THE UNIVERSITY OF NORTH CAROLINA
A multi-campus university

Primavera Project Manager for the Enterprise
Version 6.1
Custom Training Manual

June 27, 2003

Course Contents

Lesson 1

Introduction to Primavera Enterprise

Purpose and Objectives

This lesson introduces the Primavera Enterprise Suite. At the completion of this lesson, you will be able to:

- Describe the products available to The University of North Carolina.
- Describe the role of Citrix in the UNC implementation.
- Explain the difference between enterprise and project-specific data

Introduction to Primavera Enterprise

Primavera Enterprise is a suite of products/tools used for enterprise-wide project management.

It provides comprehensive information on all the projects in the enterprise, from executive-level summaries to detailed work assignments for each team member.

It is an integrated solution with Web-enabled, client/server and desktop software that provides role-specific tools to satisfy each team member's needs, responsibilities, and skills. The tools within the Primavera Enterprise suite are multi-project and multi-user.

Enterprise-Wide Solution

- Works identically in single and multiuser modes
- Scalable client/server architecture
- Relational database (Oracle)

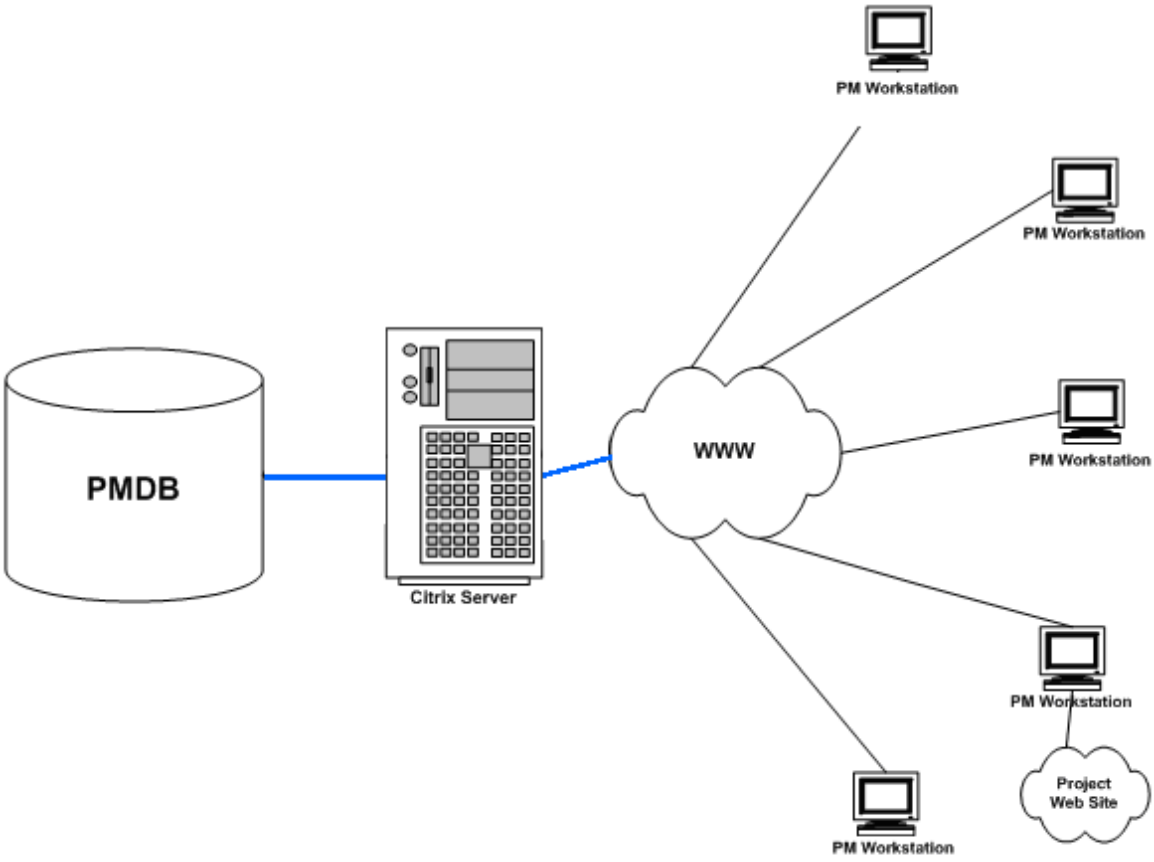
Easy to Use

- Simple, intuitive interface
- Extensive wizards
- Customized to meet The University of North Carolina's needs

Primavera Enterprise Suite Products

- Primavera Project Manager (PM)
- Project Web Site
- Primavera Methodology Manager
- Primavera Portfolio Analyst
- Progress Reporter

Primavera Enterprise Suite of Products



The University of North Carolina has chosen a combination of tools from the Primavera Enterprise Suite. This should provide all users with the functionality and ease of use needed.

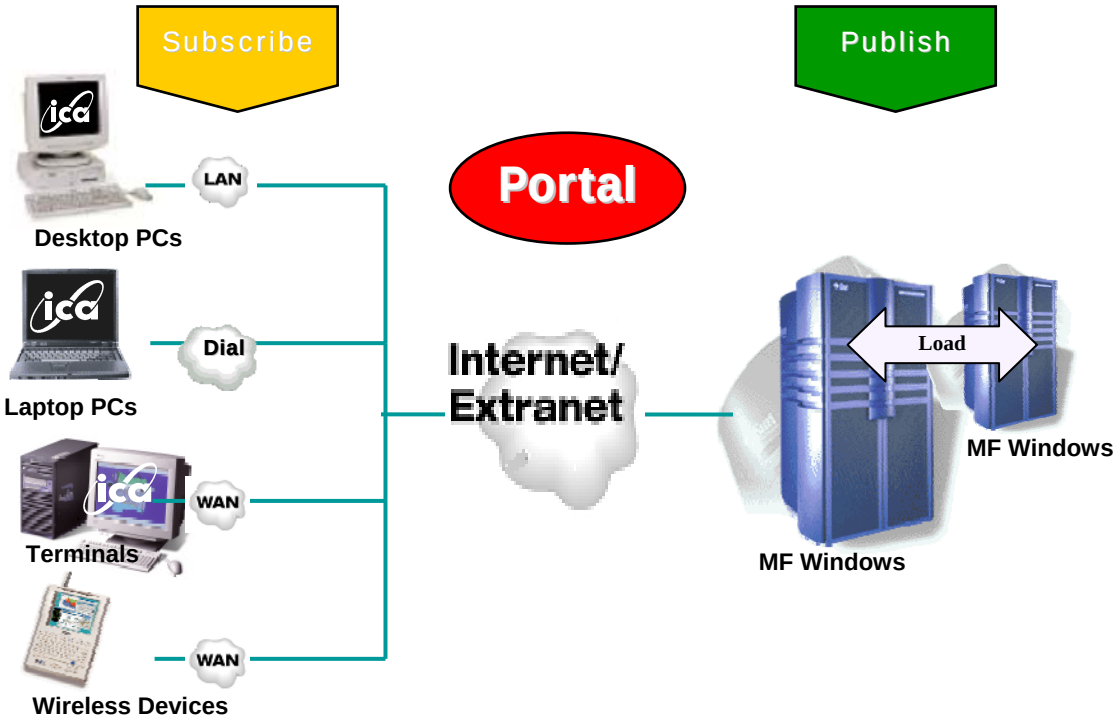
PM

- PM is a system for planning, tracking and controlling your projects.
- By using PM, an organization can store and manage projects in a central location.
- PM is the core application for the Primavera Enterprise Suite.

Project Web Site

- PM can be used to publish project plans as a Web site on an intranet or the Internet.
- The Project Web site allows project staff and other interested parties to view project information using a Web browser.

Citrix



- Provides access to virtually any Windows application, across any type of network connection to any type of client
- A cost-effective, proven solution
- Provides centralized management, universal access, exceptional performance and improved security for all business critical applications and data
- Thin-client/server architecture reduces network traffic

Primavera Enterprise Data – Enterprise vs. Project-Specific

In Primavera Enterprise, a project consists of a combination of enterprise and project-specific data.

Enterprise Data

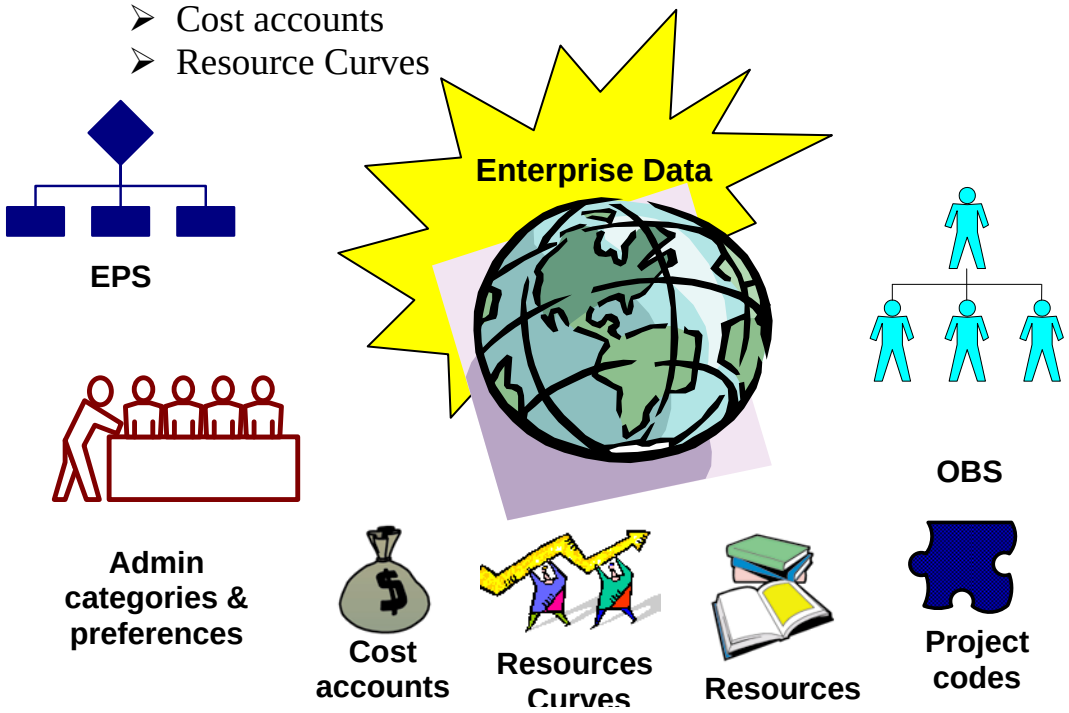
Enterprise data provides the enterprise structure needed to manage multiple projects. It is available to all projects across the enterprise and provides the structure necessary for centralized project and resource management.

Centralized Project Management

- Enterprise project structure (EPS)
- Organizational breakdown structure (OBS)
- Project codes
- Admin categories and preferences

Centralized Resource Management

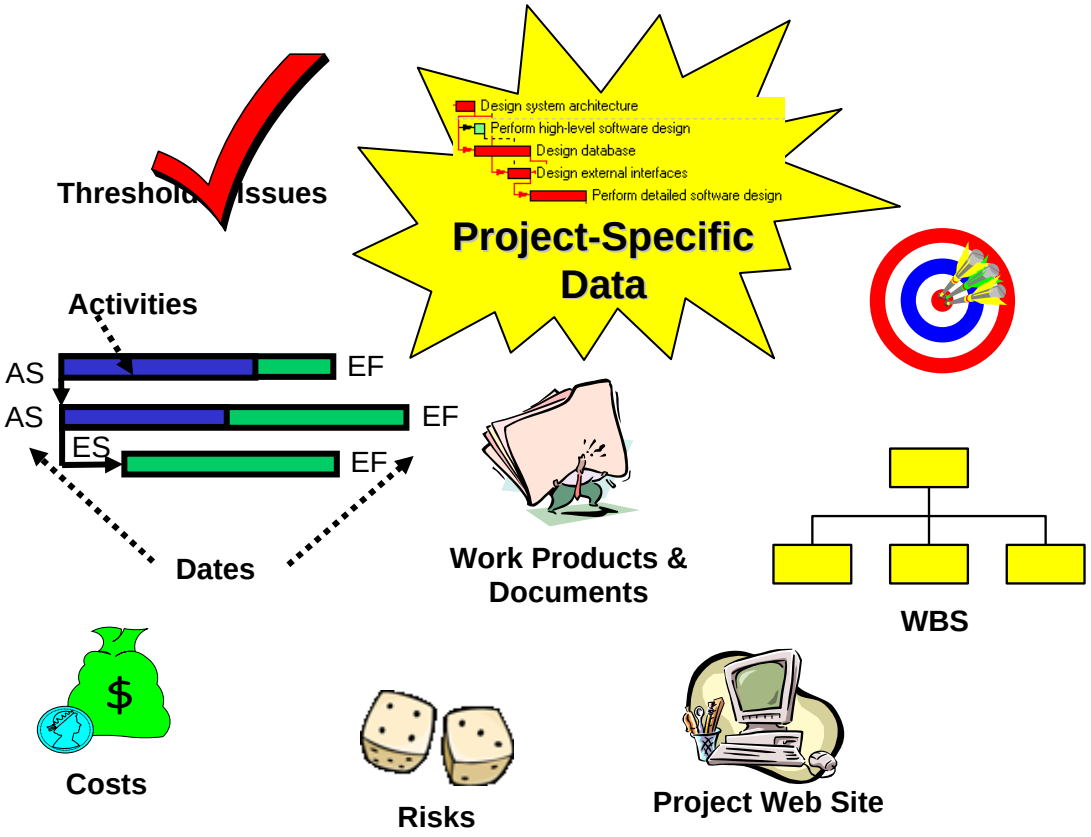
- Resources
- Cost accounts
- Resource Curves



Project-Specific Data

Project-specific data is only available to the Project in which it is defined.

- Dates
- Work Breakdown Structure (WBS)
- Activities
- Activity relationships
- Baselines
- Expenses
- Risks
- Thresholds and issues
- Work products & documents
- Project Web site

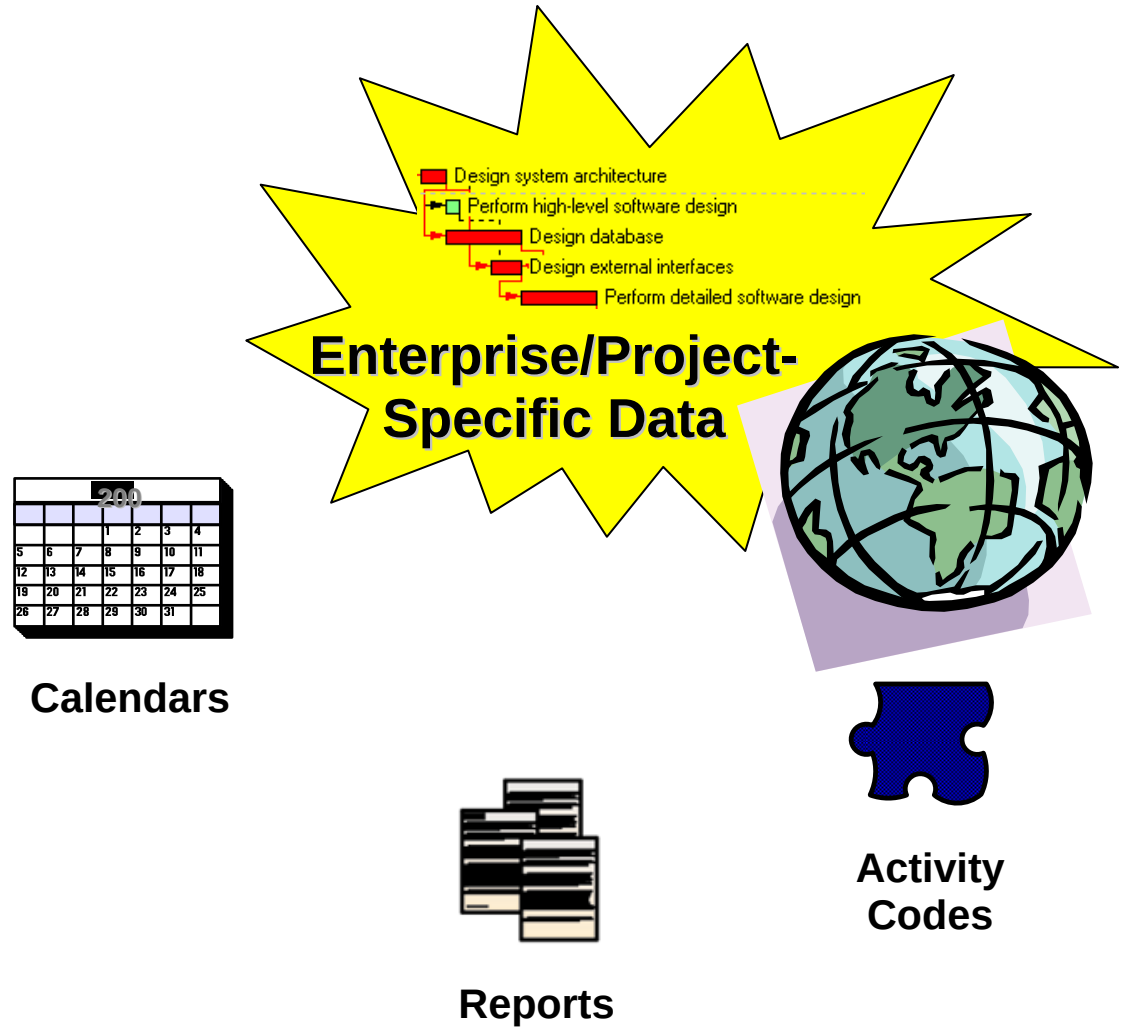


Enterprise/Project-Specific Data

The following types of data may be enterprise, as well as project-specific.

System administrators define enterprise data. Project managers may define project-specific data to further control their projects.

- Calendars
- Reports
- Activity Codes

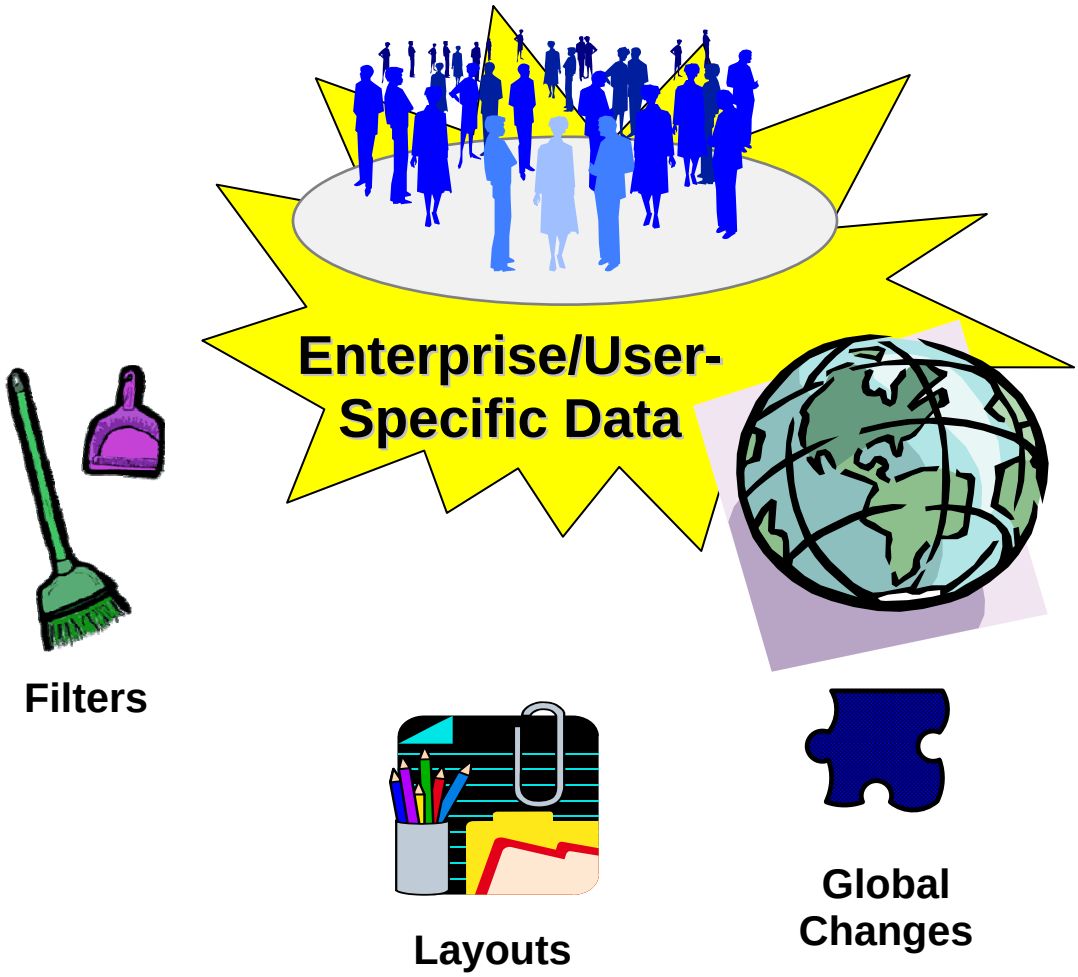


Enterprise/User-Specific Data

The following types of data may be enterprise, as well as user-specific.

System administrators define enterprise data. Project managers may define user-specific data for their own use.

- Layouts
- Filters
- Global Changes



User Rights

Rights are set at the Enterprise and Project levels. User rights may vary from project to project. Enterprise rights are defined by The University of North Carolina, and in general are set so only Resource Curves are available to the institutions.

Project level security can be requested on an institution by institution basis if needed.

Lesson 2

P6 and the Project Management Life Cycle

Purpose and Objectives

This lesson provides an overview of how P6 can assist you in various stages of the project management life cycle. At the completion of the lesson, you will be able to:

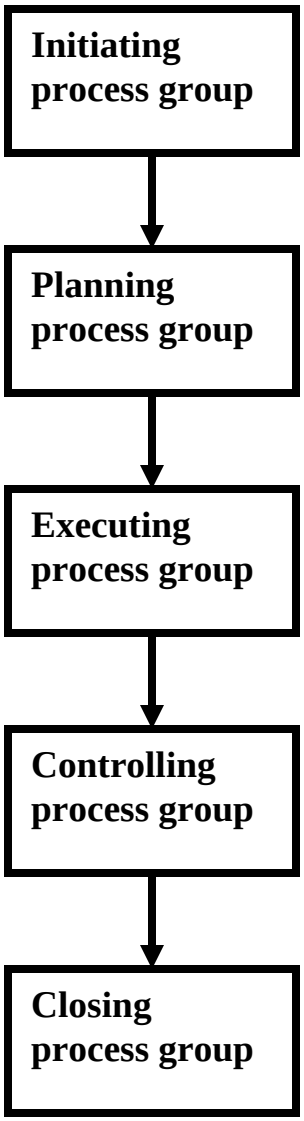
- Understand the relationship between P6 and the project management life cycle.

Project Management Life Cycle

The Primavera Enterprise suite is used for enterprise-wide project management.

Project Management Process Flow Diagram

Project Management is the process of achieving set goals within the constraints of time, budget, and staffing restrictions. The project management life cycle is made up of these process groups:



UNC Project Types

The University of North Carolina has identified several types of projects that will be managed in P6. Institutions may also manage non-mandatory projects in P6 if they choose.

Bond Projects

Bond projects must be maintained in P6 until all projects are administratively closed.

COPS Projects

All COPs funded projects approved by the legislature beginning with the 2004 Session of the General Assembly, excluding 2003 COPs funded R&R projects will be maintained in this node. The Project ID will be Code-Item assigned by CAPSTAT.

Campus Projects

Capital projects authorized by the legislature must be maintained in P6 and will be created under the Campus. All non-COPs funded projects approved by the legislature beginning with the 2007 Session of the General Assembly. Self-liquidating projects and projects approved by consultation with the Joint Legislative Commission on Governmental Operations are to be included.

R&R Projects

This node was created for the 2003 COPS projects when it was anticipated that all of them would be reported and cash flowed through Primavera. It is optional for campuses to use P6 to manage R&R projects.

What-If Projects

This node is for the campuses to test projects or different scenarios.

Templates

Templates have been created for Single Prime and Construction Manager at Risk projects. Each of these templates includes the required structures that will be discussed later in this training manual. They also include required milestones and activities needed for global reports.

Lesson 3

Navigating in Primavera

Purpose and Objectives

In this lesson, you will be introduced to the basic elements of P6. At the completion of this lesson, you will be able to:

- Login to Primavera
- Open an existing project
- Navigate the Home and Activities windows
- Open an existing layout
- Customize a layout
- Save a layout

Introduction to the Training Scenario

In this course we will create a project using one of the templates created for The University of North Carolina system. We will set up a schedule based on information provided to us in this manual.

There are many factors that will determine the make up of the project. We will discuss these factors, review examples and determine the structure for our project.

We will take this project through two cycles of updates. General project level reporting will be needed at the completion of the updates.

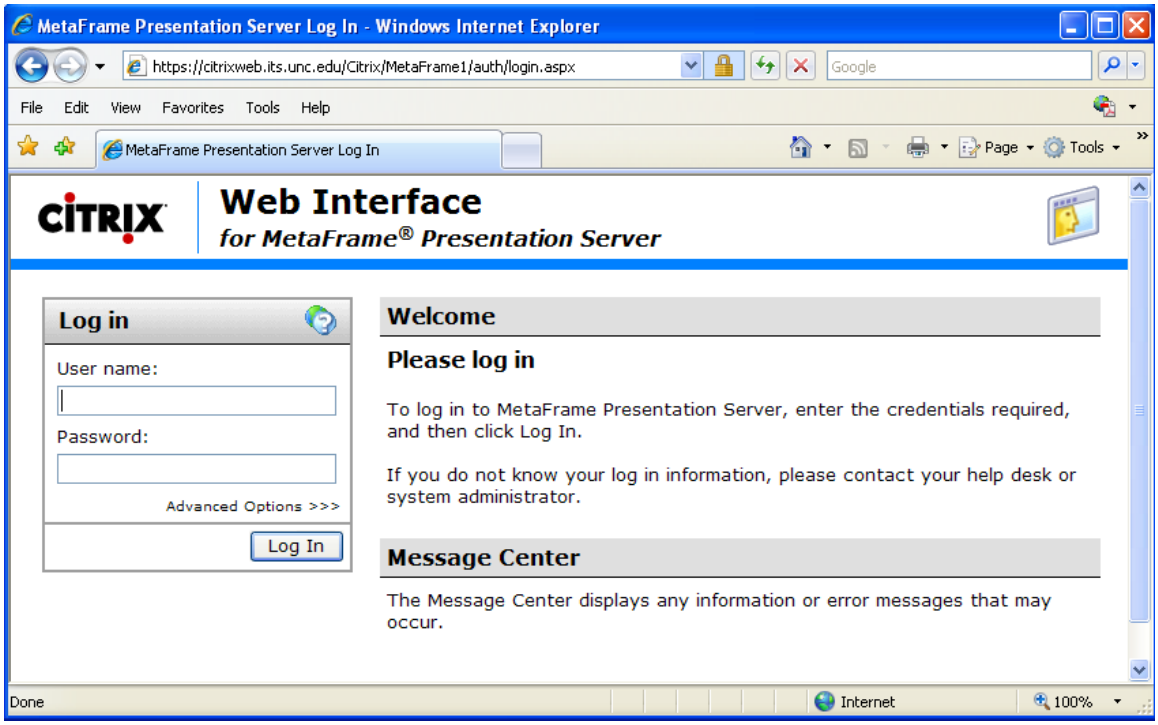
For training purposes we are the Project Manager for the institution we are working for. Our security rights will be based on this scenario.

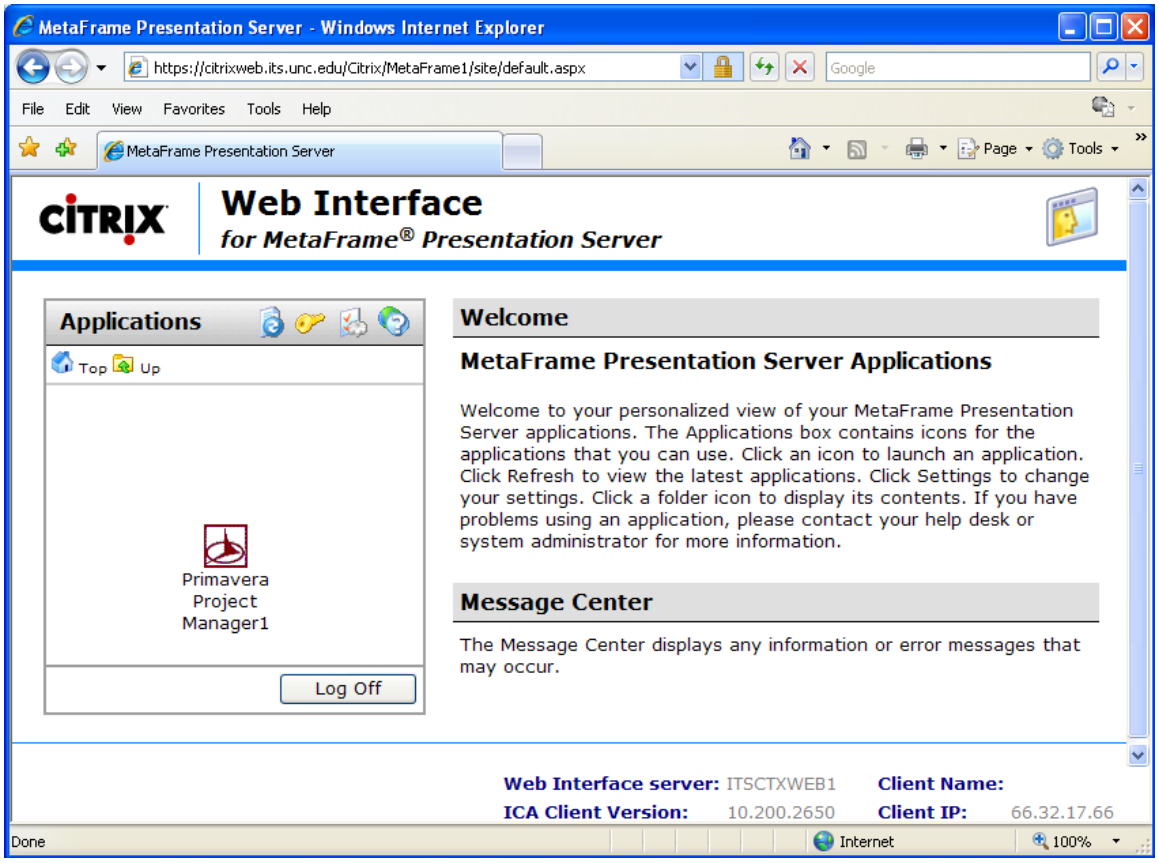
Starting P6

Before using P6, you must enter a valid login name and password. If you do not know your login name/password, contact the Rich Cox or Miriam Tripp.

- Passwords are case sensitive

Logging In to Citrix




MetaFrame Presentation Server - Windows Internet Explorer
https://citrixweb.its.unc.edu/Citrix/MetaFrame1/site/default.aspx
Google
File Edit View Favorites Tools Help
MetaFrame Presentation Server
Page Tools
CITRIX
Web Interface
for MetaFrame® Presentation Server
Applications
Top Up
Primavera Project Manager1
Log Off
Welcome
MetaFrame Presentation Server Applications
Welcome to your personalized view of your MetaFrame Presentation Server applications. The Applications box contains icons for the applications that you can use. Click an icon to launch an application. Click Refresh to view the latest applications. Click Settings to change your settings. Click a folder icon to display its contents. If you have problems using an application, please contact your help desk or system administrator for more information.
Message Center
The Message Center displays any information or error messages that may occur.
Web Interface server: ITSCTXWEB1
Client Name:
ICA Client Version: 10.200.2650
Client IP: 66.32.17.66
Done
Internet
100%

Login Dialog Box

Steps:

1. Choose **Primavera Project Manager** icon to start the application.

Note: This procedure will be published for Citrix use when activated.

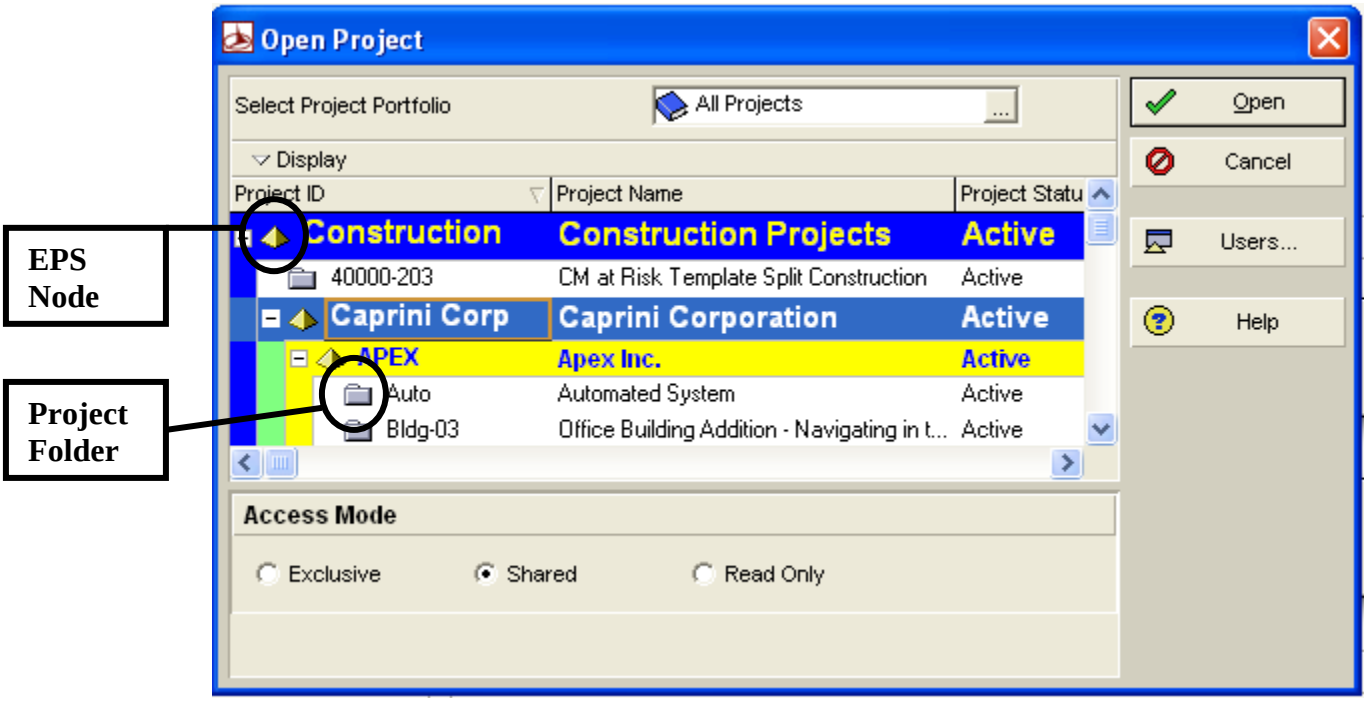
2. Type a ***Login Name*** **<tharris>** and password **<tharris>**
3. Click ***OK***.

Opening an Existing Project

Open Project Dialog Box

Lists all the projects you have access to open. By default, the projects are grouped by EPS.

- Open a single project, indicated by .
- Open a single Enterprise Project Structure (EPS) node, indicated by .
  - All projects under the node will be opened.
- Open multiple projects under the same or different EPS nodes.
  - Press *Ctrl + click* to select more than one project.



Access Modes

You have the option to select an access mode prior to opening a project.

- ***Read Only***
  - You can view data, but cannot input or change data.
- ***Shared***
  - Multiple users can view, input and change data.
  - This is the PE default setting.
- ***Exclusive***
  - The current user is the only user who can edit data on these projects.
  - Other users can access these projects in ***Read Only*** mode.

Steps:

1. Highlight a project **<40000-203>**.
2. Click ***Open***.

P6 Workspace

The main windows in P6 have different functions, but the navigation options are consistent.

Home Window

The Home window is a starting Point for navigation through the various windows within P6.

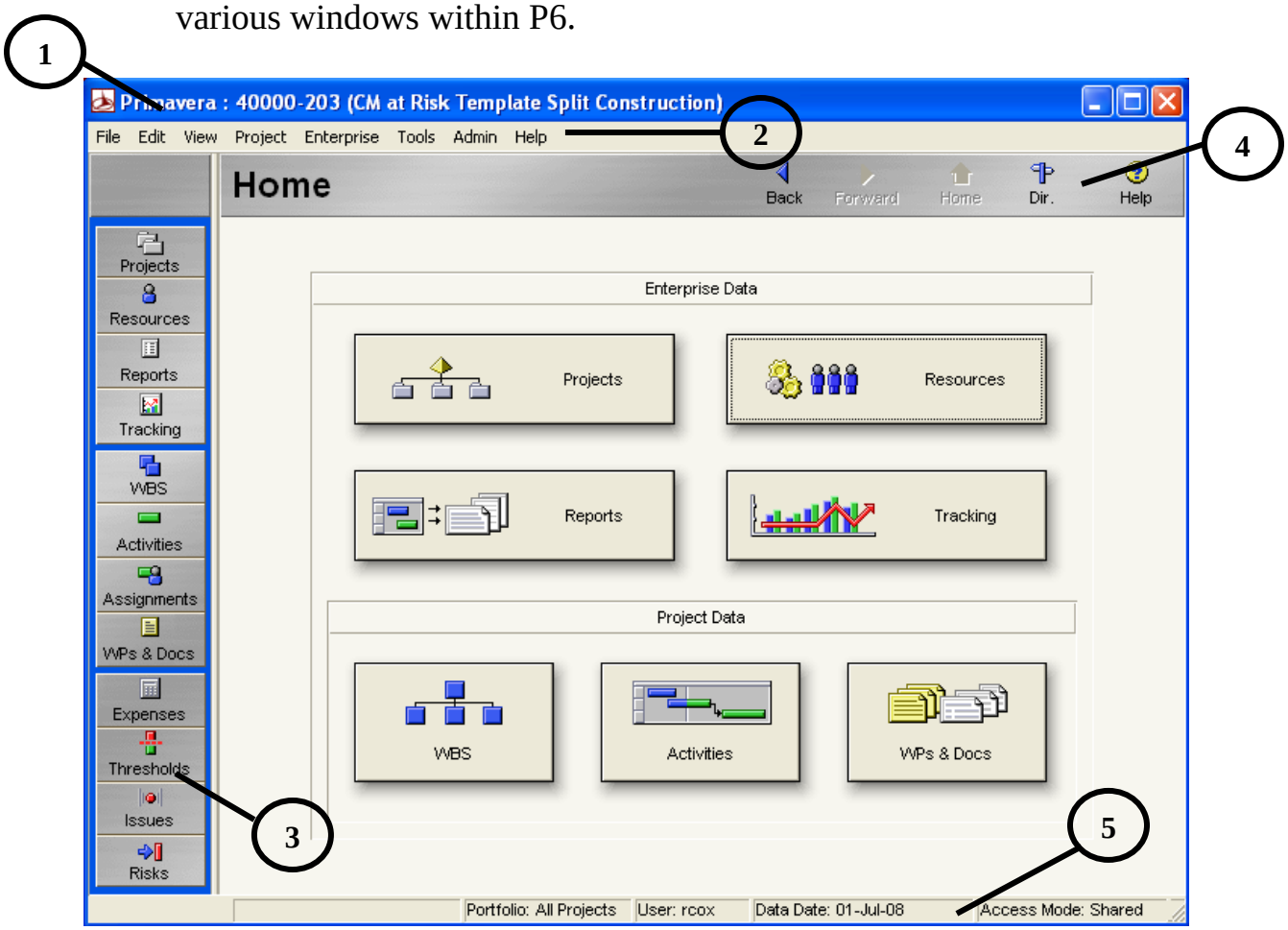


Table 1: Home Window

1. Title bar- Displays application and open projects	4. Navigation bar – Standard navigation and opens Help
2. Menu bar – Standard P6 functions	5. Status bar – General information
3. Directory bar – Use to quickly display P6 windows	

Activities Window

The Activities window is used to create, view, and edit activities for open projects. It can be divided into a top and bottom layout.

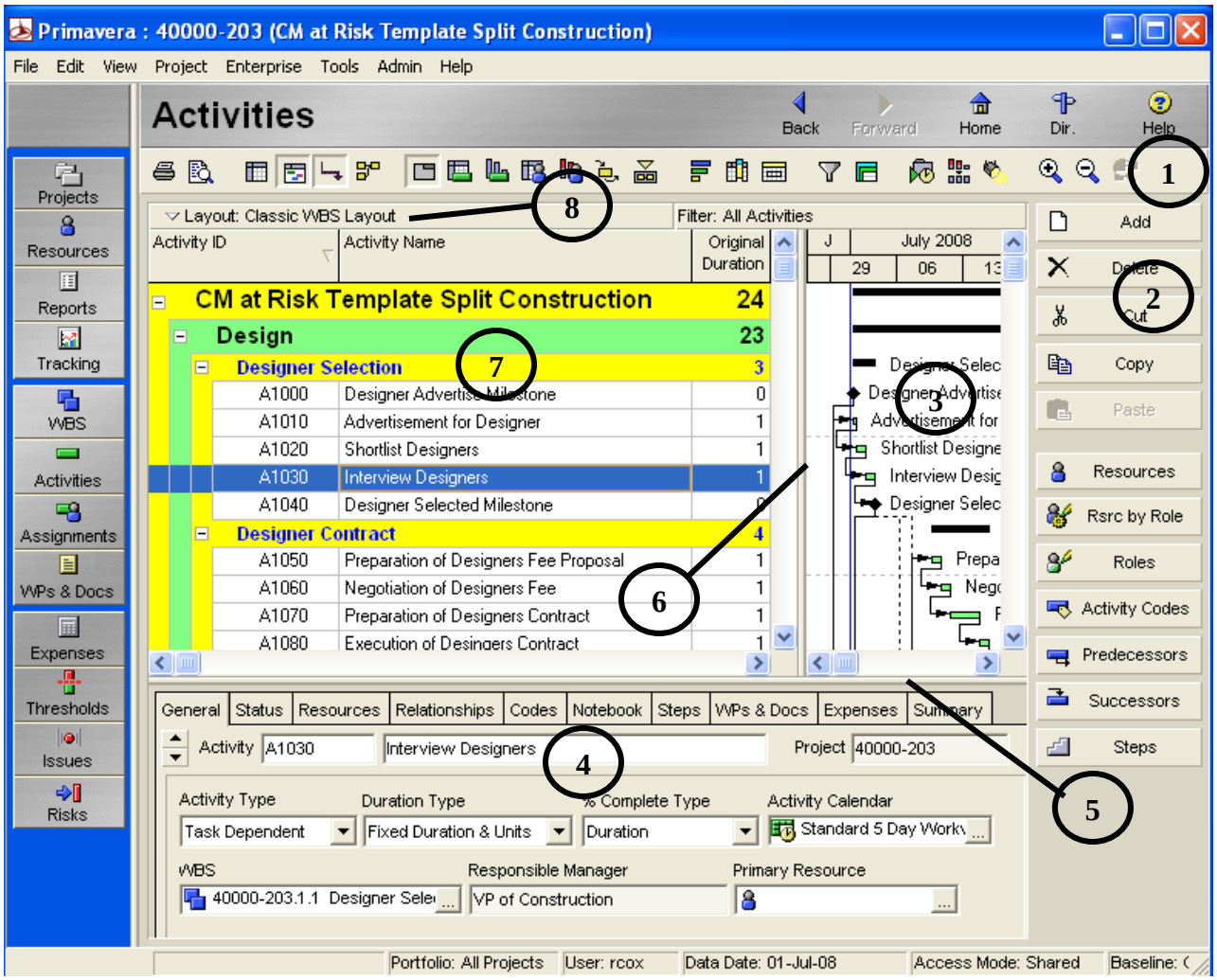


Table 2: Activities Window

1. Toolbar – Icons that allow you to format the layout.	5. Horizontal Split bar – Extends information on top and bottom.
2. Command bar – Options for editing data	6. Vertical Split bar – Extends split view in top layout.
3. Gantt Chart – Graphical display of activities	7. Activity Table – Activities in spreadsheet
4. Activity Details – View/edit detailed information about the activity	8. Layout Options bar – Menu of available formatting options.

What is a Layout?

A layout is a customizable view of project information. The layout is a combination of all the visual elements that appear onscreen. The Activities window provides the option of viewing data in top/bottom layouts.

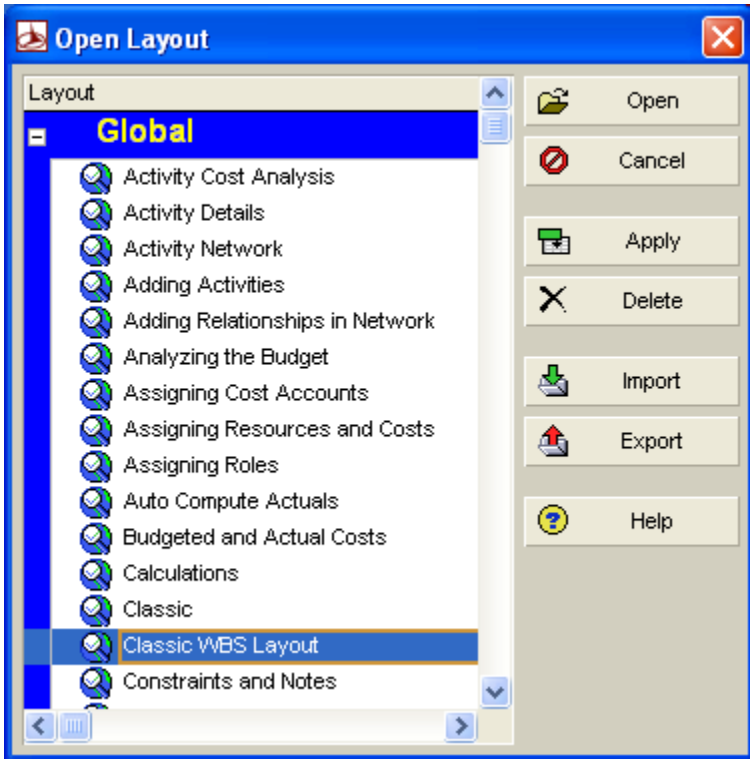
- Choose on of the following layout types to show on top:
  - Activity Table
  - Gantt Chart
  - Activity Usage Spreadsheet
  - Activity Network

- Choose one of the following layout types to show on bottom:
  - Activity Details
  - Activity Table
  - Gantt Chart
  - Activity Usage Spreadsheet
  - Resource Usage Spreadsheet
  - Activity Usage Profile
  - Resource Usage Profile
  - Trace Logic

Opening an Existing Layout

You can choose from a number of layouts to present your project from different perspectives. This allows you to spend more time managing projects instead of repeatedly preparing the displays.

- You can create you own layouts or use global layouts provided by your company.

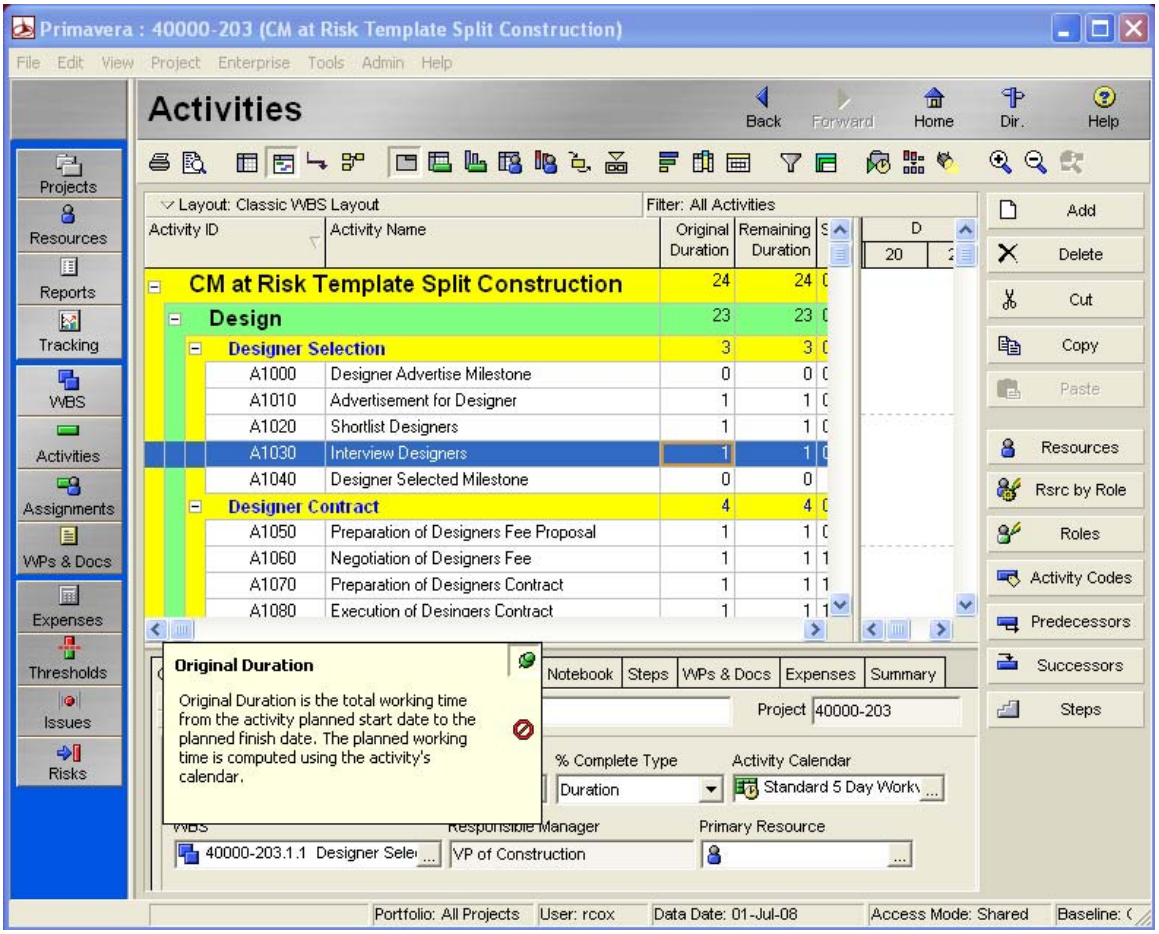


Steps:

1. From the *Layout Options* bar, choose **Layout, Open**.
2. When prompted to save changes to the layout, click *No*.
3. Select a layout to apply to the project **<Classic WBS Layout>.**
4. Click *Open*.

Using Hint Help

Hint Help provides onscreen help for various items. Click on any pre-defined column to view a definition of that field.



Steps:

1. From the *Layout Options* bar, choose **Hint Help**.
2. Place the mouse over a column **<Original Duration>.**
3. Click the tack to keep the onscreen help in one location.
4. From the *Layout Options* bar, choose **Hint Help** to disable the onscreen help dialog box.

Customizing a Layout

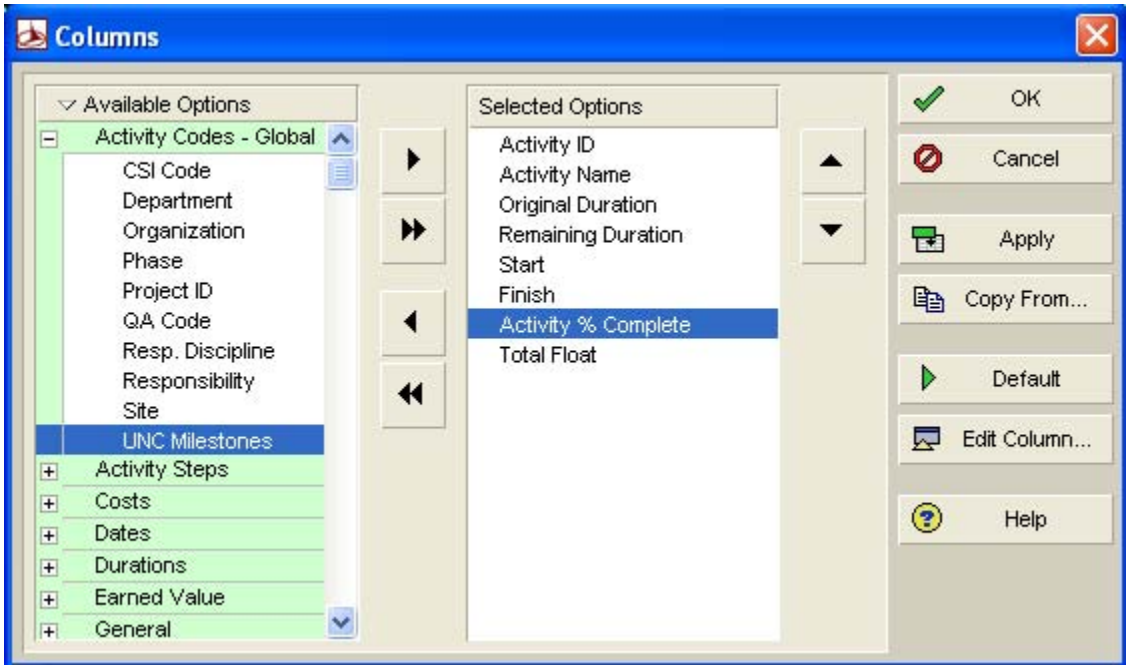
By creating custom layouts, you can easily view data in a manner specific to your needs. The Activities window can be customized and saved as a layout. Saving the layouts for future use allows you to quickly retrieve information.

- The Layout Options bar is a centralized menu for layout customization. You can perform key layout changes from this options bar.
- The following list contains the layout elements that are customizable.
  - Bars
  - Bar Chart Options
  - Columns
  - Timescale
  - Table font and colors
  - Row height
  - Filters
  - Grouping and Sorting
  - Top/bottom layouts

Selecting Columns

You are able to select which columns are visible in the Activities window, as well as the order in which they appear from left to right.

- Use single arrows to move highlighted data items.
- Use double arrows to move all data items.
- Use up/down arrows to configure the order of the data items.



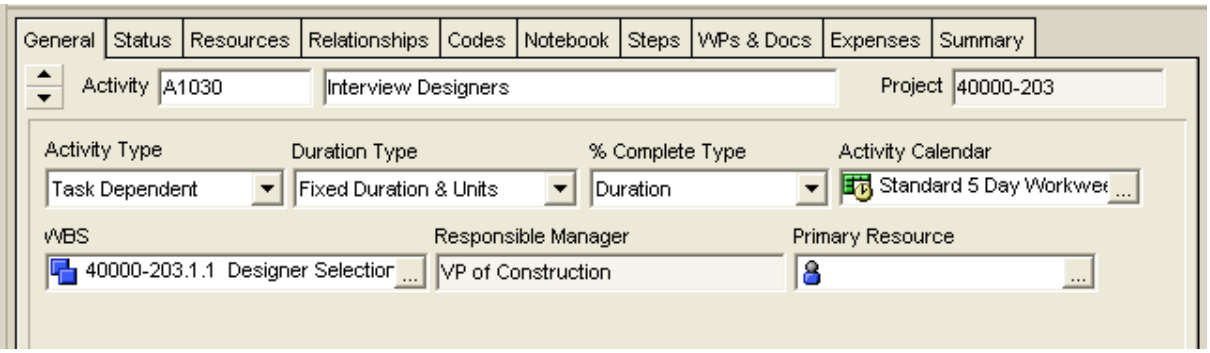
Steps:

1. From the *Layout Options* bar, choose **Columns**.
2. Click on the Plus sign by **Activity Codes**
3. Select a data item to display in the Activity Table **<UNC Milestones>.**
4. Click the single right arrow key to move the item into the *Selected Options* column.
5. Use the up/down arrows to position the order.
6. Click *OK*.

Displaying Activity Details

The display of information in the Activity window may be customized.

- The width of the columns may be adjusted to accommodate the data being displayed.
- Activity Details display detailed information for an activity highlighted in the Activity Table or Activity Network.
  - Use the tabs to enter and edit activity information.

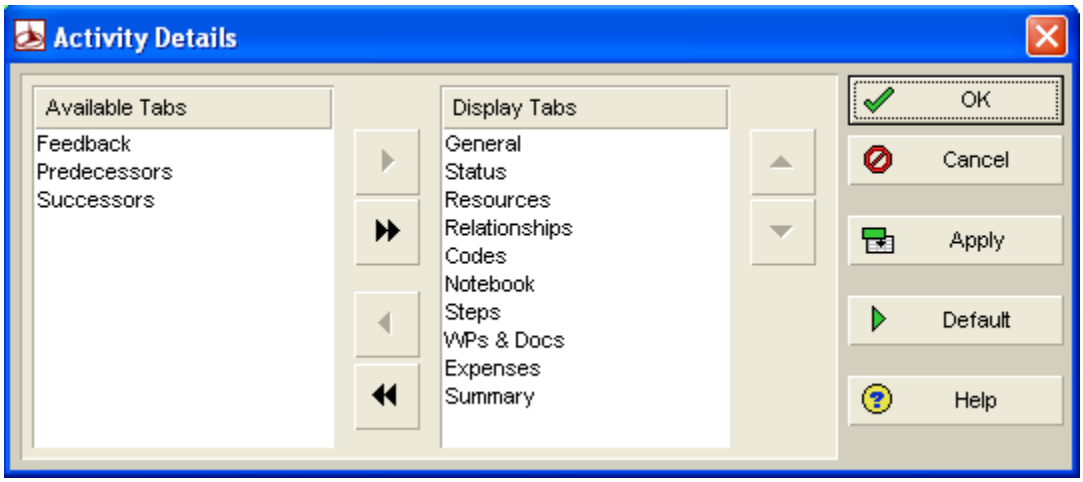


Steps:

1. Place your cursor between the two column titles <**Activity Name** and **Original Duration**> until the cursor changes to a double arrow, and then *double click.*
2. From the *Layout Options* bar, choose **Show on Bottom, Activity Details**.

Selecting Detail Tabs

- The tabs displayed in Activity Details are customizable.



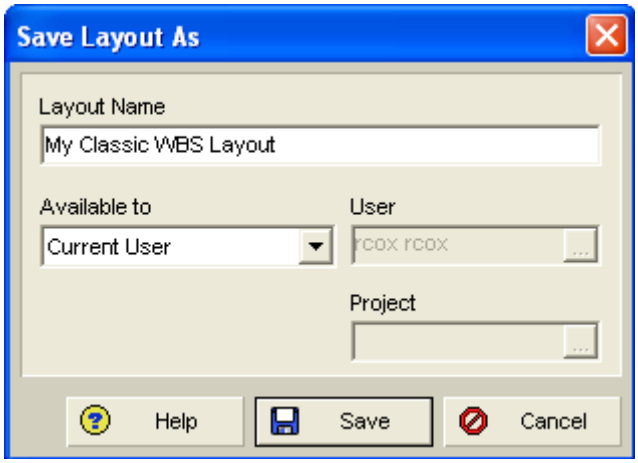
Steps:

1. From the *Layout Options* bar, choose **Bottom Layout Options.**
2. From the *Display Tabs* column, select a data item **<WPs & Docs>.**
3. Click the left arrow key to remove it from the list.
4. Click *OK*.

Saving Layouts

Layouts can be saved and shared with other users to facilitate project communication.

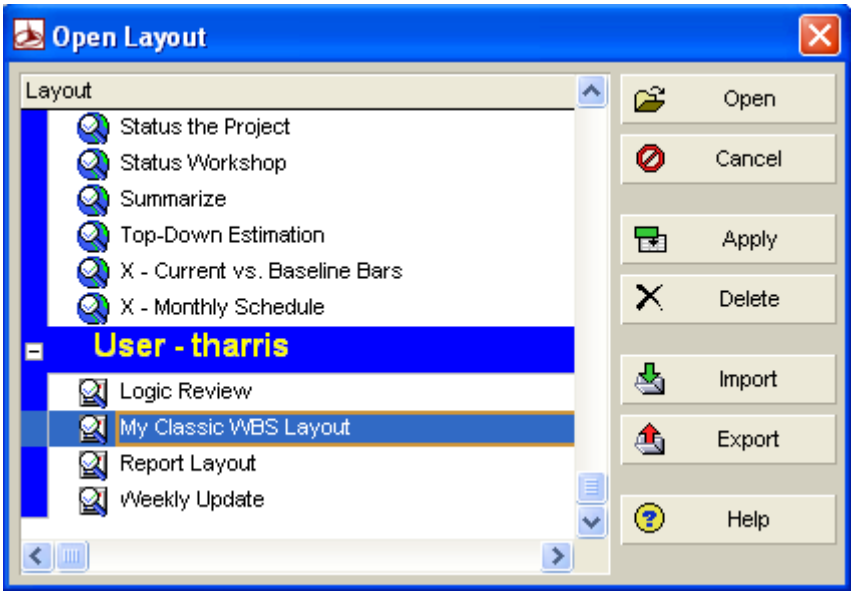
- Layout, Save saves changes to the existing layout.
- Layout, Save As prompts you to save the layout with a new name.
- Layouts can be global or user-specific.
  - Current User – only the user creating the layout will have access to it in the future.
  - All Users – all licensed users will have access to the layout. This requires an enterprise security level.
  - Another User – a specified user will have access to the layout.
    - The current user will not have access to the layout.



Steps:

1. From the *Layout Options* bar, choose **Layout, Save As.**
2. Type the *Layout Name* <**My Classic WBS Layout**>.
3. Click in the *Available to* field.
4. Select *Current User*.
5. Click *Save*.

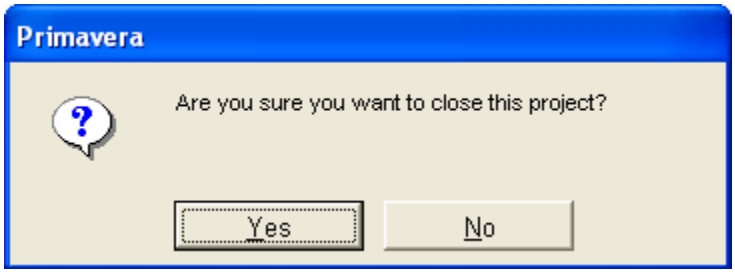
The layout name now shows as “My Classic WBS Layout”



Closing a Project

You should close the project when you are finished working with it. You will be prompted to verify that you want to close the project.

Data is saved automatically or when changes are committed. There is no project save button or any undo button.



Steps:

1. Choose **File, Close All**.
2. When prompted, click *Yes*.

Note: Closing the project takes you back to the Home window.

Lesson 4

Enterprise Project Structure (EPS)

Purpose and Objectives

This lesson describes the hierarchical structure for projects. At the completion of this lesson, you will be able to:

- Describe UNC's Enterprise Project Structure.
- View the Enterprise Project Structure.

Enterprise Project Structure

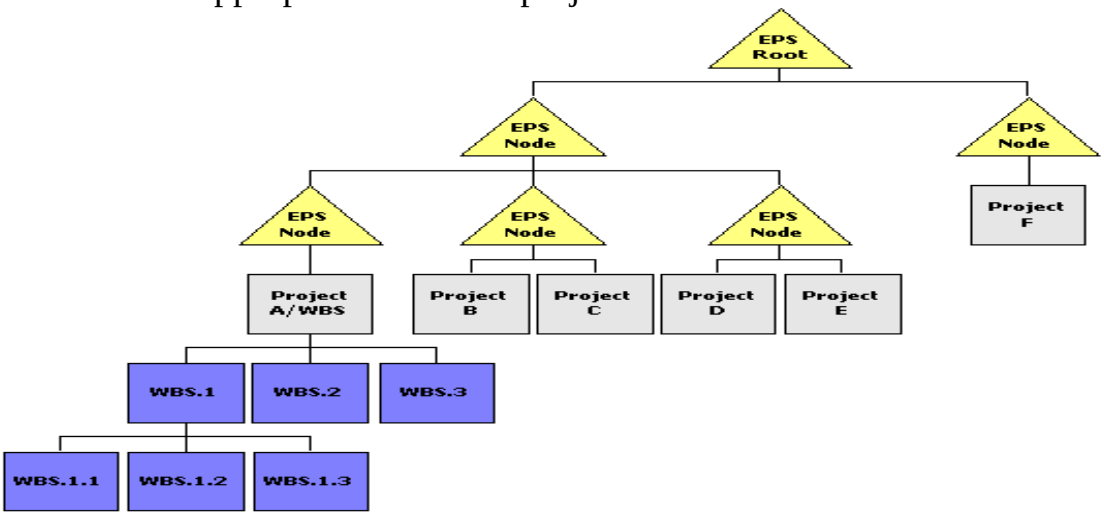
The Enterprise Project Structure (EPS) is a hierarchy developed in P6 to help organize projects.

Attributes

- The EPS is a structure made of roots and nodes.
  - Each root in the EPS can be subdivided into many nodes.
  - Nodes represent different levels within your EPS.
    - For example, nodes can represent divisions within you company, departments, or site locations.
- All projects must be included in the EPS node.
  - Each node can contain an unlimited number of projects.
  - Projects always represent the lowest level of the hierarchy.
  - Placement of a project in the hierarchy determines the summary level in which it is included.

Benefits

- View project priorities, scope, and budgets across the enterprise.
- Manage projects separately while retaining the ability to roll up and summarize data across multiple projects.
- View cost distribution across projects.
- Assign security at any level of the structure to provide users with appropriate access to project information.



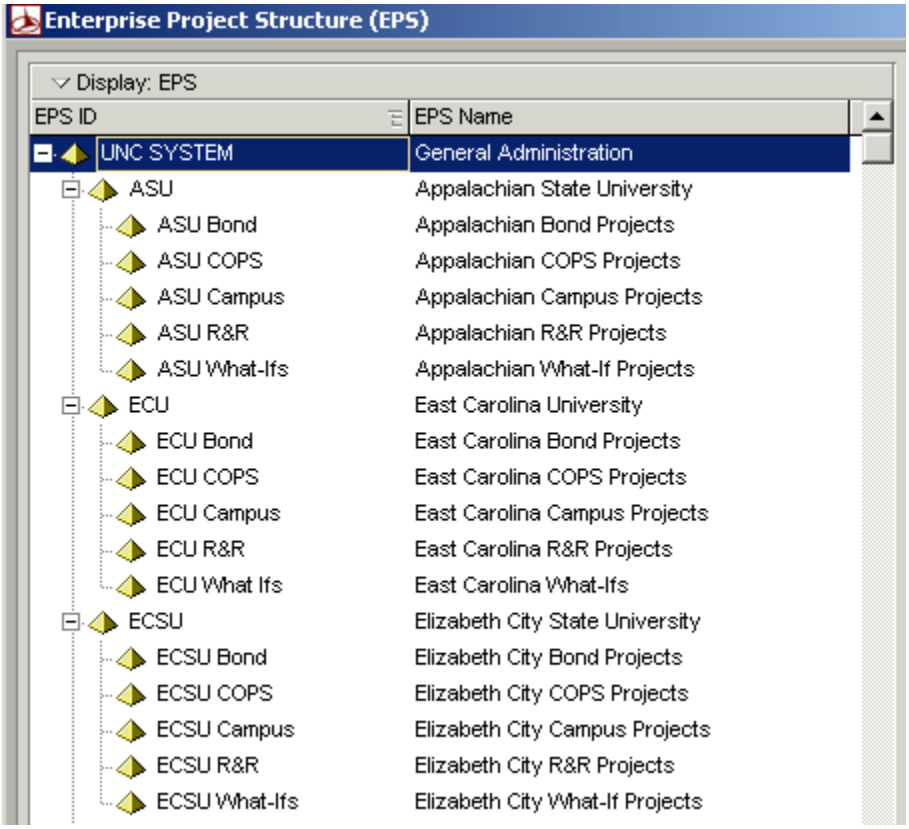
The University of North Carolina's EPS

UNC will divide the Office of the President into all associated institutions. Beneath each institution will be divisions for capital projects, campus projects, and what-if projects.

Each division has been structured into nodes. These nodes can be rolled up individually, to the institution level or to General Administration for reporting.

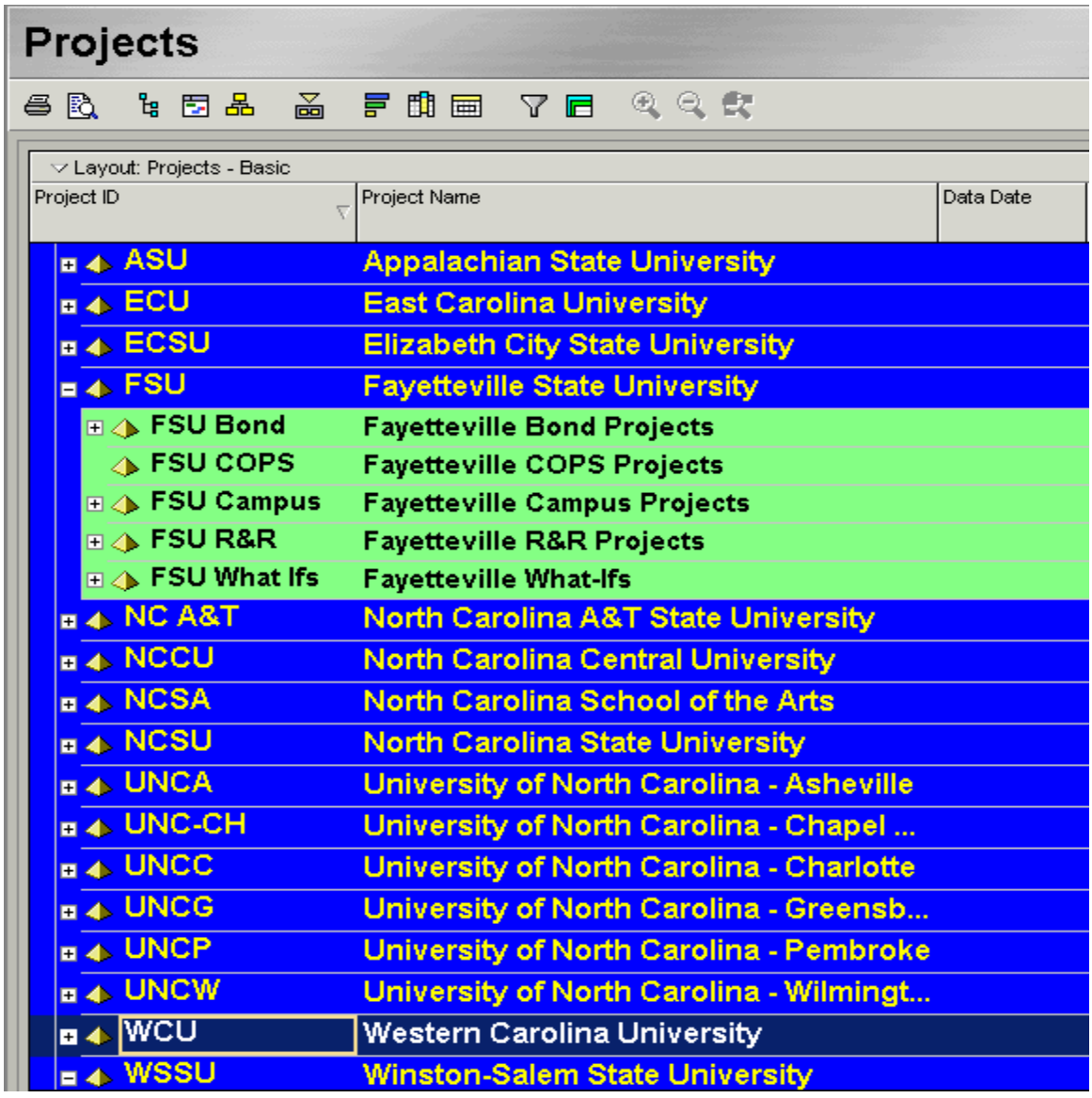
Viewing the EPS

The enterprise Project Structure is a global framework that should be established by your system administrator.



Viewing the EPS in the Projects Window

The Projects window displays the projects in the EPS that the user has access to open. Project data can be viewed in the tabular, Gantt, and chart view.



Lesson 5

Organizational Breakdown Structure (OBS)

Purpose and Objectives

This lesson describes the hierarchical structure for the individuals or departments that are responsible for managing projects. At the completion of this lesson, you will be able to:

- Describe UNC's Organizational Breakdown Structure.
- View the Organizational Breakdown Structure.

Organizational Breakdown Structure/Responsible Manager

An organizational breakdown structure (OBS) is a hierarchical arrangement of institutions' project management structures. The OBS is rolled up to The Office of the President, and in general is a list of the responsible managers.

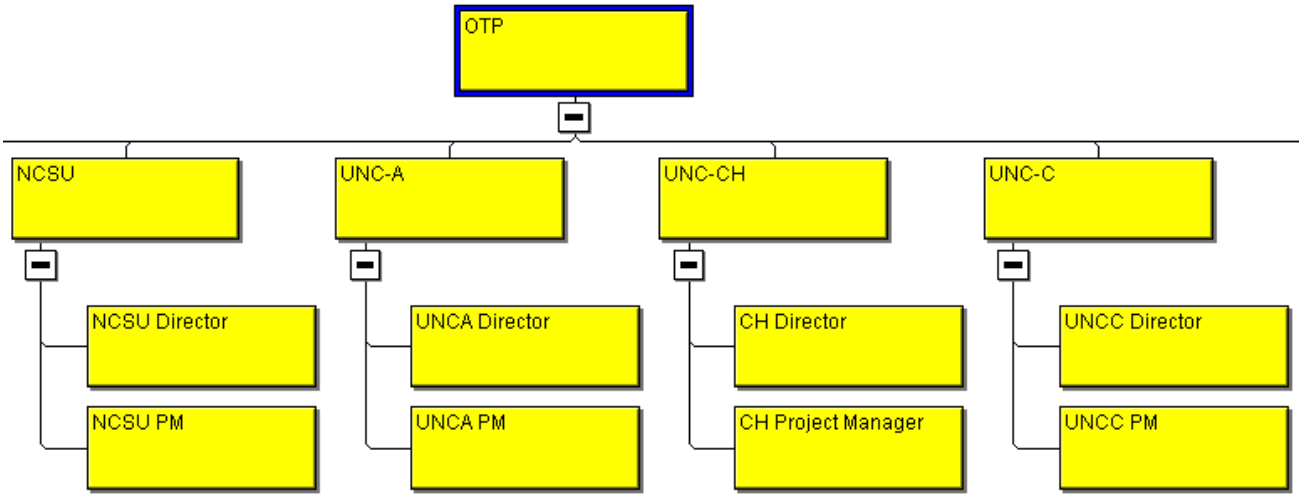
- The OBS supports larger projects, which involve several projects managers with different areas of responsibility.
- The OBS is assigned to EPS nodes, projects, WBS elements, risks, issues, and thresholds to designate responsibility.
  - Example: The OBS element assigned to a project is the project manager responsible for all work included in the project.
- The OBS controls user access to project information.

The University of North Carolina's OBS

UNC has created the following OBS to organize the managers responsible for projects within the institutions. This is a flexible structure and can change to meet individual needs.

UNC uses a more general approach where functional responsibilities are modeled in the structure. This structure will be used to assign responsibility to all projects under the Office of the President.

As John Smith, you will review the OBS. In other modules, you will assign the OBS/responsible managers to projects and WBS elements to establish responsibility.

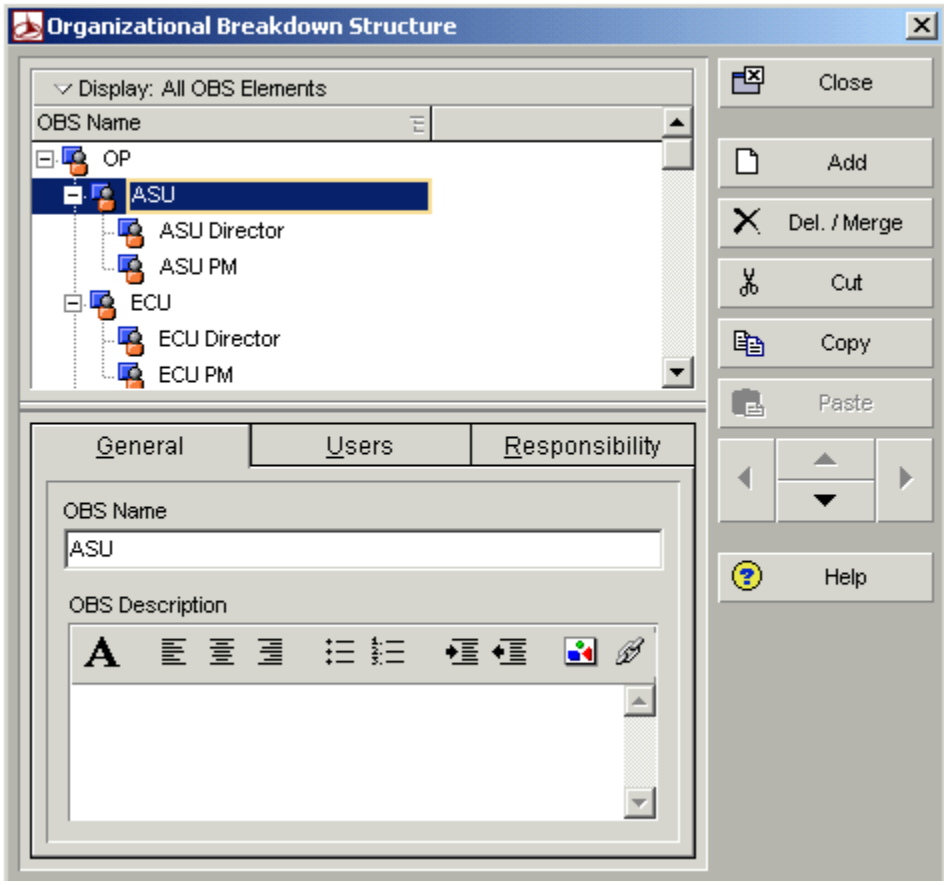


Viewing the OBS/Responsible Managers

The Organizational Breakdown Structure dialog box displays the responsible managers in the organization. This data can be viewed in a tabular or chart view.

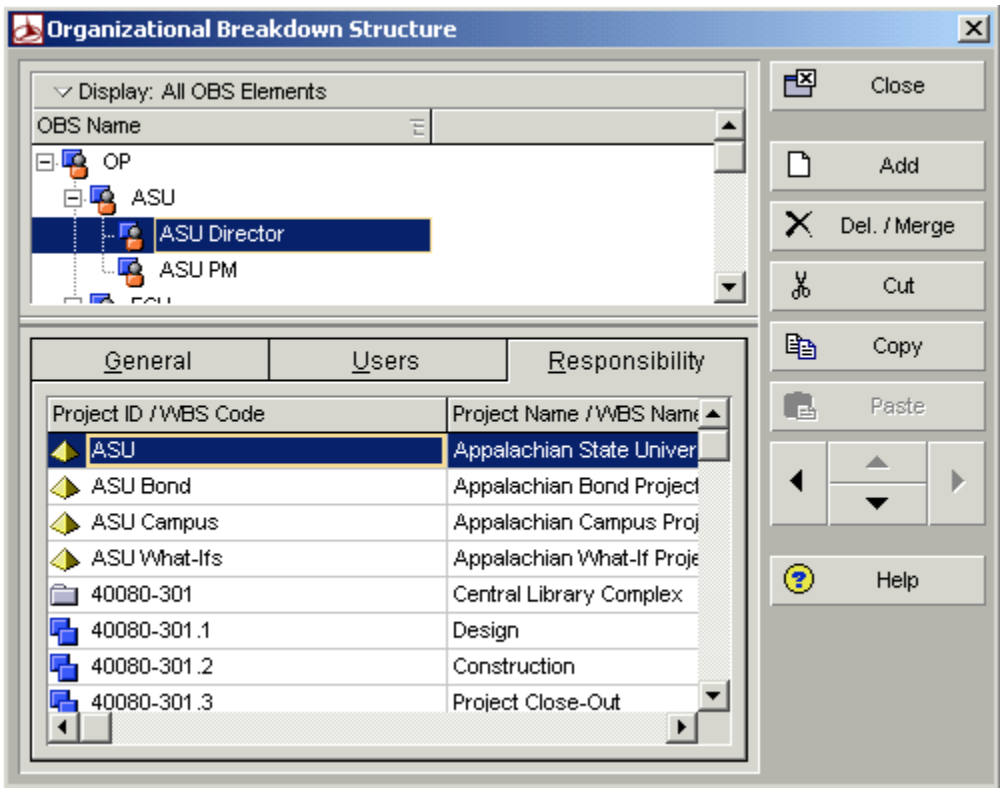
General Tab

This tab displays the OBS Name and OBS Description for the selected responsible manager (OBS element).



Responsibility Tab

Use to quickly view where the selected responsible manager (OBS element) is assigned throughout the enterprise.



Lesson 6

Creating a Project

Purpose and Objectives

In this lesson, you will learn how to create a project in P6 using the UNC templates. At the completion of this lesson, you will be able to:

- Create a project
- Navigate the Projects window
- View and modify information on the Projects Details tabs
- Define the use of the UNC templates

Creating a Project

A project can be created using a variety of methods.

Using the Create a Project Wizard

- Create the project
- Set default project tabs
- Add project codes
- Create the work breakdown structure (WBS)
- Add activities and codes
- Assign resources and costs

Using Templates

- Copy a template
- Review and adjust project codes
- Review and adjust the work breakdown structure (WBS)
- Review and adjust activities and codes
- Assign resources and costs

Importing a File

- Import projects using the following file formats:
  - PE projects (XER)
  - Microsoft Project (MPP) projects
  - Third-party projects (MPX)
  - Primavera Project Planner projects (P3)
- Review and adjust project codes
- Review and adjust the work breakdown structure (WBS)
- Review and adjust activities and codes
- Assign resources and costs

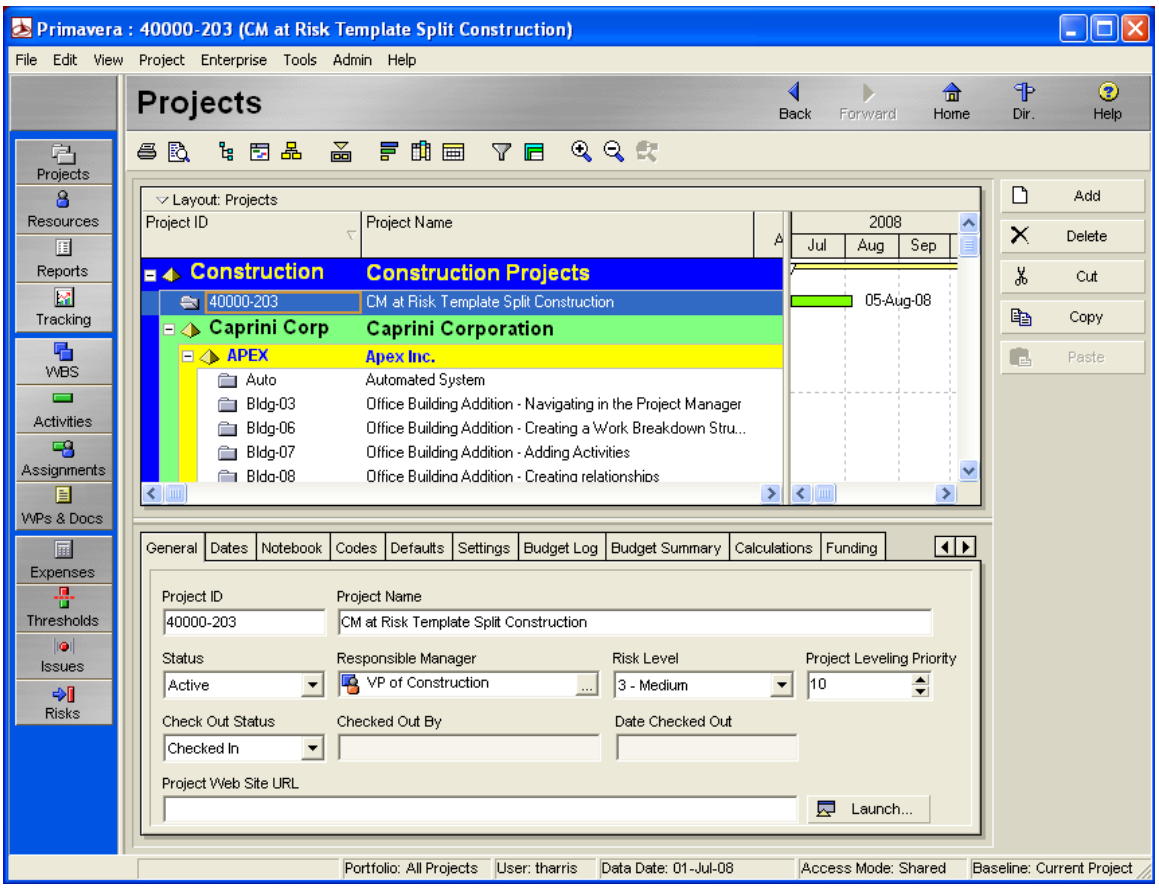
Creating a Project from the Template

UNC-GA has created templates to use for all capital projects. This will add to the ease-of-use and the consistency of the project tools. The templates were created as a minimum of required information. Institutions can add to the structure for more detailed management if desired.

We will be creating a new capital construction project for our institution in the class. We will use the templates provided to assist in our efforts.

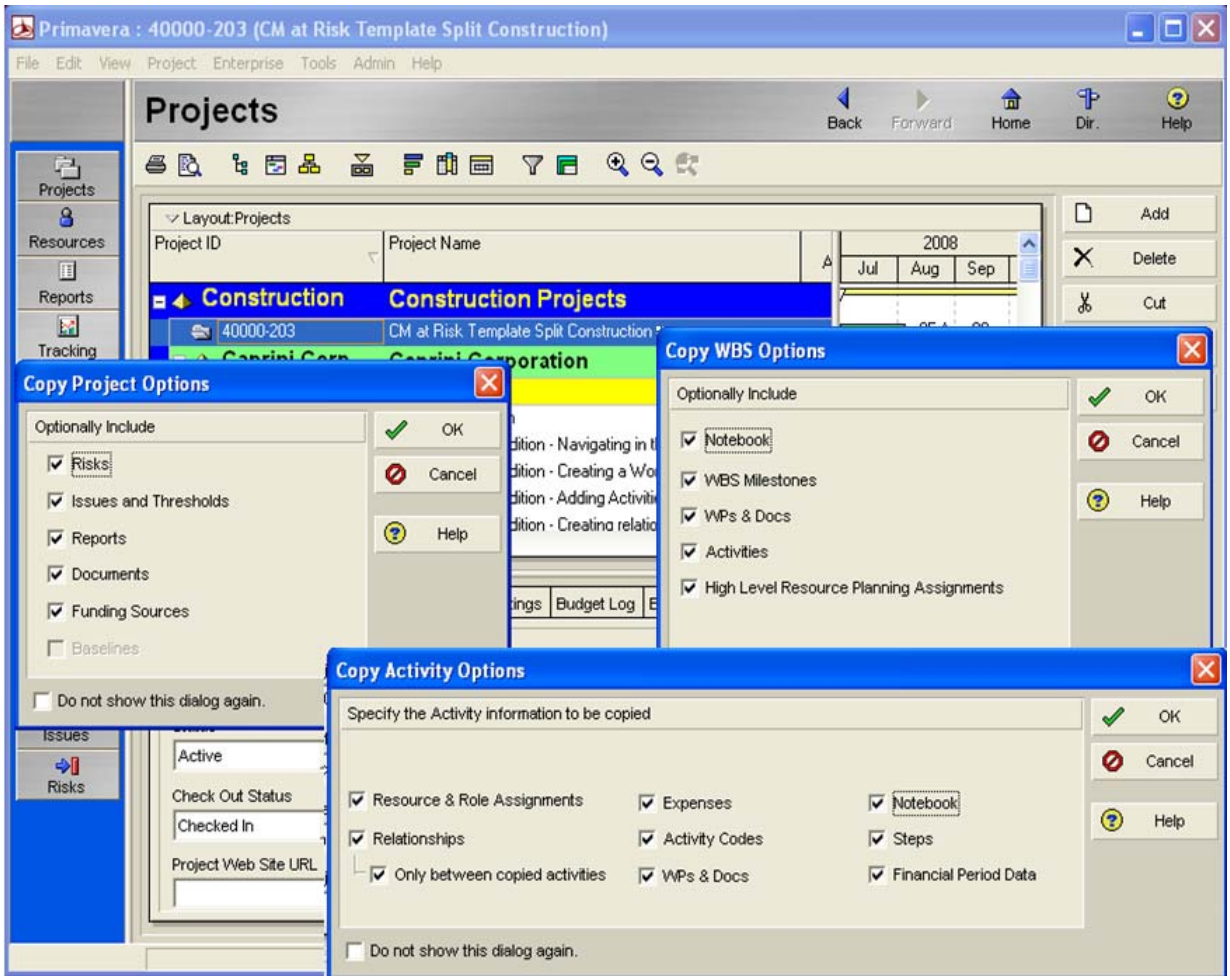
Select the Template

- You will add the UNC Project Management Building project to the Construction Projects EPS. We will use 40000-203 template for this.



Steps:

1. Highlight the template you wish to copy **<40000-203>**.
2. Click **Copy** on the *Command bar*.
3. Highlight the level of the EPS for the new project **<Construction Projects>**.
4. Click *Paste*.



5. Click *OK* to all screens.

Projects Window

The project has been created and opened. The template is opened as well. To view high-level information about the project, open the Project window.

The Project window displays the projects in the EPS that you can access. You can also:

- Group projects by EPS, project codes, or other project-related items.
- Filter projects
- Modify column data

Projects Window (Continued)

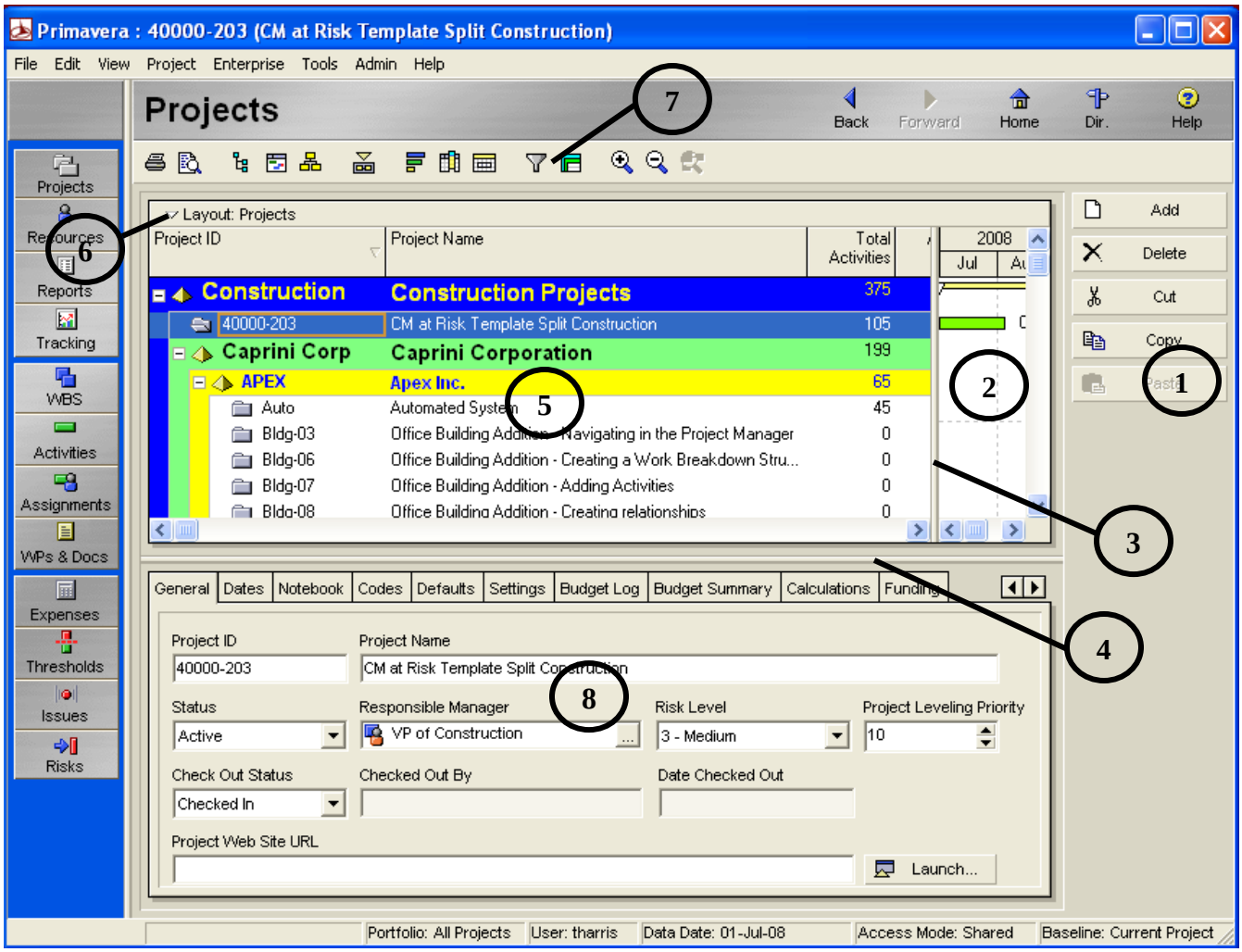


Table 3: Projects Window

1. Command bar – options for editing project data	5. Projects Table – spreadsheet of project information
2. Gantt Chart – graphical display of project information	6. Layout Options bar – menu of project data format options
3. Vertical Split bar – hide/show information in top layout of Project Table or Gantt Chart	7. Toolbar – icons that allow you to change the look of the current window
4. Horizontal Split bar – hide/show information from top to bottom	8. Project Details tabs – edit detailed project information

Projects Detail Tabs

The Project Detail tabs are located in the bottom layout of the Projects window. They can be used to define the projects properties and defaults that will be applied throughout the selected project.

You will use the Project Details tabs to define information about your projects. Just like the tabs on the activities screen these tabs can be adjusted to meet your needs.

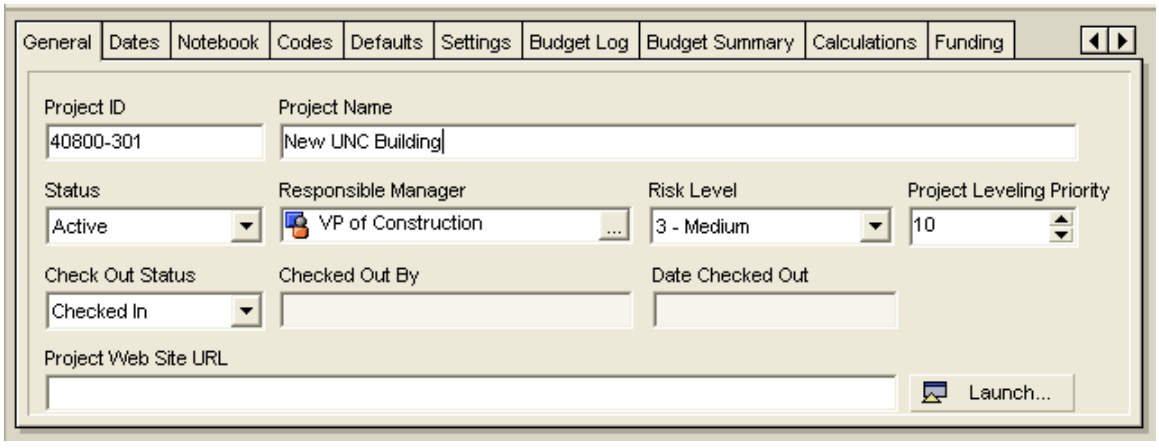
The Project Details can also be toggled on and off by clicking on the  show/hide bottom layout button.

1. Click on the newly created project.
2. Right click to get drop down menu.
3. Click *Open Project.*
4. Click on the *Projects* tab on the Directory Bar

General Tab

Enables you to view or modify general information about the selected project. The project ID, project name, and responsible manager can be set when you create the project. If necessary, you can change them here. The remaining fields are set by default.

- Change the Project ID and Project Name as desired.
- Change Status to 'Planned'.
  - **Planned** – Progress Reporter users cannot access activities.
  - **Active** – Progress Reporter users can access activities.
  - **Inactive** – Progress Reporter users cannot access activities.
  - **What-If** - Progress Reporter users cannot access activities, and closed projects do not show in resource profiles.
- **Responsible Manager** – Set to the OBS level of management. This will set security and access levels to the Project.
- **Risk Level** – This setting is not required by UNC.
- **Leveling Priority** – This setting is not required by UNC.
- **Check-out Status** – For integrity purposes user cannot check-out projects.
- **Project Web Site URL** – displays the project's web address.



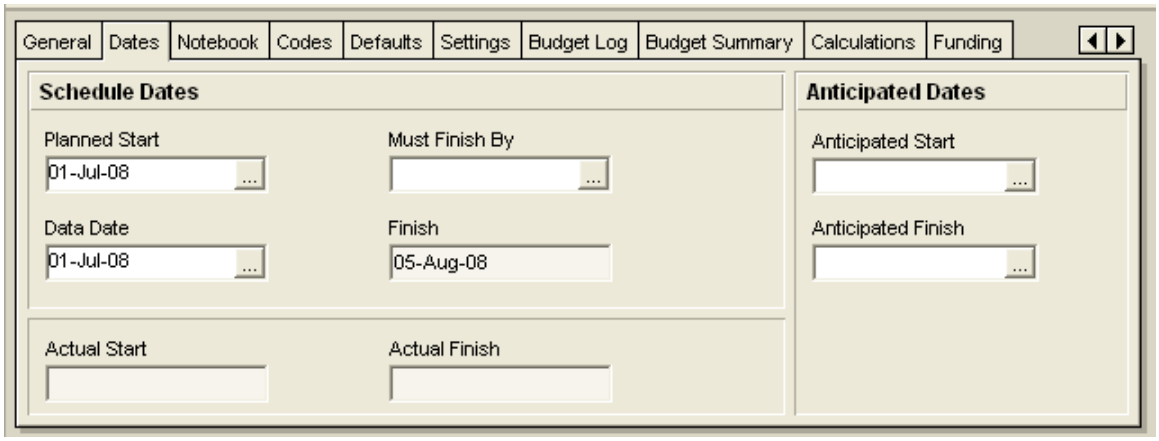
Steps:

1. Change the *Project ID* to <**40800-301**>.
2. Change the *Project Name* to <**New UNC Building**>.
3. Click on *Status* drop-down arrow and select *Active*.

Dates Tab

Enable you to edit date information for the selected project.

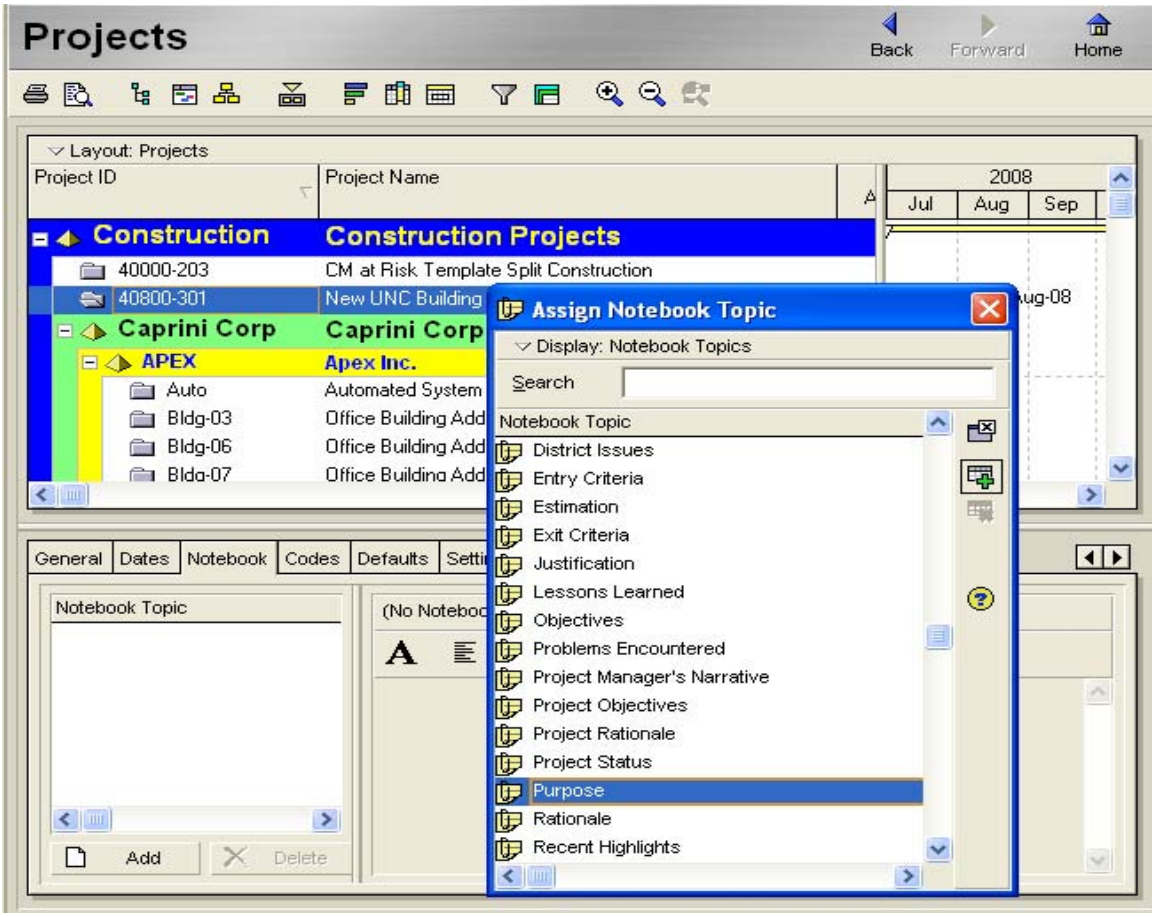
- **Planned Start** – Set to the scheduled start date.
- **Data Date** – Prior to Project start this should be equal to the Planned Start.
- **Must Finish By** – Deadline date if defined.
- **Finish** – Non-editable field indicating the latest early finish date calculated when the project was last scheduled.
- **Actual Start and Actual Finish** – Non-editable fields indicating the actual start and finish dates of the project.
- **Anticipated Start and Anticipated Finish** – expected dates that can be used for high level planning – not used by UNC.



Notebook Tab

Enable you to view or modify project notes, such as the project's purpose, core requirements, or any other project-specific details.

- **Notebook Topic** – list of topics assigned to the selected node/project.
- **Detail** – user-defined description of the selected topic. You can use HTML editing features, including formatting text, inserting pictures, copying, pasting and adding hyperlinks.

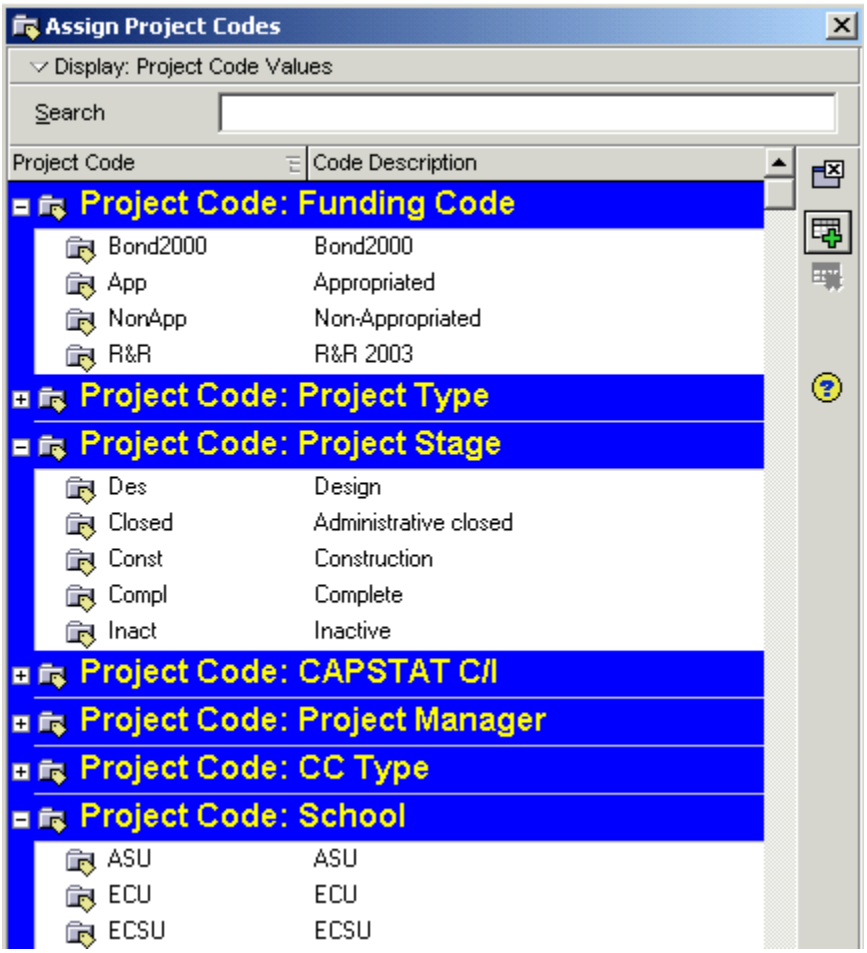


Steps:

4. From within the *Notebook Topic* section, click *Add*.
5. Assign a *Notebook Topic* <**Purpose**>.
6. Close the *Assign Notebook Topic* dialog box.
7. In the Details section, type desired text.

Codes Tab

Project Codes allow for grouping, sorting, and filtering project information. For proper reporting and project control, Project Codes must be set.



Steps:

1. Click on Assign at the bottom of the screen.
2. Select one value beneath each Project Code.
3. You may double-click the value or hit the assign button to the right.
4. It is recommended to minimize the Project Code after assigning a value to help you keep track of where you are.

Defaults Tab

- **Duration Type** – The duration type determines whether the schedule, resource availability, or costs are most important when updating activities. The duration type applies only when you have resources assigned to the activity.
- **Activity percent complete based on activity steps**. Check this if you want resources to check off steps and allow the system to compute remaining duration. Set activities with weighted steps to a Percent Complete Type of Physical.

UNC's scheduling procedures dictate that normal use will require Fixed Duration and Units to be set. Project Managers can change this setting if necessary. To help you understand the effects of the duration type, you should first review how P6 Project Manager calculates resource data. The following equation must hold true regardless of which data you update:

Remaining Units (resource) = Units/Time x Remaining Duration (activity)

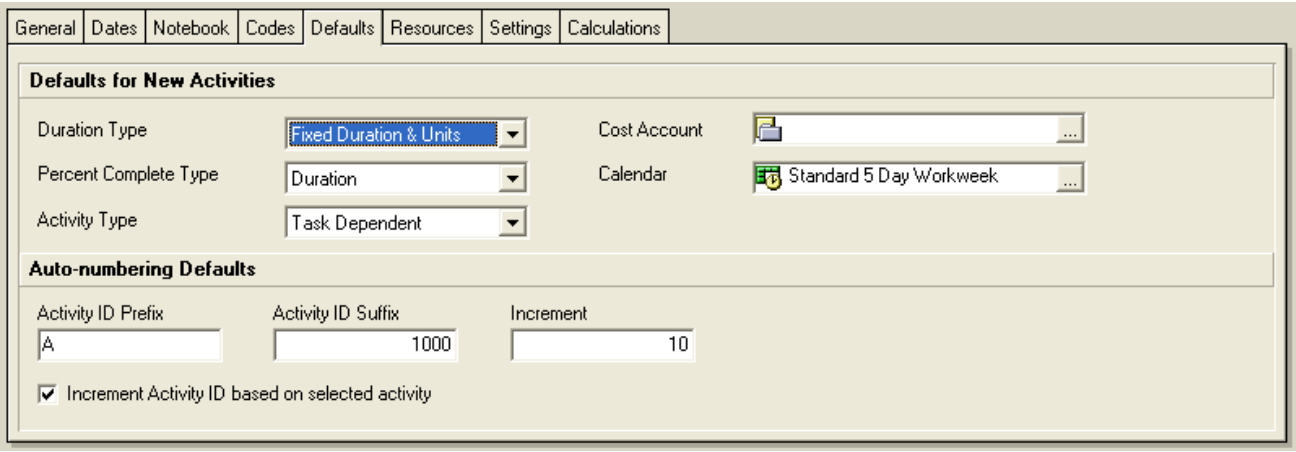
Activity duration type	When you change units, P3e changes…	When you change duration, P3e changes…	When you change units/time, P3e changes…
Fixed Units/Time	Duration	Units	Duration
Fixed Duration & Units/Time	Units/Time	Units	Units
Fixed Units	Duration	Units/Time	Duration
Fixed Duration & Units	Units/Time	Units/Time	Units

- **Percent Complete Type –** Define the percent complete type for an activity based on how you will report progress.
  Duration is the preferred setting by UNC.
  - **Duration** – Use if activity progress can most easily be reported based on actual days of work accomplished and scheduled days of work remaining. The activity's percent complete is calculated from the actual and remaining

duration. For example, if you have a 10-day activity that has 5 days remaining, it is 50% complete.

- **Units** – Use if activity progress is best reported according to the accomplished work effort (units) and how much work remains. The activity's percent complete is calculated from the actual and remaining units. For example, if an activity has an assigned resource with 40 hours of work to complete and the resource has actually completed 20 hours with 20 hours remaining, the activity is 50% complete.
- **Physical** – Use Physical if activity progress is most accurately described by personal judgment. In this case, you manually enter the percent complete for the activity. You must also enter the actual units for the resource and days remaining, as they are not linked in this mode.

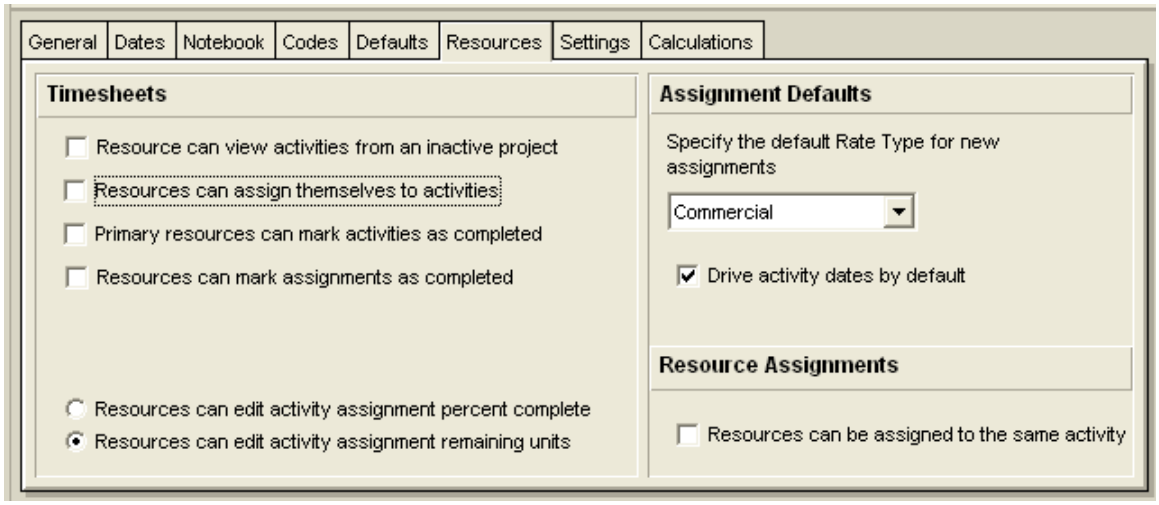
- **Activity Type** – This should be set to Task Dependent.
- **Cost Account** – This can be filled in with the appropriate cost account for the project or left blank if there will be multiple cost accounts.
- **Calendar –** Set the default calendar type to the appropriate workweek. This can be changed at the activity level.
- **Auto-numbering Defaults** – Sets the default number sequence for P6. Check the Increment Activity ID based on selected activity. When working with multi-phase projects this is important.



Resource Tab

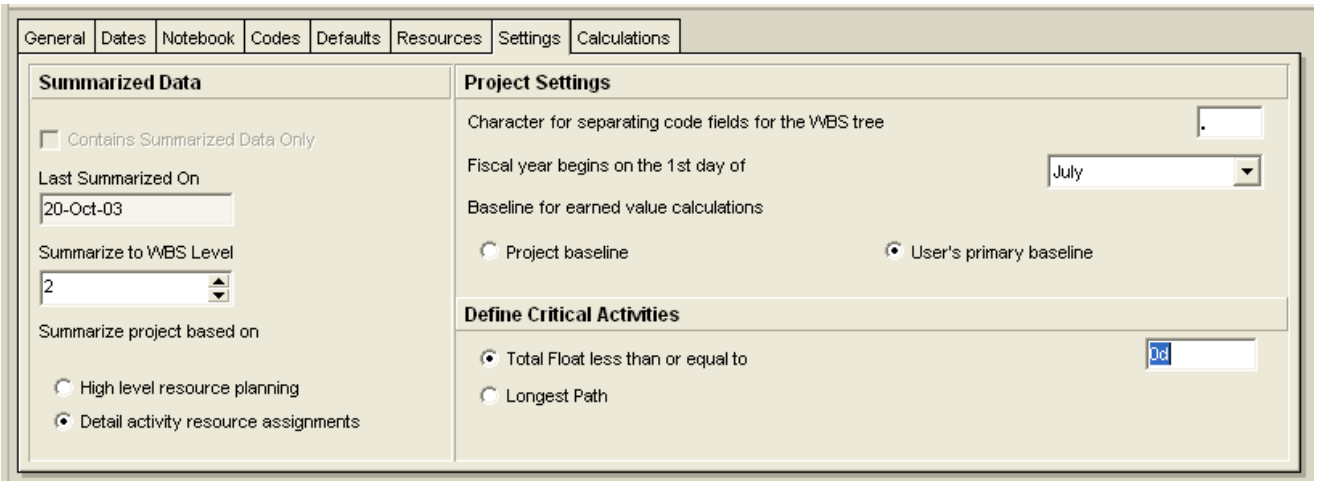
- **Timesheets** – UNC system is not using timesheets.
- **Assignment Defaults** – This would be used if there were different rates charged for resources. Leave Commercial as default.
- **Resource Assignments** – Uncheck Resources can be assigned… to prevent accidentally adding the same resource multiple times to the same activity.
- **Price/Unit** – N/A, this field is not used by UNC.

- Progress Reporter – Progress Reporter is not being used and these settings can be skipped.



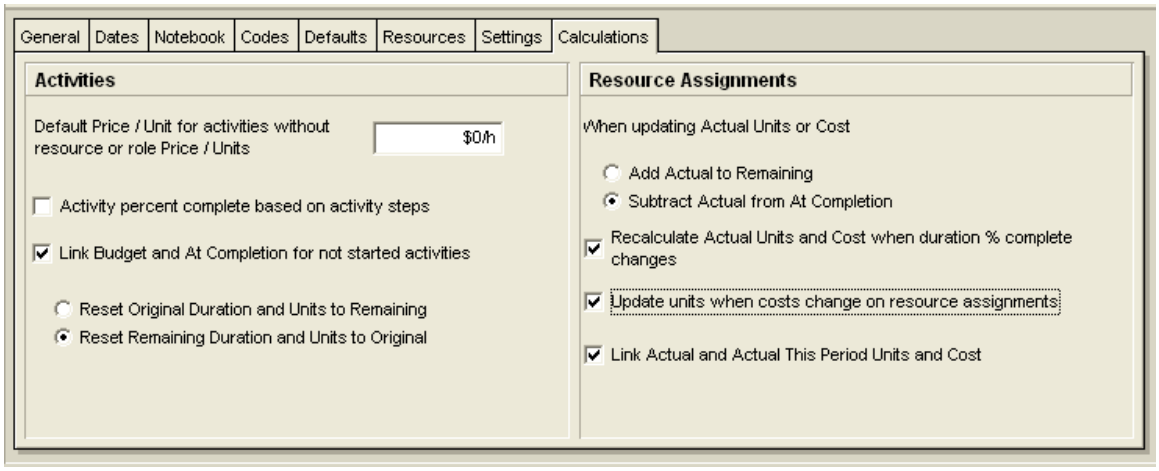
Settings Tab

- **Summarize to WBS Level** – Summery level should never be set below 2. If you are using a large WBS you may increase this level.
- **Summarize project based on** – This will remain Detail activity resource assignments.
- **Project Settings –** These do not need to be changed.
- **Fiscal year** – Begins on the 1st day of July.
- **Critical Activities** – This can be set to Total Float less than or equal to 0 for review of all critical activities, or to Longest Path to review the critical path.



The Calculations Tab

- **Activities**
  - The **Default Price / Unit** entry is for using roles without resources, this will give an average cost for all roles. If you want to use steps for activity updating check
  - **Activity percent complete based on activity steps** and use **Physical** for the **Percent Complete Type**.
  - **Link Budget and At Completion for not started activities**. You will want this to be checked.
  - **Reset Remaining Duration and Units to Original** – This will keep your budgeted and at completion dollars the same.
- **Resource Assignments**
  - **When updating Actual Units or Cost –** This should be changed to **Subtract Actual from At Completion** to adjust remaining units when actuals are entered. To calculate this, manually use **Add Actual to Remaining**.
  - **Recalculate Actual Units and Cost when duration % complete changes** should be checked.
  - **Update units when costs change on resource assignments** should be checked.
  - **Link Actual and Actual This Period Units and Cost** should be checked.



Lesson 7

Creating a Work Breakdown Structure (WBS)

Purpose and Objectives

This lesson describes the hierarchical structure for projects. At the completion of this lesson, you will be able to:

- Describe UNC's Work Breakdown Structure (WBS).
- Create multiple levels of a WBS hierarchy
- Assign a responsible manager to a WBS element

Work Breakdown Structure (WBS)

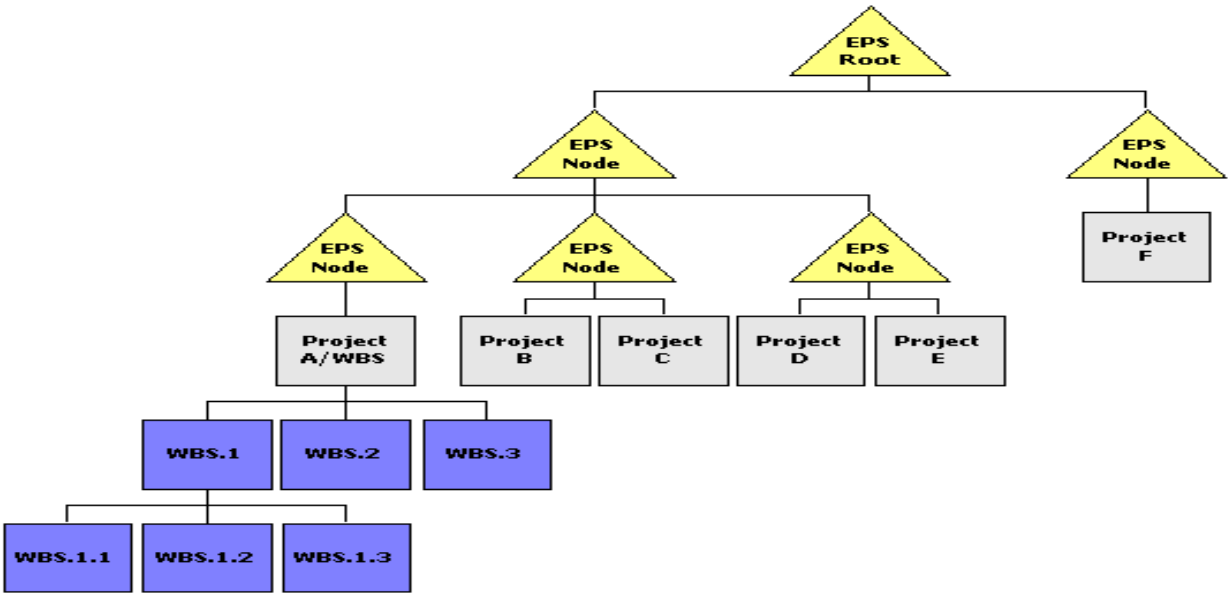
The WBS is a hierarchy arrangement of the products and services produced during and by a project.

Attributes

- Each project has a unique WBS hierarchy.
  - P6 sets the root level of the WBS equal to the project ID and name.
- Elements within the WBS have a "child/parent" relationship, which means that you can roll up and summarize information from the lower levels.
- WBS elements can be used to assign responsibility, via the OBS, for groups of activities to different managers for planning/accountability purposes.
- By default, P6 groups activities, tracks costs, and monitors schedule data according to the WBS.

Benefits

- Allows you to divide a project into meaningful and logical smaller pieces for the purpose of planning, control and reporting.

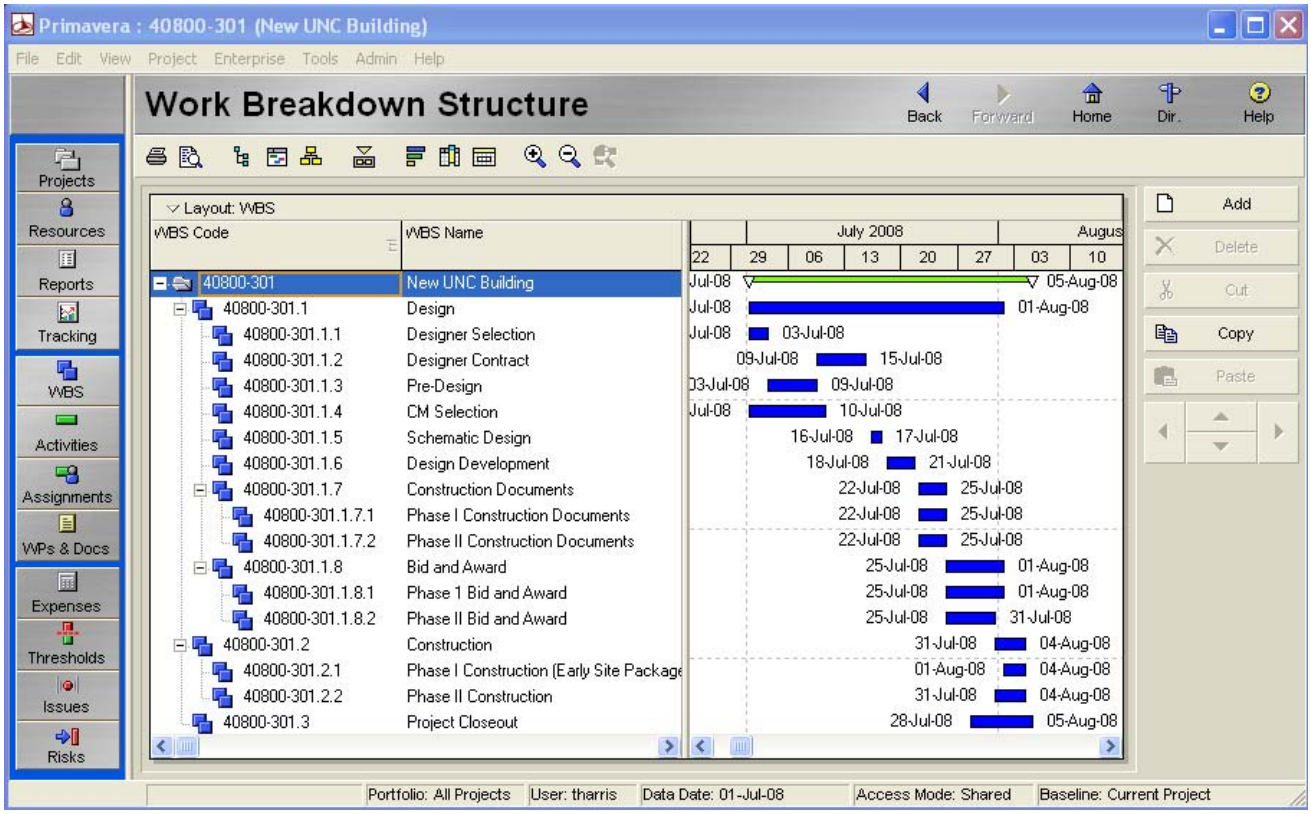


The University of North Carolina's WBS

The default WBS elements were copied with the default template information. The project makes up the top level of WBS and two additional levels are used in the template. This structure is a minimum and can be added to.

Viewing WBS Elements

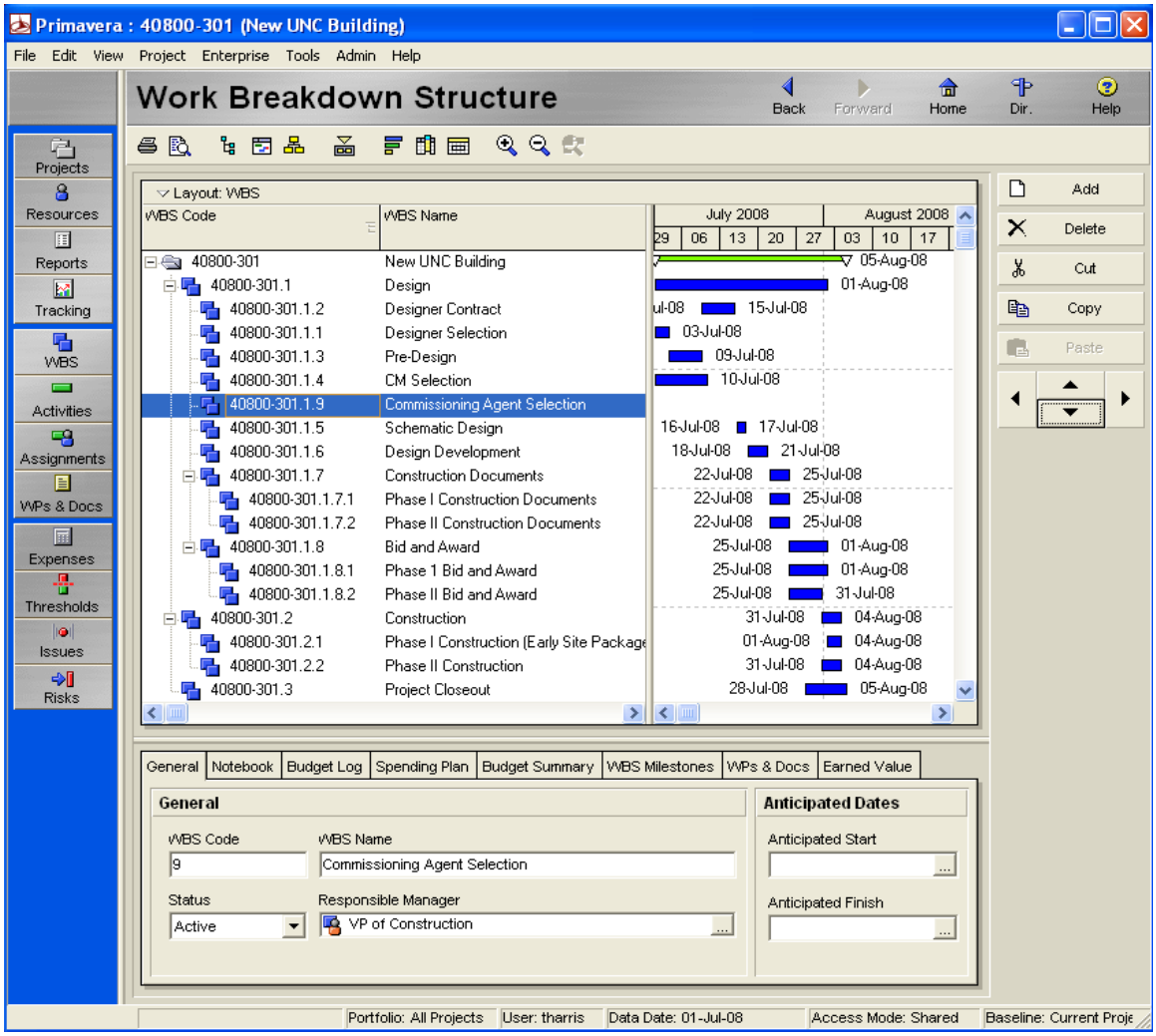
When the project is created, PE adds a root level WBS element with the same ID and name as the project.



This is the default setting for a CM at Risk, multi-phase project. A single phase project would not contain Phase I and Phase II under Construction Documents, Bid and Award, and Construction.

Creating the WBS Hierarchy

The WBS elements added after the root level element are automatically indented to form the child levels of the hierarchy.



Steps:

1. Highlight the Design phase in the WBS table.
2. Click *Add* on the *Command* bar.
3. Click on *WBS Name* and type the phase **< Commissioning Agent Selection >**
4. Press *Enter*.
5. Use arrows on *Command* bar to move new WBS to position after CM Selection.

Lesson 8

Activities

Purpose and Objectives

This lesson describes how to add activities to a project and modify various activity components. You will also add supporting information to an activity. At the completion of this lesson, you will be able to:

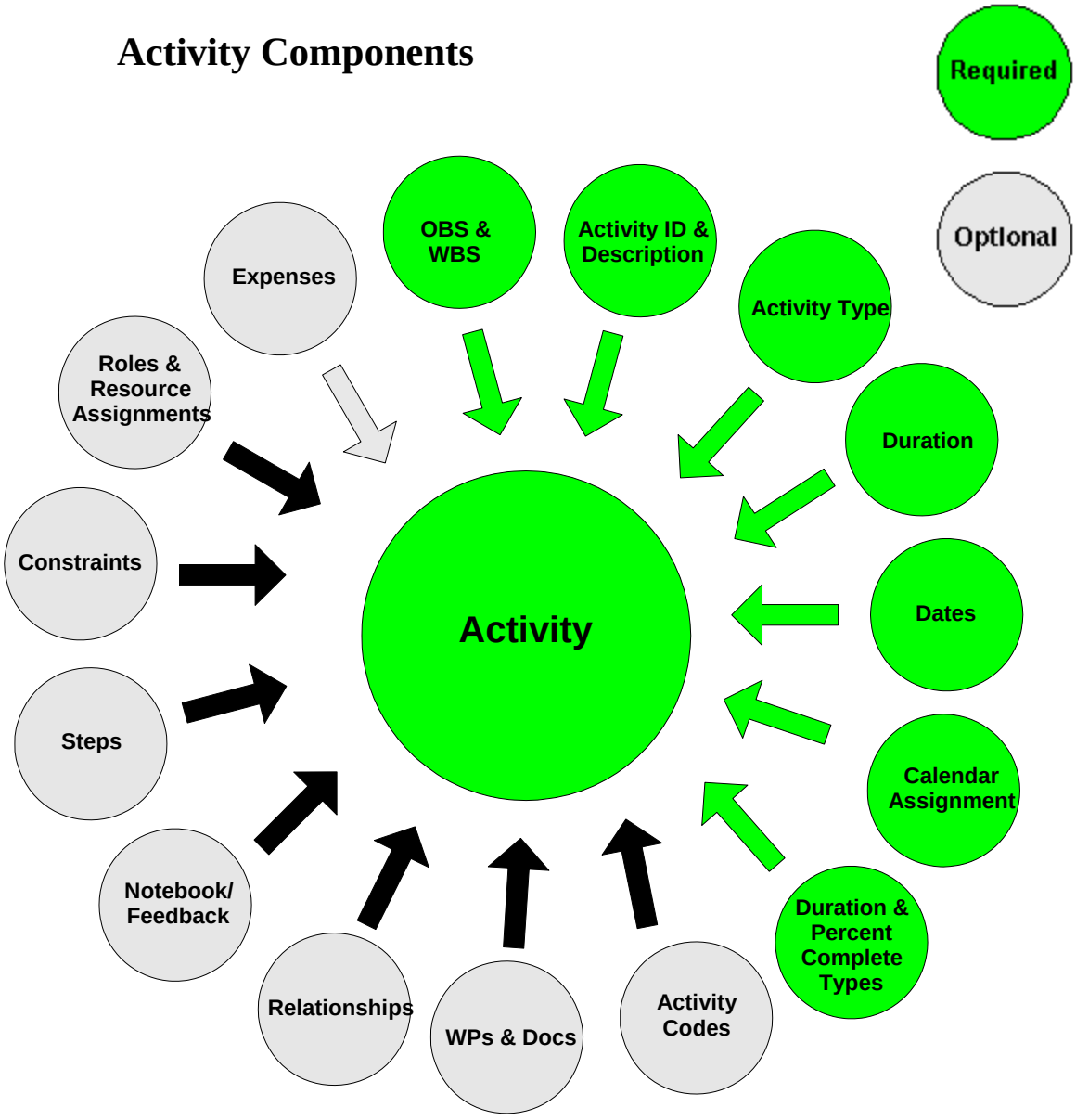
- Define an activity
- Define activity types
- Add activities
- Delete and Dissolve activities
- Copy and Move activities
- Add a notebook topic to an activity
- Add steps to an activity
- Change a calendar assignment

What are Activities?

Activities are the fundamental work elements of a project. They are the lowest level of the WBS and the smallest functional area tracked in the project.

- Contains all information about the work to be performed.
- Also known as a task (sub-task in MSP), item, event, or work package.

Activity Components



The University of North Carolina's Activities

The required list of activities was copied with the default template information. This activity set is a minimum and can be added to. The following is a list of activities for a CM at Risk contract:

New UNC Building

Design

Designer Contract	
A1050	Preparation of Designers Fee Proposal
A1060	Negotiation of Designers Fee
A1070	Preparation of Designers Contract
A1080	Execution of Desingers Contract
A1090	Design Contract Milestone
Designer Selection	
A1010	Advertisement for Designer
A1000	Designer Advertise Milestone
A1020	Shortlist Designers
A1030	Interview Designers
A1040	Designer Selected Milestone
Pre-Design	
A1670	Programming letter agreement
A1100	Programming
A1110	Review and Approval of Program
CM Selection	
A1120	Advertise for Construction Manager
A1130	Shortlist Construction Managers
A1140	Interview CM @ Risk
A1150	Selection CM @ Risk
A1160	Preparation of CM Preconstruction Contract
A1170	Approval of CM Preconstruction Contract
A1180	Execution of CM Preconstruction Contract
A1190	Execution of CM Preconstruction Contract Mi...
Commissioning Agent Selection	
Schematic Design	
A1200	SD Production
A1210	SD Submittal to SCO Milestone
A1220	SD Review by SCO
A1240	SD Submittal to DOI Milestone
A1250	SD Review by DOI
A1270	SD Review by Owner
A1230	SD Approval by SCO Milestone
A1260	SD Approval by DOI Milestone
A1280	SD Final Approval Milestone
Design Development	

Design Development	
A1290	DD Production
A1300	DD Submittal to SCO Milestone
A1310	DD Review by SCO
A1330	DD Submittal to DOI Milestone
A1340	DD Review by DOI
A1360	DD Review by Owner
A1730	DD Review by CM
A1740	DD review by Commissioning Agent
A1320	DD Approval by SCO Milestone
A1350	DD Approval by DOI Milestone
A1370	DD Final Approval Milestone
Construction Documents	
Phase I Construction Documents	
A1380	CD Production
A1440	CD Submittal to DOI Milestone
A1450	CD Review by DOI
A1390	CD Submittal to SCO Milestone
A1400	CD Review by SCO
A1490	CD Cost Estimate From CM @ Risk
A1500	CD Cost Estimate From Designer
A1520	CD Review by Owner
A1510	CD Cost Reconcilliation Meeting
A1410	CD Redline Corrections (SCO)
A1460	CD Redline Corrections (DOI)
A1420	CD Resubmit & Re-Review (SCO)
A1470	CD Resubmit and Re-Review by (DOI)
A1480	CD Approval by DOI Milestone
A1430	CD Approval by SCO Milestone
A1530	CD Final Approval Milestone
Phase II Construction Documents	

Phase II Construction Documents	
B1380	CD Production
B1440	CD Submittal to DOI Milestone
B1450	CD Review by DOI
B1390	CD Submittal to SCO Milestone
B1400	CD Review by SCO
B1490	CD Cost Estimate From CM @ Risk
B1500	CD Cost Estimate From Designer
B1520	CD Review by Owner
B1510	CD Cost Reconcilliation Meeting
B1410	CD Redline Corrections (SCO)
B1460	CD Redline Corrections (DOI)
B1420	CD Resubmit & Re-Review (SCO)
B1470	CD Resubmit and Re-Review by DOI
B1480	CD Approval by DOI Milestone
B1430	CD Approval by SCO Milestone
B1530	CD Final Approval Milestone
Bid and Award	
Phase 1 Bid and Award	
A1540	GMP Proposal
A1550	GMP Negotiations
A1560	Prepare & Issue Recommendation for Letter ...
A1600	Solicitation for Bid Packages
A1570	Issue Award Letter
A1610	Bid Packages Opening Milestone
A1580	Award Letter Milestone
A1590	Preparation of CM Contract
Phase II Bid and Award	
B1540	GMP Change Order Proposal
B1550	GMP Negotiations
B1560	Prepare & Issue Change Order
B1600	Solicitation for Bid Packages
B1570	Issue Award Letter
B1610	Bid Packages Opening Milestone
Construction	

Construction	
Phase I Construction (Early Site Package)	
A1620	Notice to Proceed Milestone Ph I
A1690	Asbestos Abatement
A1700	Demolition
A1660	Construction Administration
A1630	Construction Phase
A1650	Beneficial Occupancy Milestone
Phase II Construction	
B1620	Notice to Proceed Milestone Ph II
B1630	Construction Phase Ph II
B1660	Construction Administration Ph II
B1640	Commissioning
B1740	Construction Phase - Other funds
B1650	Beneficial Occupancy Milestone Ph II
Project Closeout	
B1680	Uncommitted Funds/Contingency
B1670	Install of FF&E
B1710	User Move-In
B1720	Project Closeout Phase
B1750	CM Fee (50%)
B1730	Project Closeout Milestone

Cleanup Template Activities

We have created a project but there is some cleanup necessary. We will modify the template in the following ways:

- Deleting Activities
- Dissolving Activities
- Adding Activities
- Copying Activities

Deleting Activities

Deleting activities simply removes the activities from the schedule. To delete an activity, perform one of the following actions:

- Click Delete from the Command bar
- Choose Edit, Delete
- Press Delete on the keyboard.
- Right-click and choose Delete.

We will remove all the activities from the Pre-Design WBS element and selected activities from the Phase I Construction.

Steps:

1. Highlight all activities in the section to be deleted
    a. Click on first activity in the section
    b. Hold the *Shift* key and click the last activity
2. On the *Command* bar, click *Delete*.
3. Click *Yes*.

Delete	
Activity ID	**Activity Name**
A1690	Asbestos Abatement
A1700	Demolition

Dissolving Activities

Dissolving activities removes the activity, but retains logic to its predecessors and successors. This is the safest way of removing activities. You must dissolve activities one at a time.
We will remove the following activities using the dissolve function:

Dissolve	
Activity ID	**Activity Name**
A1410	CD Redline Corrections (SCO)
A1420	Resubmit & Re-Review by SCO
A1460	CD Redline Corrections (DOI)
A1470	Resubmit & Re-Review by DOI

Steps:

1. Highlight an activity you wish to dissolve
2. On the *Menu* bar, click **Edit, Dissolve**.

Note: This is the same process of Delete.

3. Click *Yes*.
4. Repeat for all activities to be dissolved or deleted.

Adding Activities

Use the Activities window to create, view, and modify activities for the open project.

To add an activity to a project, perform one of the following actions:

- Click Add from the Command bar
- Choose Edit, Add
- Press Insert on the keyboard.
- Right-click and choose Add.

Activities can be added in the follow ways:

- Activity Wizard
- Activity Detail tabs
- Activity Table

The UNC template created most activities needed for this project. We will copy the CM selection activities into Commissioning Agent Selection and add review activities in appropriate Design elements.

We will start with creating the activities for reviews.

Adding Activities to a UNC Project

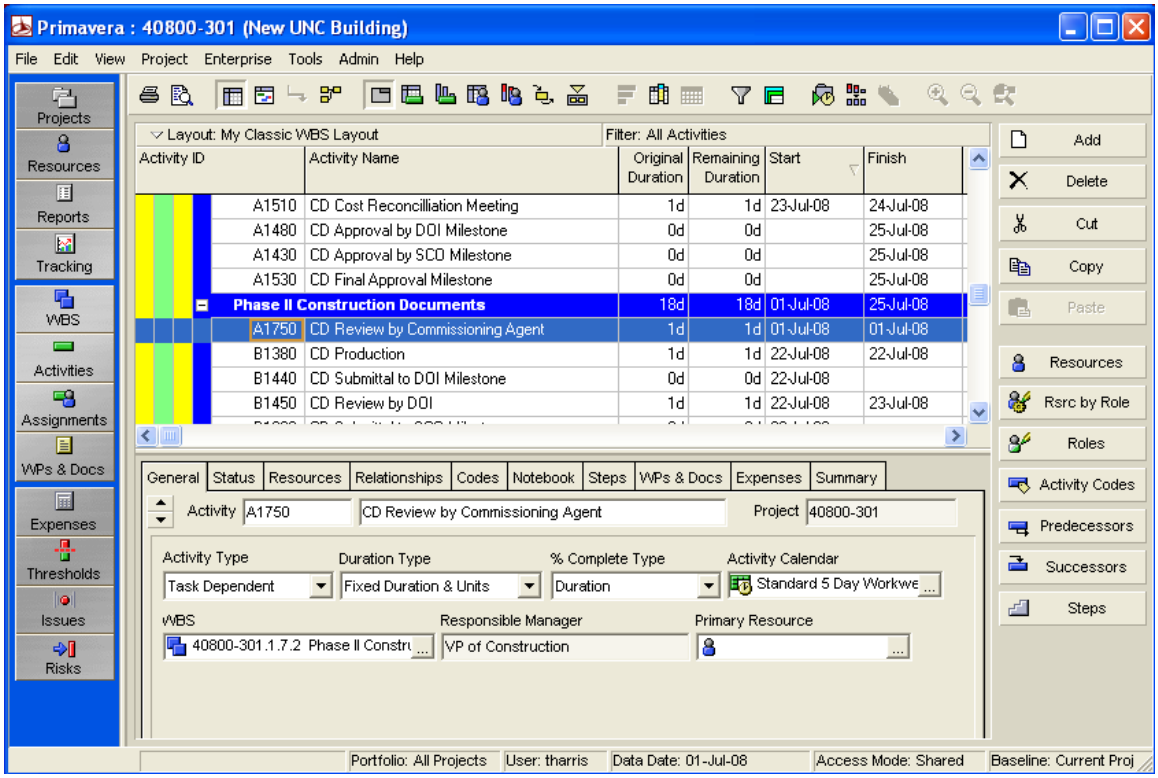
To add an activity to a specific group in the Activity Table, select the group title band or an activity within the band. You can then use the Activity Detail tabs or the Activities Table to add additional information to the activity.

Steps:

1. Highlight **Phase II Construction Documents** in the *Activity Table*.
2. Click *Add* on the *Command* bar.
3. Type the new name <**CD Review by Commissioning Agent** >.

General Tab

You can add the information about this activity in the Activity Details tab.



The following information can be added or modified:

- **Activity ID** and **Name**
- **Activity Type**
  - **Task Dependent** – This uses the Activity Calendar and is the default activity type for UNC.
  - **Resource Dependent** – This is not used due to the use of Resources discussed later in this manual.
  - **Level Of Effort** – This type is typically used for ongoing tasks dependent on other activities.
    - Duration is determined by it's logic
    - You cannot assign constraints

General Tab (Continued)

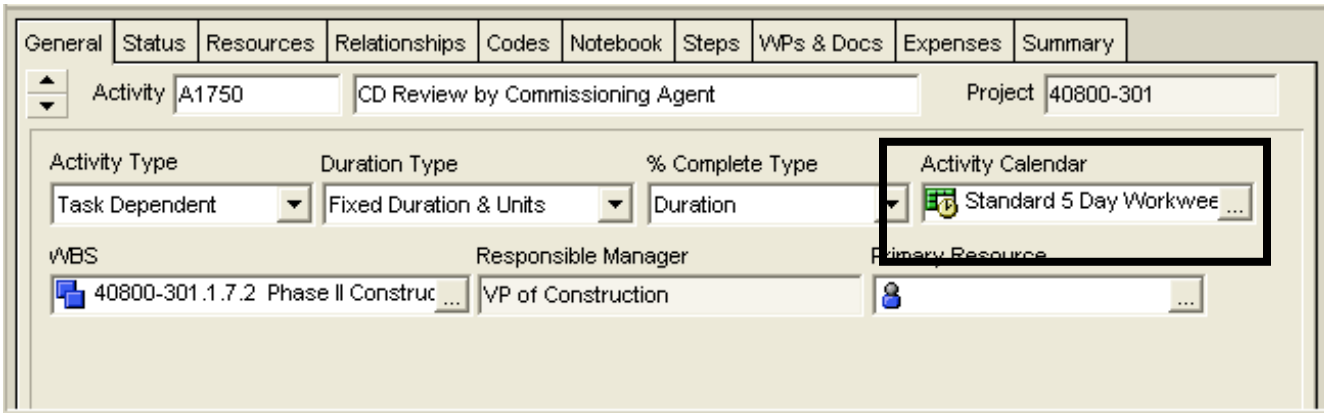
- **Start Milestone** – This marks the beginning of a phase or communicates project deliverables.
  - Zero duration activity
  - Only has a start date
  - You cannot assign resources
- **Finish Milestone** – This marks the end of a phase or communicates project deliverables.
  - Zero duration activity
  - Only has a finish date
  - You cannot assign resources

- **Duration Type** – Fixed Duration and Units
- **% Complete Type –** Duration
- **Activity Calendar –** 5 x 8 workweek
- **WBS –** Phase II Construction Documents
- **Primary Resource** – Not used by UNC

Calendar Assignments

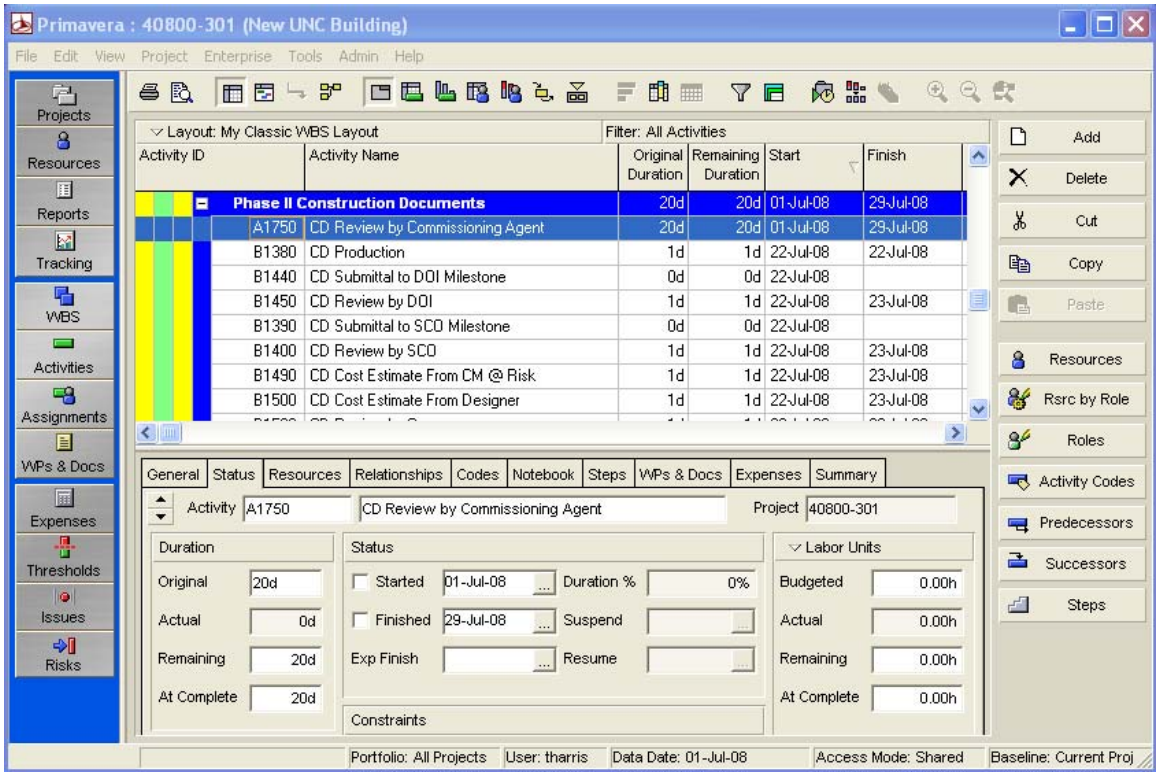
Calendars can be created and assigned to activities. PE uses calendar assignments to schedule activities.

- UNC has identified two (2) calendars.
  - 5 day workweek
  - 7 day workweek
- Holidays are not used
- Project specific calendars can be created if needed
- Calendars can be assigned at the activity level
- They are found under the General tab



Status Tab

You can enter the estimate of how long it will take to complete the activity.



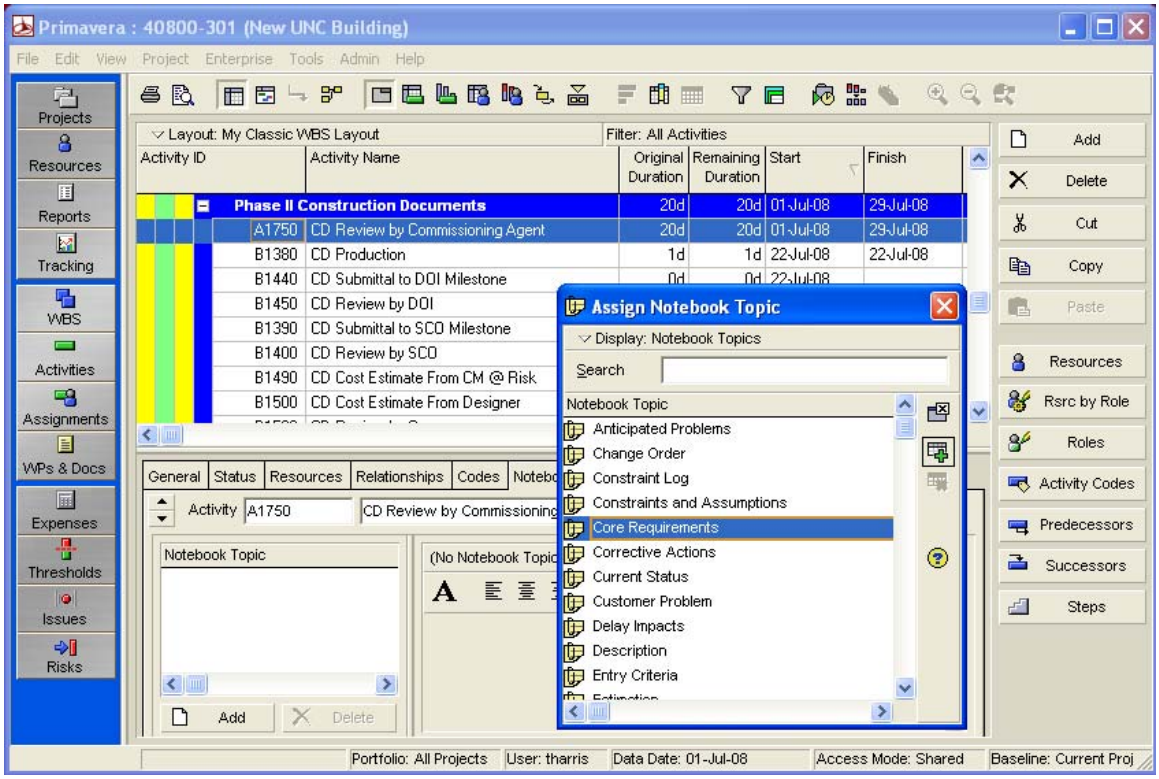
- You can enter the Original Duration of the activity on this screen.
- Constraints and other items will be used later in this manual.

Steps:

1. Enter <**20**> in the *Original Duration*. Do not enter the "d".

Notebook Tab

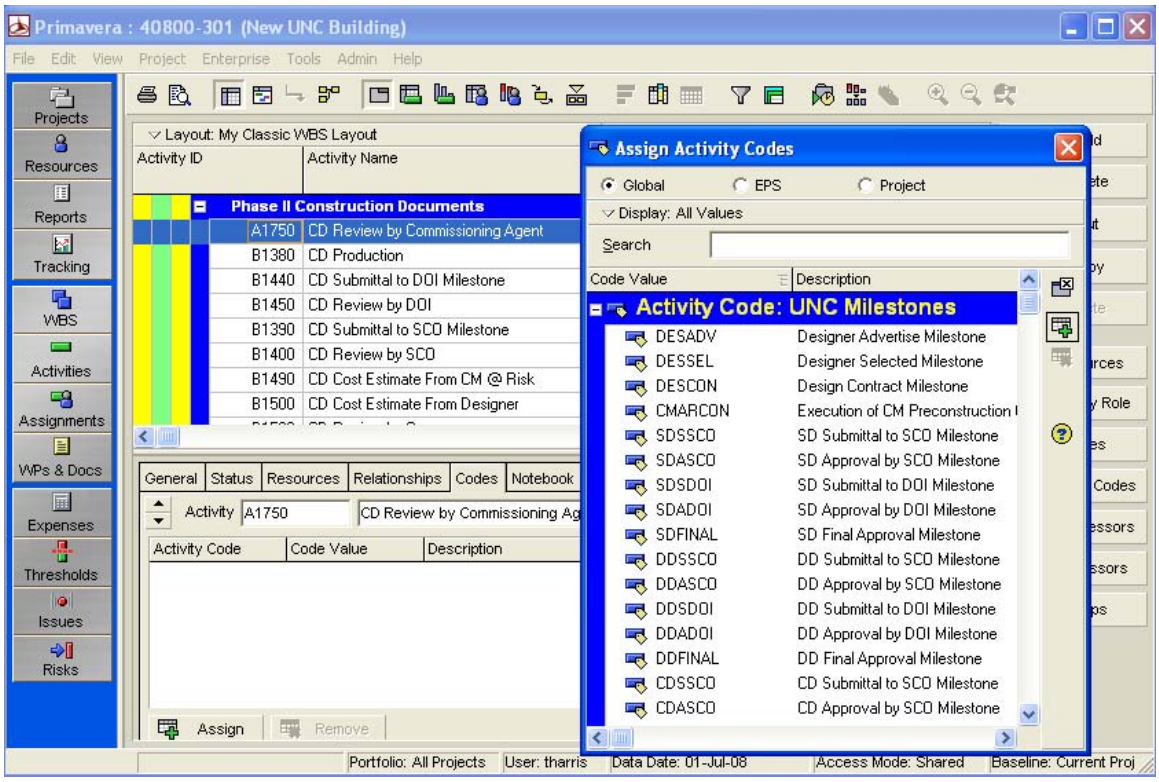
The Notebook tab enables you to assign notes to an activity. Notebook topics are typically instructions or descriptions that further describe the activity according to specific categories of information.



- Notebook Topics can be added at the EPS, project, WBS and activity levels.

Codes Tab

The Codes tab enables you to assign activity codes to an activity. Activity codes are used for grouping, sorting and filtering activities within a project. Global activity codes can be used on multiple projects at the same time.



- Activity Funding must be set for all activities with resource/cost information attached.

Steps Tab

Activity steps allow you to break activities into smaller units and track the completion of those units.

Attributes

- You can assign an unlimited number of steps per activity.
- Steps can be marked completed
- Steps do not have duration estimates or dates.
- Each step can have an additional explanation in the text area on the right side of the *Steps* tab.

Benefits

- Steps provide a list of procedures required to complete the task.
- Steps provide extra guidance to the resources assigned to the activity.
- Activities can be updated based on steps

Copying Activities

Activities can be copied one at a time or in groups. Coping groups of activities allows you to maintain logic ties within the group.

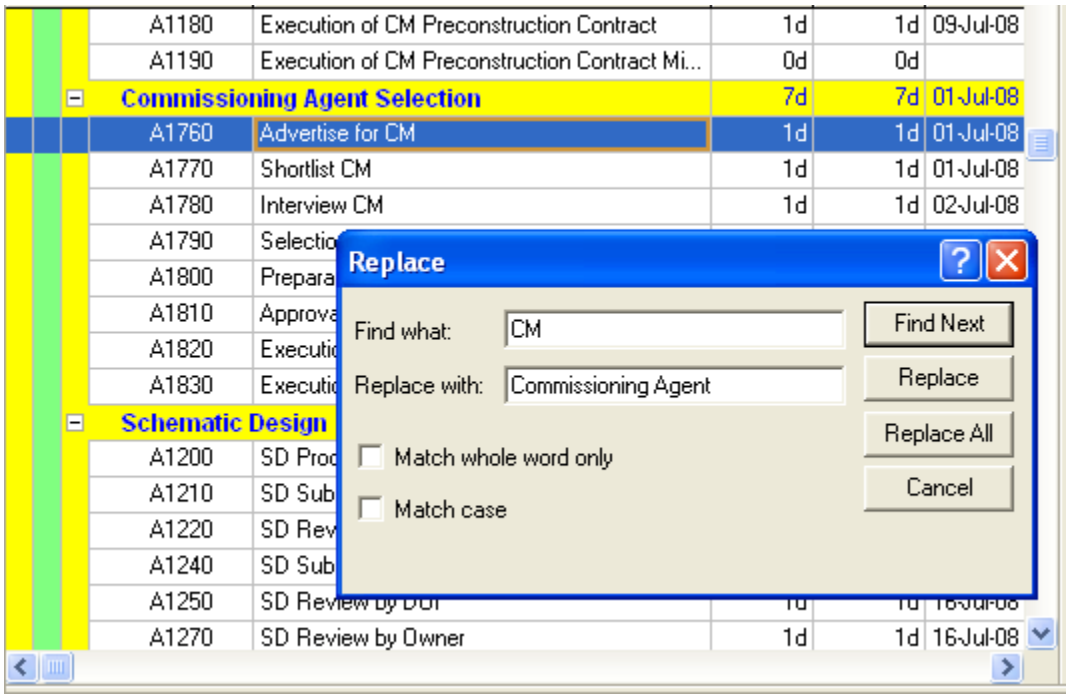
Construction Manager Selection	
A1120	Advertise for CM
A1130	Shortlist CM
A1140	Interview CM
A1150	Selection CM
A1160	Preparation of CM Preconstruction Contract
A1170	Approval of CM Preconstruction Contract
A1180	Execution of CM Preconstruction Contract
A1190	Execution of CM Preconstruction Contract Mi...

Steps:

1. Highlight the first activity in the band you wish to copy **<A1120>**.
2. Hold down the *Shift* key and click on the last item in the group **<A1190>**.
3. Click *Copy* on the *Command* bar.
4. Highlight the WBS element you want to copy the activities into <**Commissioning Agent Selection**>.
5. Click *Paste* on the *Command* bar.
6. Click *OK*.

Commissioning Agent Selection	
A1760	Advertise for CM
A1770	Shortlist CM
A1780	Interview CM
A1790	Selection CM
A1800	Preparation of CM Preconstruction Contract
A1810	Approval of CM Preconstruction Contract
A1820	Execution of CM Preconstruction Contract
A1830	Execution of CM Preconstruction Contract Mi...

Now, to complete the process, we need to change CM to Commissioning Agent in each activity. We can do this by typing in the correction in the General Tab, or in the Activity Table. Or we can use the find and replace function.



Steps:

1. Click on <**A1760**>.
2. Click on Edit>Replace
3. Type <**CM**> in the Find what:
4. Type <**Commissioning Agent**> in the Replace with:
5. Click on *Replace* to step through the rest of the activities in this WBS element.
6. Delete <**Preconstruction**> from Activity Name in A1800 - A1830

Undo

Undo capability is provided in some areas of Primavera, enabling you to undo errors in the Activities window and the Resource Assignments window.

- You can only undo modifications in the General, Status, Resources, and Relationships tabs of Activity Details.

- You can only undo activity code value assignments that were assigned using the *columns* in the Activities window.
- An option to clear the Undo history in the database is available in the Admin Preferences, Options tab in the Admin menu. You must have Admin Superuser privileges to clear the Undo history.

The following actions clear stored values from the Undo history — in other words, Undo will not work after these actions are performed:

- Application — Exiting the application.

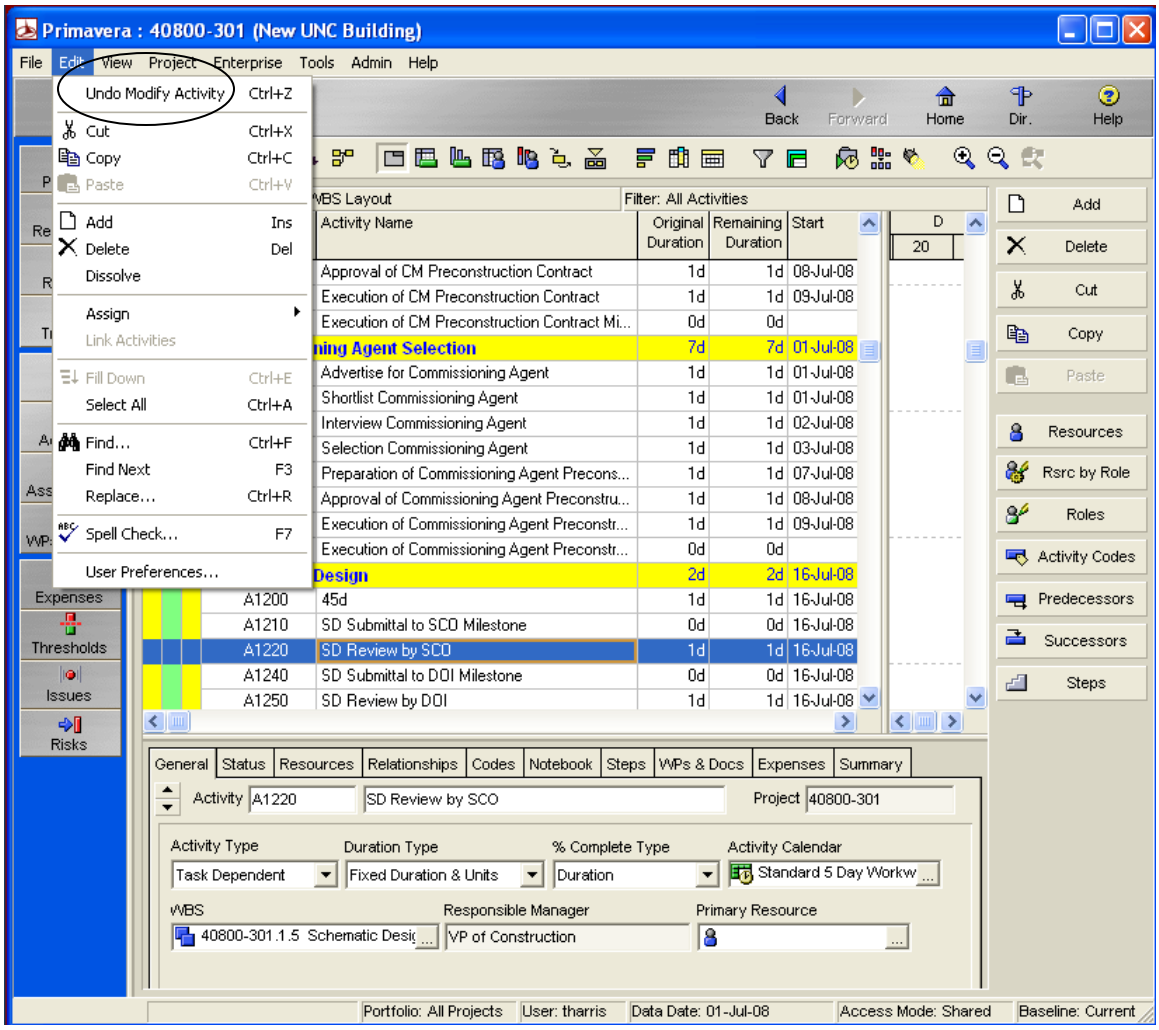
- Data — Summarizing data, refreshing data.

- Schedule/status — Auto scheduling, updating progress, applying actuals.

- Project/portfolio — Creating projects, opening and closing projects, importing, changing portfolios, opening portfolios.

- Dialog boxes — User Preferences, Admin Preferences, and Time Approval.

Scheduling, leveling, making layout changes, and opening a new layout do not clear the Undo history.



Steps

1. Select an activity, *A1200 – SD Production*
2. Click in the *Activity Name* column and type <45d>.
3. Press *Enter* on your keyboard.

   You realize that you meant to type <5d> in the *Original Duration* column — not the *Activity Name* column.
4. In the Edit menu, click *Undo Modify Activity*

Workshop 1

Adding and Modifying Activities

- Change the Activity ID for activity A1750 to B1760.
- Add the following activities:

Activity Name	Activity Type	WBS Node
Order FF&E	Start Milestone	Project Closeout
Completion of Punch list	Finish Milestone	Project Closeout

- Change durations on the following activities.

A1380	CD Production	30d
A1400	CD Review by SCO	45d
A1450	CD Review by DOI	45d
A1520	CD Review by Owner	30d
A1550	GMP Negotiations	15d
A1560	Prepare and Issue Recommendation	5d
A1600	Solicitation for Bid Packages	20d
A1590	Preparation of CM Contract	10d
A1630	Construction Phase	120d
A1660	Construction Administration	120d
B1380	CD Production	90d
B1400	CD Review by SCO	45d
B1450	CD Review by DOI	45d
B1520	CD Review by Owner	45d
B1760	CD Review by Commissioning Agent	20d
B1550	GMP Negotiations	15d
B1560	Prepare and Issue Change Order	10d
B1600	Solicitation for Bid Packages	21d
B1630	Construction Phase Ph II	360d
B1660	Construction Administration Ph II	427d
B1740	Construction Phase – Other Funds	60d
B1670	Installation of FF&E	30d
B1710	User Move-in	5d
B1720	Project Closeout Phase	90d
B1680	Uncommitted Funds/Contingency	5d

Use the following picture to help you finish your activity list in P6. Check all of the following:

- WBS elements
- Activities
- Activity Types
- Original Duration

Layout: My Classic WBS Layout | Filter: All Act

Activity ID	Activity Name	Original Duration
40800-208	New Unc Building	318d
40800-208.1	Design	77d
40800-208.1.1	Designer Selection	32d
A1010	Advertisement for Designer	21d
A1000	Designer Advertise Milestone	0d
A1020	Shortlist Designers	15d
A1030	Interview Designers	30d
A1040	Designer Selected Milestone	0d
40800-208.1.2	Designer Contract	18d
A1050	Preparation of Designers Fee Proposal	1d
A1060	Negotiation of Designers Fee	15d
A1070	Preparation of Designers Contract	10d
A1080	Execution of Desingers Contract	15d
A1090	Design Contract Milestone	0d
40800-208.1.3	Pre-Design	23d
A1670	Programming letter agreement	5d
A1100	Programming	30d
A1110	Review and Approval of Program	15d
40800-208.1.4	CM Selection	21d
A1120	Advertise for CM	21d
A1130	Shortlist CM	15d
A1140	Interview CM	15d
A1150	Selection CM @ Risk	1d
A1160	Preparation of CM Preconstruction Contract	10d
A1170	Approval of CM Preconstruction Contract	5d
A1180	Execution of CM Preconstruction Contract	15d
A1190	Execution of CM Preconstruction Contract Mi...	0d
40800-208.1.9	Commissioning Agent Selection	21d
A1760	Advertise for Commissioning Agent	21d
A1770	Shortlist Commissioning Agent	15d
A1780	Interview Commissioning Agent	15d
A1790	Selection Commissioning Agent	1d
A1800	Preparation of Commissioning Agent Contract	10d
A1810	Approval of Commissioning Agent Contract	5d
A1820	Execution of Commissioning Agent Contract	15d
A1830	Execution of Commissioning Agent Contract ...	0d
40800-208.1.5	Schematic Design	22d

40800-208.1.5	Schematic Design	22d
A1200	SD Production	30d
A1210	SD Submittal to SCO Milestone	0d
A1220	SD Review by SCO	20d
A1240	SD Submittal to DOI Milestone	0d
A1250	SD Review by DOI	20d
A1270	SD Review by Owner	20d
A1230	SD Approval by SCO Milestone	0d
A1260	SD Approval by DOI Milestone	0d
A1280	SD Final Approval Milestone	0d
40800-208.1.6	Design Development	63d
A1290	DD Production	90d
A1300	DD Submittal to SCO Milestone	0d
A1310	DD Review by SCO	20d
A1330	DD Submittal to DOI Milestone	0d
A1340	DD Review by DOI	20d
A1360	DD Review by Owner	20d
A1730	DD Review by CM	20d
A1740	DD review by Commissioning Agent	20d
A1320	DD Approval by SCO Milestone	0d
A1350	DD Approval by DOI Milestone	0d
A1370	DD Final Approval Milestone	0d
40800-208.1.7	Construction Documents	77d
40800-208.1.7.1	Phase I Construction Documents	46d
A1380	CD Production	30d
A1440	CD Submittal to DOI Milestone	0d
A1450	CD Review by DOI	45d
A1390	CD Submittal to SCO Milestone	0d
A1400	CD Review by SCO	45d
A1490	CD Cost Estimate From CM @ Risk	1d
A1500	CD Cost Estimate From Designer	1d
A1520	CD Review by Owner	30d
A1510	CD Cost Reconcilliation Meeting	1d
A1480	CD Approval by DOI Milestone	0d
A1430	CD Approval by SCO Milestone	0d
A1530	CD Final Approval Milestone	0d
40800-208.1.7.2	Phase II Construction Documents	77d

Activity ID	Activity Name	Original Duration
40800-208.1.7.2	Phase II Construction Documents	77d
B1760	CD Review by Commissioning Agent	20d
B1380	CD Production	90d
B1440	CD Submittal to DOI Milestone	0d
B1450	CD Review by DOI	45d
B1390	CD Submittal to SCO Milestone	0d
B1400	CD Review by SCO	45d
B1490	CD Cost Estimate From CM @ Risk	1d
B1500	CD Cost Estimate From Designer	1d
B1520	CD Review by Owner	45d
B1510	CD Cost Reconcilliation Meeting	1d
B1410	CD Redline Corrections (SCO)	1d
B1460	CD Redline Corrections (DOI)	1d
B1420	CD Resubmit & Re-Review (SCO)	1d
B1470	CD Resubmit and Re-Review by DOI	1d
B1480	CD Approval by DOI Milestone	0d
B1430	CD Approval by SCO Milestone	0d
B1530	CD Final Approval Milestone	0d
40800-208.1.8	Bid and Award	24d
40800-208.1.8.1	Phase 1 Bid and Award	24d
A1540	GMP Proposal	1d
A1550	GMP Negotiations	1d
A1560	Prepare & Issue Recommendation for Letter ...	5d
A1600	Solicitation for Bid Packages	20d
A1570	Issue Award Letter	1d
A1610	Bid Packages Opening Milestone	0d
A1580	Award Letter Milestone	0d
A1590	Preparation of CM Contract	20d
40800-208.1.8.2	Phase II Bid and Award	17d
B1540	GMP Change Order Proposal	1d
B1550	GMP Negotiations	15d
B1560	Prepare & Issue Change Order	10d
B1600	Solicitation for Bid Packages	21d
B1570	Issue Award Letter	1d
B1610	Bid Packages Opening Milestone	0d
40800-208.2	Construction	296d

40800-208.2	Construction	296d
40800-208.2.1	Phase I Construction (Early Site Pa...	82d
A1620	Notice to Proceed Milestone Ph I	0d
A1660	Construction Administration	120d
A1630	Construction Phase	120d
A1650	Beneficial Occupancy Milestone	0d
40800-208.2.2	Phase II Construction	296d
B1620	Notice to Proceed Milestone Ph II	0d
B1630	Construction Phase Ph II	360d
B1660	Construction Administration Ph II	420d
B1640	Commissioning	1d
B1740	Construction Phase - Other funds	60d
B1650	Beneficial Occupancy Milestone Ph II	0d
40800-208.3	Project Closeout	113d
B1690	Order FF&E	0d
B1700	Completion of Punch list	0d
B1680	Uncommitted Funds/Contingency	5d
B1670	Installation of FF&E	30d
B1710	User Move-In	5d
B1720	Project Closeout Phase	90d
B1750	CM Fee (50%)	1d
B1730	Project Closeout Milestone	0d

Lesson 9

Maintaining the Project Documents Library

Purpose and Objectives

This lesson describes how to utilize the Work Products and Documents window to catalog and track all project-related documents. At the completion of this lesson, you will be able to:

- Describe the difference between a work product and a reference document.
- Link to a project document.
- Specify the location of the actual document file.
- Assign a project document to an activity.

Project Documents

The Work Products and Documents window enables you to maintain general information about project documents, including links to the actual document files.

Attributes

- Create a link to the actual document file
- Document files can be stored on a network file server, configuration management system, or Web site
- Maintain general information about project documents, such as version, revision date, and author
- Can be assigned to WBS elements/activities
- Can be organized in a hierarchical manner
    - Work Product
        - Includes project or activity deliverables that will be turned over to the end user or customer
        - Examples: CAD files, testing plans, blueprints
    - Reference Document
        - Includes documents that can be referenced by a project participant to provide standards and guidelines for performing work.
        - Examples: guidelines, policies, procedures, design templates, checklists, and worksheets.

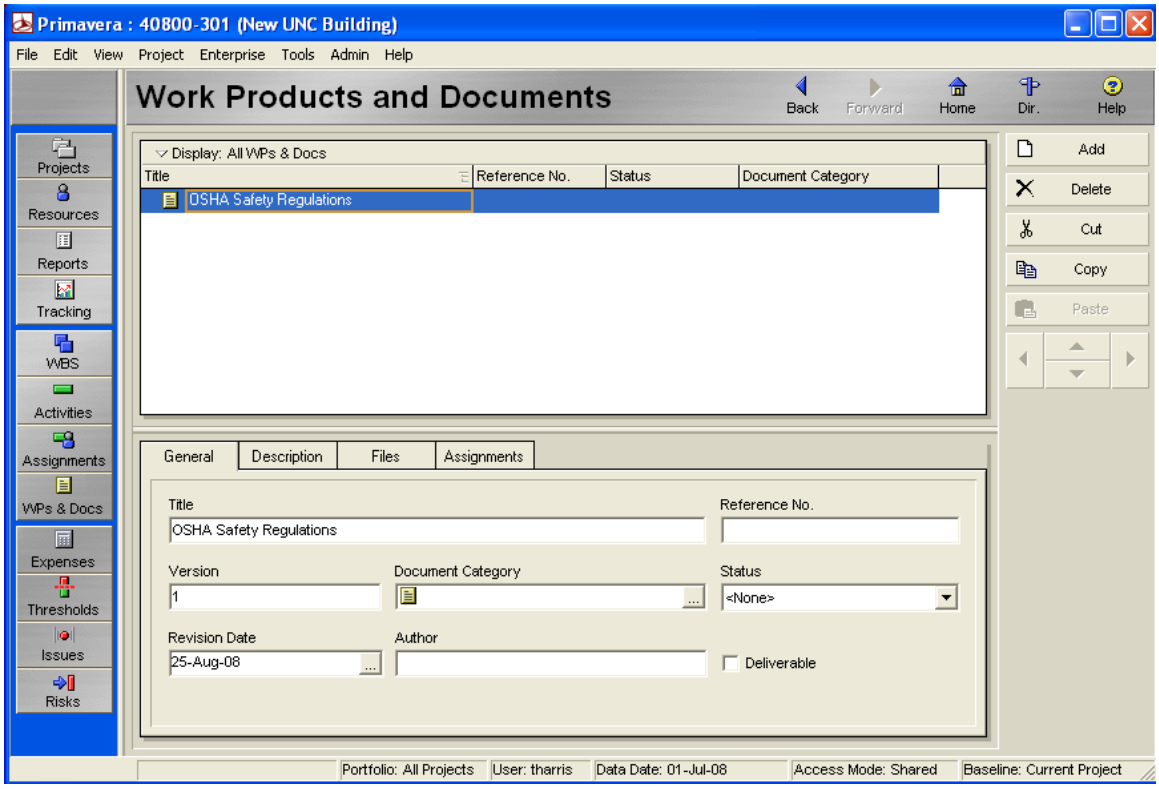
Benefits

- Catalog and track project-related documents and deliverables
- Provide standards and guidelines for performing work on an activity

Creating a Project Document

Before you can assign a project document to a WBS element/activity, you must create a link to the document in the Work Products and Documents window.

The OSHA Manufacturing Safety document outlines safety regulations for operating powered conveyors.



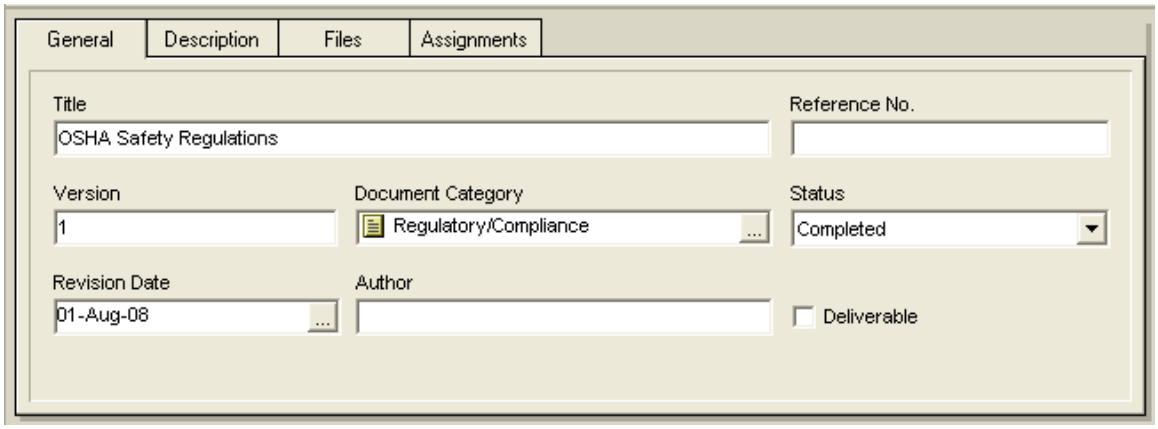
Steps:

1. From the ***Directory*** bar, click ***WPs & Docs.***
2. From the ***Command*** bar, click *Add*.
3. Type a Title **<OSHA Safety Regulations>,** then press ***Enter.***

General Tab

The General tab enables you to enter general information for the selected document.

- ***Title*** – user-defined title for the document.
- ***Reference No.*** – number used to identify the document.
- ***Version*** – allows you to track the version of the document.
- ***Document Category*** – Classifications used to organize or group different types of documents.
- ***Status*** – displays the progress of the document.
- ***Revision Date*** – indicates the date the document was modified.
- ***Author*** – name of the person who wrote the document.
- ***Deliverable*** – mark to indicate the document is completed and ready to be delivered to the end user/customer.



You will assign a document category, status, and revision date to the new document.

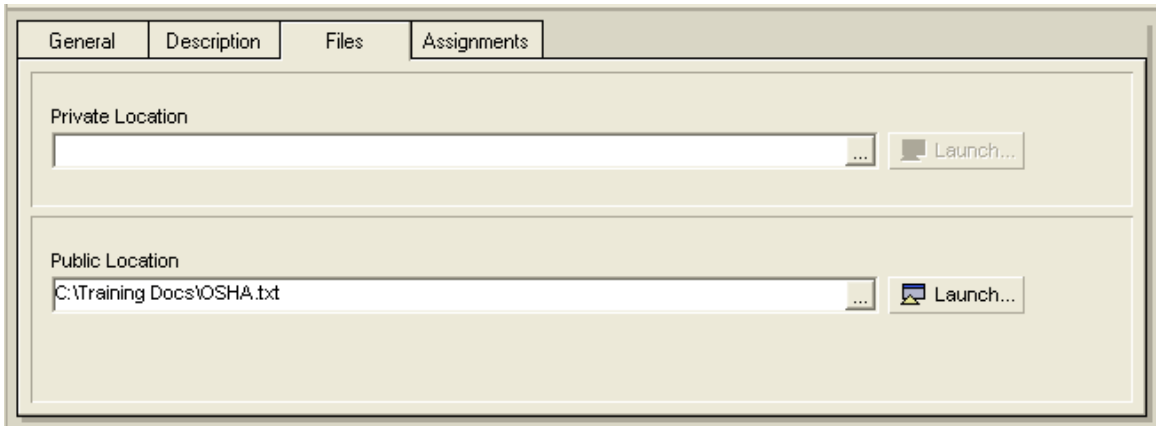
Steps:

1. Click the General tab.
2. Click the ellipsis in the ***Document Category*** field to select a document category **<Regulatory/Compliance>.**
3. Click the drop down arrow in the ***Status*** field and choose a status **<Completed>.**
4. Click the ellipsis to select a ***Revision Date*** **<1-Aug-08>.**

Files Tab

After you add the document, you must indicate the location of the file that will be referenced by the document. P3e supports two kinds of document location references:

- Private Location – references can be viewed only by PE Project Manger users.
  - Examples: invoices, purchase orders, or contracts.
- Public Locations – references can be viewed by all project participants, including Primavision users.
  - Examples: procedure guidelines or project checklists.



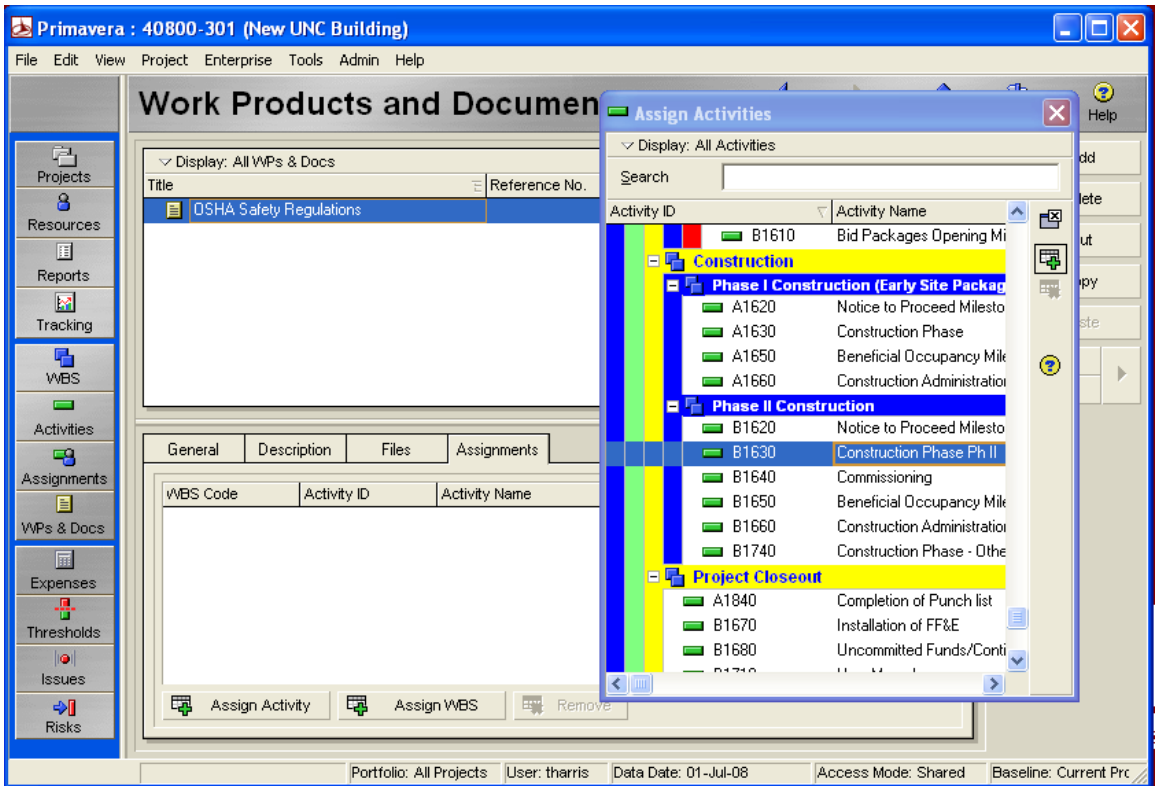
Steps:

1. Click the ***Files*** tab.
2. In the ***Public Location*** field, click the ellipsis to browse to the file location **<C:\Training Docs\OSHA.txt>.**
3. In the ***Select File*** Name dialog box, click *Open*.
4. Click ***Launch*** to view the document.
5. From Notepad, choose **File, Exit**.

Assigning a Project Document to an Activity

Project documents can be assigned to both WBS elements and activities. For example, during a project's planning phase, you may assign a document to a WBS element. As the details of your project develop, you can assign the same document to activities.

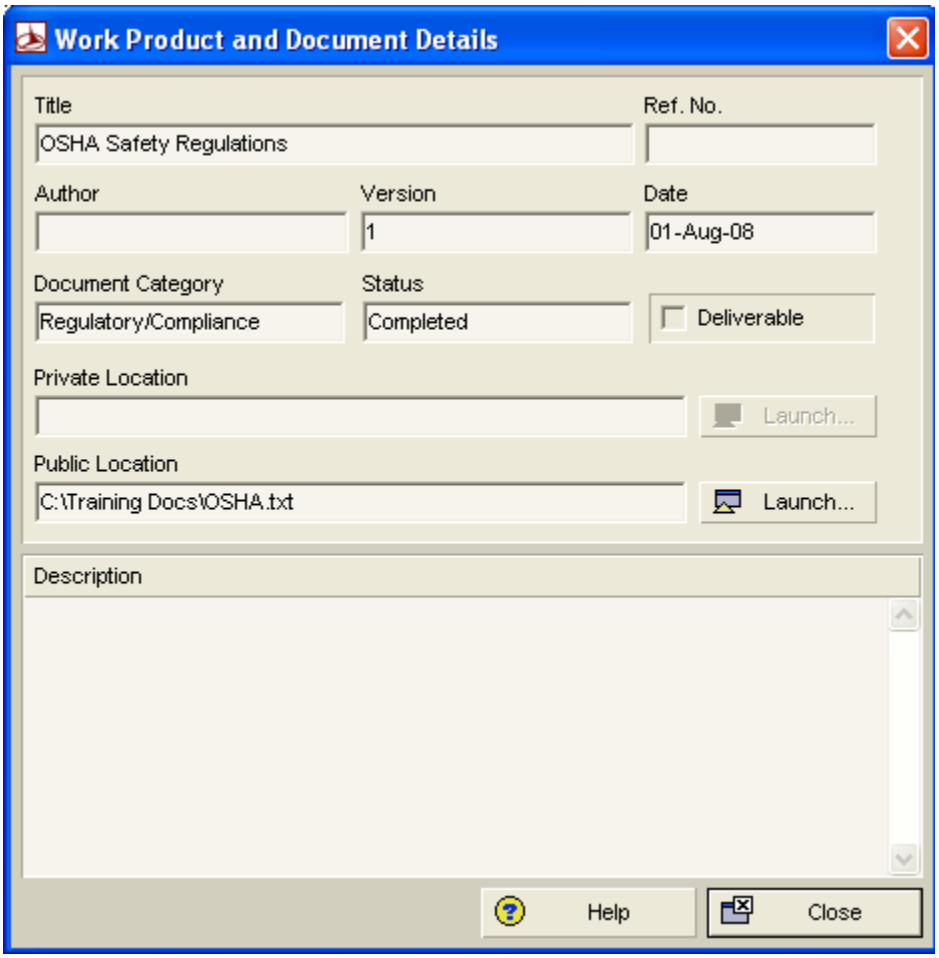
- In the Work Products and Documents window, use the ***Assignments*** tab.
- In the Activities window, use the ***WPs & Docs*** tab.



Steps:

1. Click the ***Assignments*** tab.
2. From the ***Display Options*** bar, choose **Expand All**.
3. Select an activity **<B1630 – Construction Phase Ph II>.**
4. Click assign to set the document.
5. From the ***Directory*** bar, click ***Activities***.
6. Select Activity <**B1630**>.
7. Select ***WPs & Docs*** detail tab
8. Click on OSHA Safety Regulations

9. Select ***Details*** at the bottom of the tab.



10. Select ***Launch*** to view the document.
11. When done viewing, **File>Exit** and **Close.**

Lesson 10

Creating Relationships

Purpose and Objectives

This lesson describes how to create relationships between activities. At the completion of this lesson, you will be able to:

- Create a network logic diagram.
- Differentiate between P6's four relationship types.
- Create relationships in the Activity Network.
- Create relationships in Activity Details.

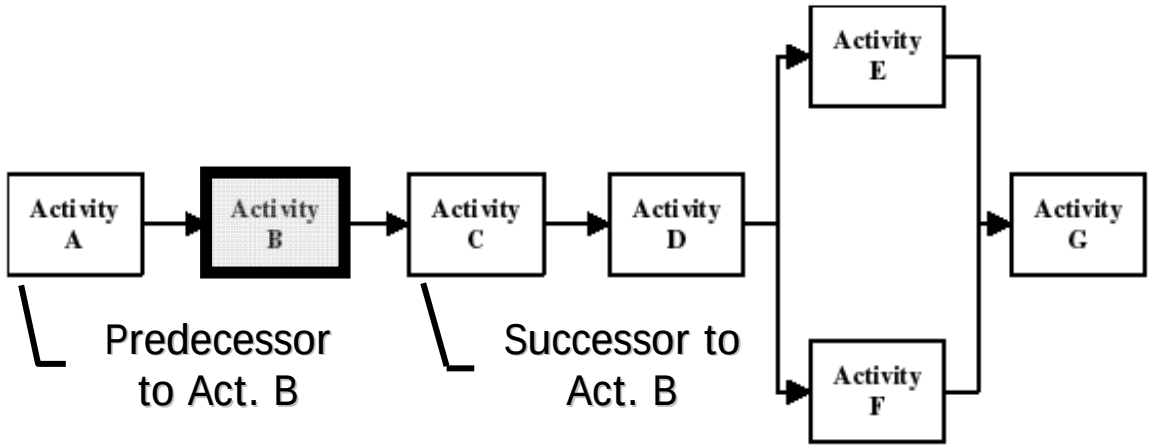
Network Logic Diagram

A network logic diagram is a logical representation of all the activities in a project showing their dependency relationships.

Precedence Diagramming Method (PDM)

PDM is a technique for creating network logic diagrams.

- A box or rectangle represents each activity.
- Lines with arrows connect the boxes and represent the logical relationships between the activities.
  - Predecessor – controls the start or finish of another activity.
  - Successor – depends on the start or finish of another activity.
- Start with either the first activity in the network and enter each successor, or start with the last activity in the network and enter each predecessor.

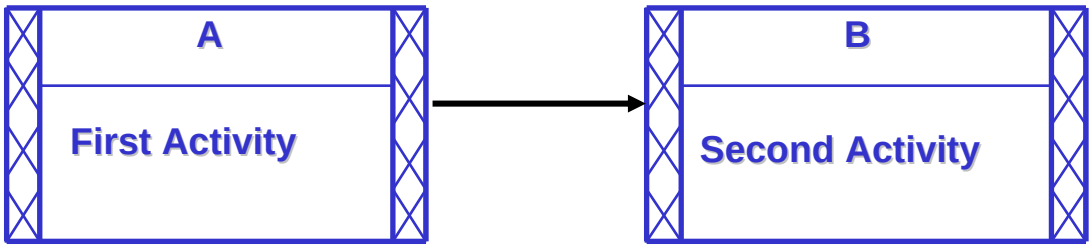


Relationship Types

P6 supports four types of relationships. In the following diagrams, activity A represents the predecessor and activity B represents the successor.

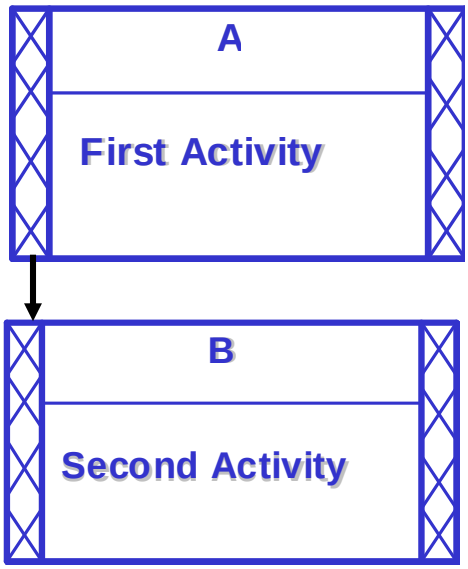
Finish to Start

- When A finishes, B can start.
- This is the default relationship type in P6.
- Used about 90% of the time.



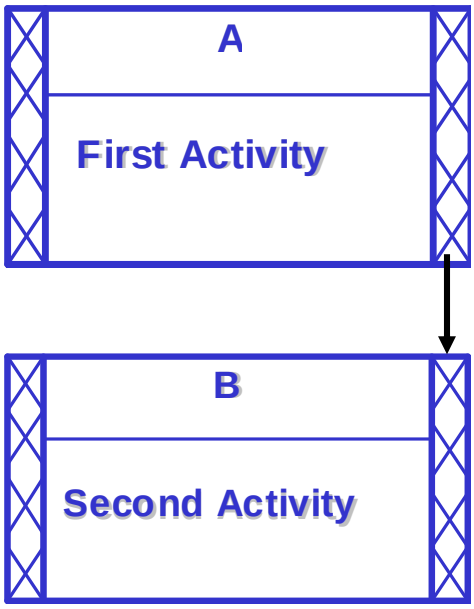
Start to Start

- When A starts, B can start.
- Used 8-9% of the time.



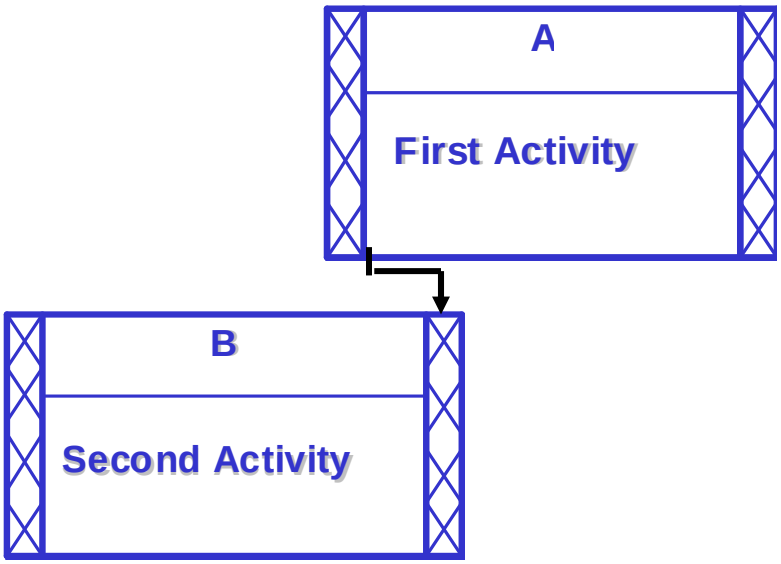
Finish to Finish

- When A finishes, B can finish.
- Used 1-2% of the time.



Start to Finish

- When A starts, B has to be finished.
- Not used.



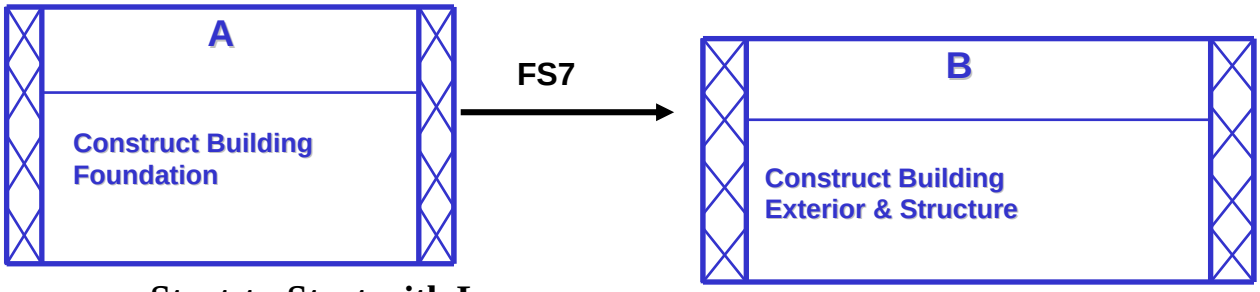
Relationships with Lag

Lag specifies an offset or delay between an activity and its successor.

- Always expressed in days.
- Scheduled based on the calendar of the successor activity.
- Can be added to any type of relationship
- Can be a positive or negative value

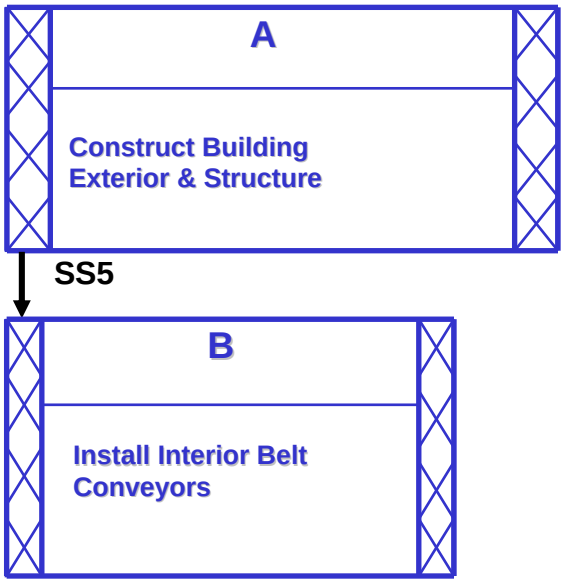
Finish-to-Start with Lag

- The following example shows that the Construct Building Foundation activity must be finished for seven days before the Construct Building Exterior and Structure activity can start.



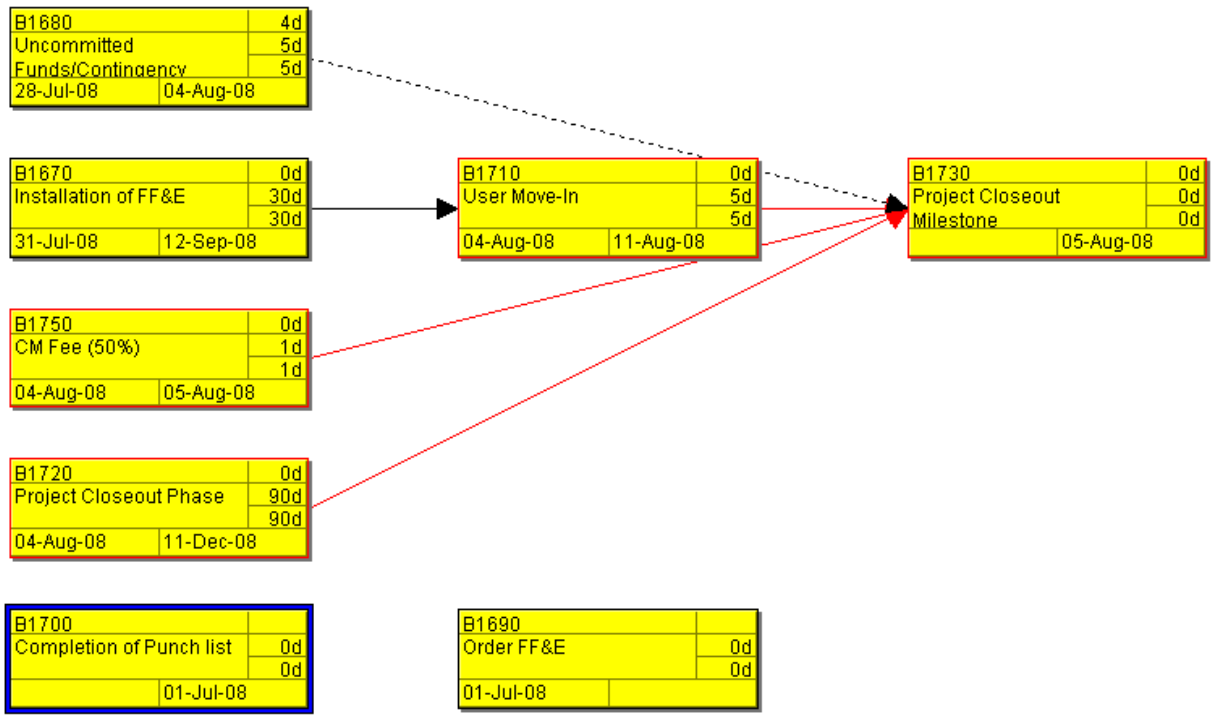
Start-to-Start with Lag

- The following example shows that the Install Interior Belt Conveyors activity can start five days after the Construct Building Exterior and Structure activity starts.



Creating Relationships in the Activity Network

The Activity Network is useful when sequencing activities because it presents the activities graphically as you draw relationships between them. You can create, modify, or review activity relationships at various levels of detail.



Steps:

1. From the ***Directory*** bar, click ***Activities.***
2. Select an activity **<B1700 – Completion of Punch List>.**
3. From the ***Toolbar***, choose **Activity Network.**
4. Click on the activity hold down the *Alt* key and drag to zoom.

Creating a Finish-to-Start Relationship

You can create a relationship between activities by clicking and dragging your mouse between the two activities.

- The left edge of the activity represents the start of the activity.
- The right edge of the activity represents the finish of the activity.

After the ***Completion of Punch list*** milestone finishes, the ***CM Fee (50%)*** activity can start. You will create a Finish-to-Start relationship between theses activities.

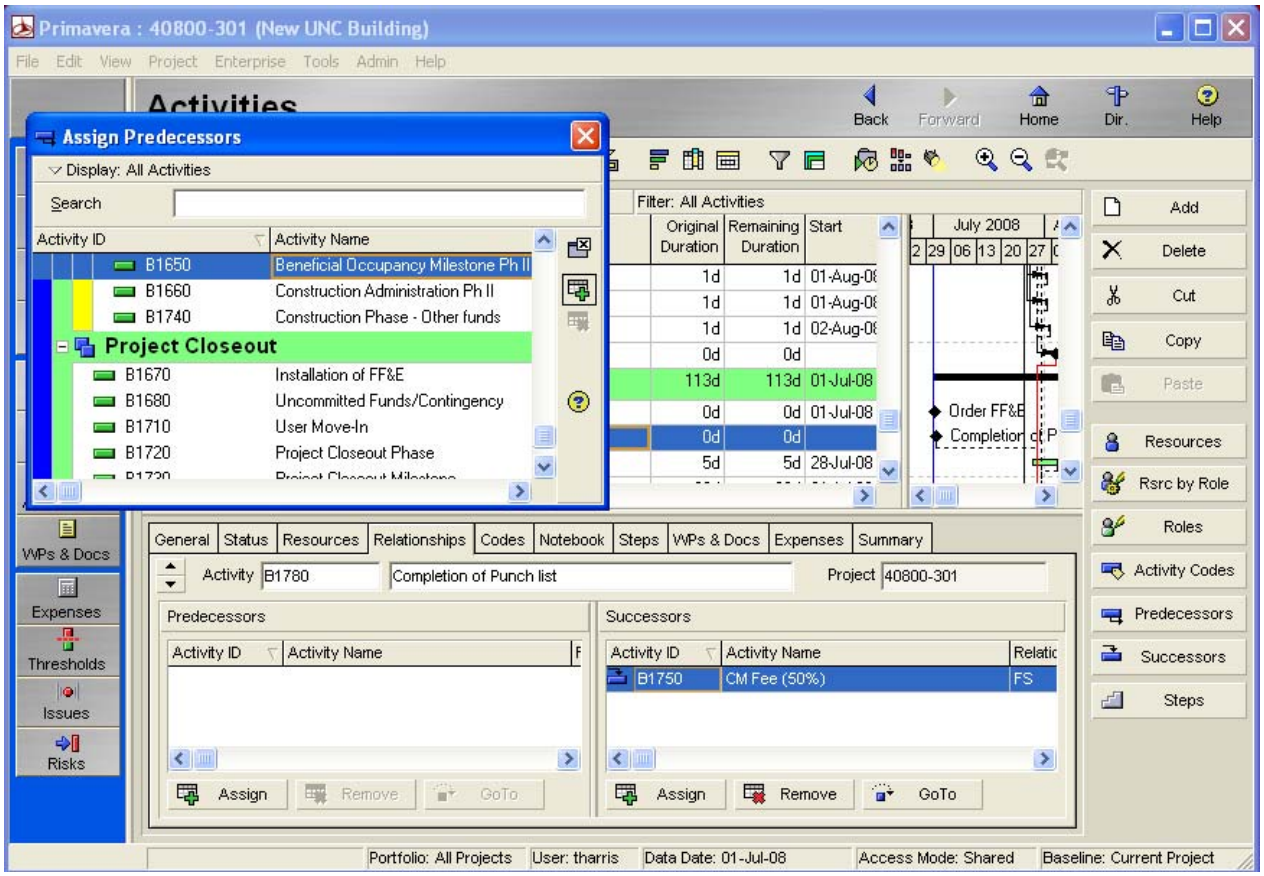
Steps:

1. Drag and Drop the box to desired positions.
2. To create a FS relationship, place the mouse pointer to the right edge of an activity **<B1700 – Completion of Punch list>.**
3. Click and drag the mouse to the left edge of a successor activity <**B1750 CM Fee (50%)** >.

Creating Relationships in Activity Details

It is very helpful to use the ***Relationship*** Activity Detail tab when creating relationships within the project.

When creating a relationship in Activity Details, the default relationship type is Finish-to-Start.



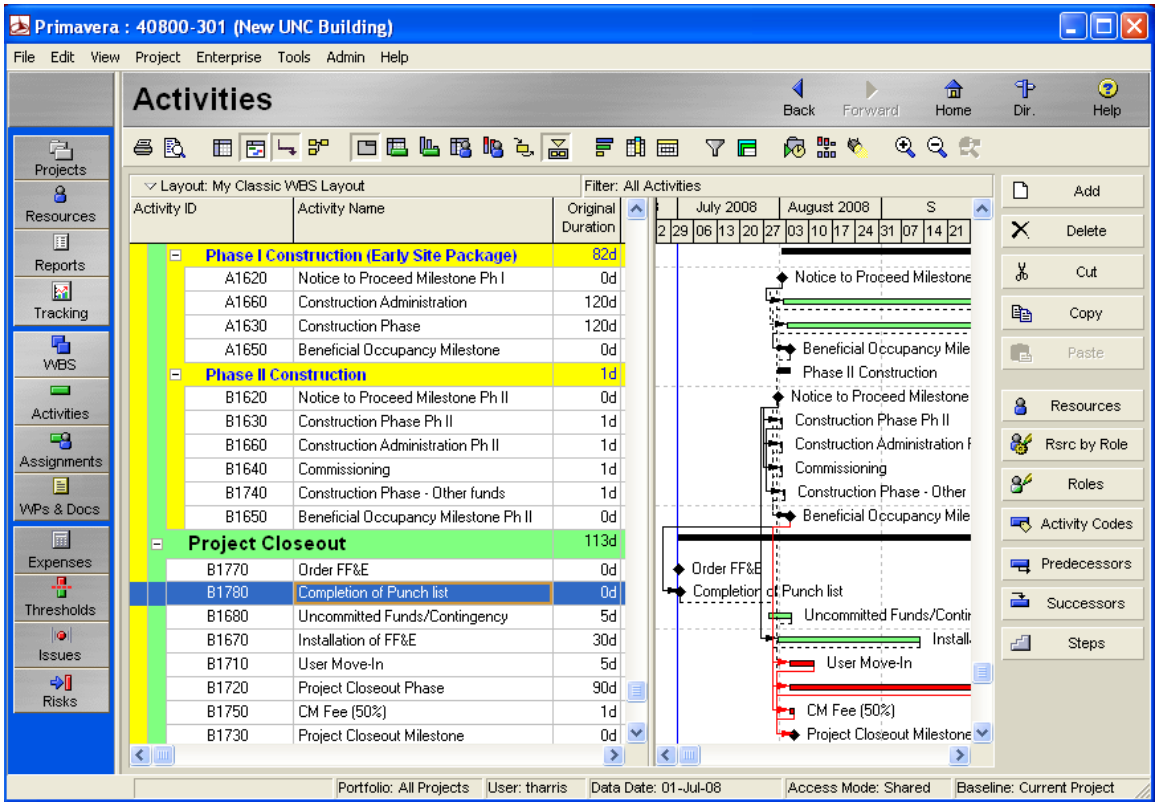
Steps:

1. From the ***Layout Options*** bar, choose **Show on Top, Gantt Chart.**
2. Select an activity **<B1700 – Completion of Punch list>.**
3. Click the ***Relationship*** tab.
4. From the ***Relationship*** tab, click ***Assign*** under *Predecessors*.
5. Assign predecessor activities **<B1650 – Beneficial Occupancy Milestone Ph II>**.

Viewing relationships in the Gantt Chart

You can also view/modify relationships in the Activity Table and Gantt Chart.

- Activity Table – display the ***Predecessors*** and ***Successors*** columns.
- Gantt Chart – click the ***Relationship Lines*** icon on the Toolbar to toggle relationship lines on and off.



Steps:

1. From the Toolbar, click the Relationship Lines icon to view the relationships between the activities.

   Note: Even though relationships were added, the activities did not move from the project start date. When the project is scheduled, the activities will be placed in the Gantt Chart according to the relationships.

Workshop 2
Creating Relationships

Background:

Now that the activities have been entered, relationships need to be established. We have determined the order in which the activities should occur.

Assignment:

1. Use the table below to verify/create relationships.

Activity ID	Activity Name	Successor	Relationship
A1000	Designer Advertisement Milestone	A1760	FS
A1830	Execution of Commissioning Agent Contract Milestone	A1740	FS
B1380	CD Production	B1760	FS
B1760	CD Review by Commissioning Agent	B1530	FS
B1620	Notice to Proceed Milestone Ph II	B1690	SS
B1690	Order FF&E	B1670	FS

Lesson 11

Scheduling

Purpose and Objectives

This lesson describes how P6 calculates schedule dates. At the completion of this lesson, you will be able to:

- Perform a forward and backward pass.
- Define float and its impact on a schedule.
- Identify loops and open ends.
- Calculate a schedule using P6.
- Analyze the scheduling log report.

Critical Path Method (CPM) Scheduling

P6 employs the Critical Path Method (CPM) scheduling technique to calculate project schedules. CPM uses activity durations and relationships between activities to calculate schedule dates. This calculation is done in two passes through the activities in a project.

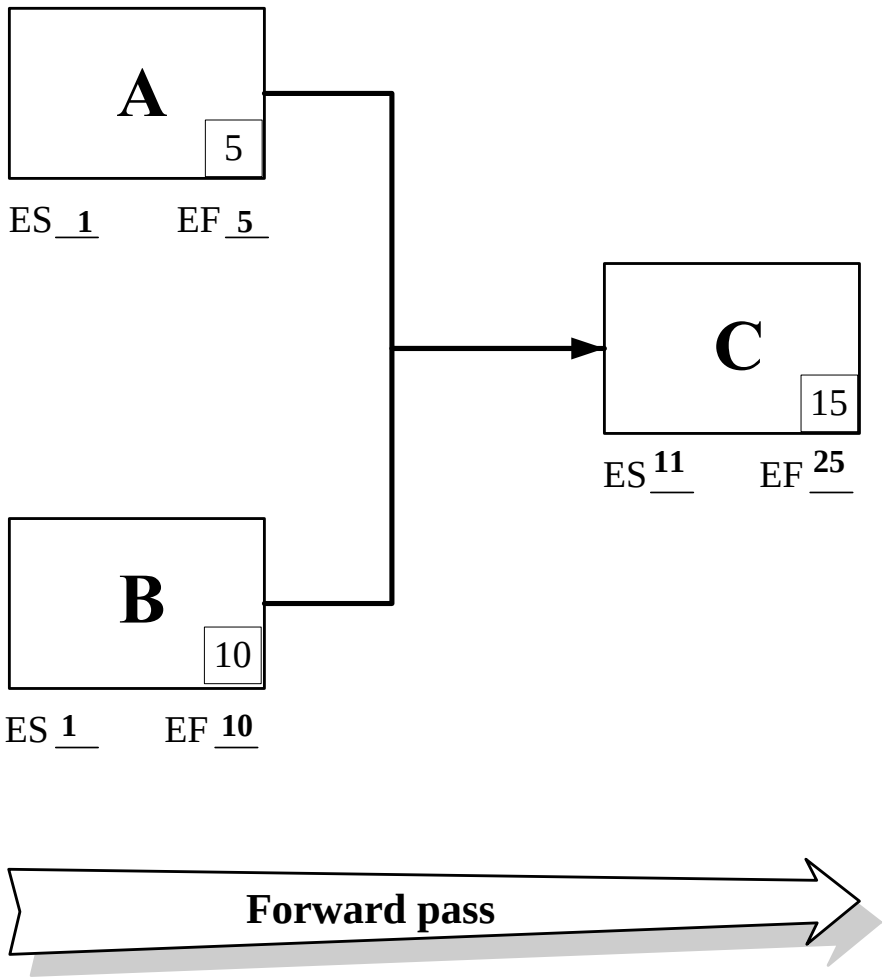
Critical Path

- The critical path is the longest continuous path of activities through a project that determines the project completion date.
- A delay in one activity delays other activities and the project as a whole.

Scheduling Concepts

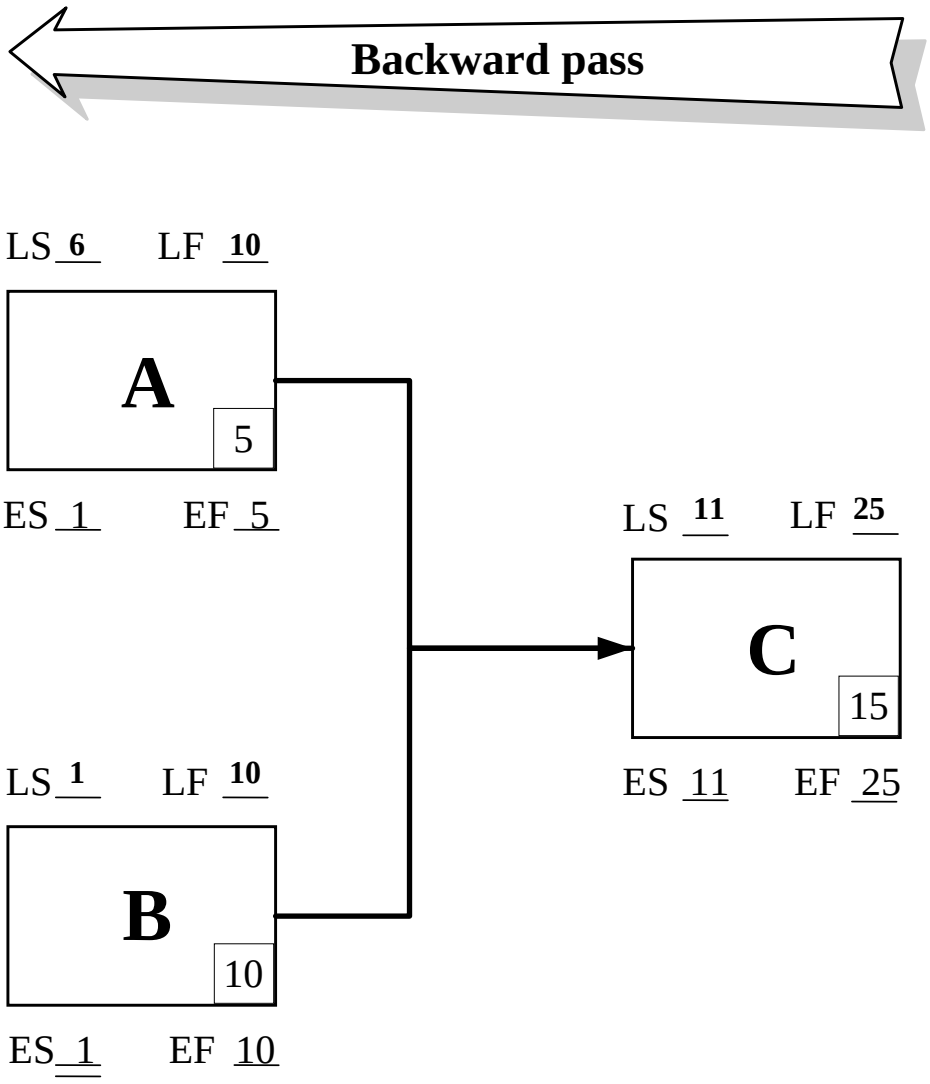
Forward Pass

- The forward pass calculates an activity's early dates.
- Early dates are the earliest times an activity can start and finish once its predecessors have been completed.
- The calculation begins with the activities without predecessors.
- Early Start + Duration – 1 = Early Finish



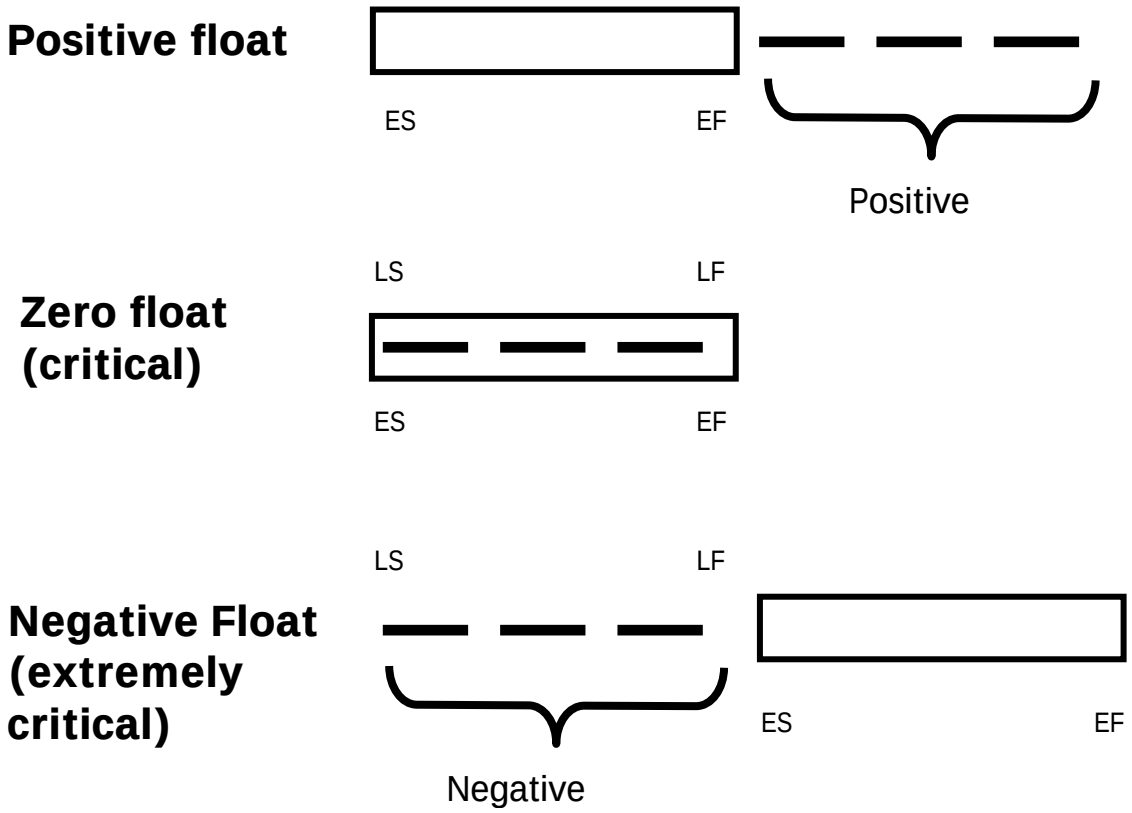
Backward Pass

- The backward pass calculates an activity's late dates.
- Late dates are the latest times an activity can start and finish without delaying the end date of the project.
- The calculation begins with the activities without successors.
- Late Finish – Duration + 1 = Late Start



Total Float

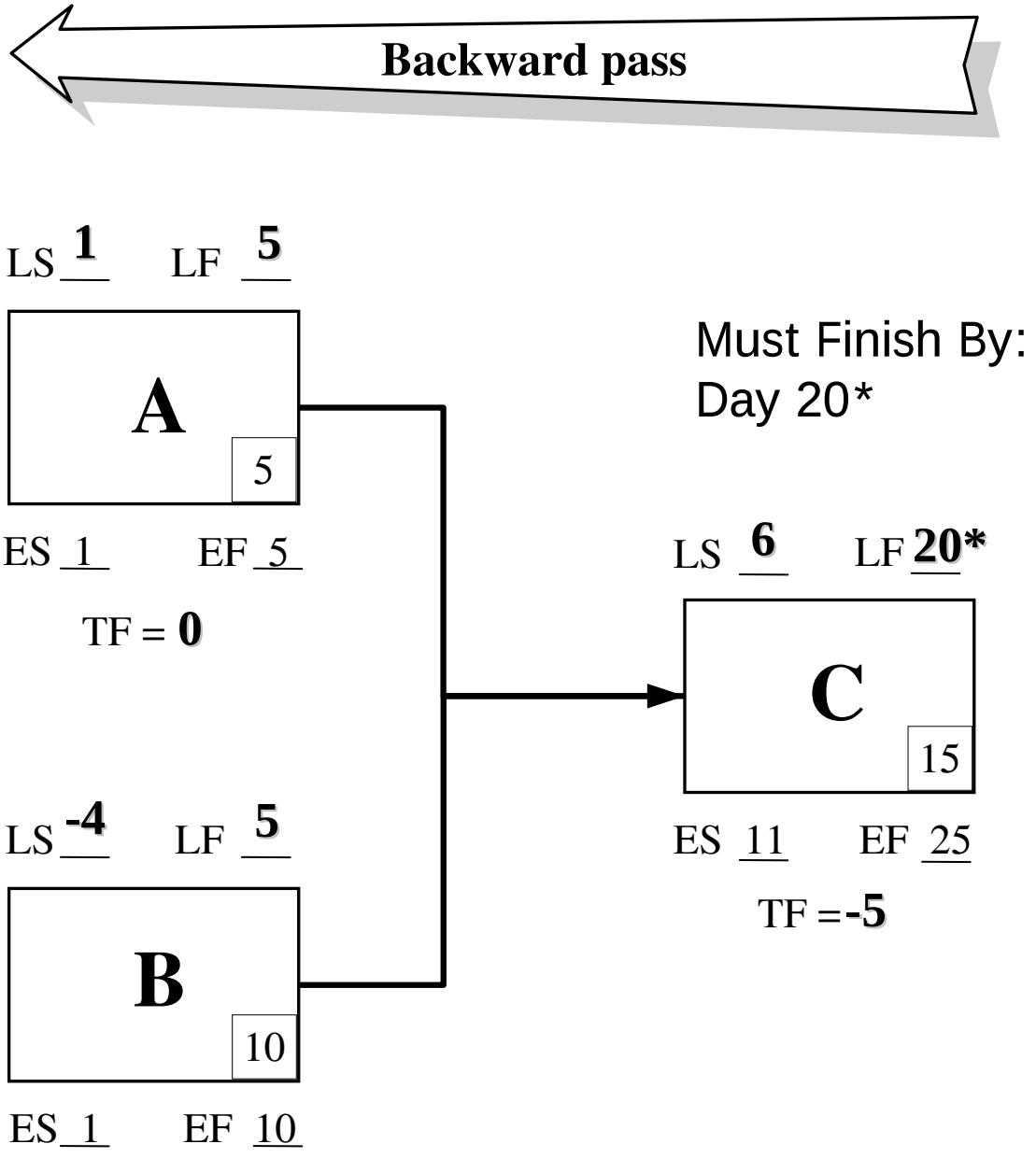
- The amount of time an activity can slip from its early start without delaying the project.
- The difference between an activity's late dates and early dates.
- Activities with zero total float are critical.
- Late date – Early date = Total Float



Backward Pass with Required Finish

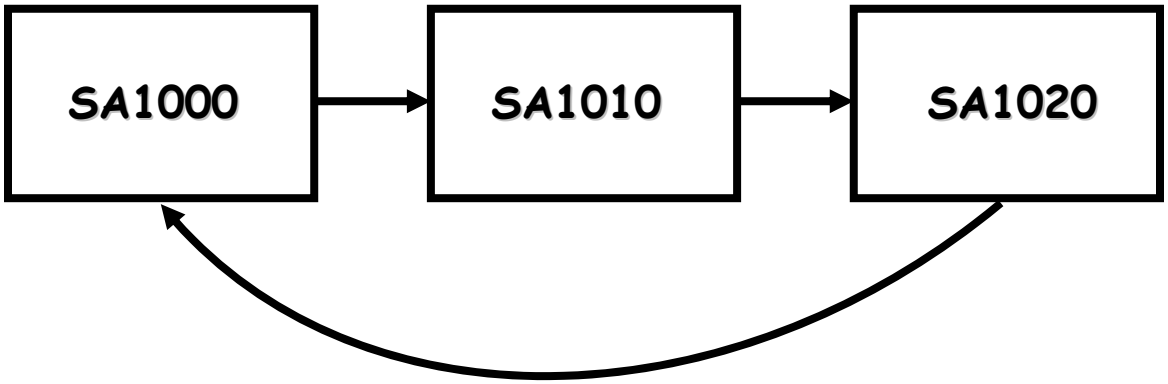
One of the most common project scenarios is a required finish date for the project.

- Used only during the backward pass.
- Required finish date specifies when the project must finish regardless of the network's duration and logic.
- Late Finish – Duration + 1 = Late Start.

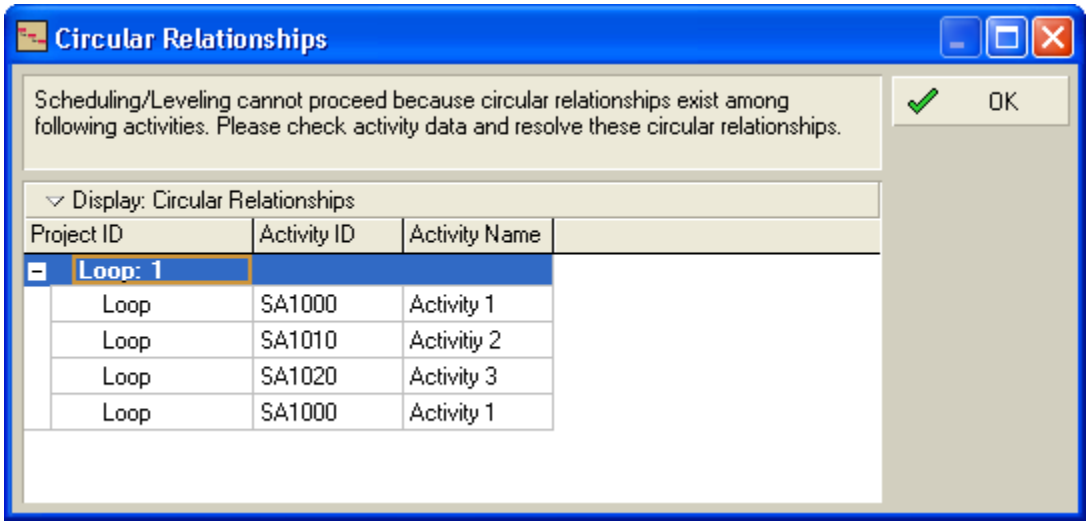


Circular Relationships (Loops)

- Loops indicate circular logic between two activities.
- PE will not calculate the schedule until the loop is eliminated.
  - Determine proper logic.
  - Rerun the schedule.

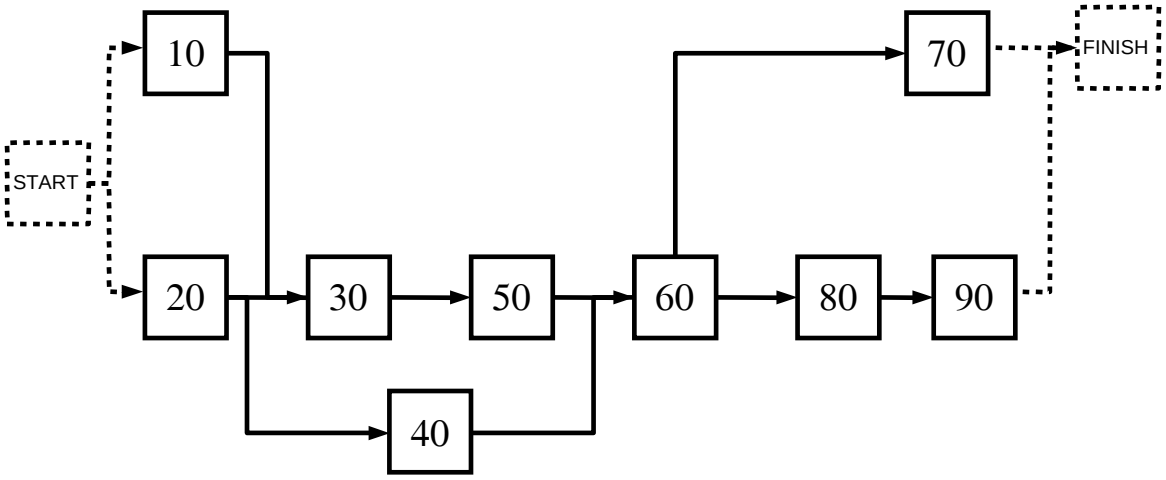


- P6.1 displays a dialog box listing the activities in the loop.



Open Ends

- Activities without a predecessor or successor.
  - No predecessor – activity uses data date as its early start
  - No successor – activity uses project finish as its late finish
- Open-ended activities can portray an unrealistic amount of positive total float.

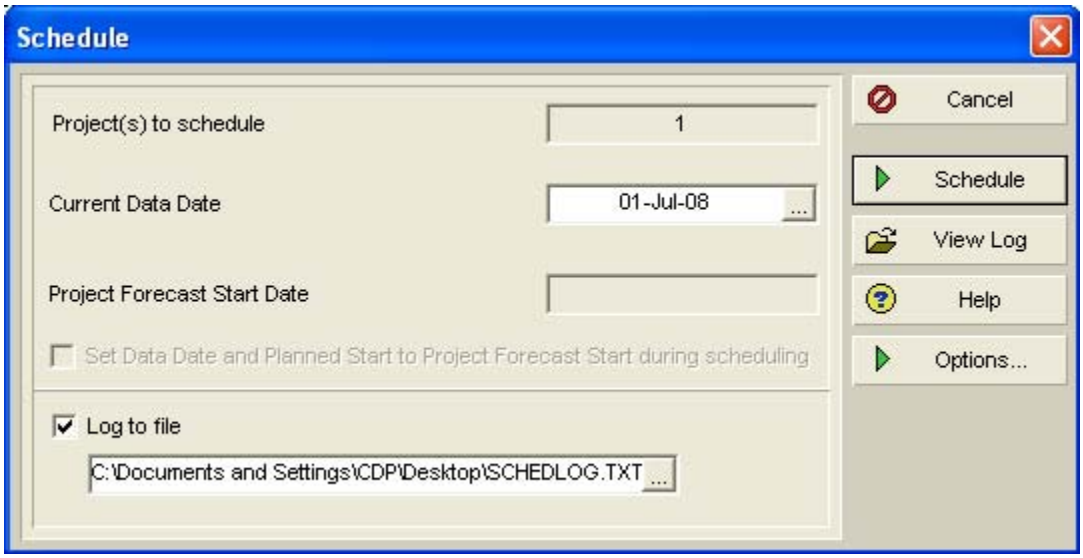


Note: We recommend that each project have only two open ends, the first milestone activity and the last milestone activity.

Scheduling a Project in P6

When you schedule a project, P6 calculates activity dates according to durations and logic.

Although you established relationships in the project, the activities have not yet been placed in time according to those relationships.



Steps:

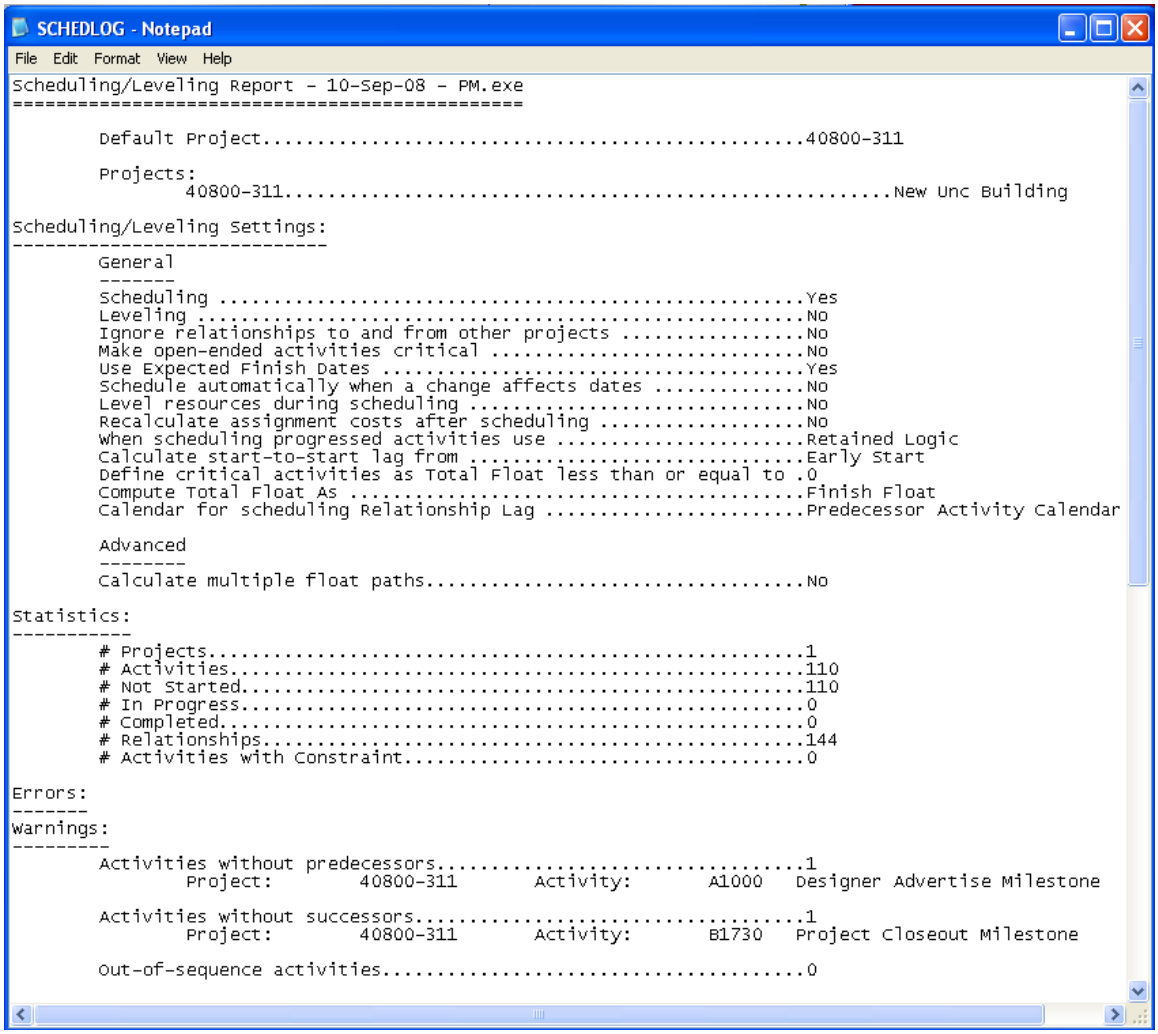
1. Open Project 40080-311
2. Choose **Tools, Schedule**.
3. Verify the ***Current Data Date*** **<01-Jul-08>.**
4. Click the ellipses in ***Log to File*** to select a file location**<C:\Documents and Settings\CDP\Desktop\SCHEDLOG.TXT>.**
5. From the ***Specify Log File*** dialog box, click ***Open***.
6. If prompted to create the file, click ***Yes***.
7. Click *Schedule*.

Note: Notice the position of the activities on the Gantt Chart has changed according to their calculated start and finish dates. Critical activities are displayed in red.

Schedule Log

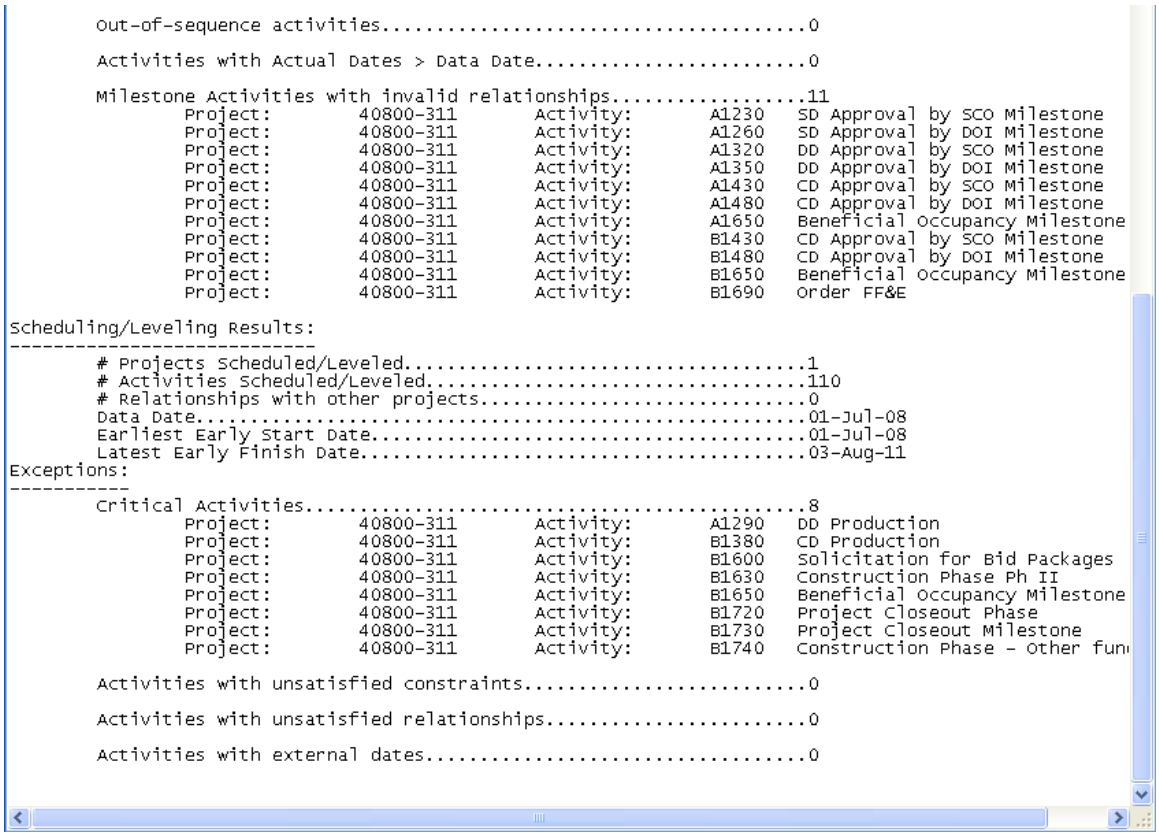
The schedule log records scheduling results, including:

- Scheduling/leveling settings
- Statistics
- Errors
- Warnings
- Scheduling/leveling results
- Exceptions



Steps:

1. Choose **Tools, Schedule** or Press ***F9***.
2. Click ***View Log***.



```
        Out-of-sequence activities.....................................0

        Activities with Actual Dates > Data Date.......................0

        Milestone Activities with invalid relationships.................11
                Project:        40800-311       Activity:       A1230   SD Approval by SCO Milestone
                Project:        40800-311       Activity:       A1260   SD Approval by DOI Milestone
                Project:        40800-311       Activity:       A1320   DD Approval by SCO Milestone
                Project:        40800-311       Activity:       A1350   DD Approval by DOI Milestone
                Project:        40800-311       Activity:       A1430   CD Approval by SCO Milestone
                Project:        40800-311       Activity:       A1480   CD Approval by DOI Milestone
                Project:        40800-311       Activity:       A1650   Beneficial Occupancy Milestone
                Project:        40800-311       Activity:       B1430   CD Approval by SCO Milestone
                Project:        40800-311       Activity:       B1480   CD Approval by DOI Milestone
                Project:        40800-311       Activity:       B1650   Beneficial Occupancy Milestone
                Project:        40800-311       Activity:       B1690   Order FF&E

Scheduling/Leveling Results:
----------------------------
        # Projects Scheduled/Leveled.....................................1
        # Activities Scheduled/Leveled...................................110
        # Relationships with other projects.............................0
        Data Date.....................................................01-Jul-08
        Earliest Early Start Date.....................................01-Jul-08
        Latest Early Finish Date......................................03-Aug-11
Exceptions:
-----------
        Critical Activities.............................................8
                Project:        40800-311       Activity:       A1290   DD Production
                Project:        40800-311       Activity:       B1380   CD Production
                Project:        40800-311       Activity:       B1600   Solicitation for Bid Packages
                Project:        40800-311       Activity:       B1630   Construction Phase Ph II
                Project:        40800-311       Activity:       B1650   Beneficial Occupancy Milestone
                Project:        40800-311       Activity:       B1720   Project Closeout Phase
                Project:        40800-311       Activity:       B1730   Project Closeout Milestone
                Project:        40800-311       Activity:       B1740   Construction Phase - Other fun

        Activities with unsatisfied constraints.......................0

        Activities with unsatisfied relationships.....................0

        Activities with external dates................................0
```

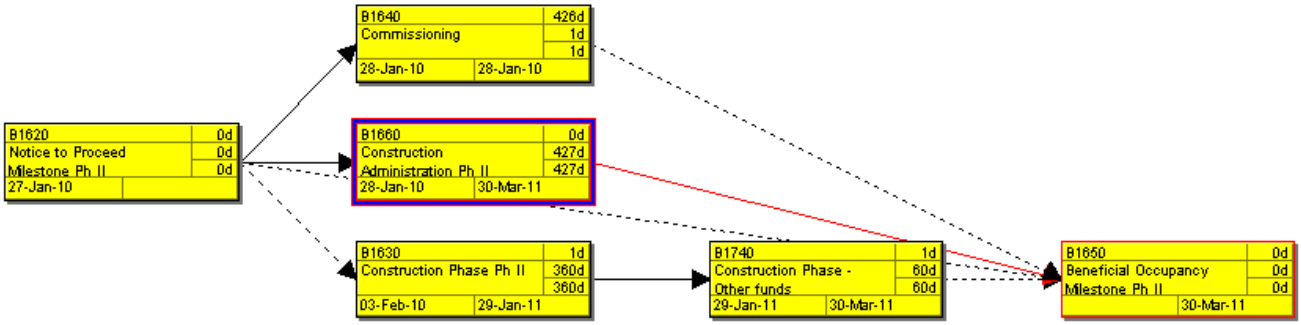
Steps:

1. From Notepad, choose **File, Exit**.
2. Click ***Cancel*** to exit the ***Schedule*** dialog box.

Driving Relationship

An activity may have a relationship from a predecessor that determines its early start. This logic tie is called a driving relationship.

- A solid relationship line indicates a driving relationship
- A dashed relationship line indicates a non-driving relationship.

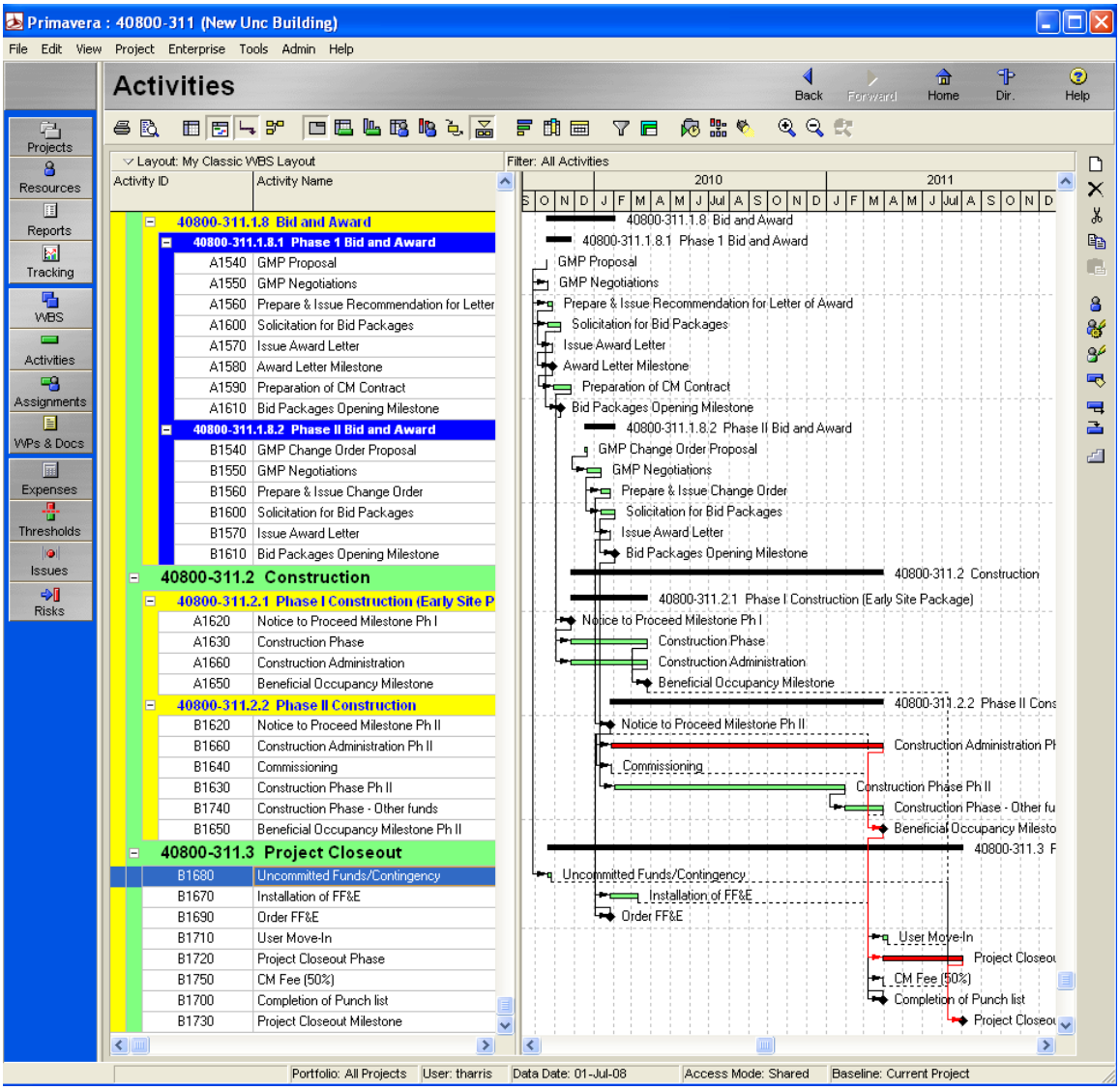


Steps:

1. Click on the ***Activity Network*** box on the ***Toolbar***.
2. Highlight a WBS element **<Phase II Construction>.**
3. Select an activity **<B1740>** and click the ***Relationships*** tab.
    a. B1630 drives the start of B1740
    b. B1740 does not drive the start of B1650.

Scheduling Summary

- The forward pass calculates early start and finish dates.
- The backward pass calculates late start and finish dates.
- Total float is the number of work periods that an activity's early start can be delayed without delaying the end date of the project.
    - Total float is calculated by subtracting an activity's early dates from its late dates.
- P6 will not calculate the schedule until the loop is eliminated.
- Open ends are activities without a predecessor or successor.
- A driving relationship determines its successor's early start.


Primavera : 40800-311 (New Unc Building)
File Edit View Project Enterprise Tools Admin Help
Activities
Back Forward Home Dir. Help
Projects
Resources
Reports
Tracking
WBS
Activities
Assignments
WPs & Docs
Expenses
Thresholds
Issues
Risks
Layout: My Classic WBS Layout
Filter: All Activities
Activity ID
Activity Name
2010
2011
40800-311.1.8 Bid and Award
40800-311.1.8.1 Phase 1 Bid and Award
A1540 GMP Proposal
A1550 GMP Negotiations
A1560 Prepare & Issue Recommendation for Letter
A1600 Solicitation for Bid Packages
A1570 Issue Award Letter
A1580 Award Letter Milestone
A1590 Preparation of CM Contract
A1610 Bid Packages Opening Milestone
40800-311.1.8.2 Phase II Bid and Award
B1540 GMP Change Order Proposal
B1550 GMP Negotiations
B1560 Prepare & Issue Change Order
B1600 Solicitation for Bid Packages
B1570 Issue Award Letter
B1610 Bid Packages Opening Milestone
40800-311.2 Construction
40800-311.2.1 Phase I Construction (Early Site P
A1620 Notice to Proceed Milestone Ph I
A1630 Construction Phase
A1660 Construction Administration
A1650 Beneficial Occupancy Milestone
40800-311.2.2 Phase II Construction
B1620 Notice to Proceed Milestone Ph II
B1660 Construction Administration Ph II
B1640 Commissioning
B1630 Construction Phase Ph II
B1740 Construction Phase - Other funds
B1650 Beneficial Occupancy Milestone Ph II
40800-311.3 Project Closeout
B1680 Uncommitted Funds/Contingency
B1670 Installation of FF&E
B1690 Order FF&E
B1710 User Move-In
B1720 Project Closeout Phase
B1750 CM Fee (50%)
B1700 Completion of Punch list
B1730 Project Closeout Milestone
Portfolio: All Projects
User: tharris
Data Date: 01-Jul-08
Access Mode: Shared
Baseline: Current Project

Lesson 12

Assigning Constraints

Purpose and Objectives

This lesson describes the various types of constraints and how to apply them. At the completion of this lesson, you will be able to:

- Apply an overall deadline to a project.
- Apply a constraint to an individual activity.
- Add notebook topics to constrained activities.
- Describe the available constraint types.

Constraints

Constraints are imposed date restrictions used to reflect project requirements that cannot be built into the logic.

Attributes

- Constraints are user-imposed.
- Two constraints can be assigned to an activity.
- After applying a constraint, the project must be rescheduled to calculate the new dates.

Benefits

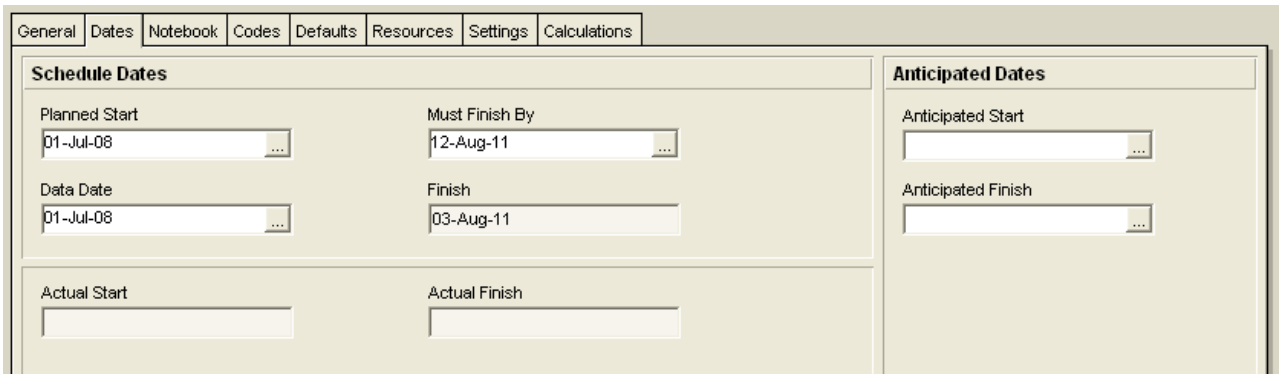
- Build a schedule that more accurately reflects the real-world aspects of the project.
- Provide added control to the project.
- Use to impose a restriction on the entire project or an individual activity.

Commonly Used Constraints

Must Finish By

- Used when an overall project deadline must be met.
- Forces all activities in the project to finish by the date (and time) specified.
- Affects the total float of the entire project.
- Must be applied in the Project window on the ***Dates*** tab.

The current early finish of the UNC Project is 3-Aug-11. You will apply a project deadline of 12-Aug-11.

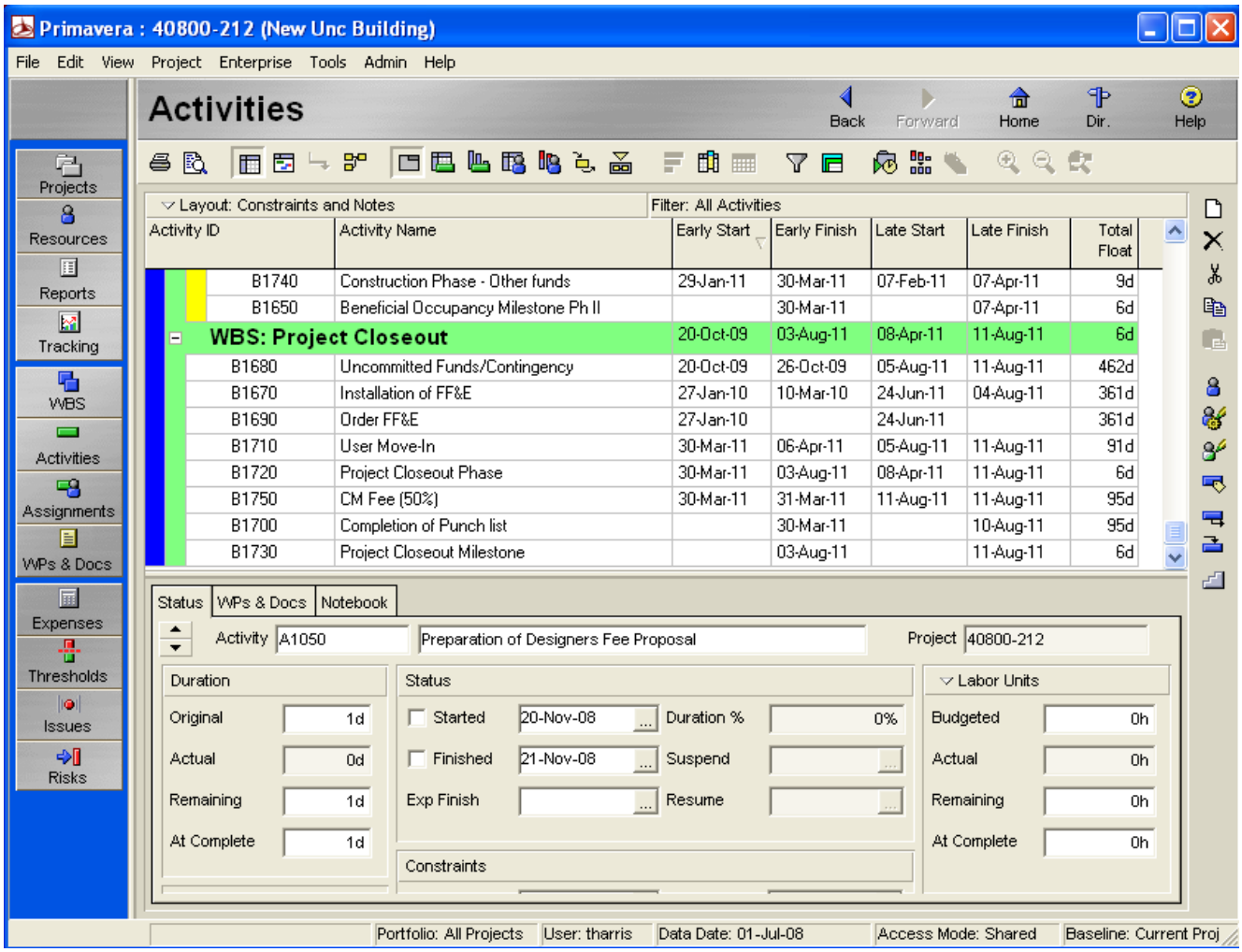


Steps:

1. From the ***Directory*** bar, click ***Projects.***
2. From the ***Display Options*** bar, click **Expand All**.
3. Click the ***Dates*** tab.
4. Highlight the project
5. Click the ellipses in the ***Must Finish By*** field to select a date **<12-Aug-11>.**

Must Finish By (Continued)

The next step is to reschedule the project to see the effect of the imposed deadline on the late dates and total float in the project plan.



6. In the Activities window, open a layout **<Constraints and Notes>.**
7. Choose **Tools, Schedule** or press ***F9***.
8. Click ***Schedule***.

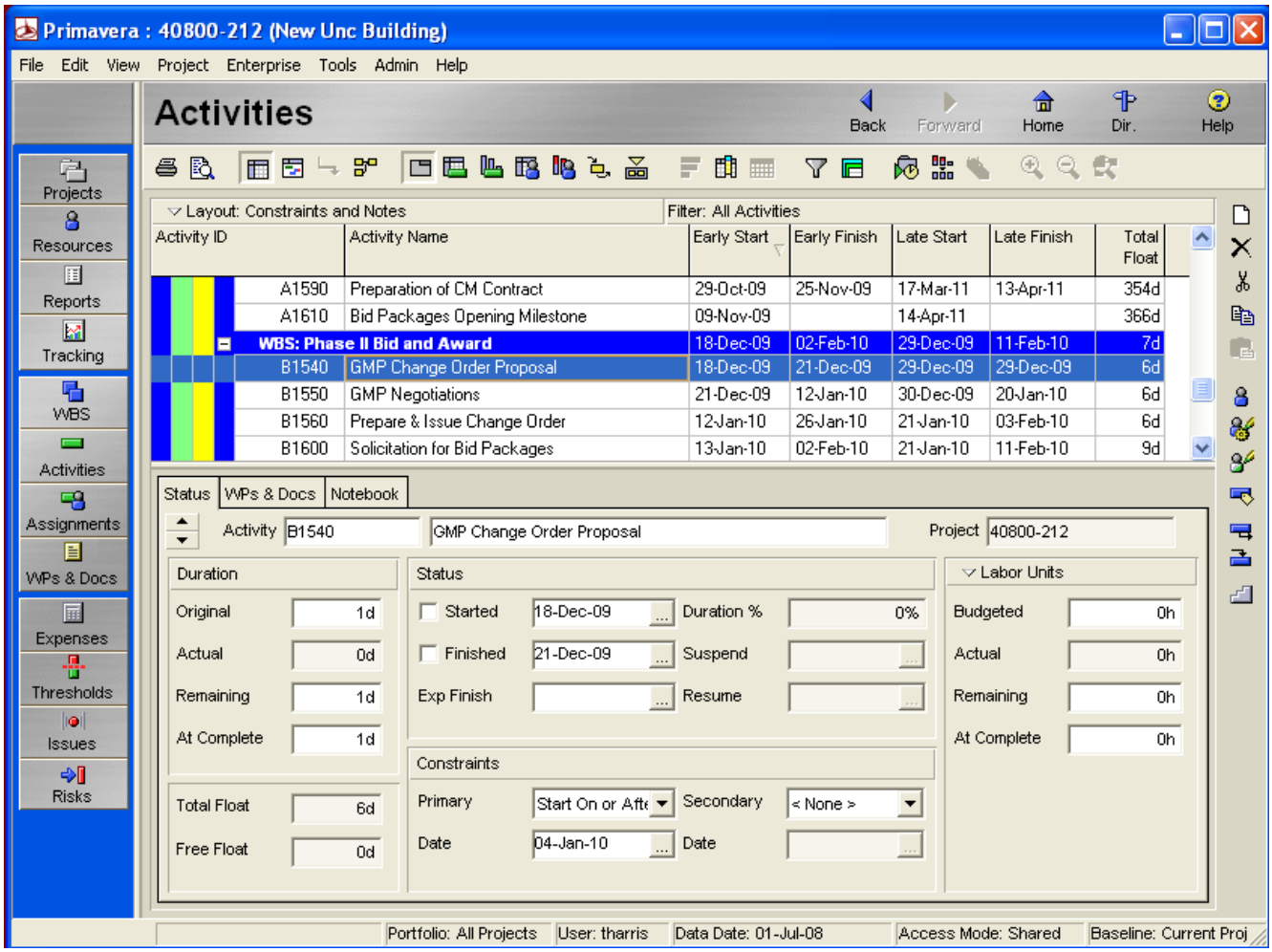
Note: Notice the Must Finish By date (12-Aug-11) is later than the calculated early finish by of the project (3-Aug-07); therefore, all of the activities contain positive total float.

Start On or After

Use the Start On or After constraint to set the earliest date an activity can begin.

- Forces the activity to start no earlier than the constraint date.
- Pushes the early start date to the constraint date.
- Affects the early dates of its successors.

The ***GMP Change Order Proposal*** is currently scheduled to start on 18-Dec-09. However, the approval of the final CDs will not be given until 4-Jan-10. You will apply a constraint to the activity to reflect this date.



Steps:

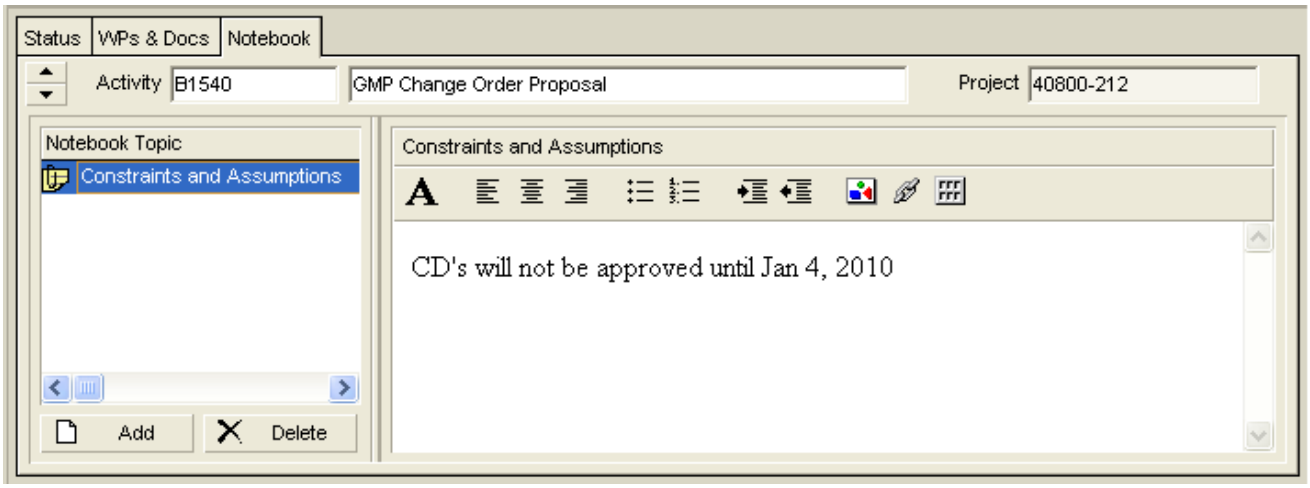
1. Select an activity **<B1540 – GMP Change Order Proposal>.**
2. Verify the ***Status*** tab is selected.
3. In the ***Constraints*** section, click the drop down arrow in the ***Primary*** field.
4. Select a constraint type **<Start On or After>.**
5. Click the ellipses in the ***Date*** field to specify the constraint date **<4-Jan-10>**.
6. Choose **Tools, Schedule** or Press ***F9***.
7. Click ***Schedule***.

Activity ID	Activity Name	Early Start	Early Finish	Late Start	Late Finish	Total Float
A1590	Preparation of CM Contract	29-Oct-09	25-Nov-09	17-Mar-11	13-Apr-11	354d
A1610	Bid Packages Opening Milestone	09-Nov-09		14-Apr-11		366d
WBS: Phase II Bid and Award		04-Jan-10	16-Feb-10	29-Dec-09	11-Feb-10	-3d
B1540	GMP Change Order Proposal	04-Jan-10	05-Jan-10	29-Dec-09	29-Dec-09	-4d
B1550	GMP Negotiations	05-Jan-10	26-Jan-10	30-Dec-09	20-Jan-10	-4d
B1560	Prepare & Issue Change Order	26-Jan-10	09-Feb-10	21-Jan-10	03-Feb-10	-4d
B1600	Solicitation for Bid Packages	27-Jan-10	16-Feb-10	21-Jan-10	11-Feb-10	-5d
B1570	Issue Award Letter	09-Feb-10	10-Feb-10	04-Feb-10	04-Feb-10	-4d
B1610	Bid Packages Opening Milestone	16-Feb-10		11-Feb-10		-3d
WBS: Construction		26-Nov-09	13-Apr-11	05-Feb-10	11-Aug-11	86d
WBS: Phase I Construction (Early Site Package)		26-Nov-09	25-Mar-10	14-Apr-11	11-Aug-11	355d

Note: The early start date is pushed out because the constraint date (4-Jan-10) is later than original early start date (18-Dec-09). The total float has gone from 6 days to -4 days, which means the project will not finish on time unless other adjustments are made in the schedule.

Adding Notebook Topics

When a constraint is assigned to an activity, it is recommended that you add a note to document why the constraint was assigned. You can use the ***Notebook*** tab in the Activities window to document these reasons.



Steps:

1. Click the ***Notebook*** tab.
2. Click ***Add***.
3. Assign a Notebook Topic **<Constraint Log**>.
4. Close the ***Assign Notebook Topic*** dialog box.
5. Type a note **< CD's will not be approved until Jan 4, 2010>**.

Additional Constraints

Start On

- Forces the activity to start on the constraint date.
  - **Shifts both early and late start dates.**
  - **Delays an early start or accelerates a late start.**
  - **Used to specify dates submitted by contractors or vendors.**

Start On or Before

- Forces the activity to start no later than the constraint date.
  - **Shifts the late start to the constraint date.**
  - **Affects the late dates of its predecessors.**
  - **Used to place a deadline on the start of the activity.**

Finish On

- Forces the activity to finish on the constraint date.
  - **Shifts both early and late finish dates.**
  - **Delays an early finish or accelerates a late finish.**
  - **Used to satisfy intermediate project deadlines.**

Finish On or Before

- Forces the activity to finish no later than the constraint date
  - **Pulls the late finish date to the constraint date.**
  - **Affects the late dates of its predecessors.**
  - **Used to place a deadline on the finish of the activity.**

Finish On or After

- Forces the activity to finish no earlier than the constraint date
  - **Shifts the early finish to the constraint date.**
  - **Affects the early dates of its successors**
  - **Used to prevent an activity from finishing too early.**

As late as Possible

- Delays an activity as late as possible without delaying its successors
  - **Shifts the early dates as late as possible.**
  - **Also called a zero free float constraint.**

Mandatory Start and Finish

- Forces early and late dates to be equal to the constraint date.
  - **Affects late dates of predecessors and early dates of successors.**
  - **May violate network logic.**

Lesson 13

Viewing Schedule Data

Purpose and Objectives

This lesson discusses some of P6's formatting capabilities, which allow you to view project data from many different perspectives. At the completion of this lesson, you will be able to:

- Group activities according to specific criteria.
- Sort activities.
- Apply a filter.
- Create a filter.
- Modify the bars on the Gantt Chart.
- Adjust the row height.
- Wrap text.

Grouping Data in P6 Windows

Grouping is a flexible way to organize data into categories that share a common attribute. You can group data to customize your layouts. These layouts can be used for reporting purposes.

Attributes

- Grouping is available in all the windows throughout P6. It is also available in most dialog boxes.
  - Each window or dialog box has its own grouping options.
  - Some windows have customizable/pre-defined groups.
- Activities can be grouped by hierarchical fields, such as, WBS, responsible manager (OBS), activity codes, and project codes.
- Activities can be grouped by data fields, such as dates, costs, total float, and other numeric data.
- The default grouping criteria is WBS.

Benefits

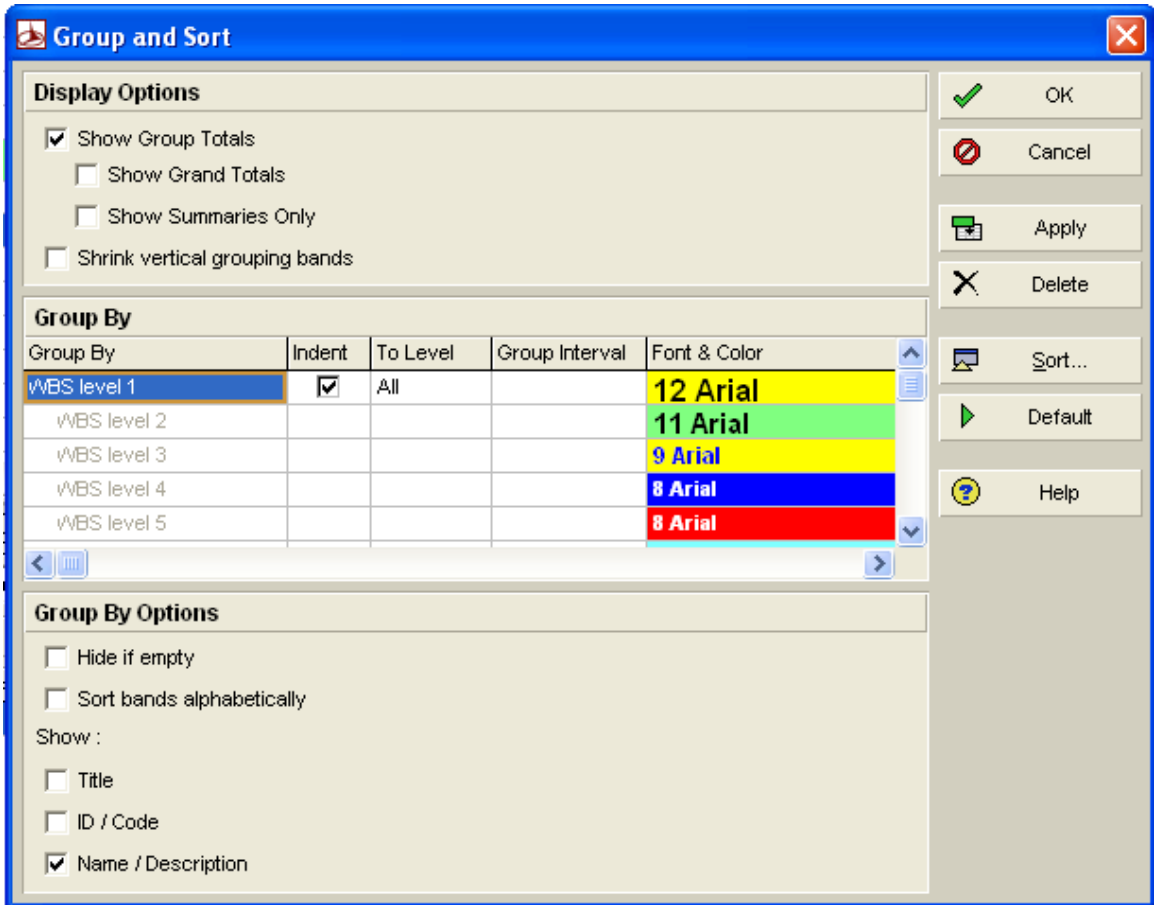
- Quickly view subtotal data in the group title bands.
- Quickly view summary bars in the Gantt Chart.
- Easily summarize data for reporting purposes.

Group and Sort Dialog Box

The Group and Sort dialog box is for organizing activities onscreen.

- ***Show Grand Totals*** – displays summary information for group in group band.
- ***Show Summaries Only*** – hides the activities within each group.
- ***Shrink vertical grouping bands*** - reduces height of grouping bands to minimum
- ***Group By*** – lists data items used to group the current display.
- ***Indent*** – available if the data item selected is hierarchical.
- ***To Level*** – indicates the number of levels of hierarchy.
- ***Group Interval*** – indicates the interval by which you want to group the selected data item.
- ***Font & Color*** – displays the font/color for each group title band.
- ***Hide if empty*** – mark to hide empty group title bands.
- ***Sort bands alphabetically*** – arranges groups alphabetically (does not apply to WBS)
- ***Show Title*** – displays the name Group By item.
- ***Show ID /Code*** – displays grouping value.
- ***Show Name / Description*** – displays group name

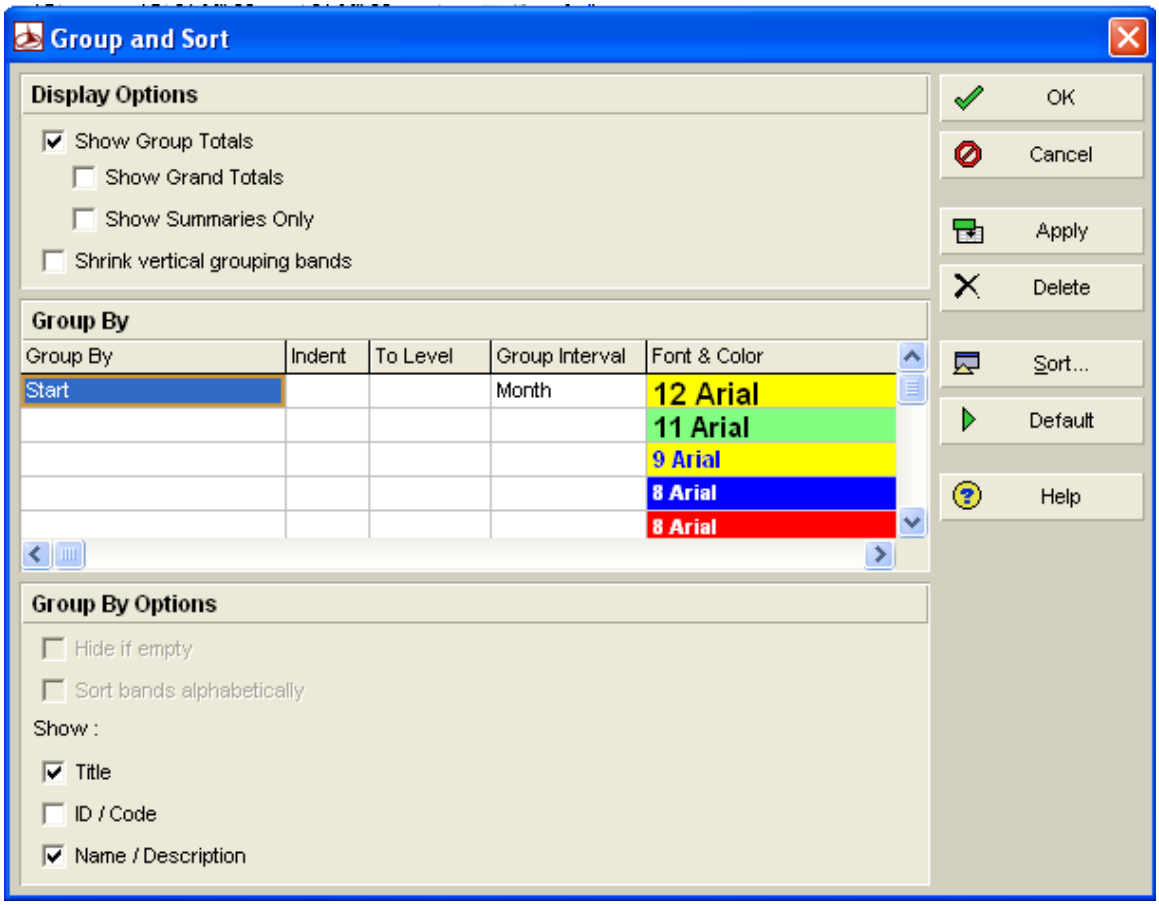
- From the ***Layout Options*** bar, choose **Group and Sort**.



Grouping Activities by Date

Grouping a layout by date allows you to identify which activities are due to occur within a particular time period.

You have been asked to create a report that shows which activities are scheduled to start in each month over the course of the project. To accomplish this task, you will group the activities by start date.

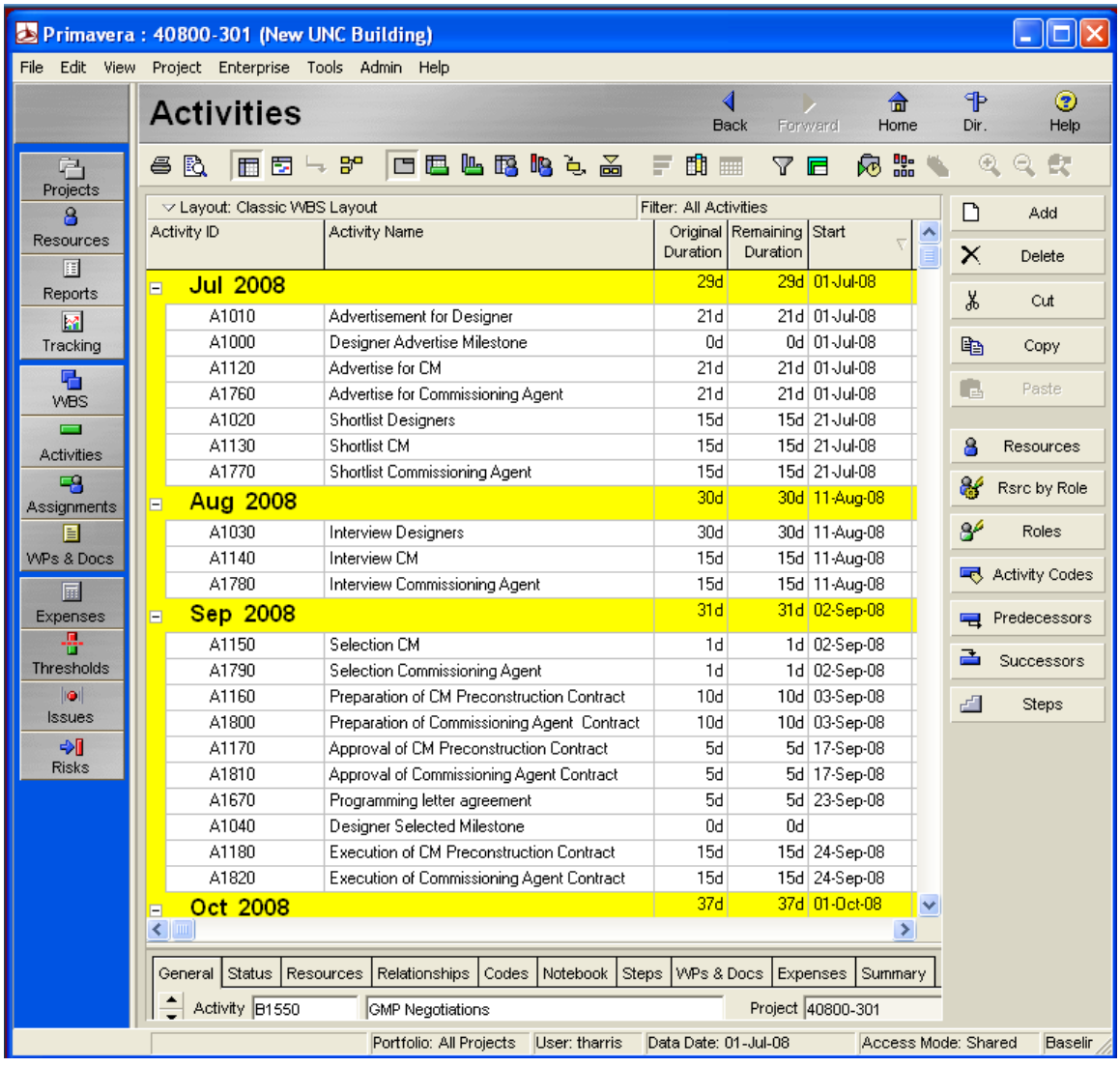


Steps:

1. Click under ***Group By*** to select a data item **<Start>**.
2. ***Double-click*** in the first cell under ***Group Interval*** to select a timeframe **<Month>.**

3. Click ***Apply*** to preview the results of your grouping selection.
4. Click ***OK*** to close the ***Group and Sort*** dialog box.

The layout is now grouped by the start date of the activities. You can see the activities scheduled to occur each month. Since you would like to use this layout in the future, you will save the layout with a new name, **Monthly Schedule**.



Steps:

1. From the ***Layout Options*** bar, choose **Layout, Save As**.

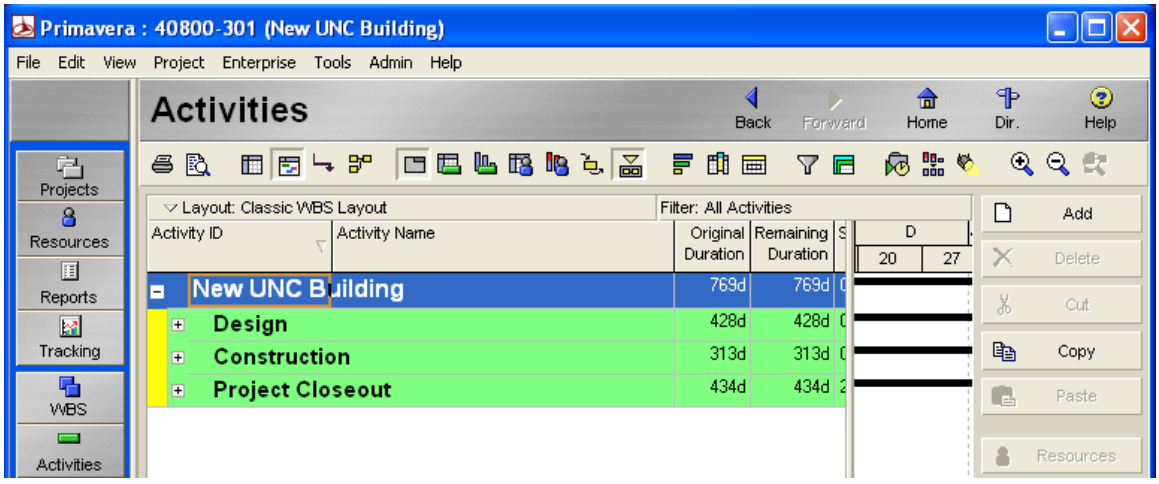
2. Type a layout name **<Monthly Schedule>**.
3. Click ***Save***.

Collapsing/Expanding Grouped Data

You can collapse group bands to control the level of detail you are viewing at any point in time.

- In the Activity Table, you can view summary information for the displayed columns.
- In the Gantt Chart, summary bars are displayed to represent the start/finish dates in each group band.

Produce this report by collapsing the project and expanding a single group band.



Steps:

1. Open a layout **< Classic WBS Layout>.**
2. From the ***Layout Options*** bar, choose **Collapse All**.
3. Click (+) to expand group bands.

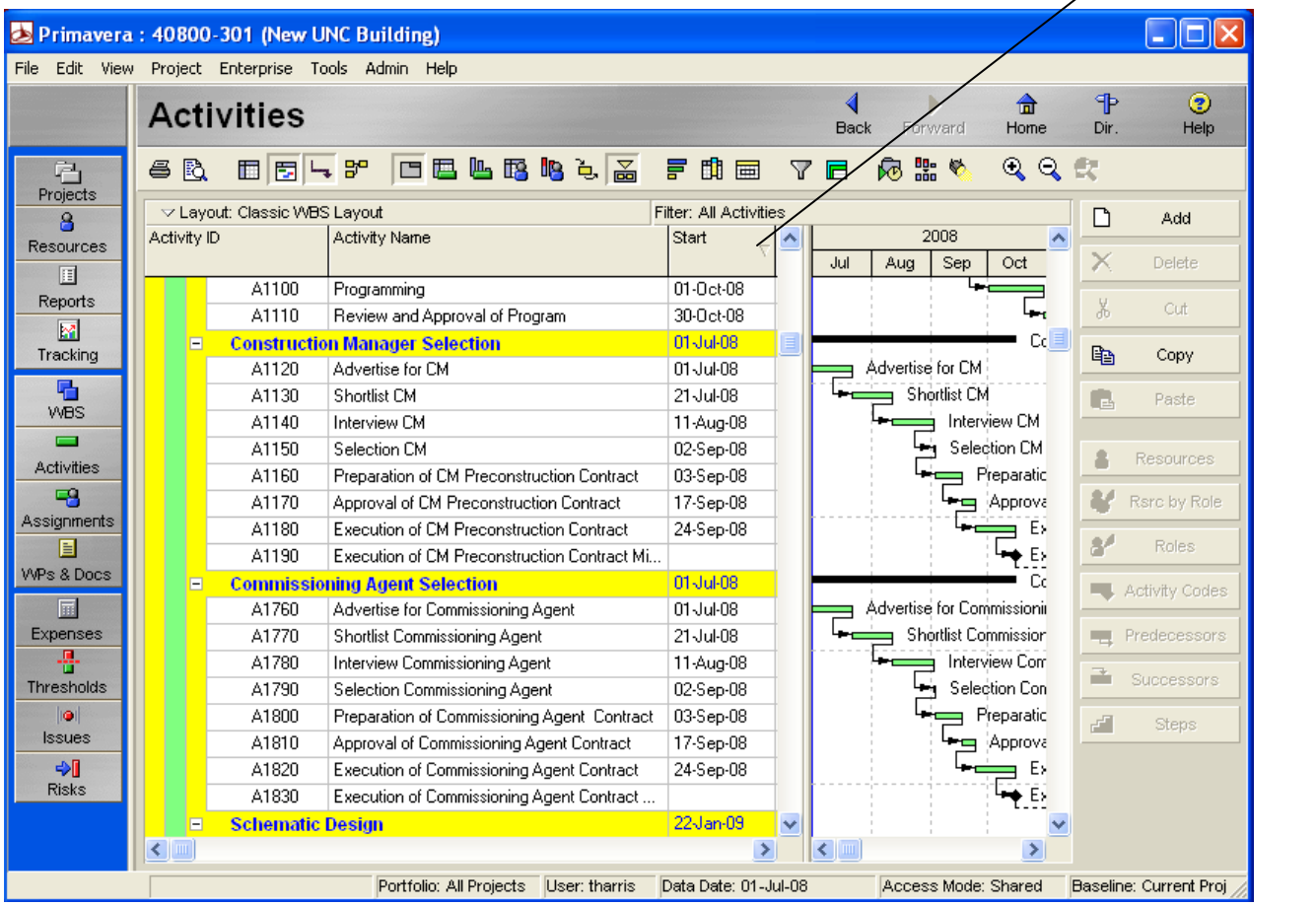
Sorting Activities

Sorting determines the sequence in which activities are listed within each group band. Based on the data item you choose, you can sort alphabetically, numerically, or chronologically.

- indicates descending sort order
- indicates ascending sort order

Sorting by a Single Criteria

To sort by single criteria, click the data item's column title.

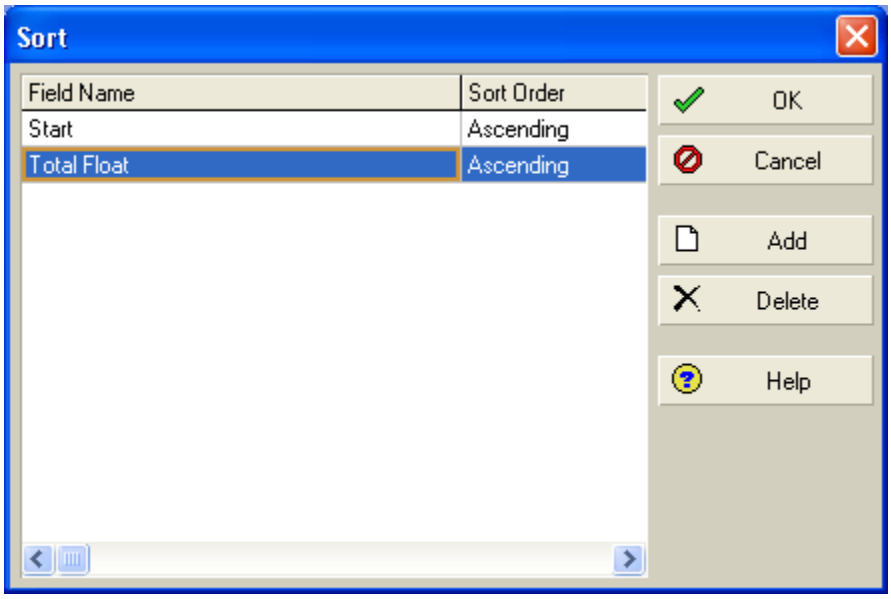


Steps:

1. From the ***Layout Options*** bar, choose **Expand All**.
2. Click on a column title **<Start>**.

Sorting by Multiple Criteria

To sort by more than one criterion at a time, open the ***Group and Sort*** dialog box and click the ***Sort*** button.



Steps:

1. From the ***Layout Options*** bar, choose ***Group and Sort***.
2. From the ***Command*** bar, click ***Sort***.
3. Verify the first sort criteria **<Start>.**
4. Click ***Add*** to specify a second sort criterion.
5. In the ***Field Name*** column, click the drop down arrow to select a data item **<Total Float>.**
6. Verify the ***Sort Order*** **<Ascending**>.
7. Click ***OK*** to close the ***Sort*** dialog box.
8. Click ***Apply*** to preview the results of your grouping selection.
9. Click ***OK*** to close the ***Group and Sort*** dialog box.

Filtering Activities

A filter is a set of instructions that determines which activities should display onscreen.

Attributes

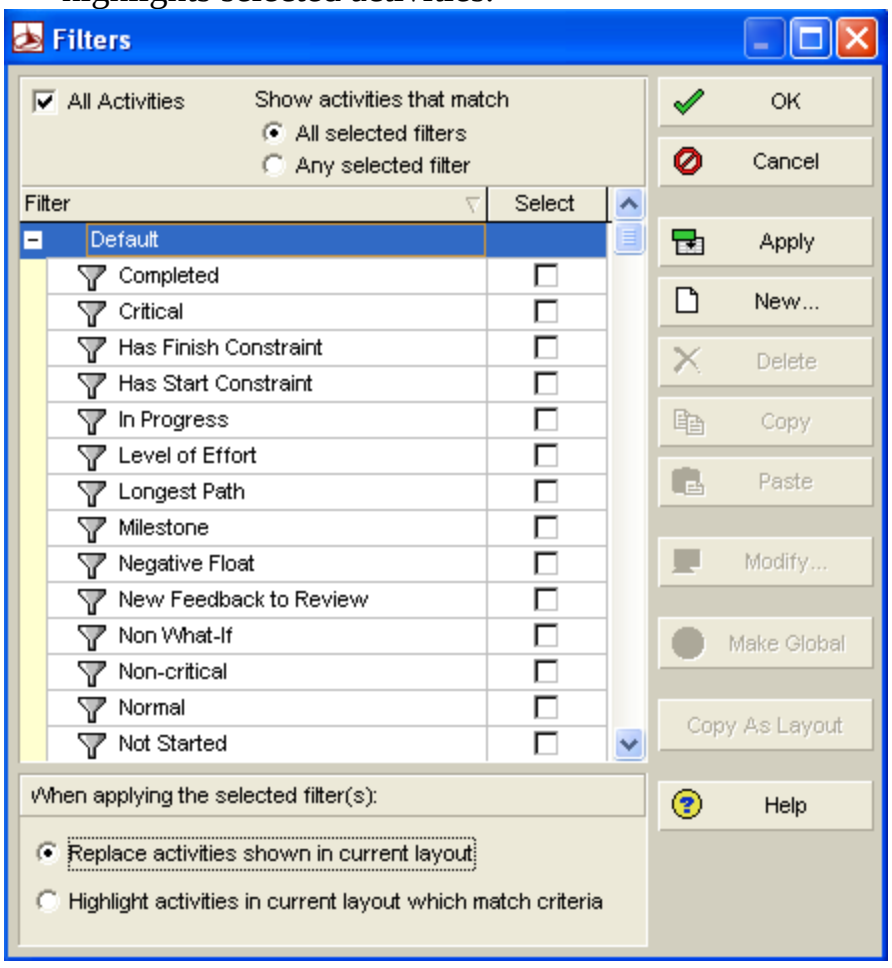
- A set of pre-defined filters is provided, as is the ability to create user defined filters of you own.
- Filters are divided into the following groupings:
  - Default
    - Available to all users
    - 14 pre-defined filters
    - Cannot be deleted or modified
  - Global
    - Available to all users
  - User Defined
    - Available to current users for all projects to which they have access
- One or more filters may be applied to a layout at a time.
- Multiple criteria for selection may be used within a single filter.
- Filter specifications can be saved and reapplied.
- Filters can be saved as part of a layout.

Benefits

- Allows the user to focus on specific data by limiting the number of activities in the layout.
- Enables the user to create and customize layouts
- Facilitates updating
- Use to analyze critical activities

Filter Dialog Box

- ***All Activities*** – mark to show all activities in the layout.
- ***Show activities that match*** – define the join between multiple filters.
  - ***All selected filters*** – include the activities that meet the criteria of each selected filter.
  - ***Any selected filter*** – include the activities that meet the criteria of at least one of the selected filters.
- ***Replace activities shown in current layout*** – displays only the activities that meet the criteria of each selected filter.
- ***Highlight activities in current layout, which match criteria*** – highlights selected activities.

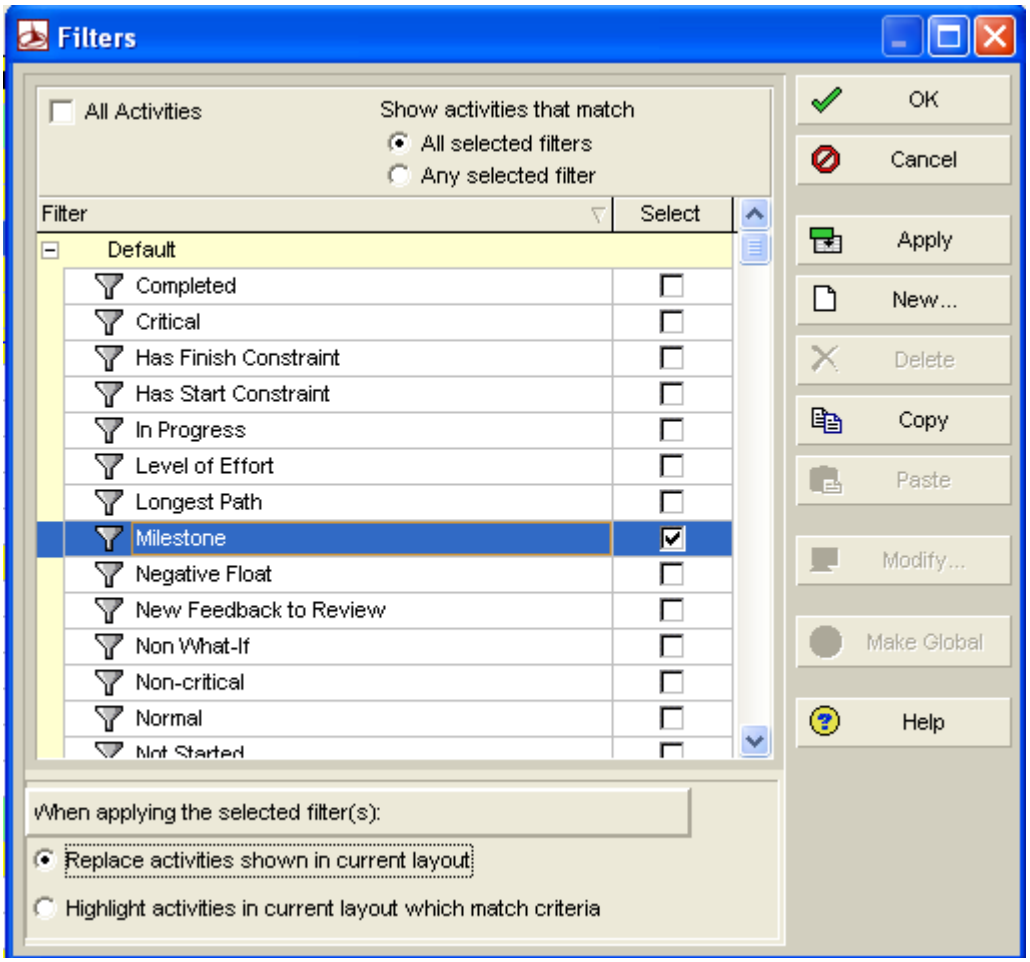


Steps:

1. From the ***Layout Options*** bar, choose **Filters**.

Applying a Default Filter

To view monitored milestones, you can run the ***Milestone*** default filter.

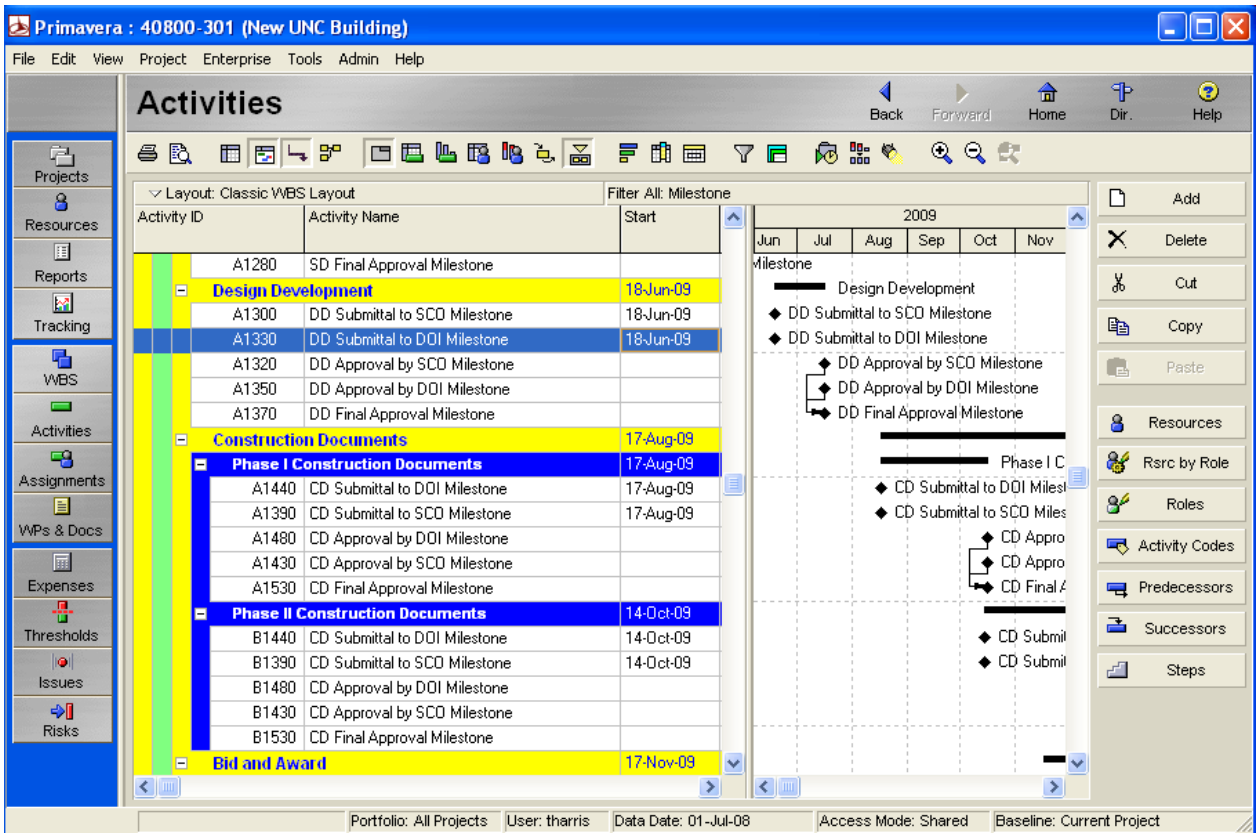


Steps:

1. Mark the checkbox in the ***Select*** column next to a filter **<Milestone>.**
2. Click ***OK*** to execute the filter.

Applying a Default Filter (continued)

The Organizing Activities layout displays only the milestone activities.

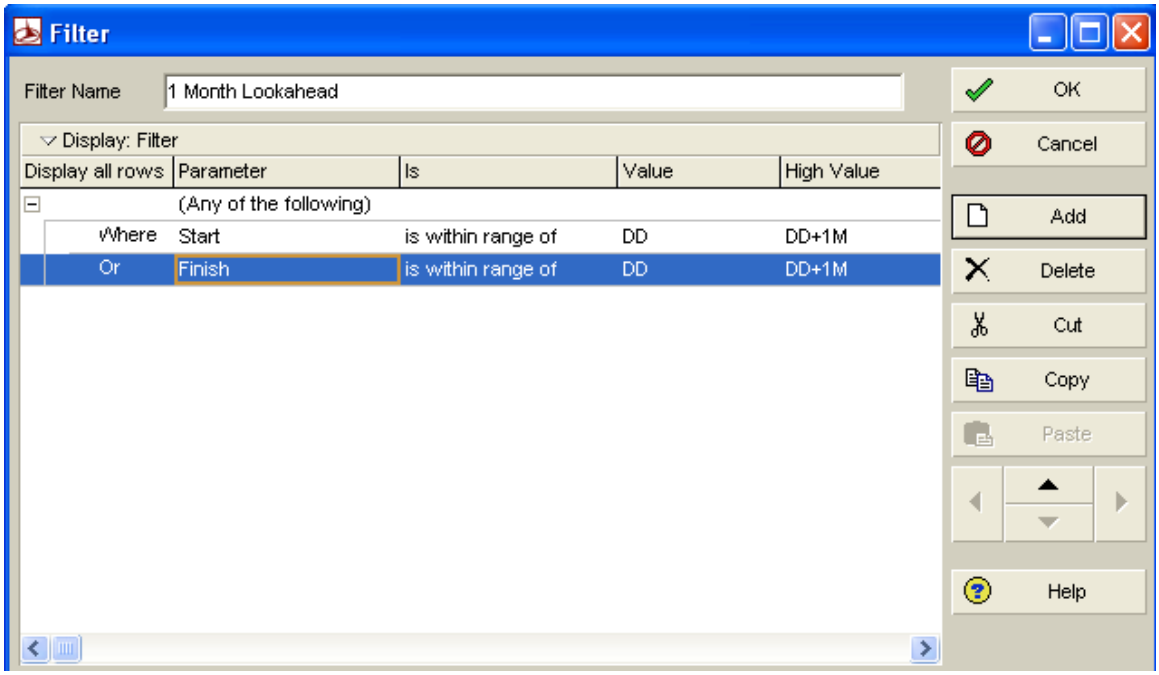


Creating Filters

P6 allows you to create filters using various levels of complexity.

Filtering by a Single Criteria

A convenient filter to use throughout the life cycle of a project is a lookahead filter. It displays the activities that are scheduled to start or finish within the given amount of time, e.g., the next 1 month.

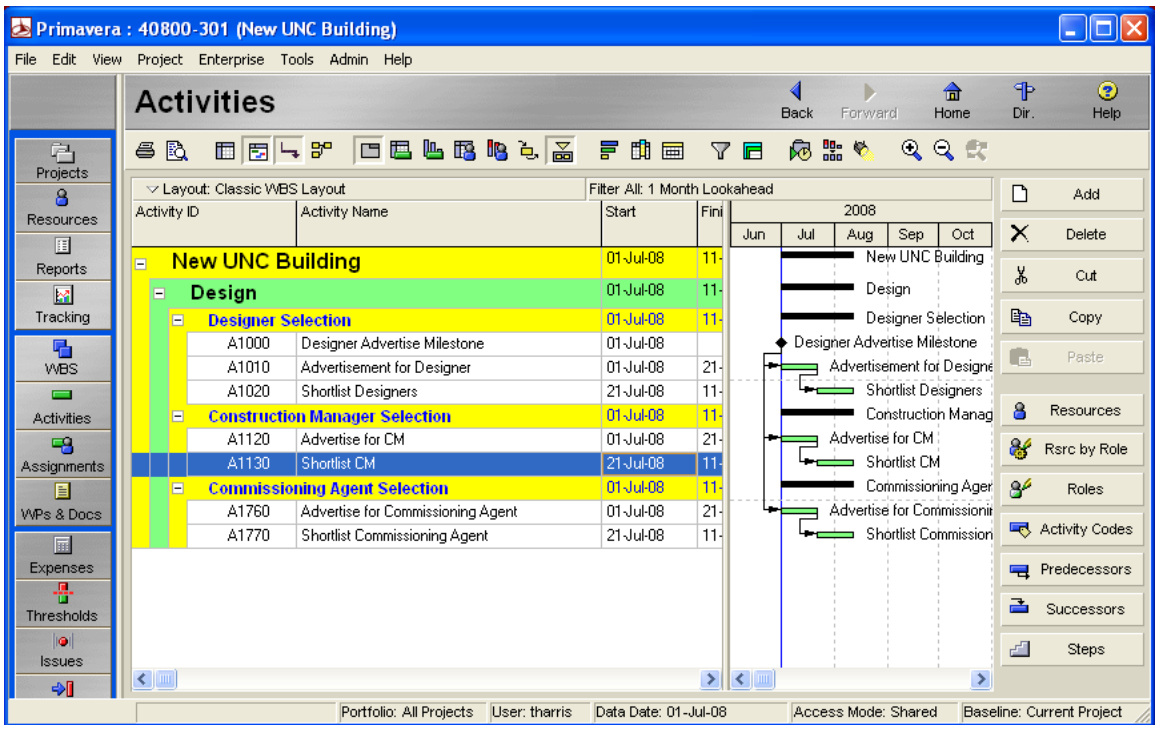


Steps:

1. From the ***Layout Options*** bar, choose **Filters**.
2. From the ***Command*** bar, click ***New***.
3. Type a ***Filter Name*** **<1 Month Lookahead>.**
4. Double-click on ***(All of the following)*** and then click on ***(Any of the following)***.
5. Click in the ***Parameter*** cell to select a data item **<Start>.**
6. Double-click in the ***Is*** cell to select a filter criteria **<is within range of>**.
7. Double-click in the ***Value*** cell to select a low date **<DD>.**

8. Double-click in the ***High Value*** cell to select a high date **<DD+1M>.**
9. Click the ***Add*** button to bring up another line.
10. Choose **<*Finish*>** for the Parameter, and duplicate the line above for other values.
11. Click ***OK*** to close the filter specification dialog box.

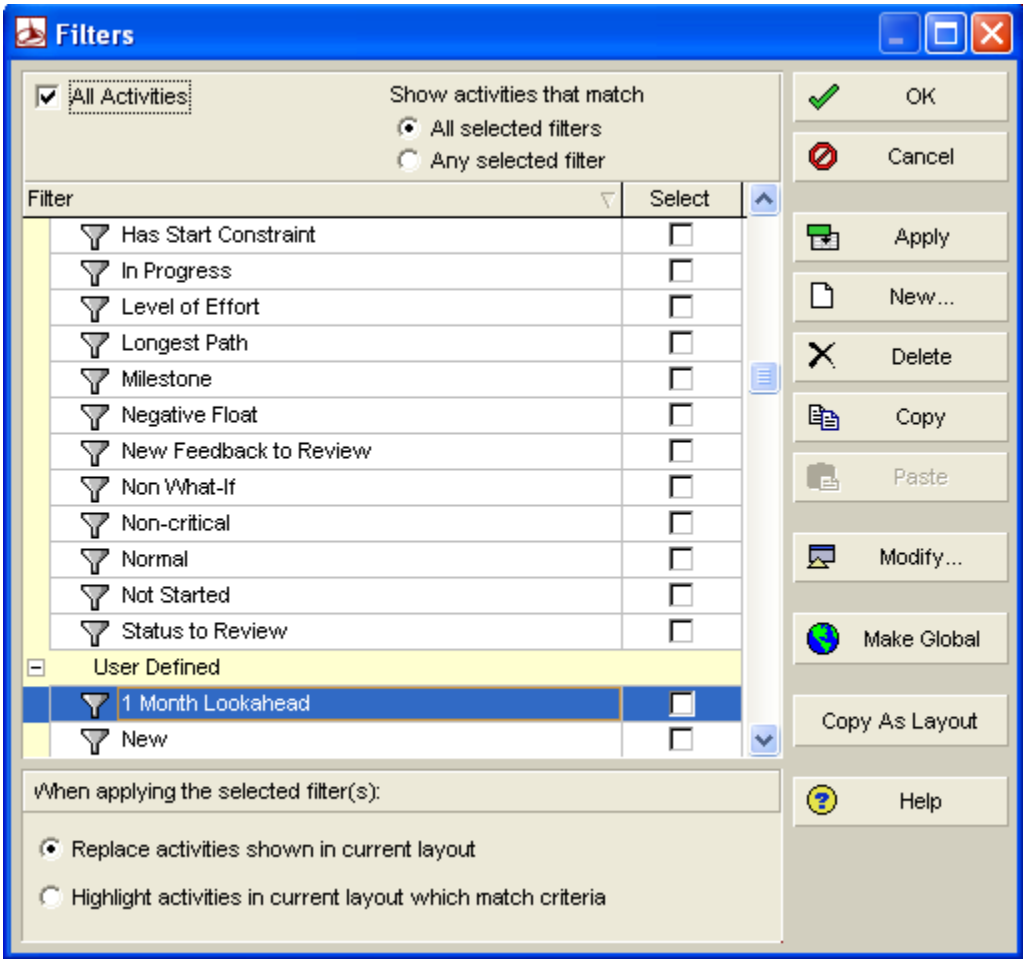
You will execute the new filter to display all activities scheduled to occur within the next month. You will save the **Layout** with a new name, 1 Month Lookahead.



12. Verify the new filter is selected **<1 Month Lookahead>.**
13. Click ***OK*** to execute the filter.
14. From the ***Layout Option*** bar, choose **Layout, Save As.**
15. Type a ***Layout Name*** **<1 Month Lookahead>.**
16. Click ***Save.***

Applying the All Activities Filter

To refresh your screen with all activities, you can run the ***All Activities*** filter.



Steps:

1. From the ***Layout Options*** bar, choose **Filters**.
2. Mark the ***All Activities*** checkbox.
3. Click ***OK*** to execute the filter.

Lesson 14

Resources and Costs

Purpose and Objectives

This lesson outlines the procedures for resource and cost management in a project plan. At the completion of this lesson you will be able to:

- Define resources.
- Describe the steps for resource management.
- View the resource dictionary.
- Assign resources to activities.
- Assign costs to activities.
- Define a resource curve.
- Assign resource curves to an activity.

Definition of a Resource

A resource is anything used to complete an activity. Resources are divided into two categories.

- Labor (people)
  - Time-based
  - Generally reused between activities/projects
  - Recorded in terms of price/unit, e.g., 8 hours/day
- Non-labor (equipment)
  - Recorded in terms of price/unit, e.g., 8hours/day
- Materials (block, stone, etc.)
  - Recorded in terms of price/unit e.g., $/cubic yard

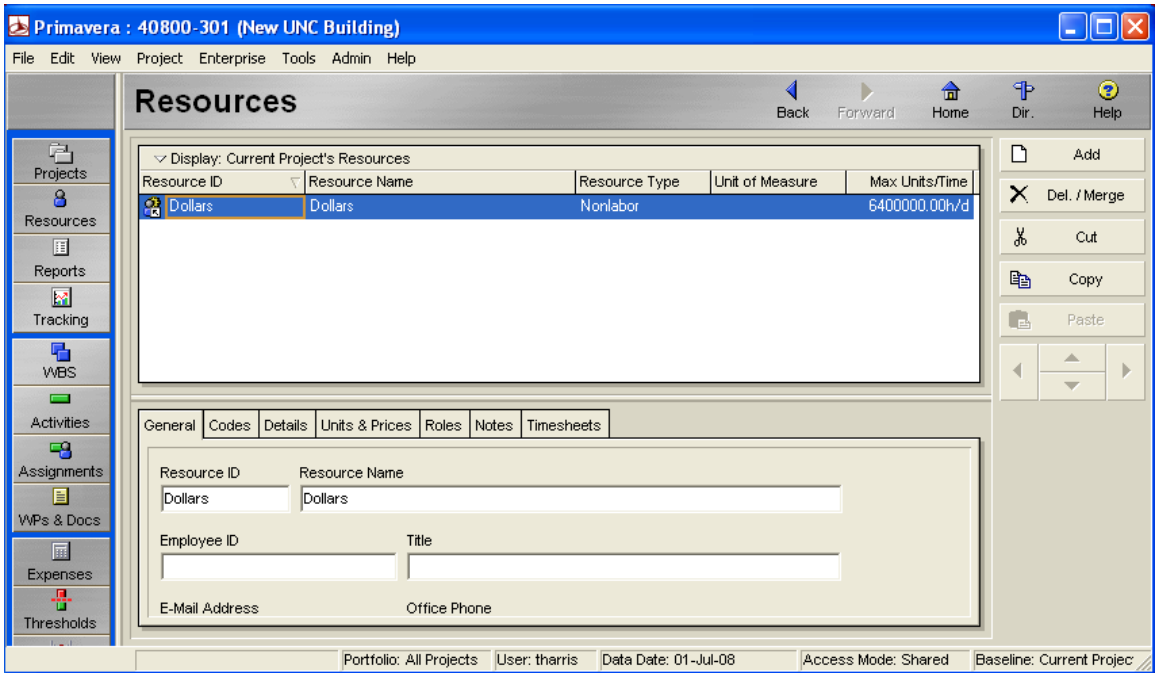
Steps for Resource Management

1. Define resources
   - In the Resource window:
     - Define resource availability.
     - Setup the resource name, description, cost, roles, and attributes that control the resource.
2. Assign resources
   - In the Activity window:
     - Enter the resource name and amount of work planned for the activity.
     - P6 calculates the cost based on the resource quantity and price/unit as defined in the Resource window.
3. Analyze resources and costs
   - In the Activities or Tracking windows:
     - Use a resource profile to view resource quantity/cost graphically, displaying when and how much of the resource will be used.
     - Use columns to view total costs.

Viewing the Resource Dictionary

The Resources window contains information about all resources within the enterprise. These resources are shared by all projects in the organization, allowing for centralized resource management. UNC's focus is on cost, not resource management, therefore, only one resource (Dollars) has been created.

Dollars are a non-labor resource and will not be tracked for man-hour utilization.



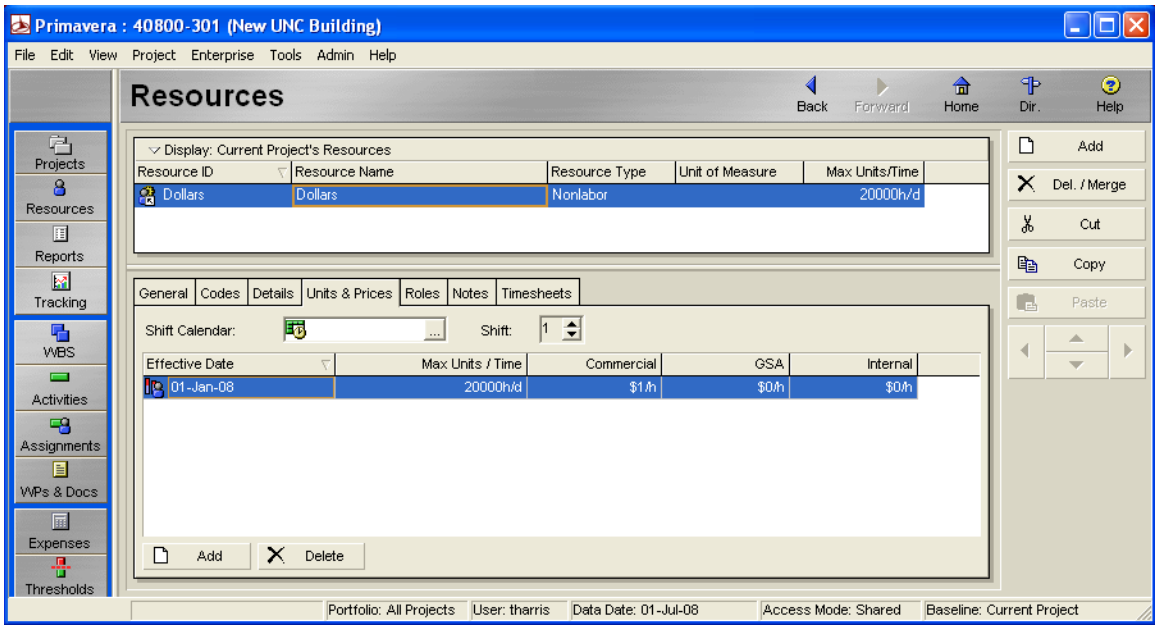
Steps:

1. From the Directory bar, click **Resources**.
2. Select a resource **<Dollars>.**

Units & Prices Tab

This tab enables you to set prices and availability according to time.

- **Price/Unit –** sets the resource's price for a single work unit, according to the effective date. UNC uses $1/hour. This will make non-labor units and cost equal for the resource.

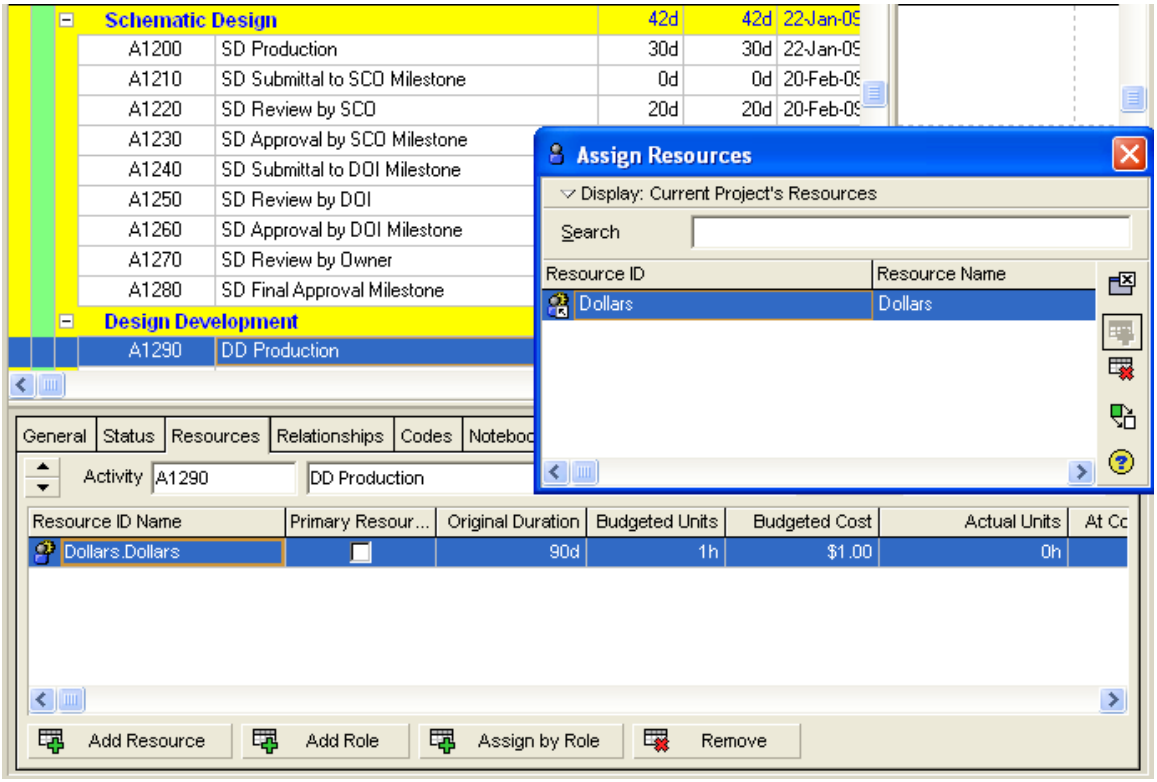


Assigning Resources

Add Resource

An unlimited number of resources can be assigned to an activity. The same resource can be assigned to an activity more than once if this function is not turned off on the Resource tab on the Project Details screen.

Activities will need to be separated for activities funded from different sources. We will use both activity codes and cost account codes to enable tracking of the COPS funded projects.



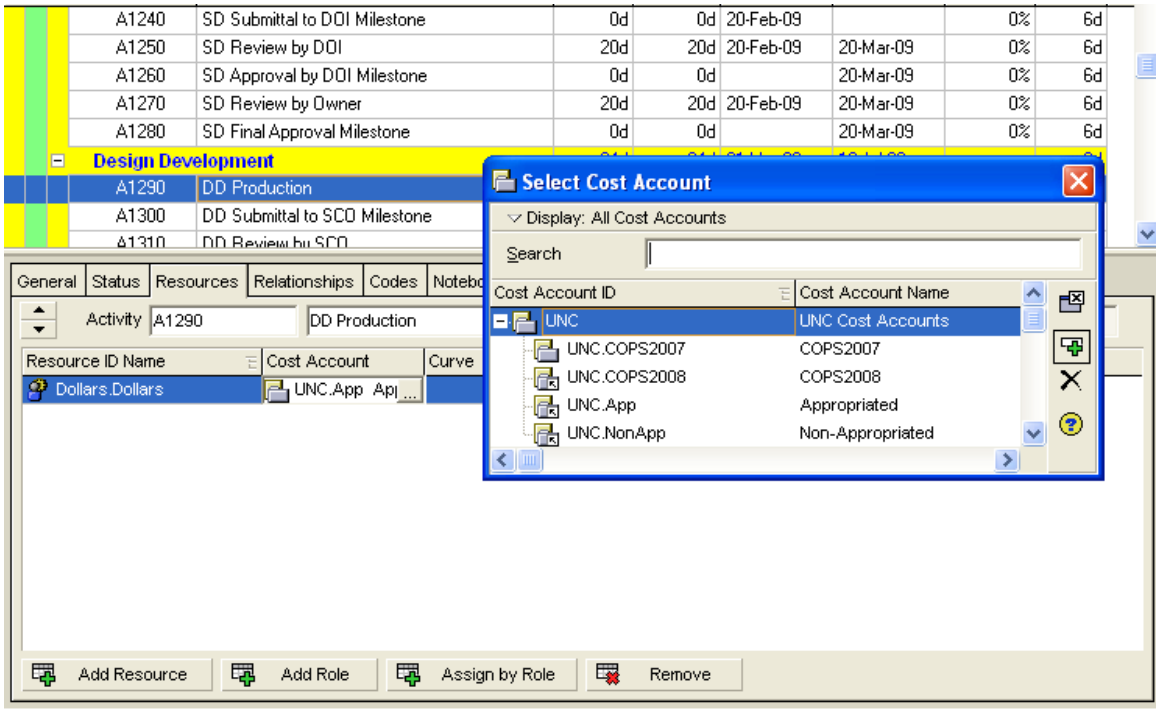
Steps:

1. Select an activity **<A1290 – DD Production>**.
2. From the ***Resource*** tab, click ***Add Resource***.
3. Assign **Dollars**.
4. Close the ***Assign Resources*** dialog box.

Assign a Cost Account Code

Assigning a Cost Account Code will enable the Bond 2000 budget to be tracked separately on tabular reports.

The Cost Account Code is assigned at the resource level on an activity.

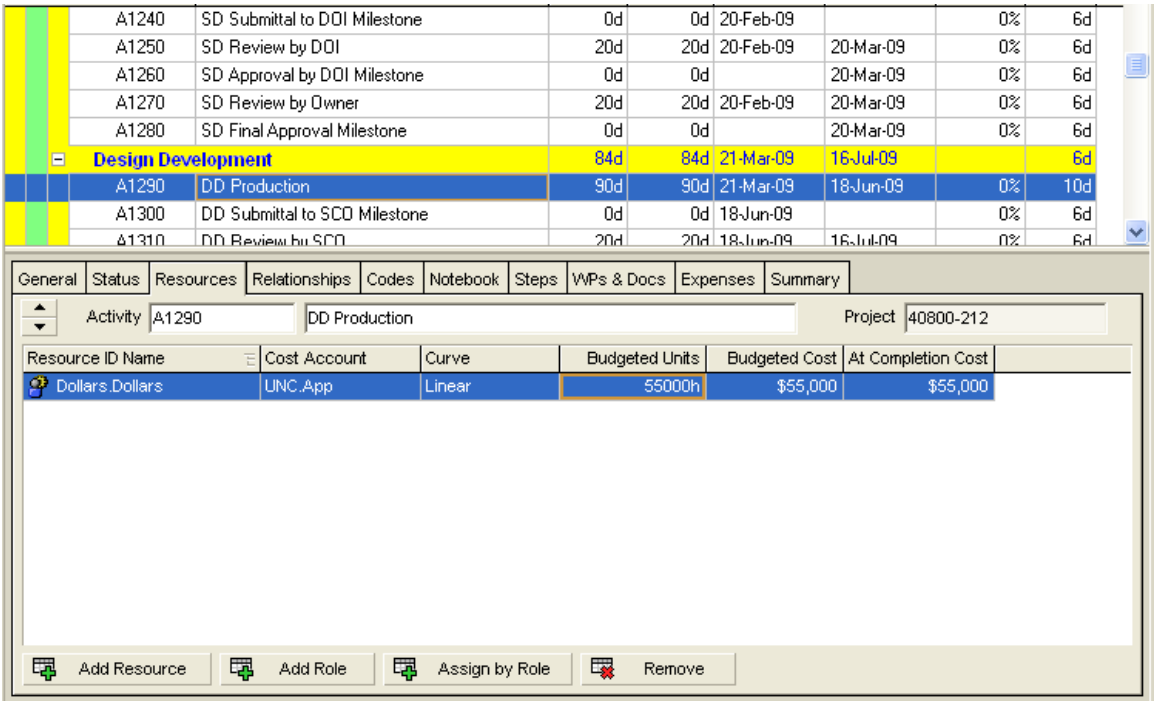


Steps:

1. Click two times in the Cost Account Column on the Resource tab.
2. Select ***App*** and click  to assign.

Assign a Budget to an Activity

To assign a budget to an activity you must adjust the Budgeted Units.



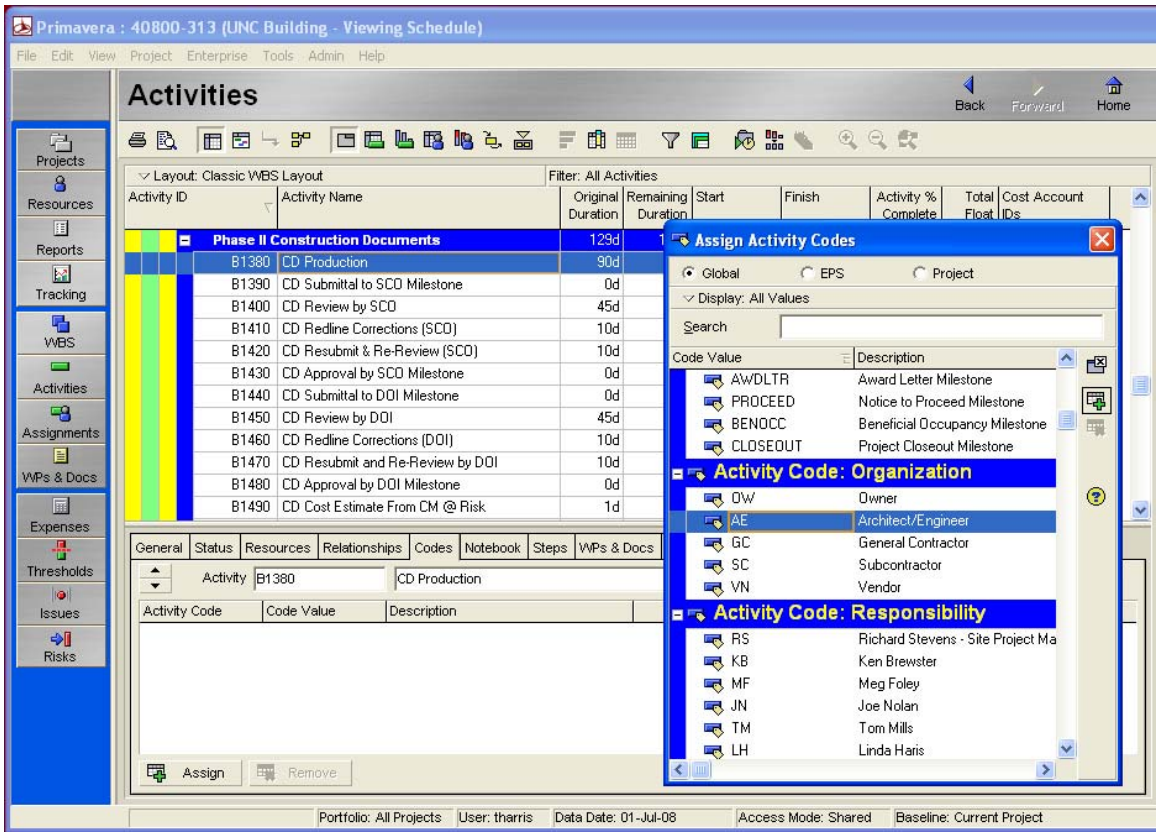
Steps:

1. Click in the *Budget Units* column on the ***Resource*** tab
2. Type in **Budget <55000>.**

Note: Cost is adjusted to match units.
Budgeted Units x Price/Unit = Budgeted Cost

Assigning Activity Codes

Currently the only activity code that is used for all projects are the UNC Milestones code. These are used to track milestones in the schedule, primarily for reporting purposes. If you use the templates, these codes are already assigned to the appropriate activities. Do not delete them from Bond or COPS projects.



Steps:

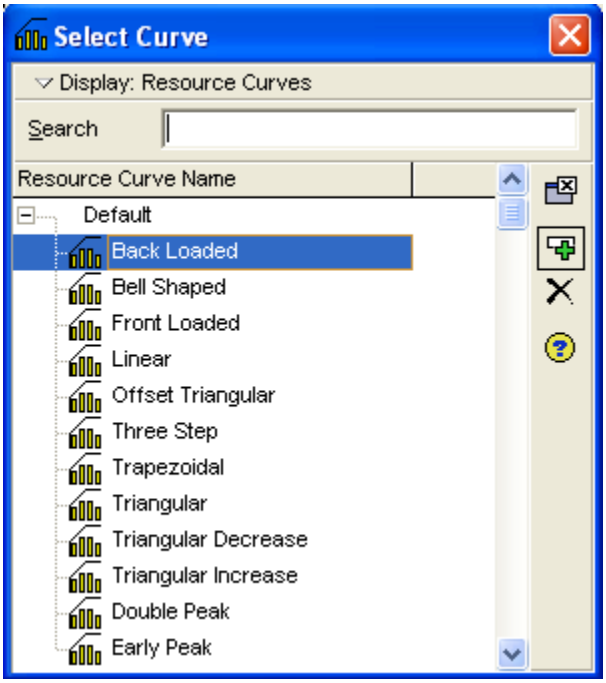
1. Click on the ***Codes*** tab
2. Click ***Assign*** on the ***Codes*** tab
3. Select **AE** and click .

Resource Curves

Resource curves are used to better project the distribution of resource units or costs over a long activity. Several standard Resource Curves are pre-built into the system. By default P6.1 distributes units and cost linearly across an activity.

Selected users can build their own Resource Curves. Resource Curves are not protected at the user level; therefore, users must be responsible not to modify other user's curves.

Viewing Resource Curves

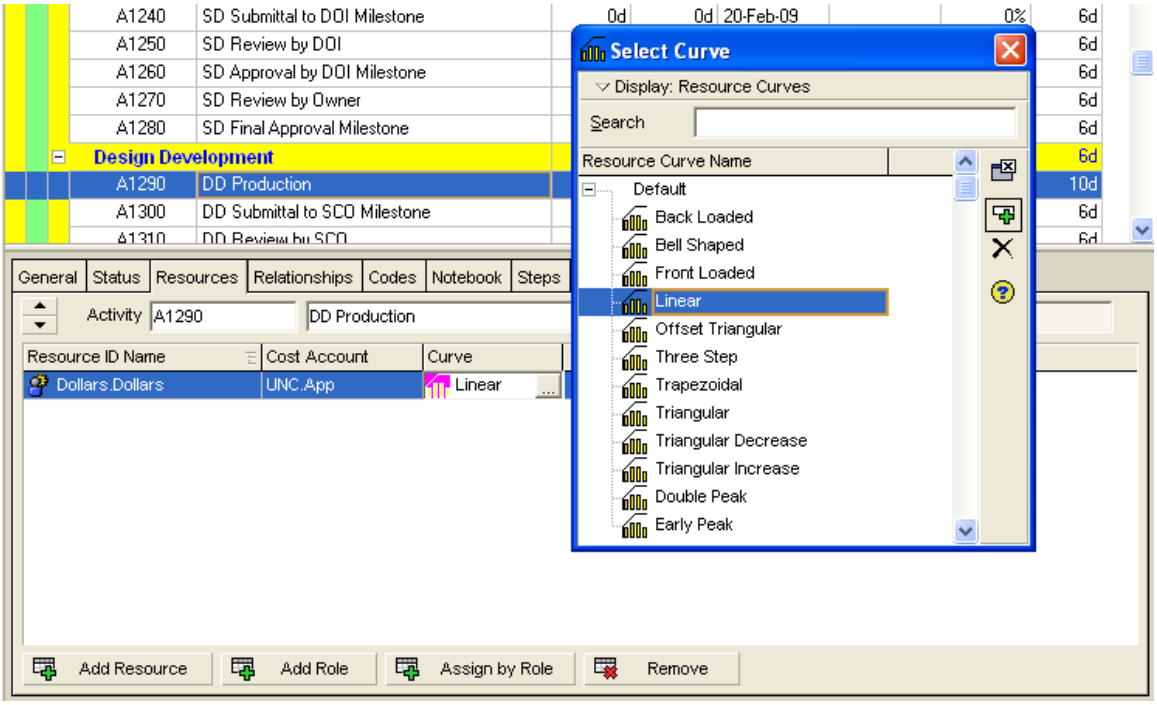


Steps:

1. From the ***Menu bar***, select **Enterprise, Resource Curves**

Adding Resource Curves

The design and construction activities in our schedule are long and have enough cost to warrant a more accurate method of distributing our cost. You will need to assign costs to the Construction Phase activities, and assign a Bell Shaped curve to each.



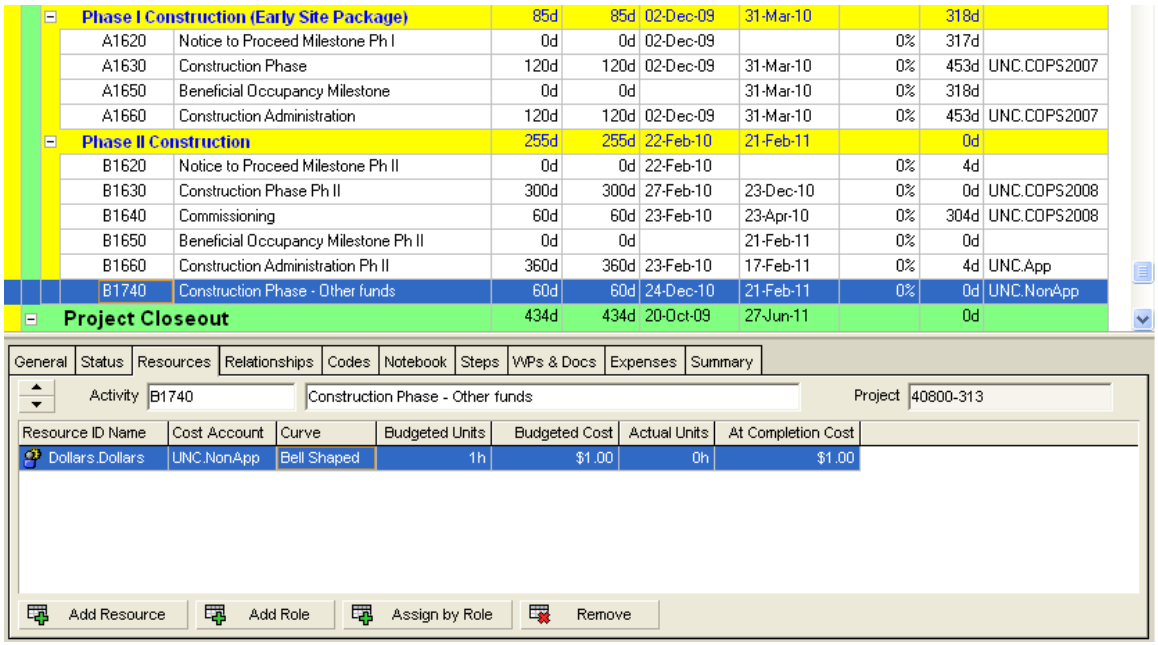
Steps:

1. Double click in the ***Curve*** column
2. Select **Linear** and click  .

Mixed Funding Projects

Projects with mixed funding will need to be managed in the following way.

- **Activities with multiple funding** – will be broken into two (2) activities.
- **Dollars** – will be associated with each activity and have the following for each:
  - Cost Accounts
  - Budgeted Units
  - Curves
  - Durations



Phase I Construction (Early Site Package)		85d	85d	02-Dec-09	31-Mar-10		318d	
A1620	Notice to Proceed Milestone Ph I	0d	0d	02-Dec-09		0%	317d	
A1630	Construction Phase	120d	120d	02-Dec-09	31-Mar-10	0%	453d	UNC.COPS2007
A1650	Beneficial Occupancy Milestone	0d	0d		31-Mar-10	0%	318d	
A1660	Construction Administration	120d	120d	02-Dec-09	31-Mar-10	0%	453d	UNC.COPS2007
Phase II Construction		255d	255d	22-Feb-10	21-Feb-11		0d	
B1620	Notice to Proceed Milestone Ph II	0d	0d	22-Feb-10		0%	4d	
B1630	Construction Phase Ph II	300d	300d	27-Feb-10	23-Dec-10	0%	0d	UNC.COPS2008
B1640	Commissioning	60d	60d	23-Feb-10	23-Apr-10	0%	304d	UNC.COPS2008
B1650	Beneficial Occupancy Milestone Ph II	0d	0d		21-Feb-11	0%	0d	
B1660	Construction Administration Ph II	360d	360d	23-Feb-10	17-Feb-11	0%	4d	UNC.App
B1740	Construction Phase - Other funds	60d	60d	24-Dec-10	21-Feb-11	0%	0d	UNC.NonApp
Project Closeout		434d	434d	20-Oct-09	27-Jun-11		0d	

General | Status | Resources | Relationships | Codes | Notebook | Steps | WPs & Docs | Expenses | Summary

Activity B1740 — Construction Phase - Other funds — Project 40800-313

Resource ID Name	Cost Account	Curve	Budgeted Units	Budgeted Cost	Actual Units	At Completion Cost
Dollars.Dollars	UNC.NonApp	Bell Shaped	1h	$1.00	0h	$1.00

Add Resource | Add Role | Assign by Role | Remove

Workshop 3
Assigning/Adjusting Resources and Costs

Since we used a template to build our project, the Resources have already been assigned to the necessary activities. We will need to modify the budgeted cost, set the cost account, assign activity codes, and adjust curves where necessary.

Follow the table below to complete resource information in this project.

Act ID	Bud Cost	Cost Account	Curve
A1100	$30,000	App	Back Loaded
A1200	$35,000	App	Linear
A1290	$55,000	App	Linear
A1380	$35,000	App	Linear
B1380	$70,000	App	Linear
B1490	$70,000	COPS2008	Back Loaded
A1630	$500,000	COPS2008	Bell Shaped
A1660	$20,000	COPS2008	Linear
B1630	$8,540,000	COPS2008	Bell Shaped
B1660	$120,000	COPS2008	Linear
B1740	$1,200,000	Nonapp	Front loaded
B1680	$700,000	COPS2008	Front Loaded
B1750	$150,000	COPS2008	Back Loaded

Lesson 15

Analyzing Resources and Costs

Purpose and Objectives

This lesson describes various methods for analyzing resources and costs in a project plan. At the completion of this lesson, you will be able to:

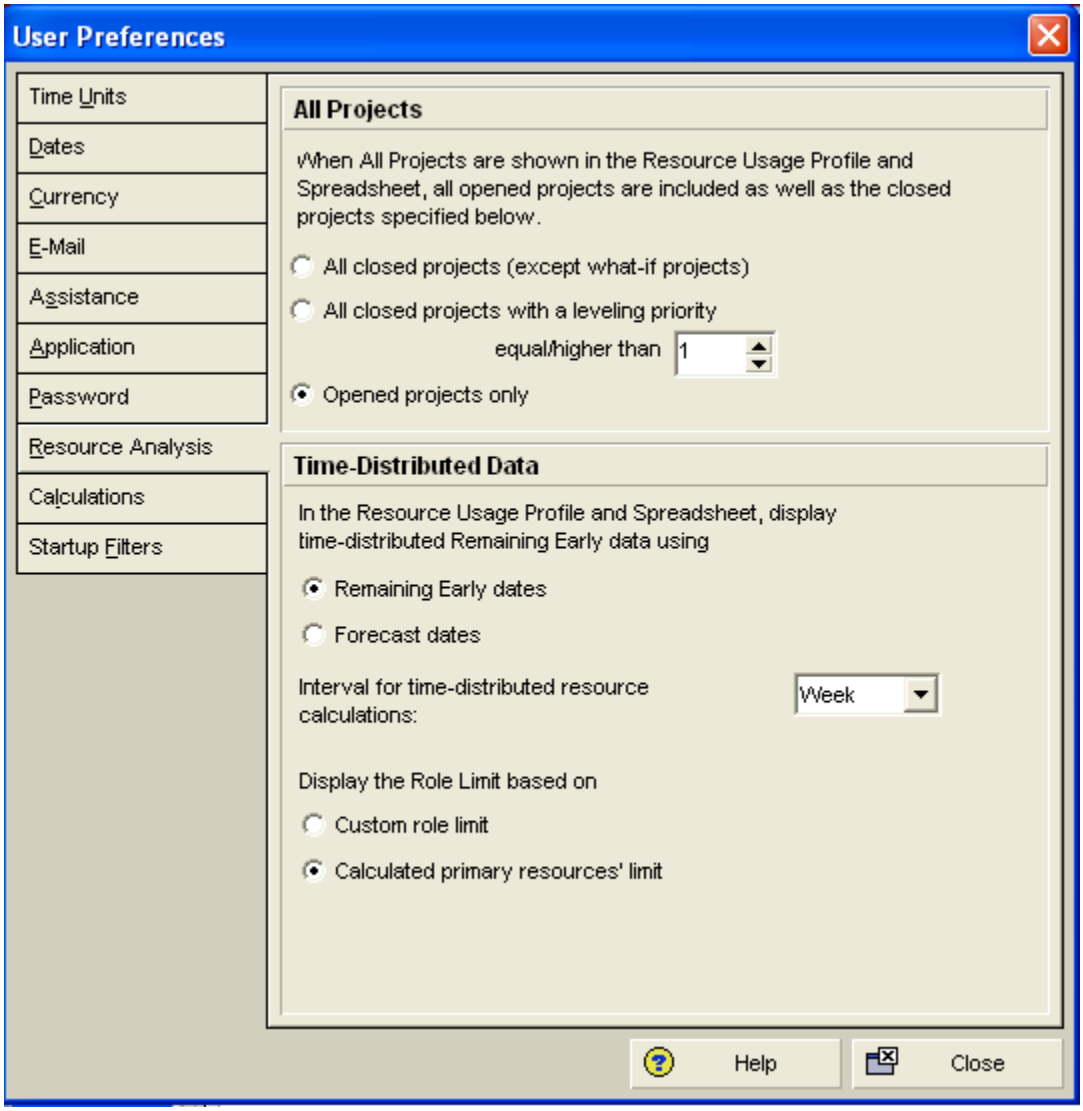
- Display a resource usage profile
- Format a resource usage profile
- Display a cost profile
- Format the timescale
- Display a resource usage spreadsheet
- Format columns to view project costs.

Resource Analysis Settings

Each user can determine the level of detail displayed on resource/cost usage profiles/spreadsheets.

- *All Projects*
  - *All closed projects* – select to display resource/cost usage across all projects that have been summarized in the EPS.
  - *Opened projects only* – select to focus on resource/cost usage in the projects currently opened onscreen.
  - Since UNC is using the same resource across all institutions **Open Projects Only** should be used for all individual use.

- *Time-Distributed Data*
  - Display data based on remaining Early or Forecast dates
  - Select the time interval for storing live resource allocations: Day, Week, or Month.



Steps:

1. Choose **Edit, User Preferences**.
2. Click the *Resource Analysis* tab.
3. Select *Opened projects only*.
4. Click *Close.*

Resource Usage Profile

Resource usage profiles provide a graphical view of unit/cost distribution over time. They display the amount of effort needed from each resource/role on the project during each time period.

Attributes

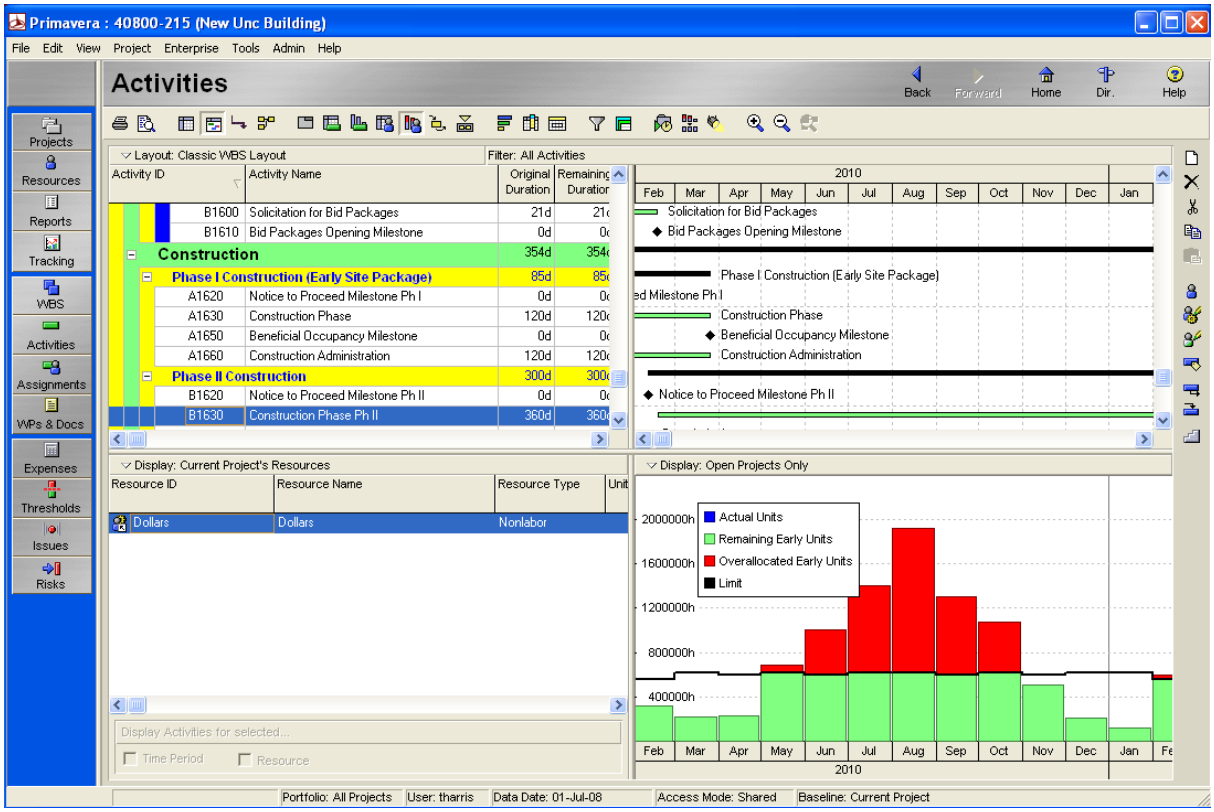
- View unit/cost distributions from a specific project or across all projects in the EPS.
- View resource or role allocations
- Can display separate bars for one or all of the following
  - Budgeted units/costs
  - Actual units/costs
  - Remaining Early units/costs
  - Remaining Late units/costs
- The resource usage profile timescale matches the timescale provided in the Gantt Chart.
- Format columns, group, sort, and filter resources/roles in the profile.
- The resource usage profile can be saved as part of a layout.

Benefits

- Determine how many hours each resource/role is scheduled to work.
- Identify overallocated resources
- Track expenditures per time period
- Display a “banana” curve to compare early and late dates

Displaying the Units Profile

You can use resource usage profile information to determine the distribution of costs over an activity, project, group of projects, or your entire institution.



Steps:

1. In the activities window, open a layout <**Classic WBS Layout**>
2. From the *Layout Options* bar, choose **Show on Bottom, Resource Usage Profile**.

Displaying the Units Profile (continued)

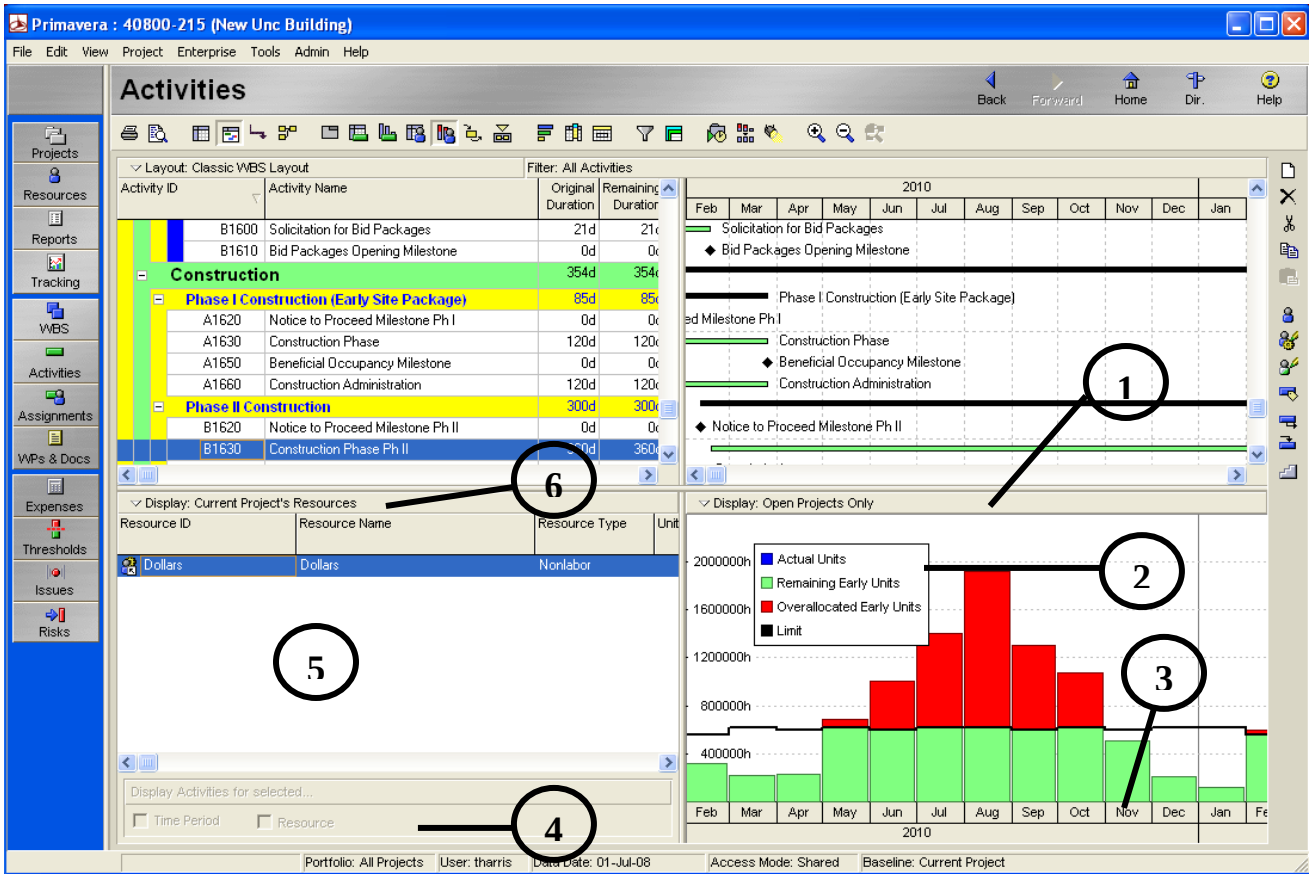


Table 4: Resource Usage Profile

1. **Right Pane Display Options bar** – menu of the formatting options for the resource profile	4. **Display Activities for selected** – for use when view Open Project only
2. **Legend** – Can be move or turned off	5. **Resource Hierarchy** – list available resources.
3. **Timescale** – adjust date intervals.	6. **Left Pane Display Options bar** – menu of formatting options for resource hierarchy.

Formatting the Profile

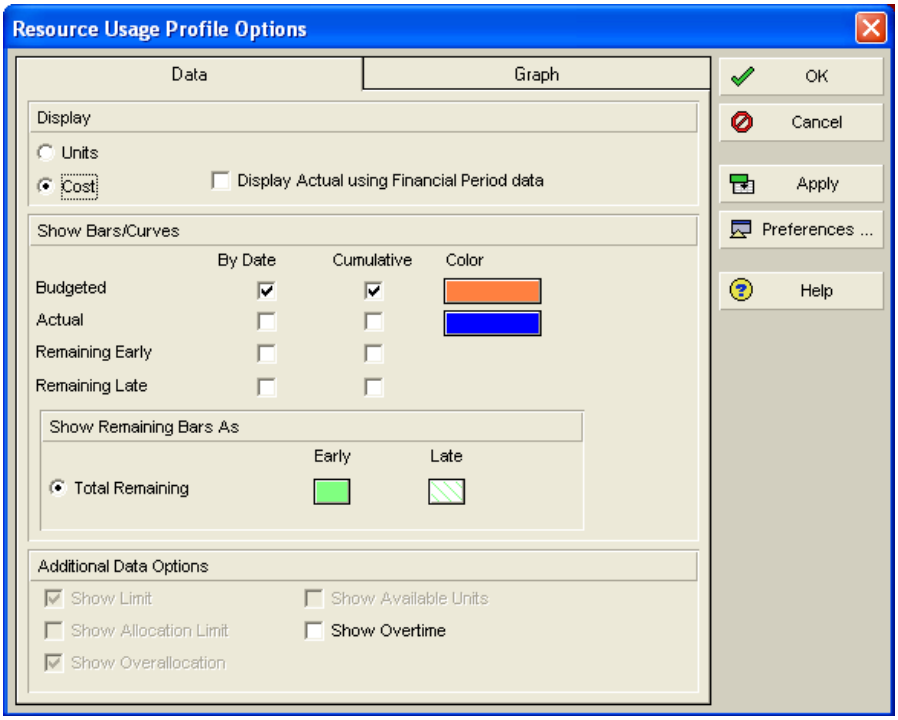
All aspects of the resource usage profile can be modified by adjusting the settings in the *Resource Usage Profile Options* dialog box.

Data Setting

- *Display* – select to display units or costs.
- *Show Bars/Curves* – mark to display *By Date* (periodic) bars and/or *Cumulative* curves and format their colors.

Note: If *Show All Projects* is marked, different color bars can be displayed to distinguish open projects from closed projects.

- *Additional Data Options* – mark to display a line indicating resource limits, resource/role overallocation in red, a line indicating resource availability, or resource overtime units.

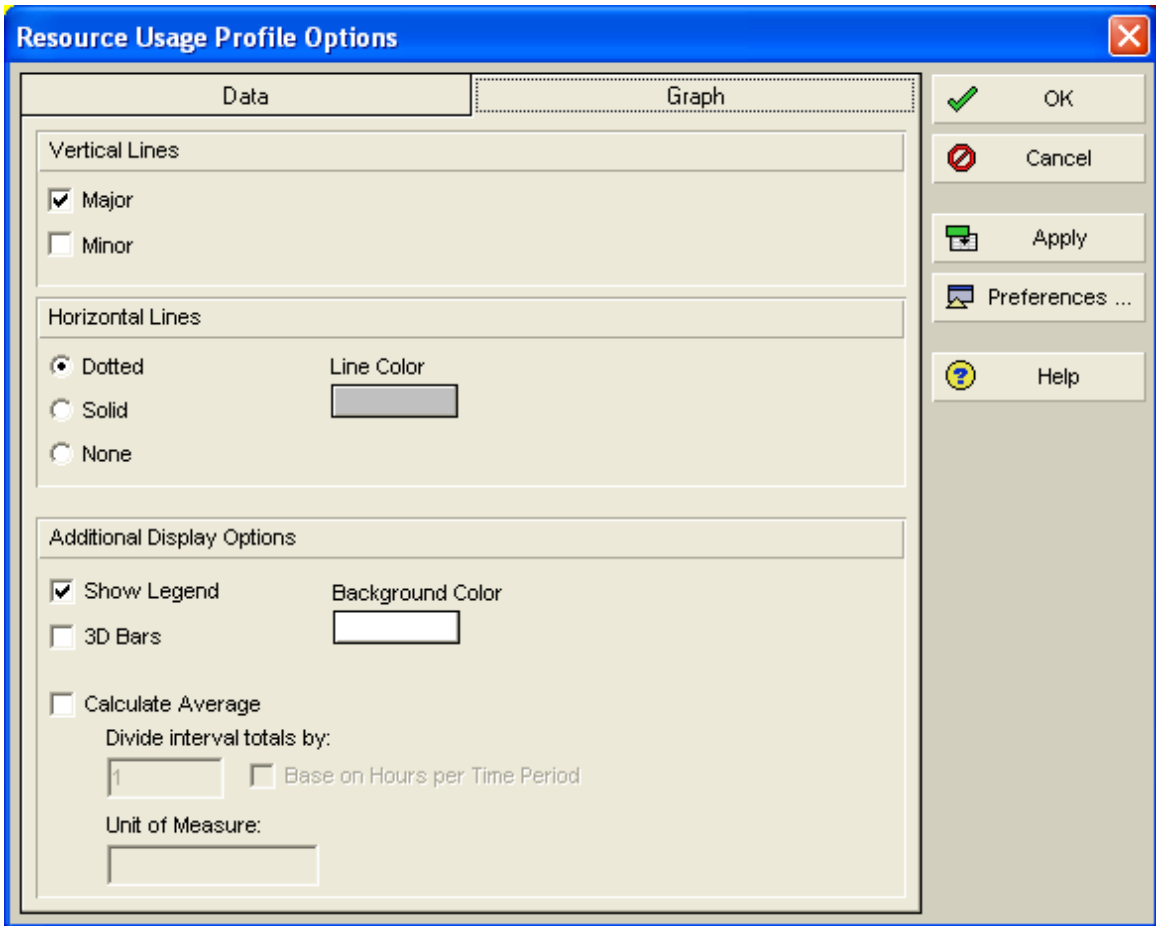


Steps:

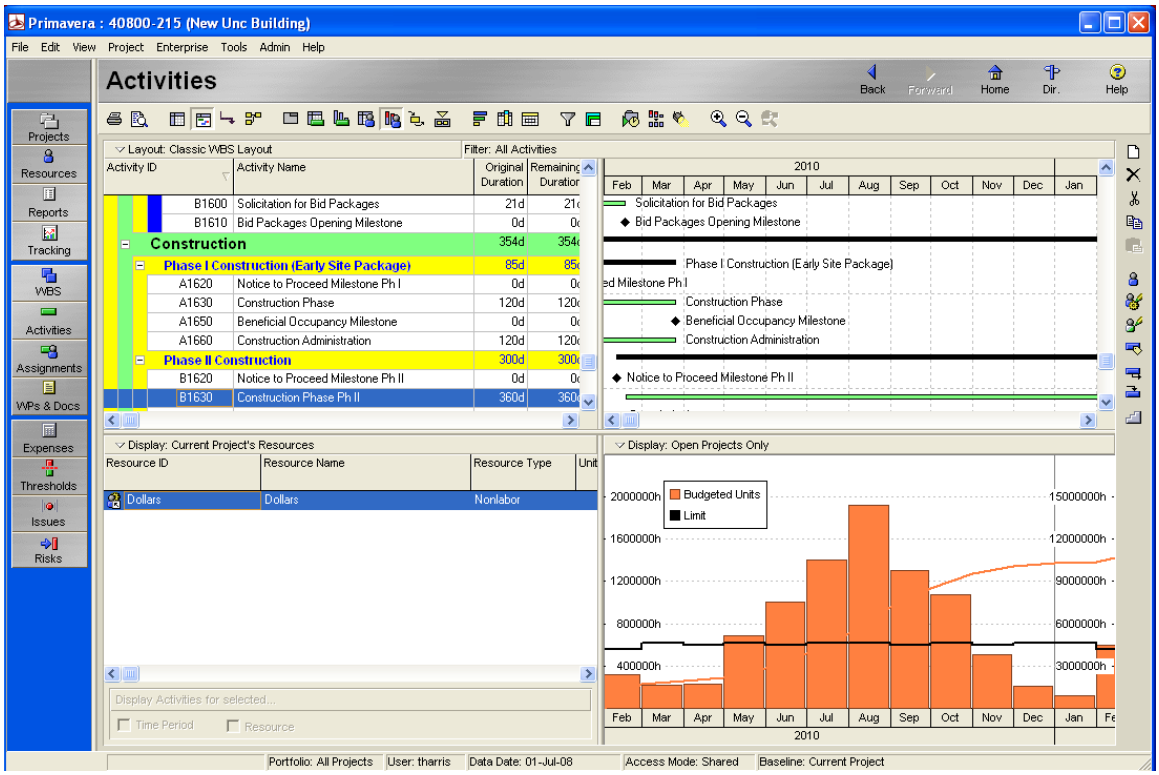
1. From the right pane *Display Options* bar, choose **Resource Usage Profile Options**.
2. Select *Cost* and *Budgeted Bars and Cumulative*

Graph Setting

- *Vertical Lines* – choose to display major/minor sight lines based on the timescale interval.
- *Horizontal Lines* – choose the line style and color.
- *Additional Display Options*
  - *Show Legend* – display the data item each color represents.
  - *3-D Bars* – add a third dimension to the bars.
  - *Background Color* – specify the color displayed in the background of the resource usage profile.



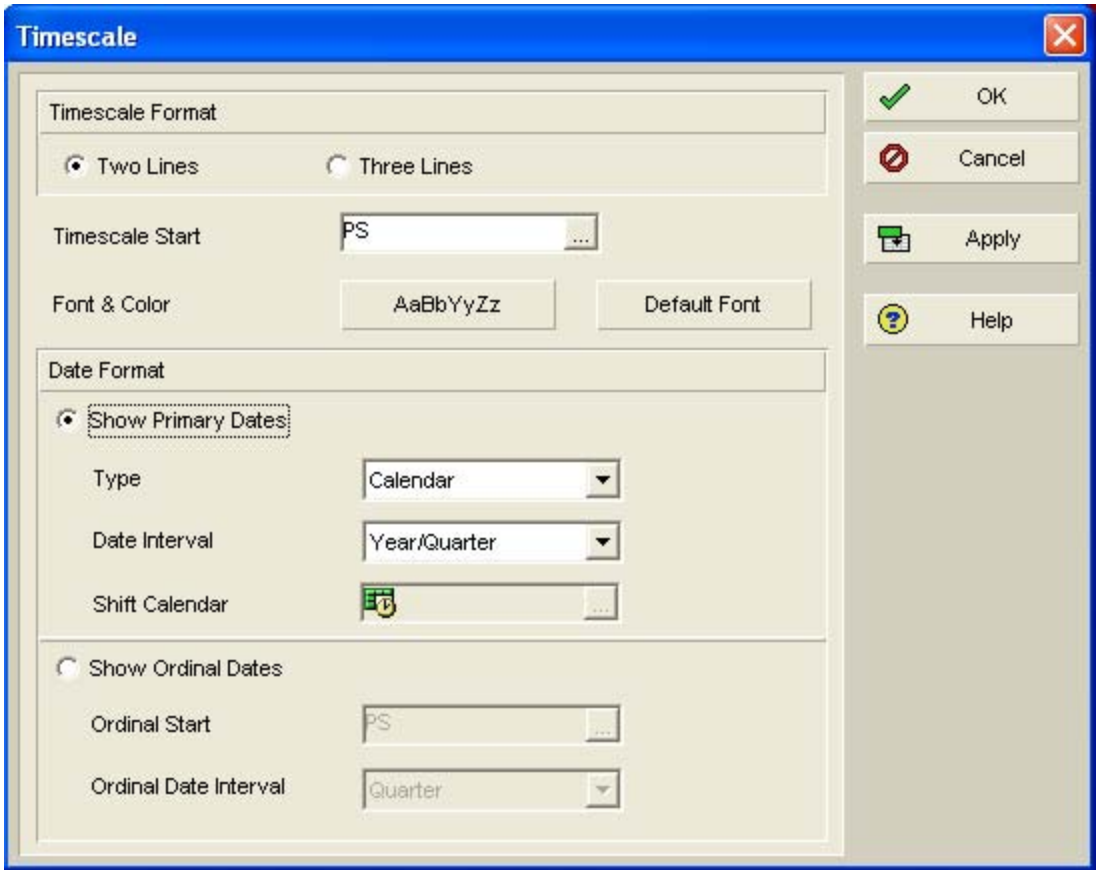
Displaying the Cost Profile



Formatting the Timescale

You can specify the timescale you want to display in the resource usage profile and the Gantt Chart.

- *Timescale Start* – specify the date from which the timescale should start for the profile or Gantt Chart
- *Date Interval* – choose the units of the timescale in years, quarters, months, weeks, days, hours, and shifts
- *Date Format* – select the format in which to display date intervals: Calendar, Fiscal, Week of the Year, or Ordinal Dates



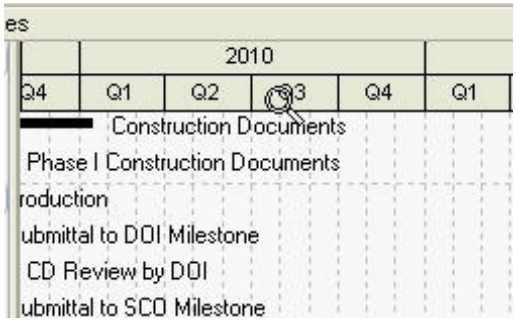
Steps:

1. From the right pane *Display Options* bar, choose **Timescale**.
2. Verify the *Type*
3. Choose a *Date Interval*, select **Year/Quarter**
4. Click *OK*.

Formatting the Timescale (continued)

You can also format the timescale by using click and drag in the timescale onscreen.

- Place your mouse on the minor date interval on the timescale. Click and drag to expand or contract the timescale.



- Place your mouse on the major date interval on the timescale (the cursor will change to a hand). Click and drag to move the entire timescale.

Lesson 16

Optimizing the Project Plan

Purpose and Objectives

This lesson illustrates techniques used to optimize a project plan, including shortening the schedule, removing overallocation, and analyzing the budget. At the completion of this lesson, you will be able to:

- Analyze schedule dates.
- Analyze project costs

Analyzing the Project

Once you have created the project plan, verify that it meets the project stakeholder' date, resource, and cost requirements. If a disconnect exists between the information in the project plan and the project requirements, you will be able to identify the source of the problem and define a solution.

Analyzing Schedule Dates

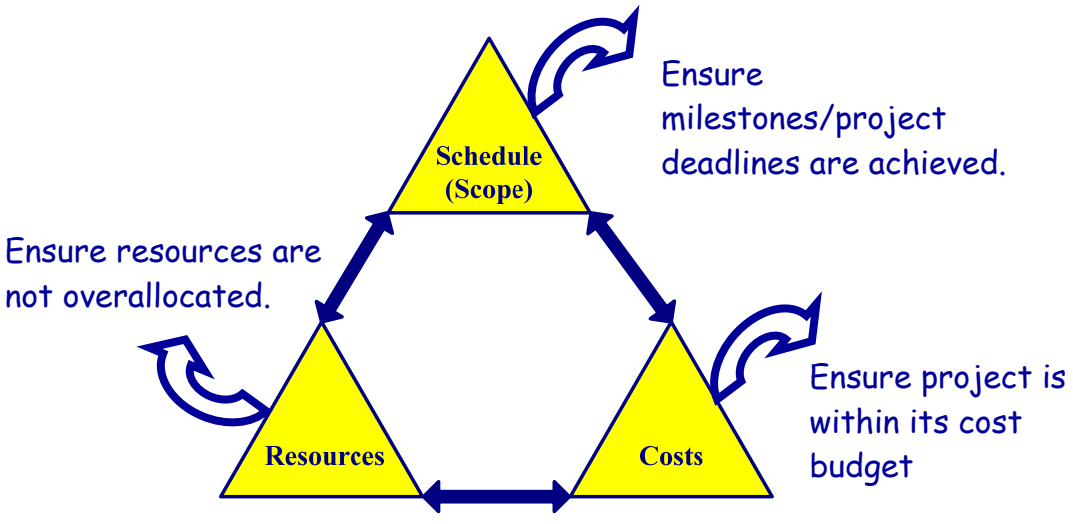
Evaluate the schedule to ensure that milestone dates and project dates are achieved.

Analyzing Resource Allocation

Evaluate the resources to ensure that the resources are not overallocated.

Analyzing Cost Budget

Evaluate the costs to ensure that the project is within its cost budget.



Analyzing Schedule Dates

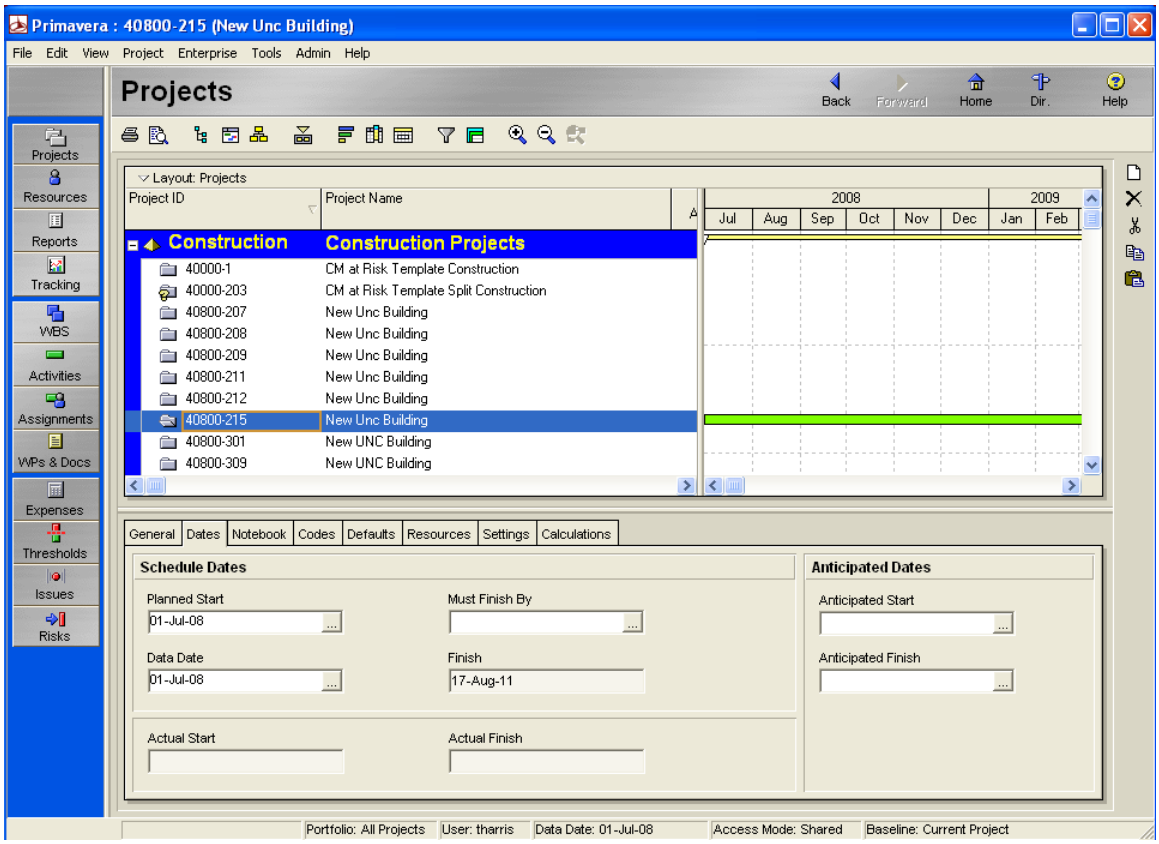
The most important date in the schedule is the calculated project finish date. If the calculated finish date of the project is beyond the required project finish date, the project must be shortened. In addition, each deliverable in the project should be scheduled to finish by the dates imposed by the project stakeholders.

Steps for Analysis

- Compare the calculated finish to the Must Finish By date.
- Copy the project.
  - Use the copy for what-if analysis or to keep as a backup.
- Focus on critical activities.
- Shorten the project.

Compare the Finish Date to the Must Finish By Date

You can quickly determine whether the project will finish on time by viewing Dates tab in the Project window.

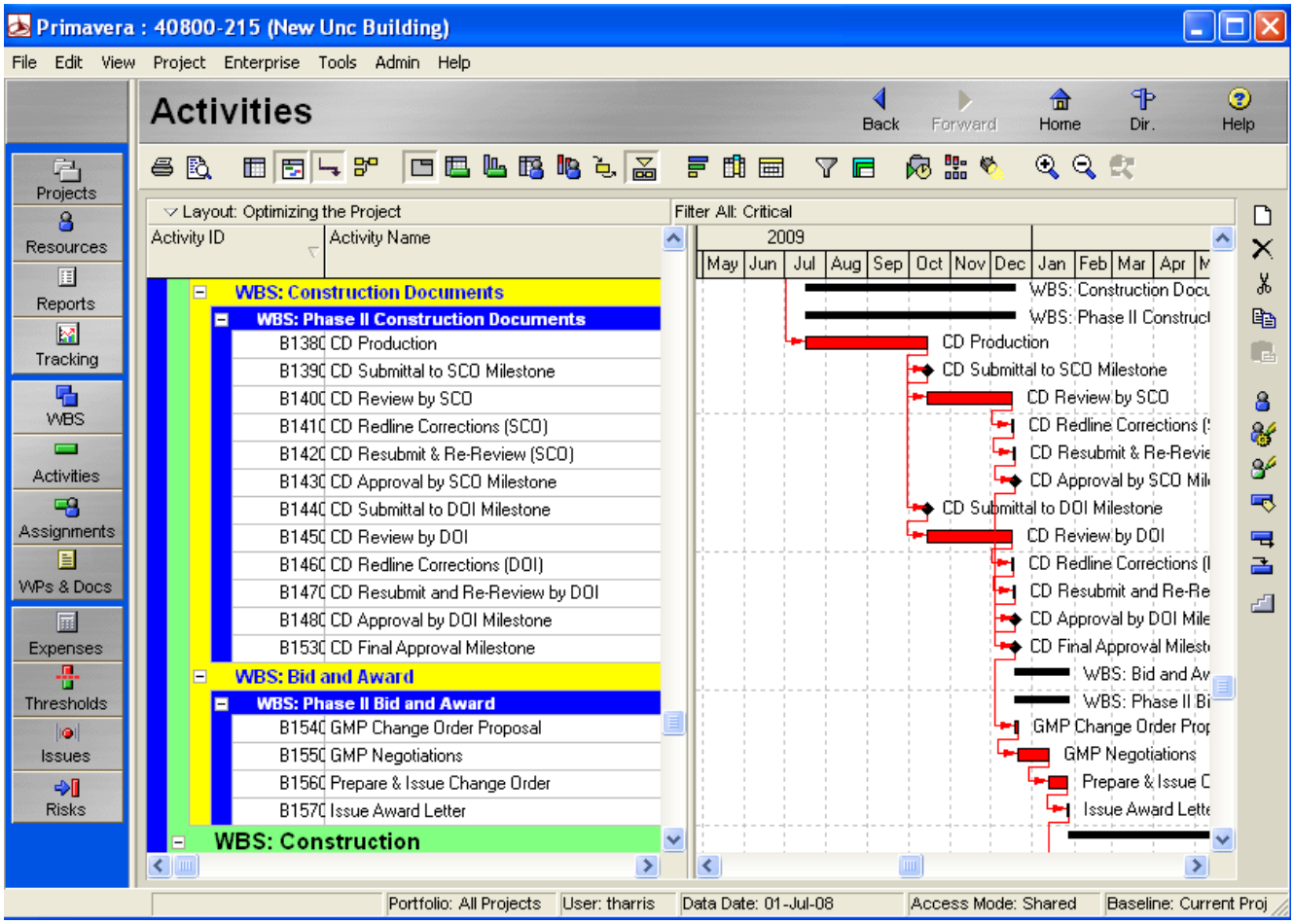


Steps:

1. Open the project 40800-315
2. From the *Directory* bar, click Projects.
3. From the *Display Options* bar, choose **Expand All**.
4. Highlight a project
5. Click the *Dates* tab.

Focus on Critical Activities

To shorten the project, you should now focus on critical activities. The critical activities are the longest continuous path of activities through a project that determines the project finish date. If you adjust a critical activity, this should adjust the project finish date.

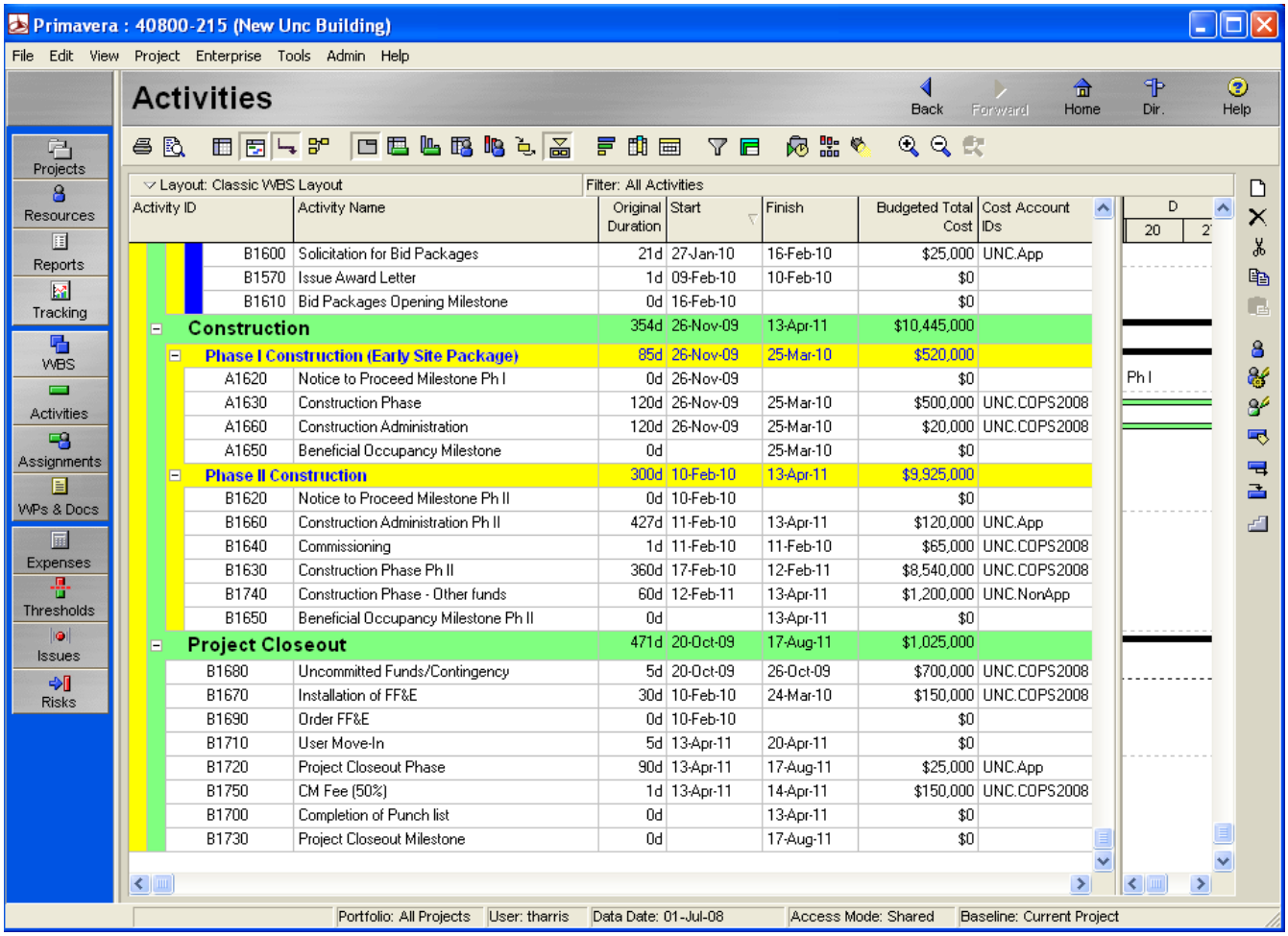


Steps:

1. From the *Directory* bar, click *Activities*.
2. Click **F9** on your keyboard to bring up schedule
3. Click *Options*
4. On the General Tab, Set *Define critical activities* as **Longest Path**
5. Click *Close* and *Schedule*
6. From the *Display Options* bar choose *Filters*
7. Run a default filter **<Critical>.**

Analyzing the Budget

There are many options for analyzing the budget. By displaying cost columns in the Activity Table, you can analyze the budgeted cost of the entire project, as well as each individual activity.

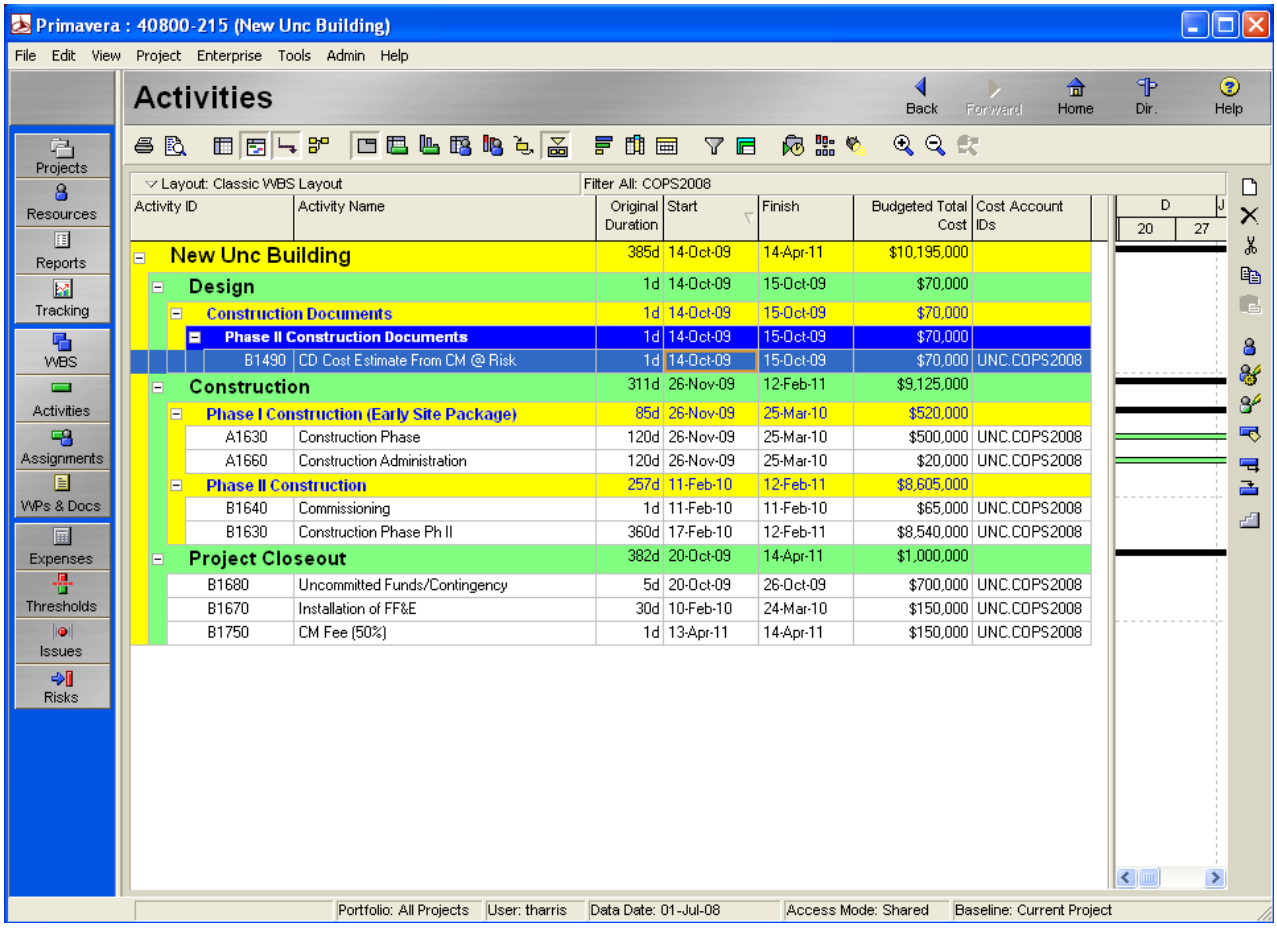


Steps:

1. Hide the bottom layout
2. Show the Activity Table on the Top Layout
3. Change the columns to match the above picture
4. Set Filter to *All Activities*

Analyzing the Budget (Continued)

The budgeted dollars are shown for each activity and rolled up by **WBS** and **Project.** To determine how much of a type of funding is included, use a filter.



Steps:

1. Create a new filter
2. Name the filter *COPS2008 Filter*
3. Select *Cost Account ID*, *equals*, and *UNC.COPS2008*
4. Set Filter to *COPS2008 Filter*

Lesson 17

Baselining the Project Plan

Purpose and Objectives

This lesson will show how to create a baseline plan from an optimized project plan. At the completion of this lesson, you will be able to:

- Create a baseline plan.
- Display baseline bars on the Gantt Chart.

What is a Baseline?

A baseline is a copy of a project. You can compare a baseline to the current project to evaluate progress.

- Before updating a schedule for the first time, you should create a baseline plan.

Attributes

- Can set the number of baselines per project.
- Designate one primary and up to three additional baselines at a time for comparison to the current project.
- Assign a baseline type that categorized its purpose.
  - This helps organizations benchmark performance across multiple projects.
  - Examples: initial planning, what-if, or mid –project baselines.

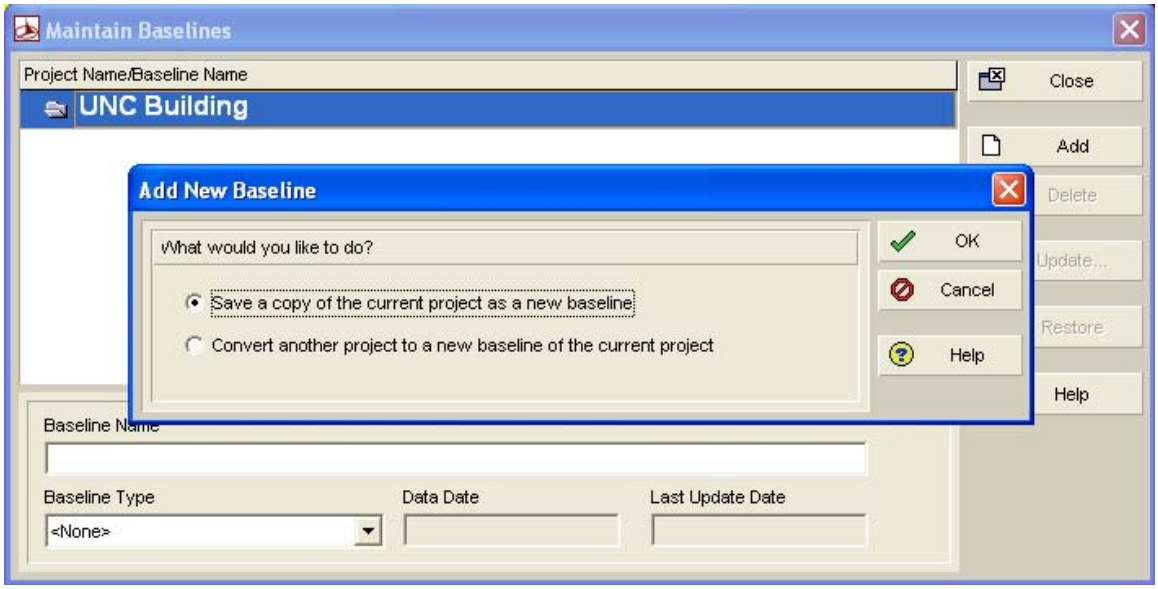
Benefits

- Baselines provide a target against which a user can track a project's cost, schedule, and resource performance.
- "What-if" project baselines allow you to enter different scenarios to examine how they affect the current schedule.

Creating a Baseline

To create a baseline, you must first open the desired projects. You must have at least one project open to access the Baselines dialog box.

- The ***Baseline*** dialog box displays group title bands for each open project, with any existing baseline projects beneath its current project.



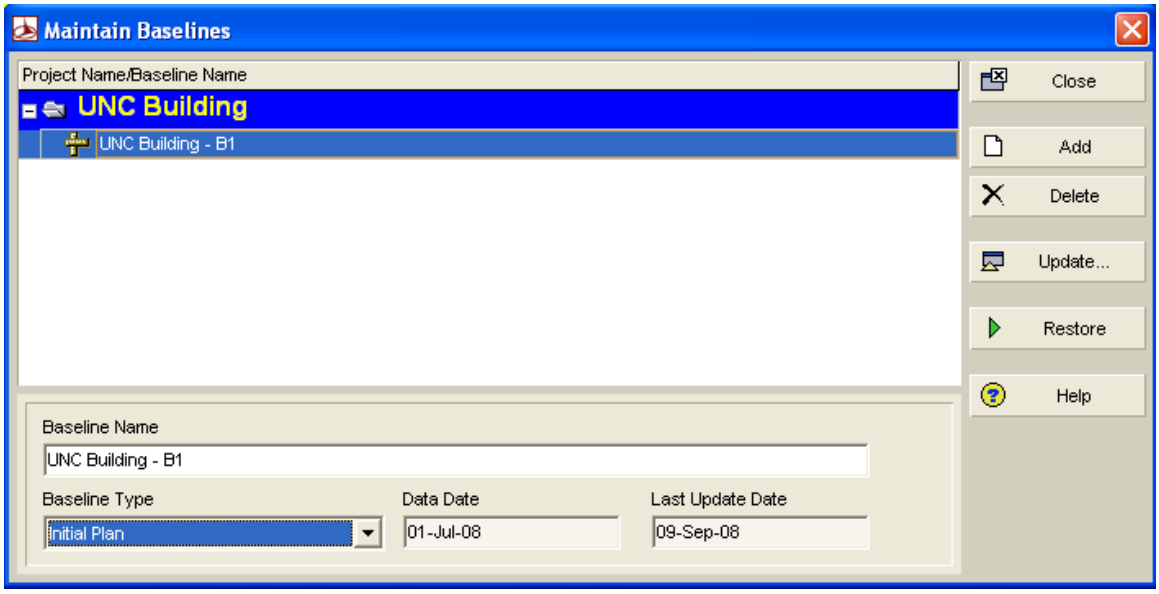
Steps:

1. Open a layout **<Classic WBS Layout>.**
2. Choose **Project, Maintain Baselines**.
3. Click ***Add***.
4. Verify that ***Save a copy of the current project as a new baseline is selected***.
5. Click ***OK***.

Categorizing the Baseline

You can assign a baseline type to categorize its purpose. This assignment will help you organize the baselines for the project.

The baseline you just created is the initial baseline for the project.



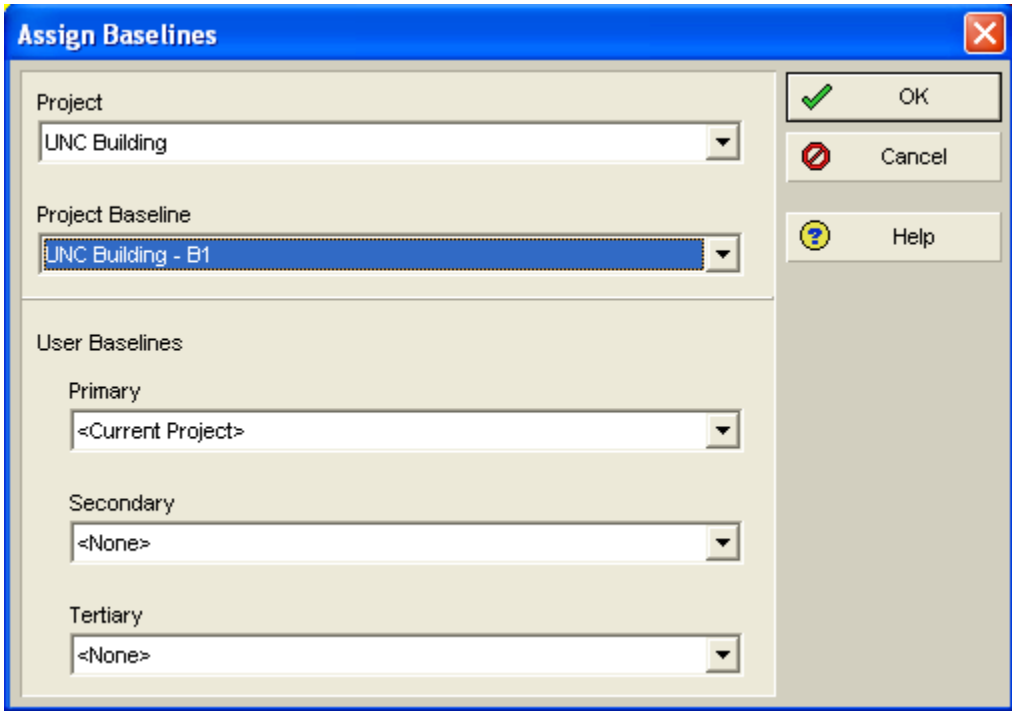
Steps:

1. Select the baseline.
2. Type a new Baseline Name if desired.
3. Click the drop down arrow from the Baseline Type filed to select a baseline type **<Initial Plan>.**
4. *Close*

Assigning a Baseline

Use the Assign Baselines dialog box to choose an active baseline for the project.

- If no baseline is designated as active, the current project plan is used as the baseline.
- Only one baseline can be designated as Project Baseline at any point in time.
- Assignments are user-specific.
  - Each user can choose a different baseline for comparison to the current project.

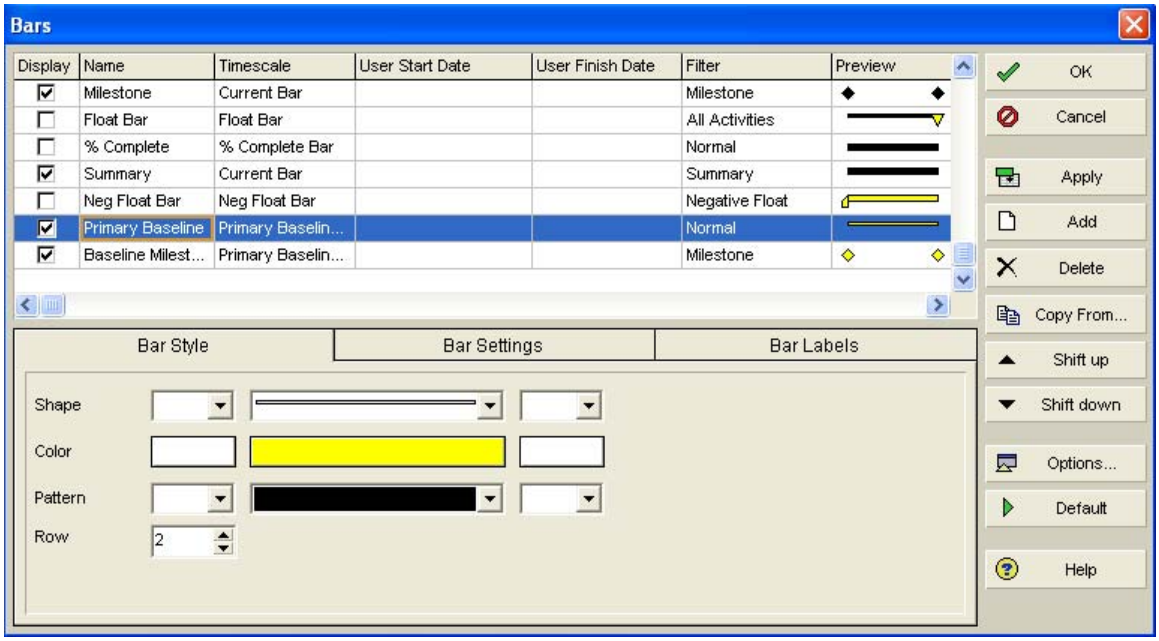


Steps:

1. Choose **Project, Maintain Baselines**.
2. On Project Baseline, select *<UNC Building – B1>*
3. Click ***OK***.

Displaying Baseline Bars

By displaying baseline bars in the Gantt Chart, you can visually compare the baseline plan's schedule dates to the current project plan's schedule dates.

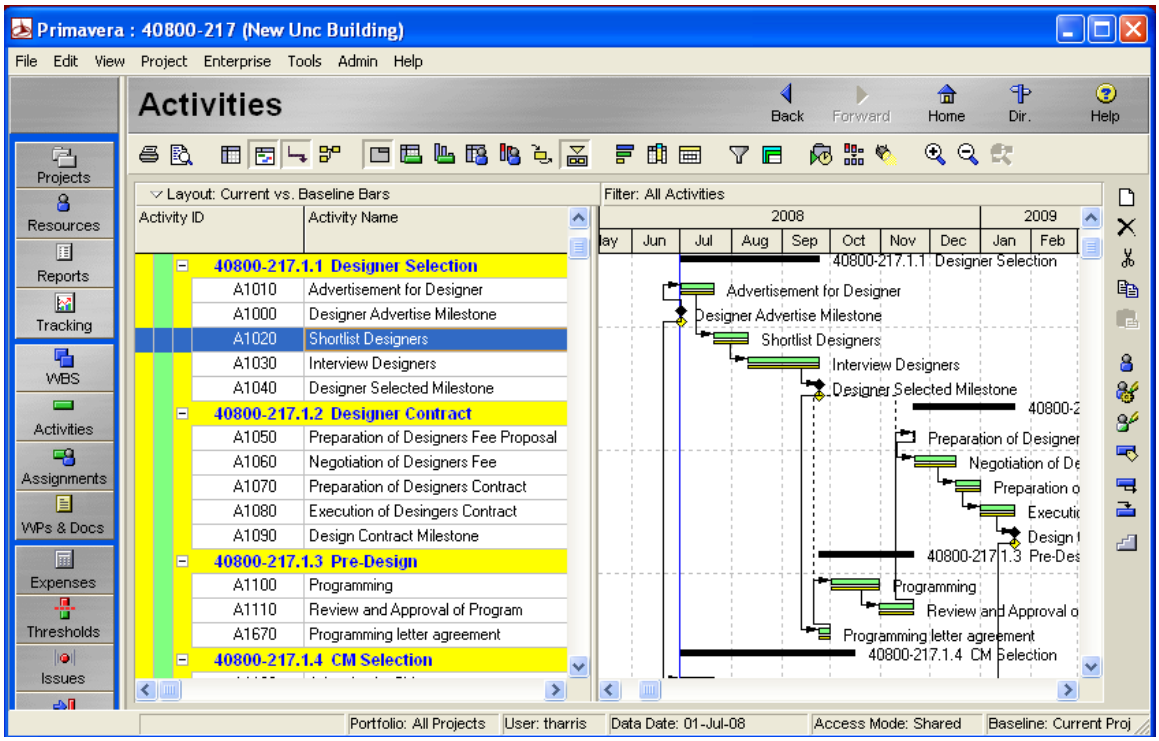


Steps:

1. From the ***Layout Options*** bar, choose **Bars**.
2. Mark the checkbox in the ***Display*** column next to the desired bars **<Primary Baseline and Baseline Milestone>.**
3. To determine the placement of the Baseline bar in the Gantt Chart, verify a Row **<2**>.
4. You may adjust the size and shape of the bar and end points.
5. Click ***OK*** to close the ***Bars*** dialog box.

Saving the Layout

The layout now displays the baseline bars in the Gantt Chart. If you would like to deep these changes, you can save the layout.



Steps:

1. From the ***Layout Options*** bar, choose **Layout, Save As**.
2. Type the ***Layout Name*** **<Current vs. Baseline Bars>**.
3. Click ***Save***.

Lesson 18

Statusing the Current Schedule

Purpose and Objectives

This lesson examines the process of updating activities. At the completion of this lesson, you will be able to:

- Describe several methods for updating the project schedule.
- Define the “Data Date”.
- Reschedule your project schedule.

Updating a Project

Project schedules should be updated on a regular basis, no less than monthly. The Program Controls office at the Office of the President will need to run regular quarterly reports and general status and cash flow reports throughout the project lifecycle. It is important that the data be accurate at the beginning of each month.

How Collected?

- Project managers collect actual dates, progress, and cost information.
- Record actual dates and progress.

Campuses

- Actual dates of milestones and activities should be recorded.
- Best estimates of remaining durations and/or percent complete should be entered.
- Resources for At Completion Units should be equal to Budgeted Units.
    - Actual dollars will not be tracked in P3e.
- Reschedule the project to see effects.

Program Controls Office (GA)

- Saves a baseline schedule each quarter.
- Schedules all projects at the beginning of each month.
    - Non-updated schedules will be pushed out.
- Compares to baseline schedules.

What is the Data Date?

When updating a project, actual dates are recorded for each activity relative to the data date.

The data date is the date up to which actual performance data is reported and the date from which future work is scheduled.

- The date that P6 uses as the starting point for its schedule calculations.
- Always starts at the beginning of the workday.
- Typically it's the last day of the month.

Entering Actuals

Once a project is underway, you must enter actual scheduled dates on each activity and milestones. Each project is different: so you may need to update weekly or monthly, depending on the time span of your project and how frequently you want to adjust your forecasts.

Enter schedule data in the following order:

For Completed Activities

- Actual start and actual finish dates.

For Activities In-Progress

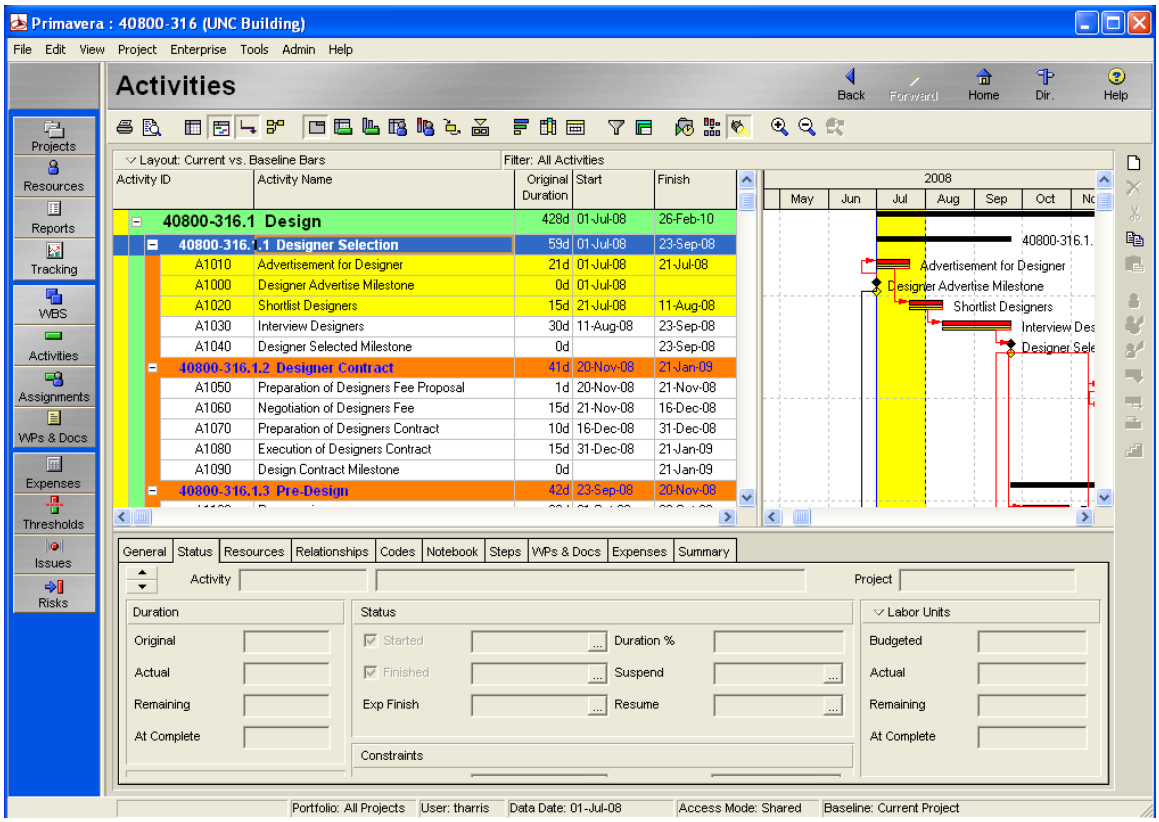
- Actual start date.
- Percent complete, or
- Remaining duration, or
- Forecasted finish date.

Highlighting Activities for Updating

The Progress Spotlight feature highlights the activities that should have been worked on during a specified timeperiod. You can also drag the data date line to a specific date to highlight the activities that fall between the last data date and the new data date. Once you spotlight activities, you can automatically status them, manually update them.

Unlike selected activities, when Progress Spotlight is active, activities remain spotlighted even when you click in another area of the workspace.

Use the Progress Spotlight feature

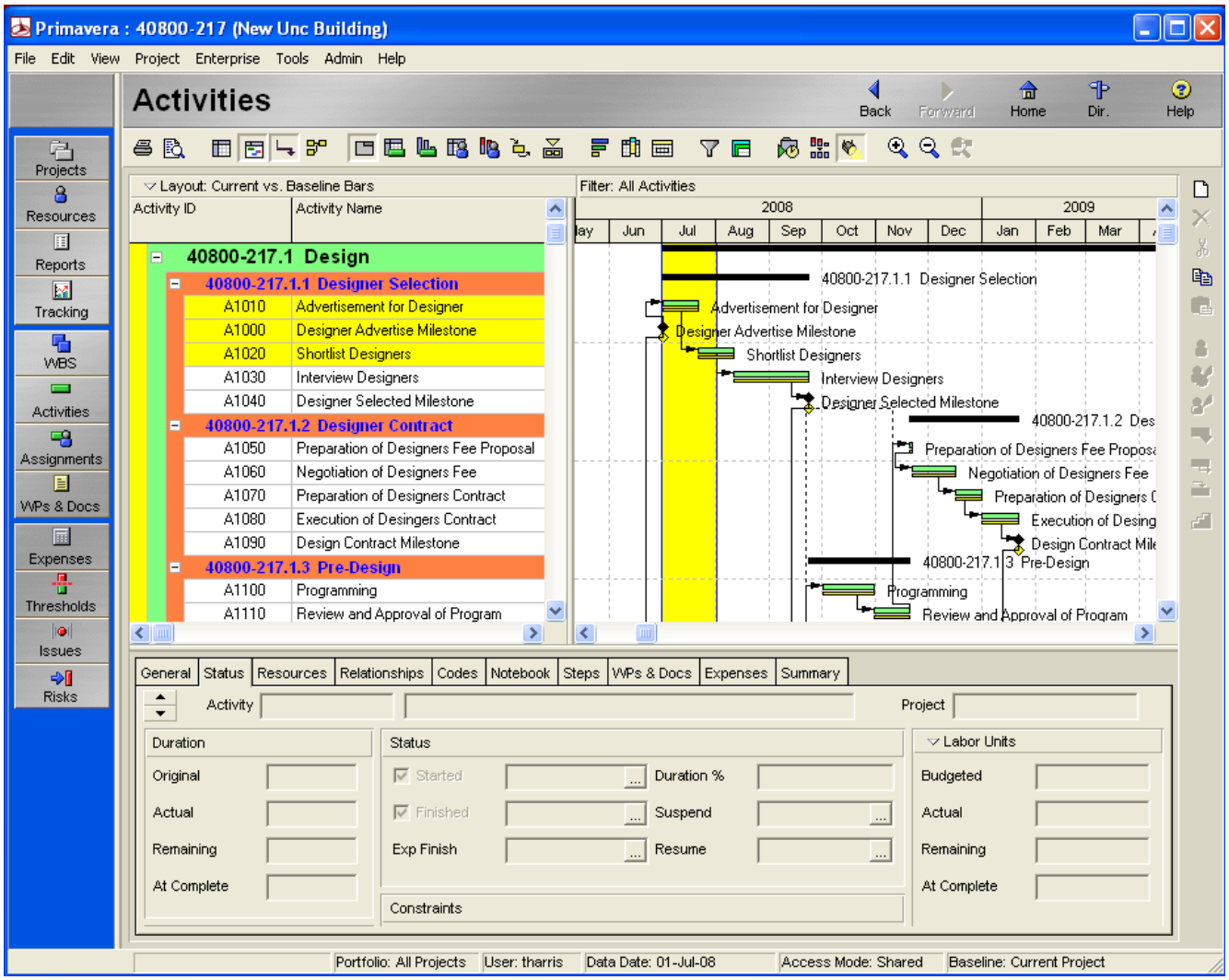


Steps

1. Choose **View**, **Progress Spotlight**, or click the *Progress Spotlight* icon to highlight a timeperiod equal to the smallest increment of the displayed timescale from the previous data date. To increase/decrease the highlighted area between the previous data date and the new date by one or more timescale increments, drag the data date line to the right or the left.
2. Drag the data date line
3. Click the data-date line; when it changes to an arrow, drag the line to the right until you reach the new data date. The Project Management module spotlights the activities between the last data date and the new data date. Update activities as described later in this chapter, or reschedule the project immediately according to the new data date by pressing F9.

Statusing Milestones

To update a start milestone, you mark the activity started and enter the actual start date.

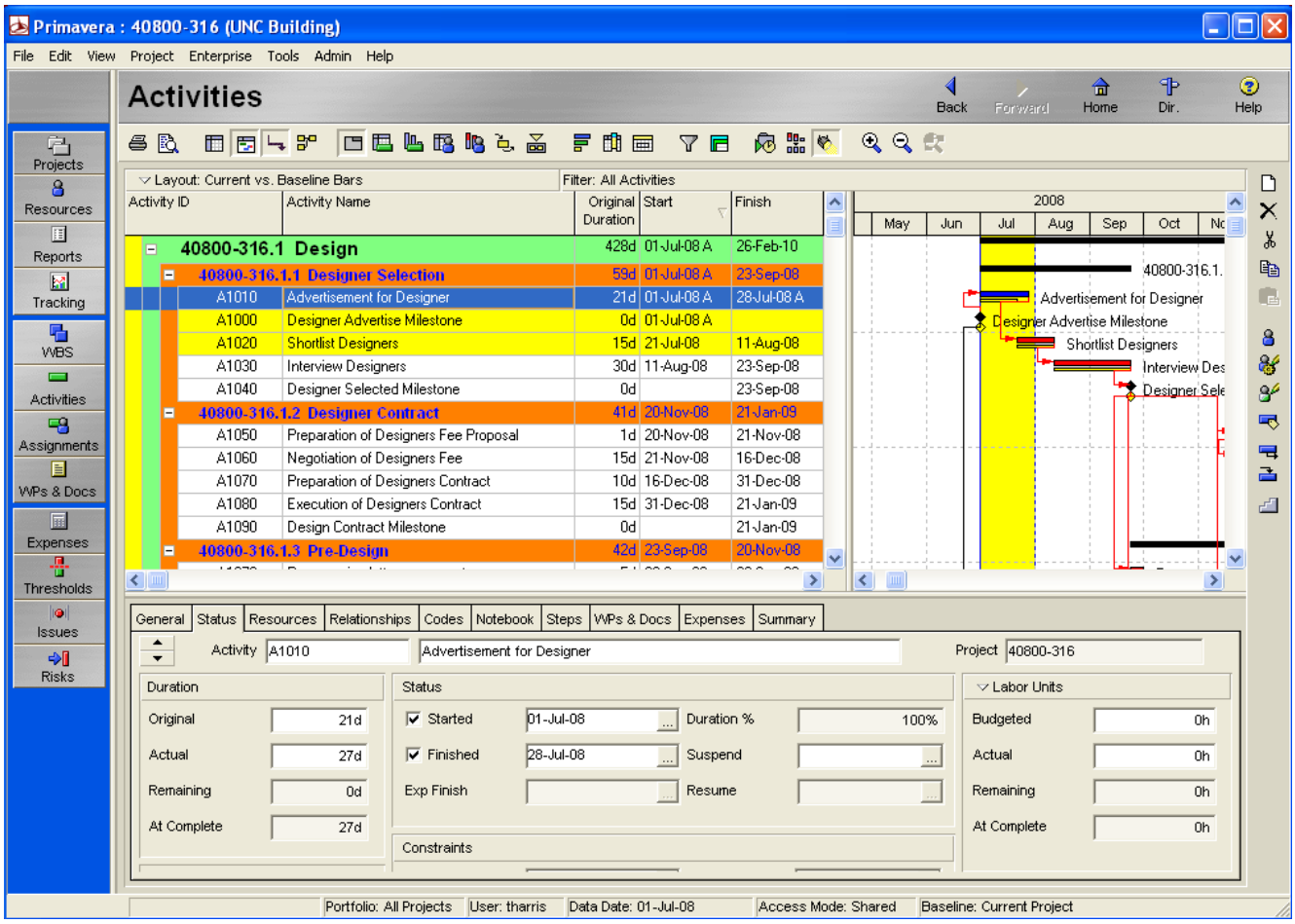


Steps:

1. Select an activity (A1000 –Designer Advertisement Milestone)
2. Click the *Status* tab
3. Mark the *Started* checkbox
4. Browse to select the actual finish date (1-Jul-08)

Note: The Duration % is automatically set to 100% and the Finished box is automatically checked.

Statusing Activities To Completion



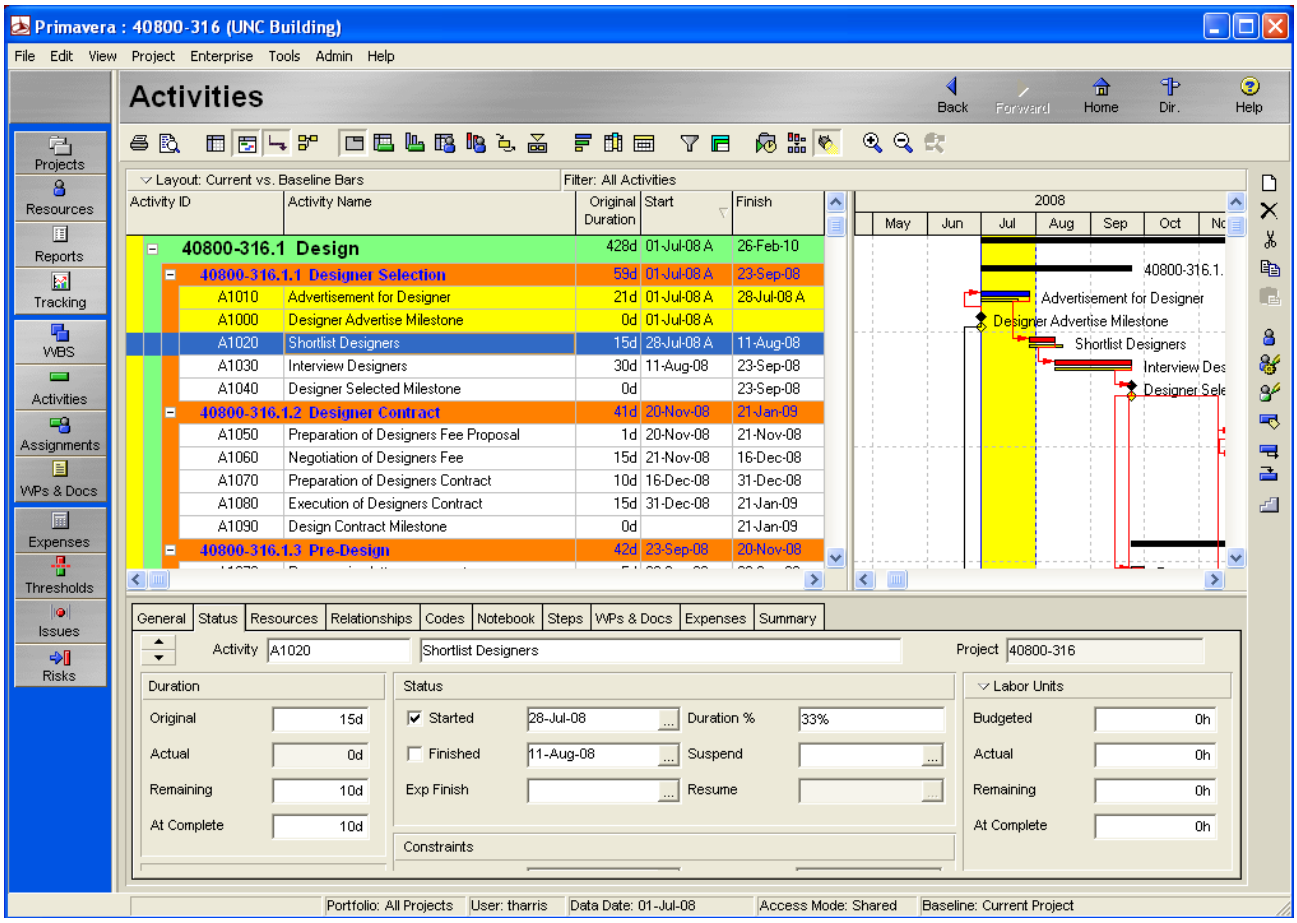
Steps:

1. Go to the *Activities* Window
2. Select an activity (A1010 – Advertisement for Designer)
3. From the *Status* tab, mark the *Started* checkbox
4. From the *Status* tab, mark the *Finished* checkbox and browse to select the actual finish date (28-Jul-08)
   Note: Notice the original duration was 21 days and the actual duration was 27. The line on the Gantt chart is now all blue.

Statusing Activities in Progress

Two steps must be performed to update an activity in progress:

- Enter the actual start date.
- Enter percent complete or remaining duration and/or finish date.

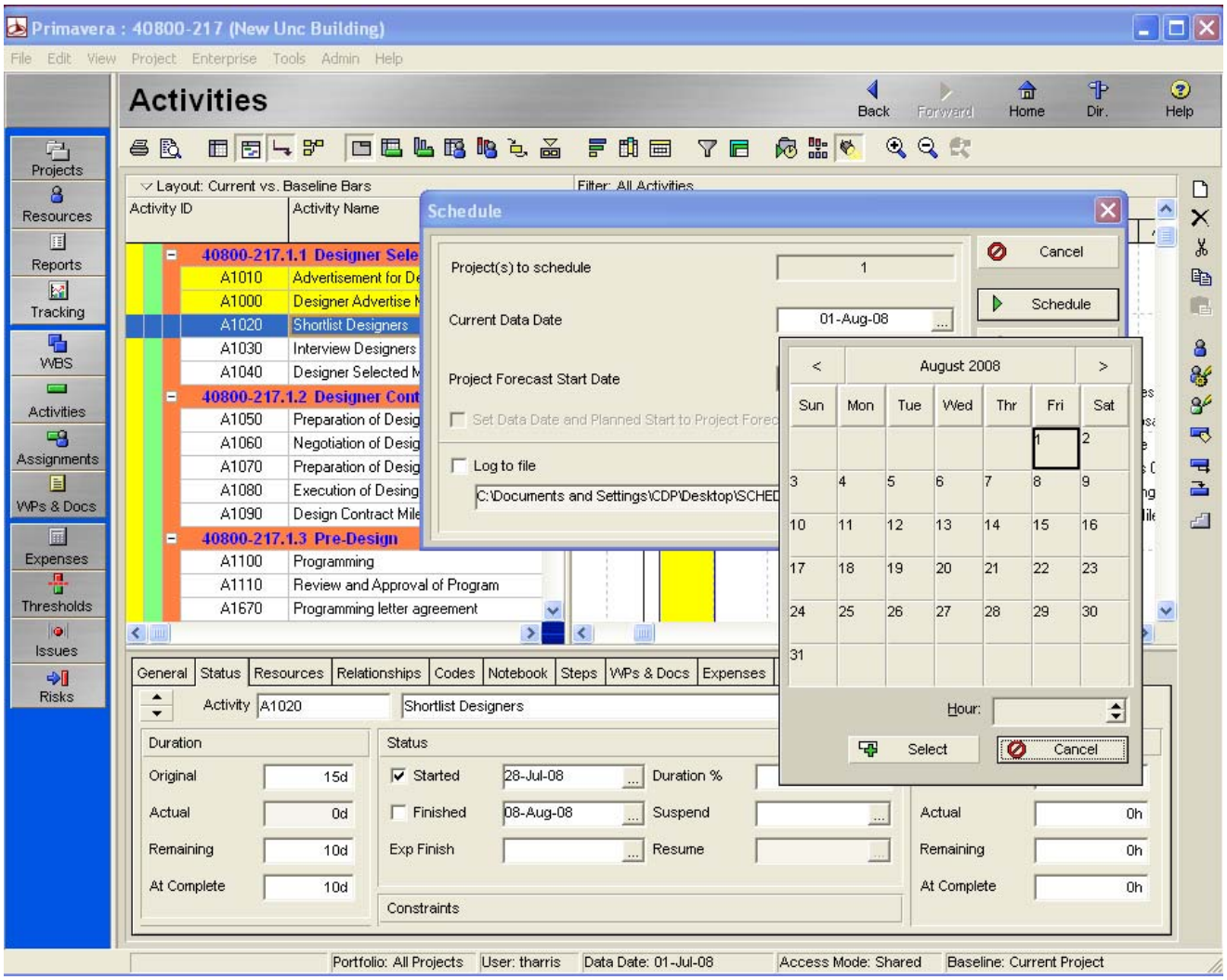


Steps:

1. Select an activity (A1020 – Shortlist Designers)
2. From the *Status* tab, mark the *Started* checkbox and browse to select the actual start date (28-Jul-08)
3. From the *Status* tab, type the *Remaining Duration* (10), then press Enter
   Or enter 33%*Percent Complete*, then press Enter
   Or browse the predicted *Finish Date*, then press *Select*

Rescheduling the Project

Now that actuals have been applied, it is time to reschedule the project based on the new *Data Date*. Any activities that were delayed during the apply actuals operation will delay their successor activities.

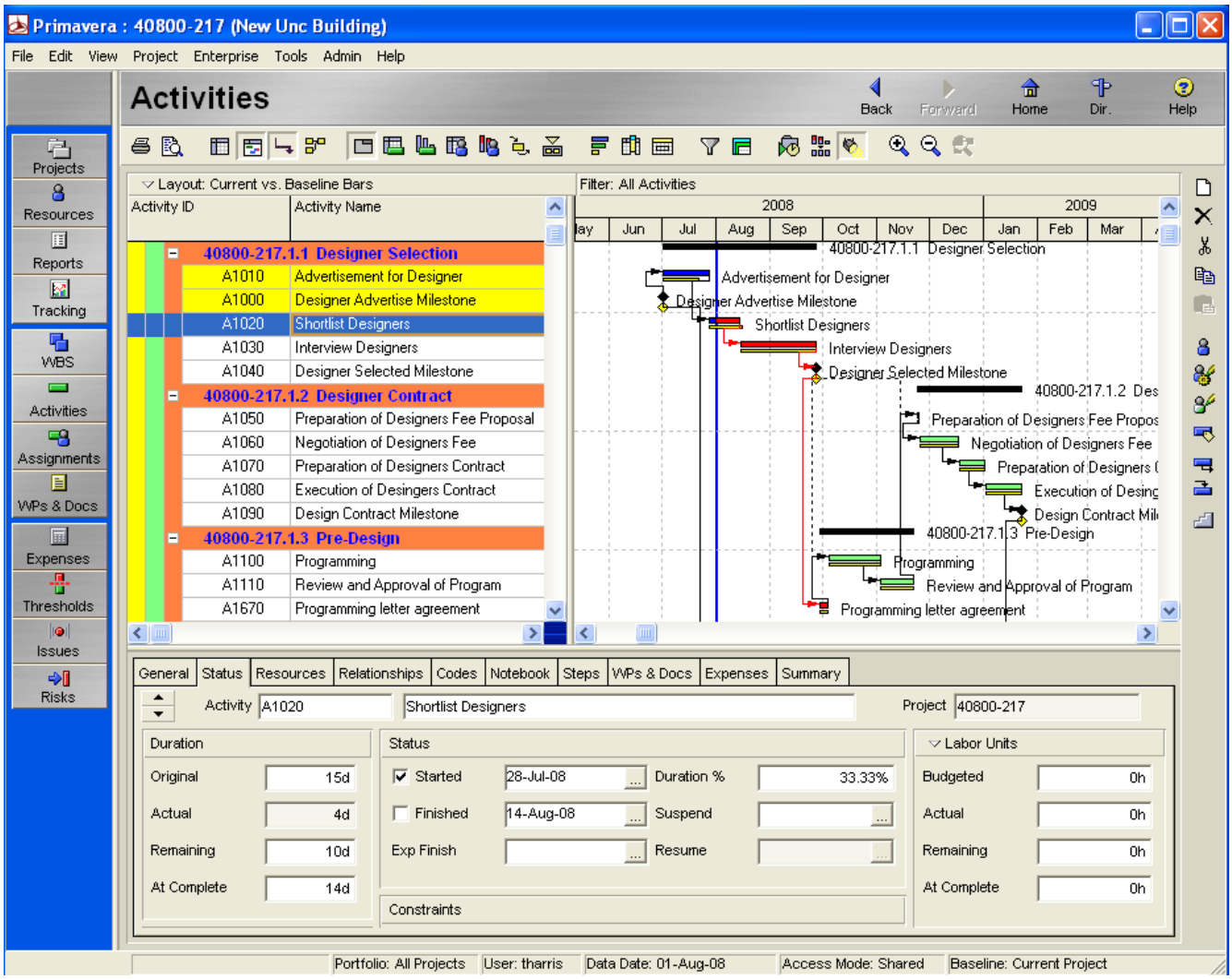


Steps:

1. Choose *Tools, Schedule (F9)*
2. Browse to select the *Current Data Date* (Aug 1, 2008)
3. Click *Select*, then click *Schedule*

Results of Rescheduling the Project

- Analyze the activities on the critical path.
- Review the project's performance to date.
- Develop strategies for getting the project back on track.



Lesson 19

Reporting Performance

Purpose and Objectives

This lesson demonstrates how to run and create tabular reports as a means of reporting performance information. At the completion of this lesson, you will be able to:

- Describe reporting methods
- Run a schedule report
- Print a report
- Create a cost report with the Report Wizard
- Summarize project data

Methods for Performance Reporting

PE provides many methods to distribute schedule, resource and cost performance information to the project team. These methods include:

- Printed Layouts
- Printed reports from PE's Report Wizard
- Printed reports from PE's Report Writer
- Project Web site
- Infomaker

Reports

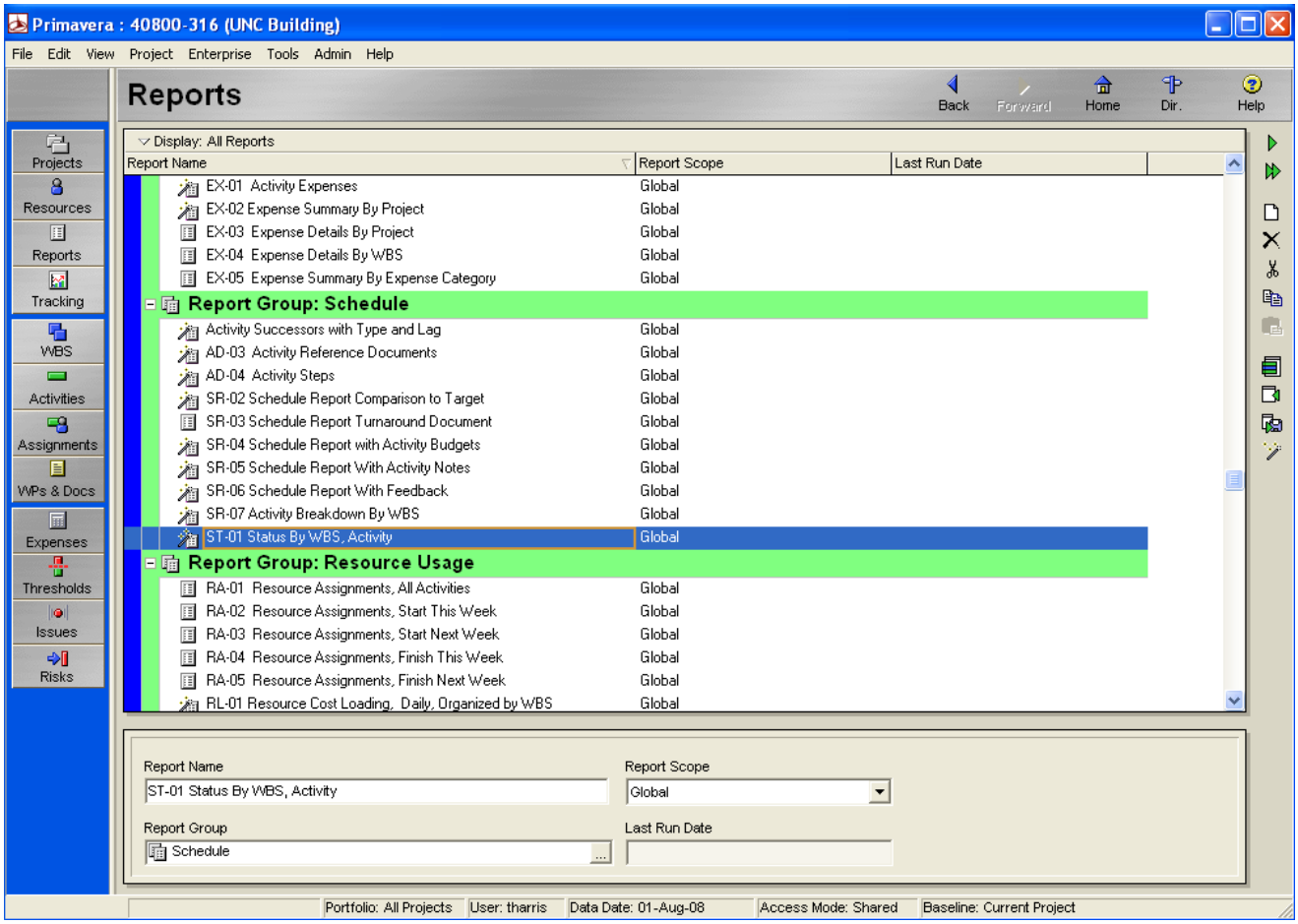
P6 provides standard reports for schedule, resource and cost analysis.

Steps:

1. Choose **Tools**, **Reports**, **Reports**.

Running an Existing Report

You can report schedule performance using a pre-defined schedule report.



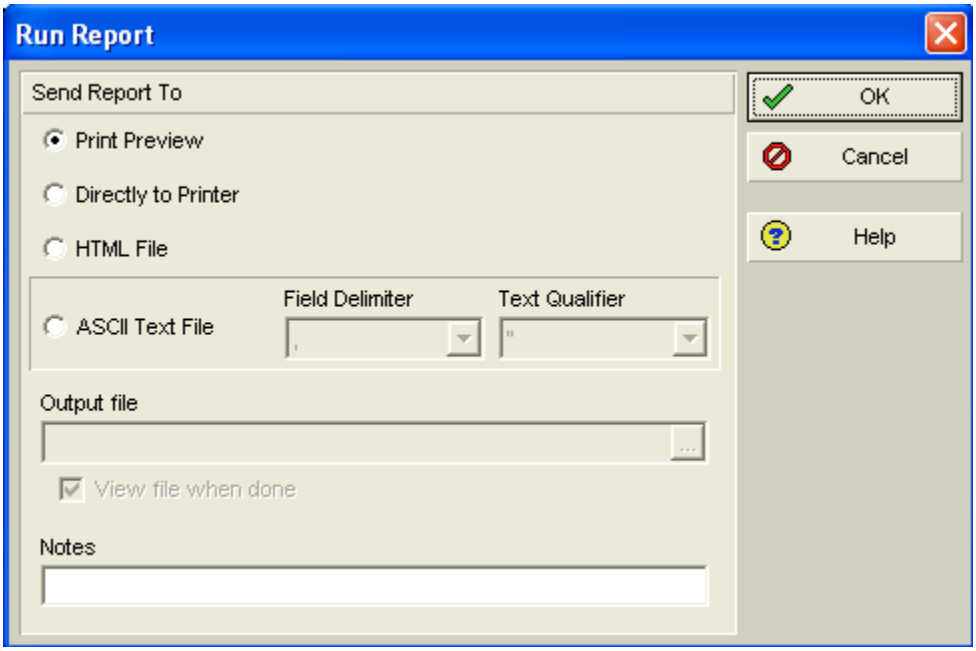
Steps:

1. Select a report **<ST-O1 Status by WBS, Activity>.**
2. From the *Command* bar, click *Run Report*

Run Report Dialog Box

Use the *Run Report* dialog box to compile and print the selected report.

- *Print Preview* — preview the report before printing it
- *Directly to Printer* — compile and print report
- *HTML File* — compile and save the report or report batch as an HTML file
- *ASCII Text File* — compile and save the report as a delimited text file (.txt)
  - *Field Delimiter* — select the character used to separate categories of information that you save in delimited text (.txt)
  - *Text QualjfIer* — select the character used to separate categories of data that you save in delimited text format (.txt), if the data contains the field delimiter you specify.
- *Output file* — If you choose HTML or ASCII Text File, click to specify the file location and name where you want to save the report.
- *View file when done* — Mark this checkbox to automatically open the report in your default browser for an HTML file, or your default text viewer for an ASCII text file.
- *Notes* — add comments about the selected report

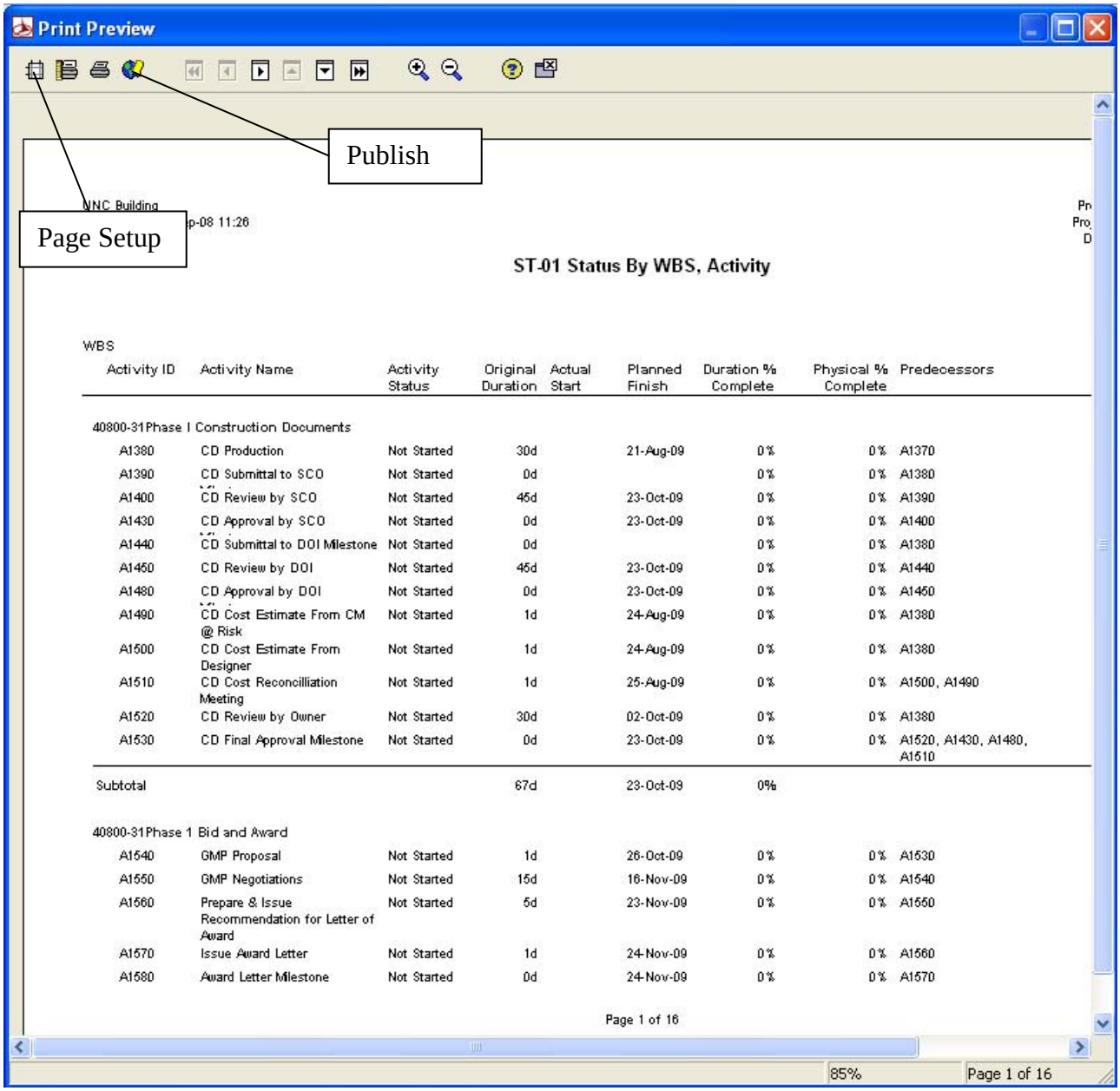


Steps:

1. From the *Run Report* dialog box, verify that *Print Preview* is selected.
2. Click **OK.**

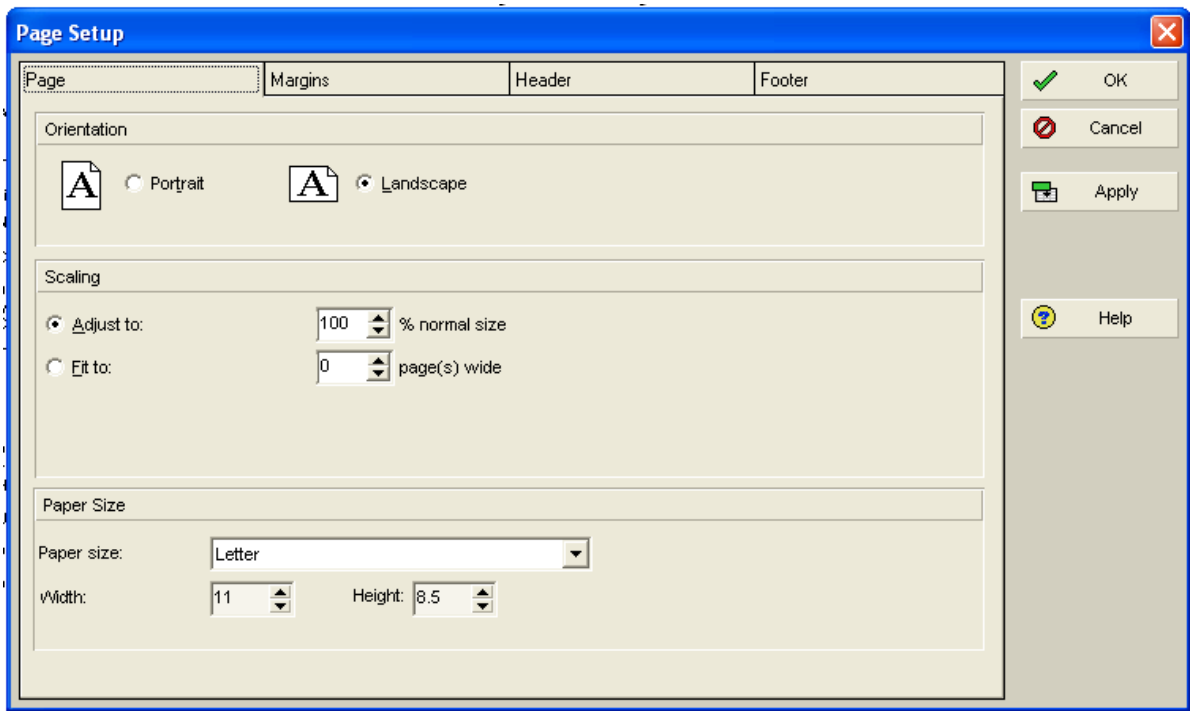
Print Preview

Print preview allows you to make modifications to the layout before printing.



Page Setup

Use to determine scaling, orientation, margins, text and logos for headers and footers, text and logos for a legend, which layout areas to print, and the date range of the printed report.



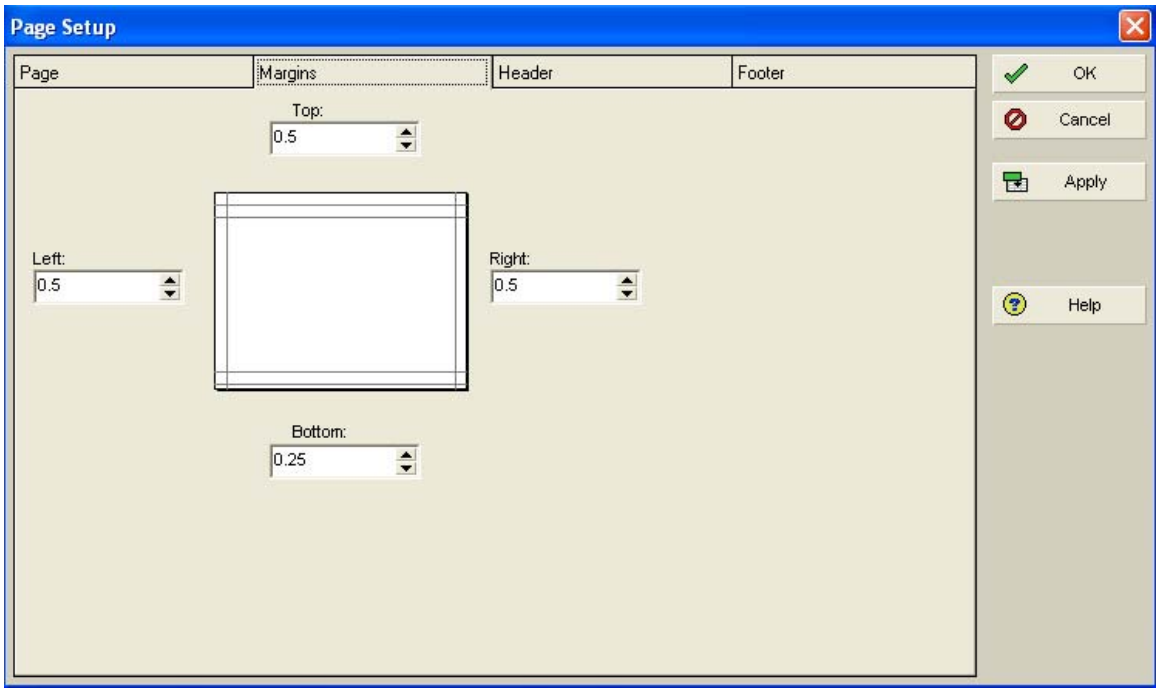
Steps:

1. Click on the *Page Setup button* at the top of the *Print Preview.*
2. Verify that the *Page* tab is selected.

Page Setup (Continued)

Margins Tab

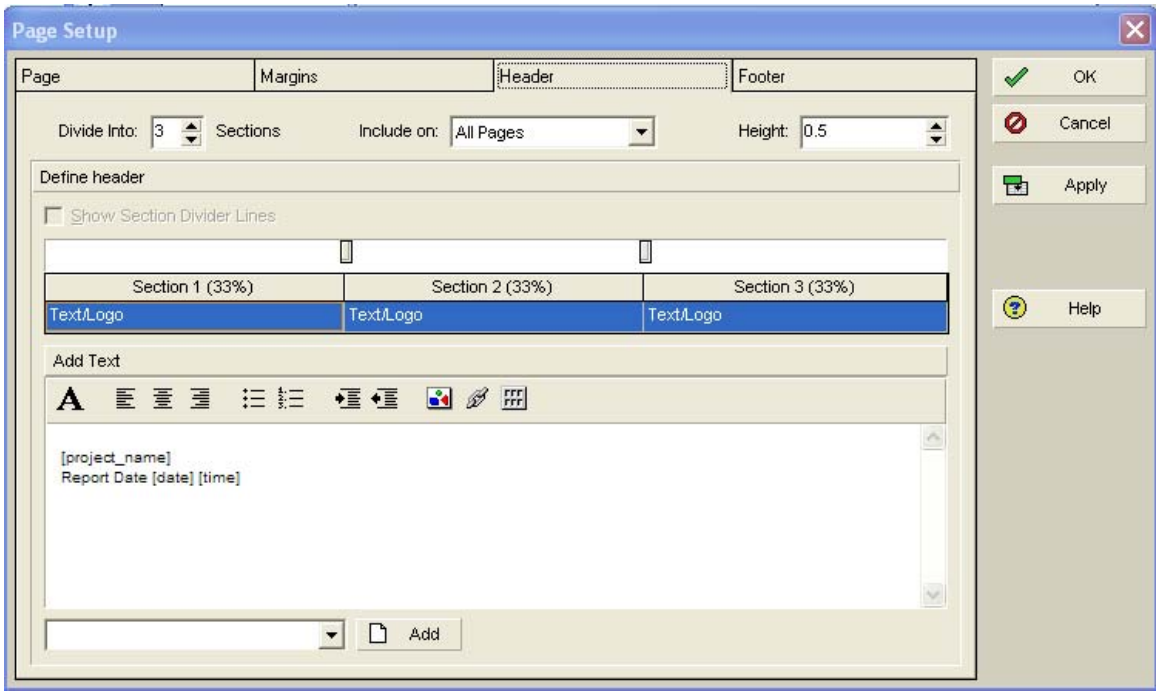
3. Click the *Margins* tab.



Page Setup (Continued)

Header/Footer Tab

4. Click the *Header* tab.
5. Click the *Footer* tab.



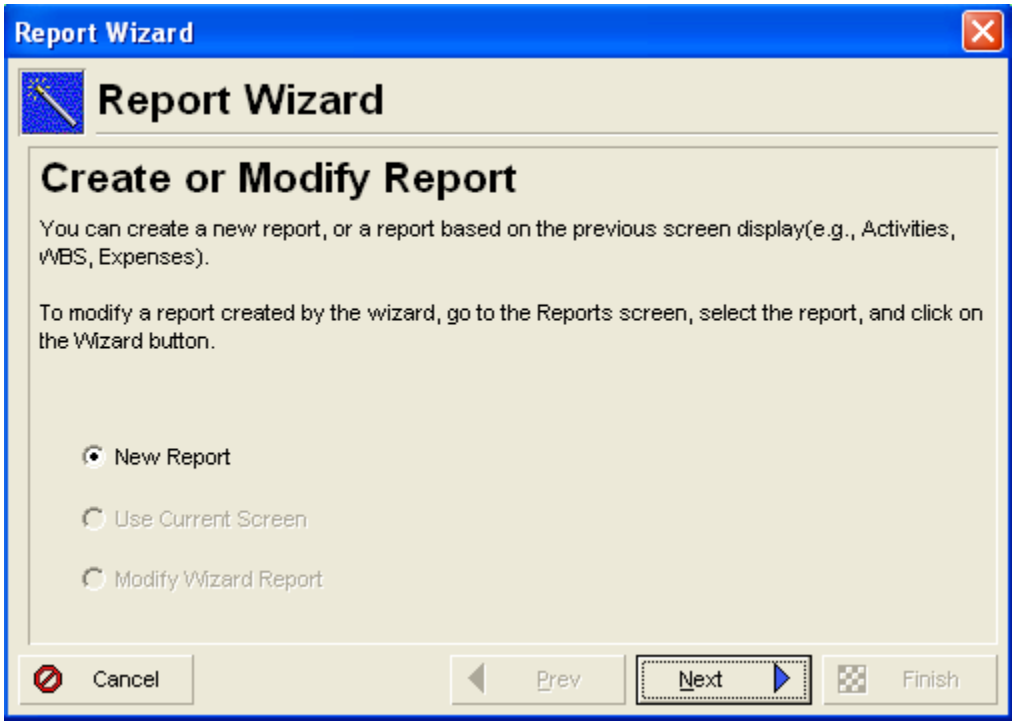
Report Wizard

The Report Wizard enables the user to create a wide variety of ad-hoc reports very easily. The reports can be modified as they are being built, or they can be reopened at a later point in time to be modified.

Wizard reports are created by first selecting a base table and pertinent data fields, then organizing the data via grouping, sorting and filtering options.

Creating a Report with the Report Wizard

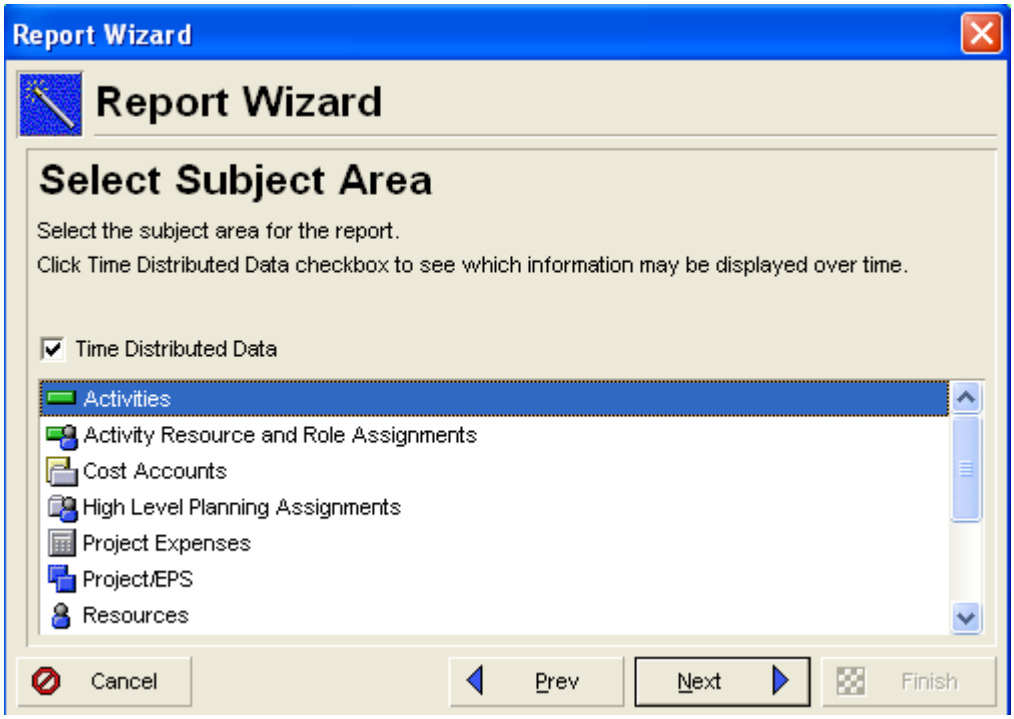
You can report cash flow by type of funds for your projects.



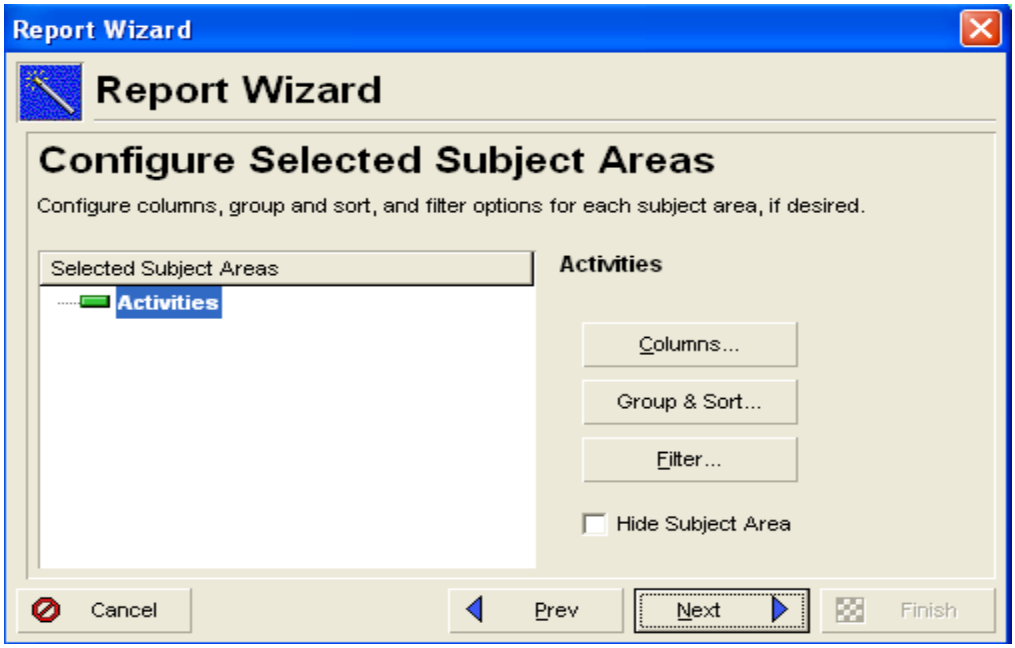
Steps:

1. Click on the *Reports* button on the *Directory* bar
2. Select the *Cost Project Group*

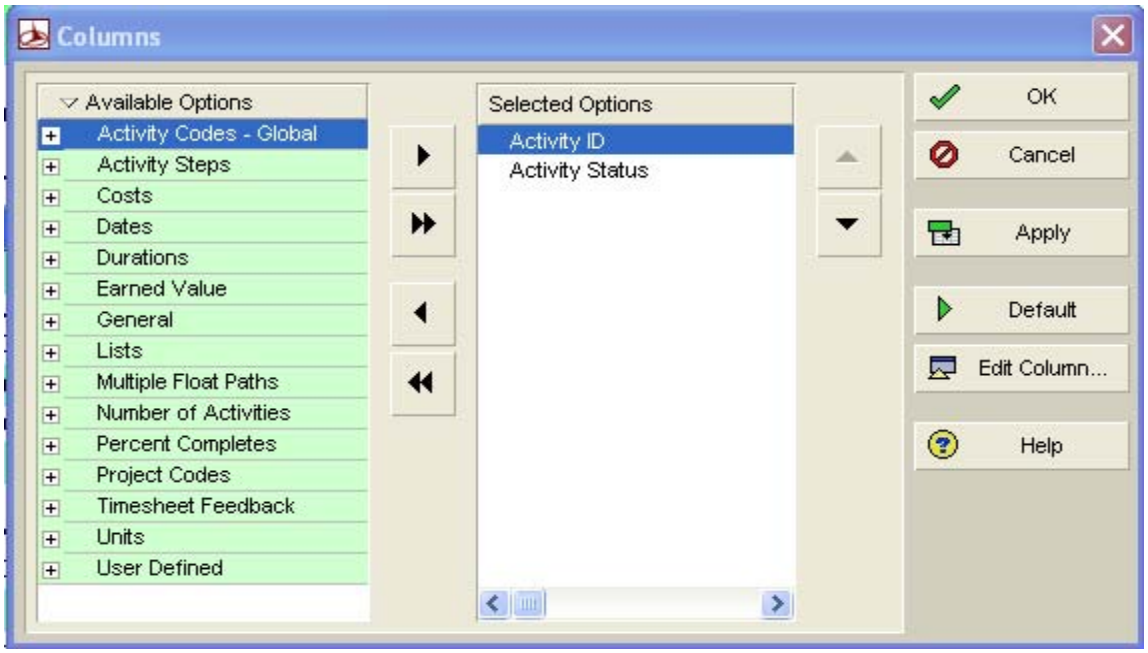
3. From the *Command* bar, click *Add.*
4. Verify the report option <New Report>
5. Click *Next*



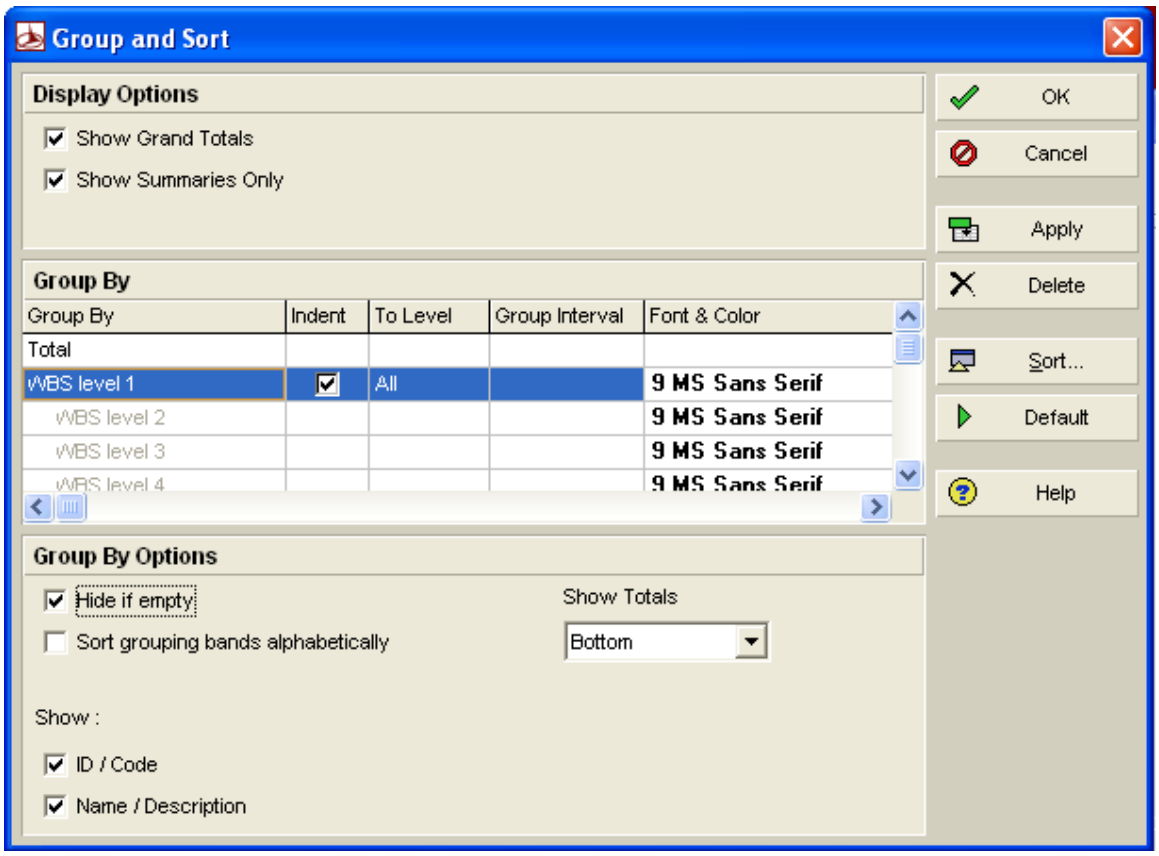
6. Select a subject area <Activities>
7. Verify *Time Distributed Data* is checked.
8. Click *Next*



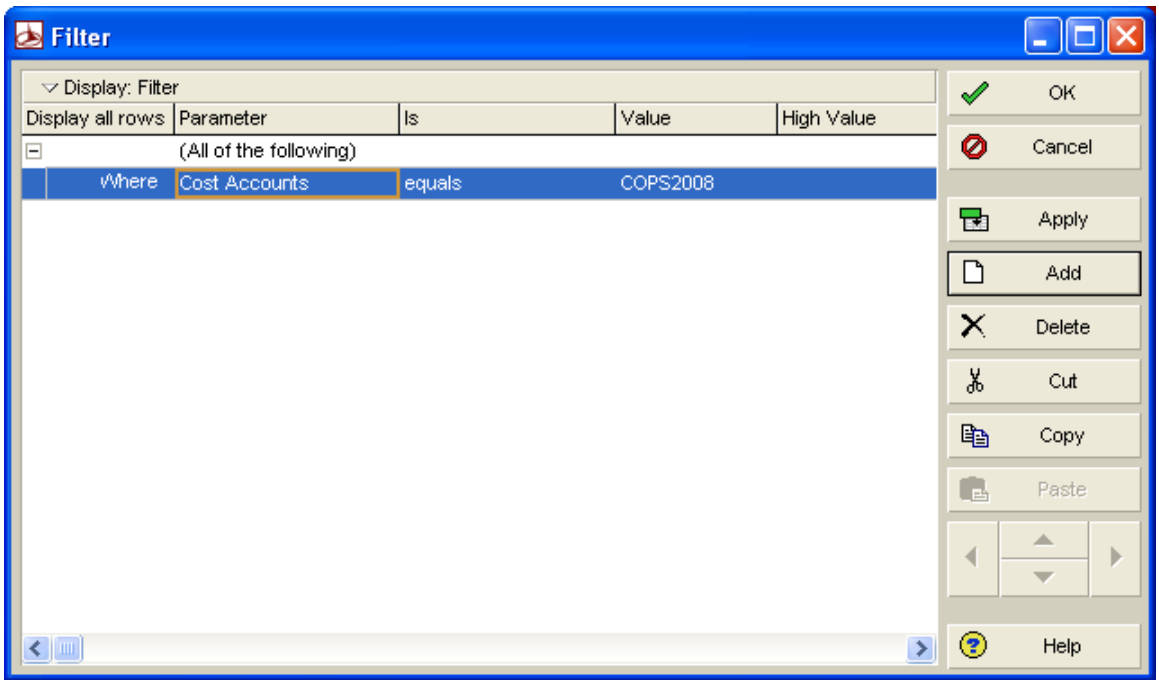
8. Click on *Columns*



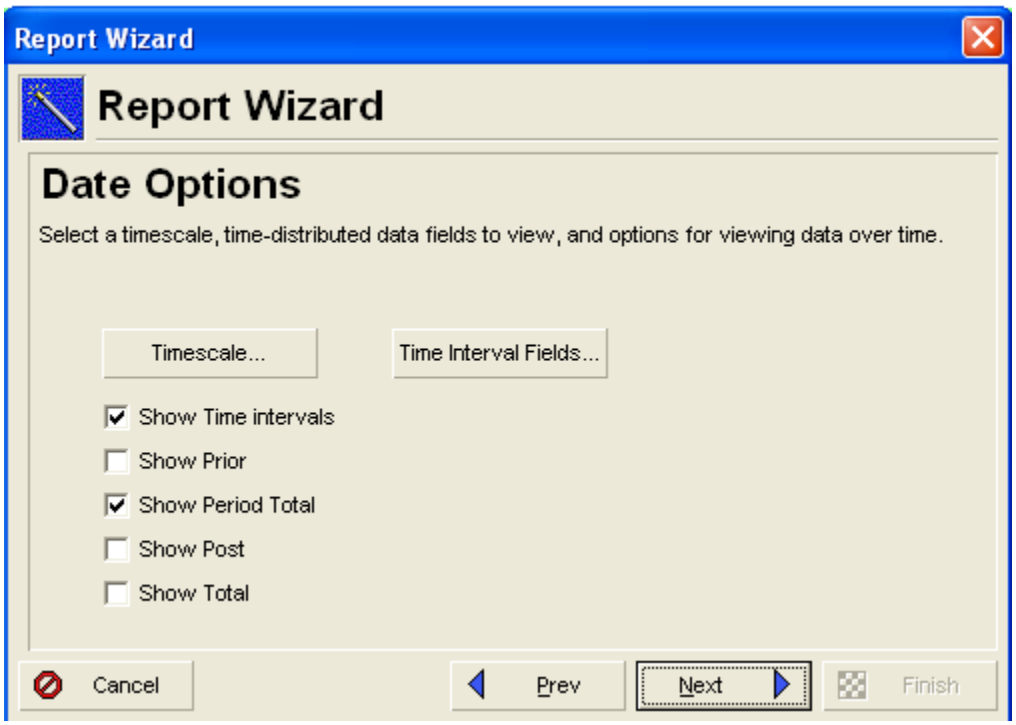
9. Verify the *Selected Options* column are **Activity ID** and **Activity Status**
10. Click *OK*



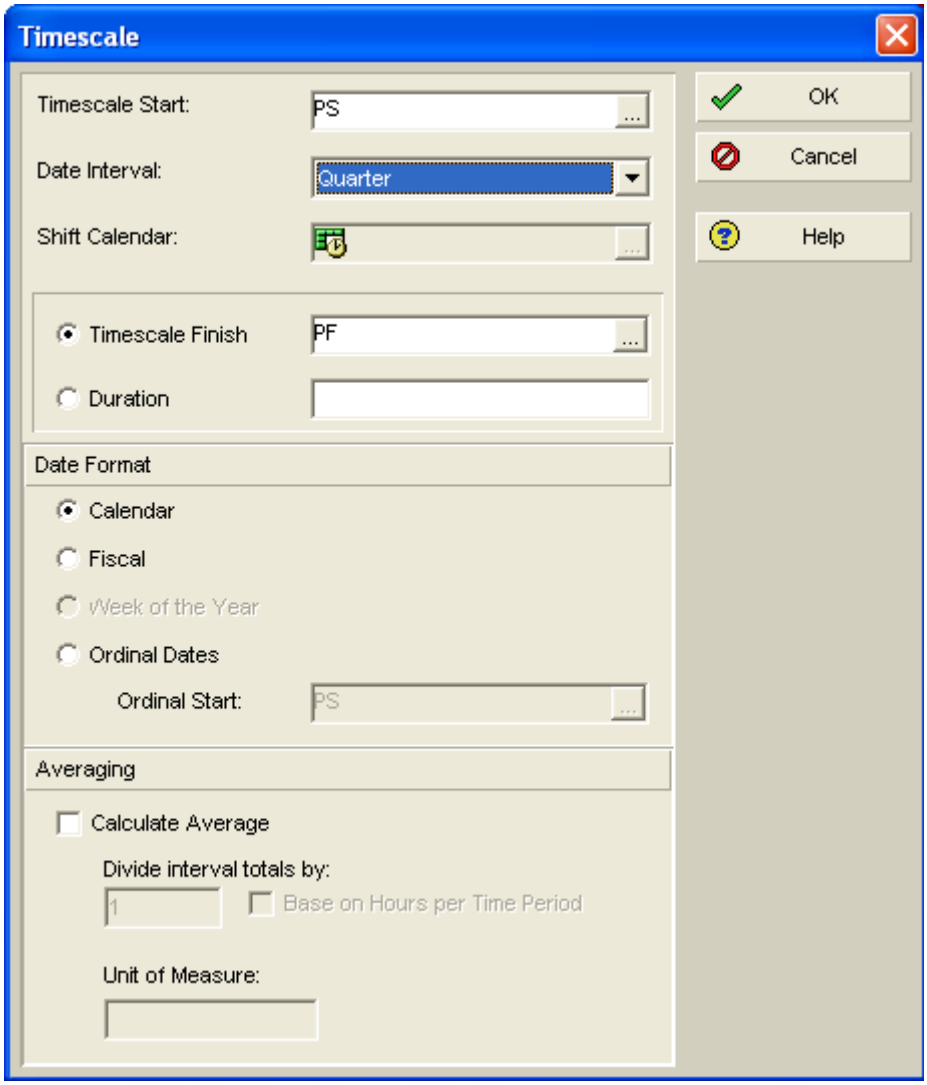
11. Click the *Group and Sort* button
12. Mark *Show Grand Totals*, *Show Summaries Only* and *Hide if empty*
13. Mark *Hide if empty*
14. Click *OK*



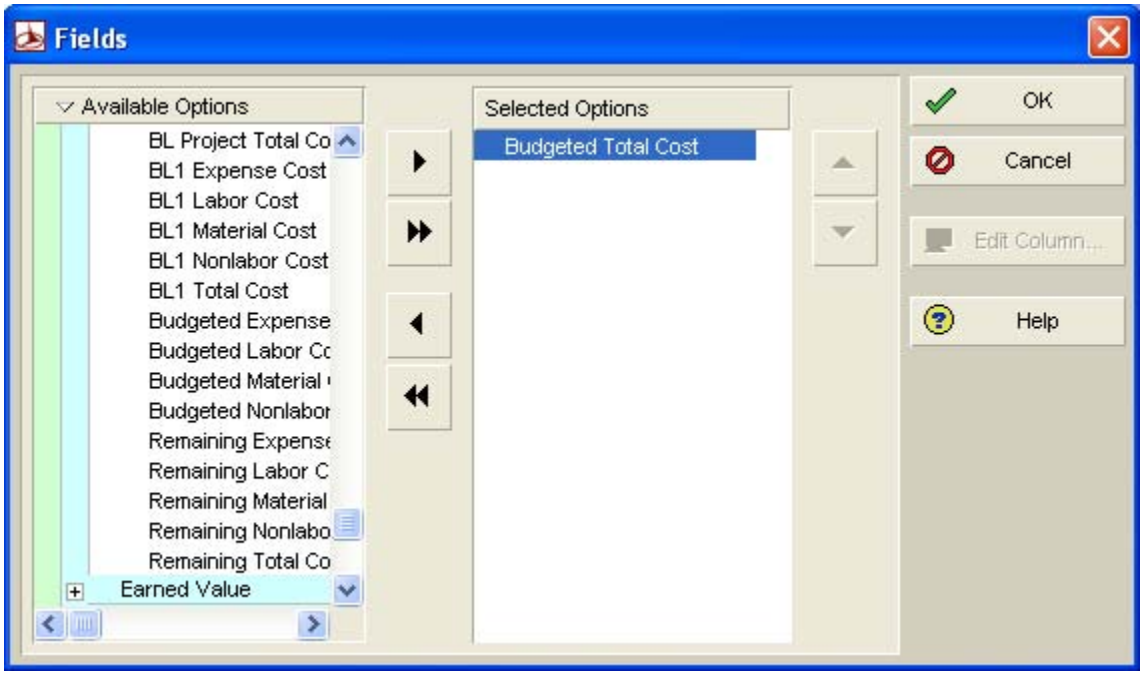
15. Click the *Filter* button
16. Click the *Add* button
17. Under the *Parameter* column, press drop down menu arrow and select <Cost Accounts>
18. Under *Value* double click and type in **COPS2008**
19. Click *OK*
20. Click *Next*



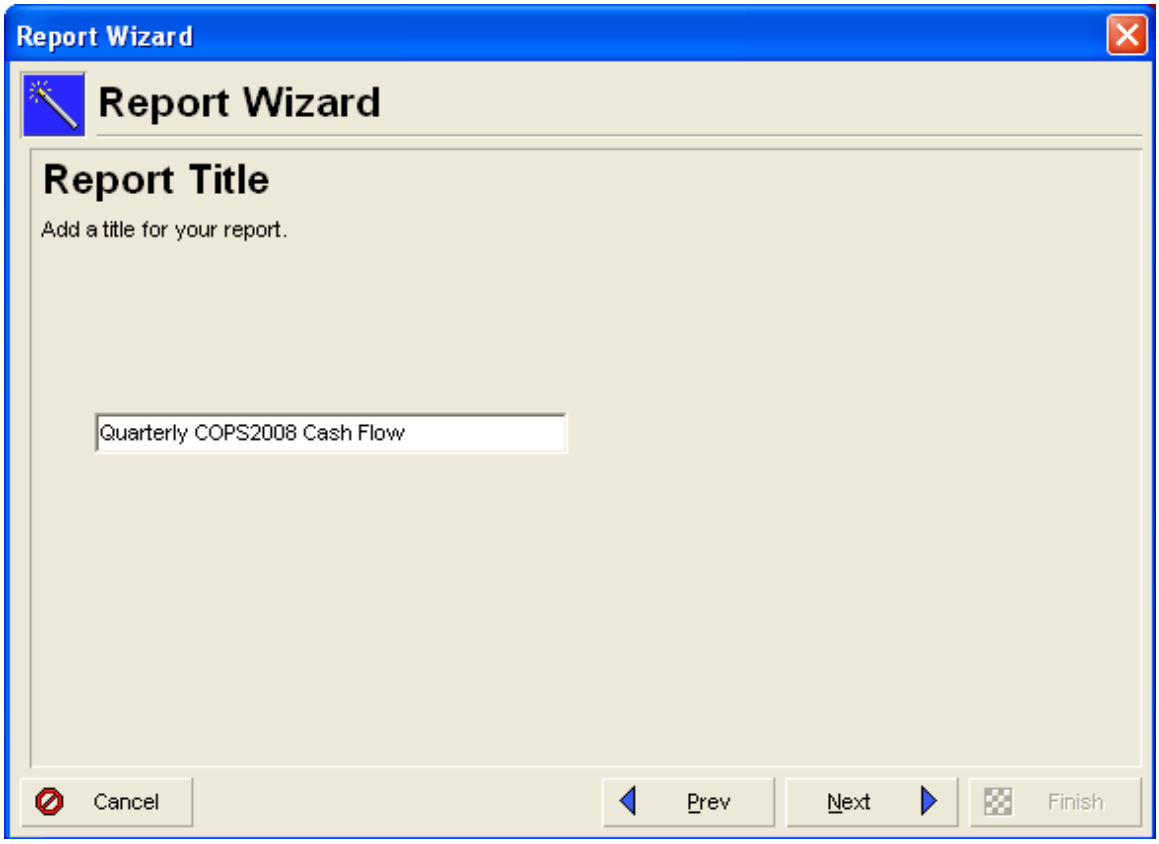
21. Click *Timescale*



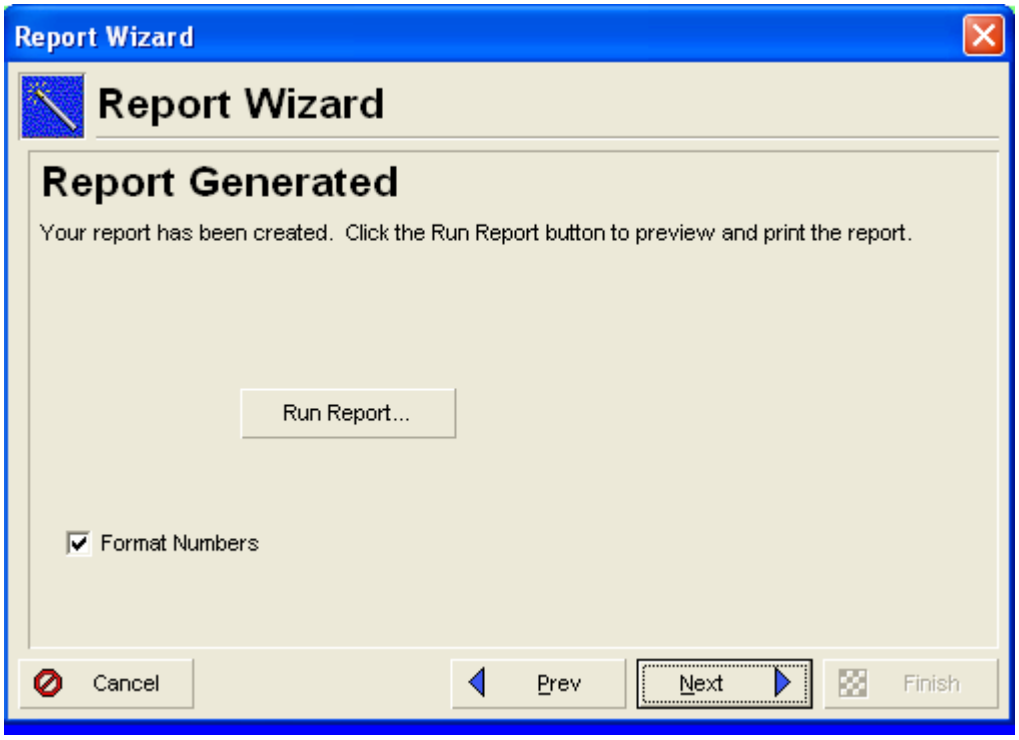
22. Click on *Date Interval* drop down arrow and select **Quarter**
23. Click *OK*



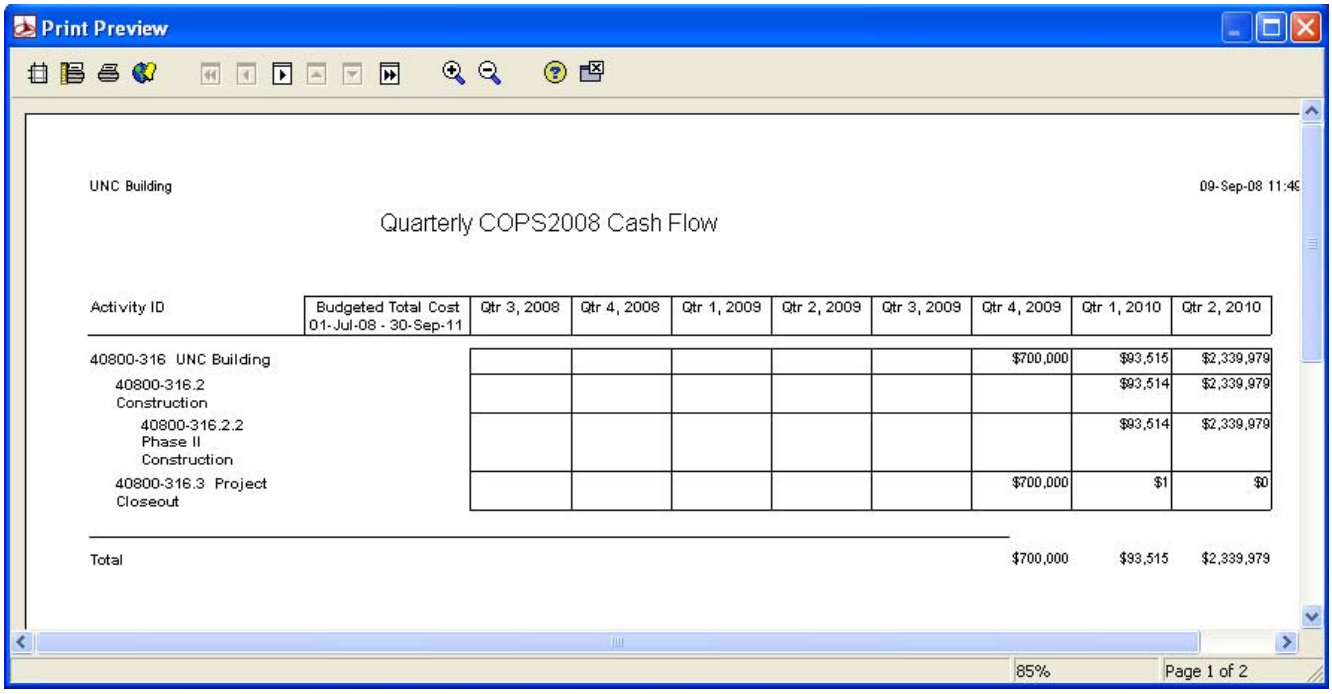
24. Add **Budgeted Total Cost** to the *Selected Options* column.
25. Click *OK*
26. Click *Next*



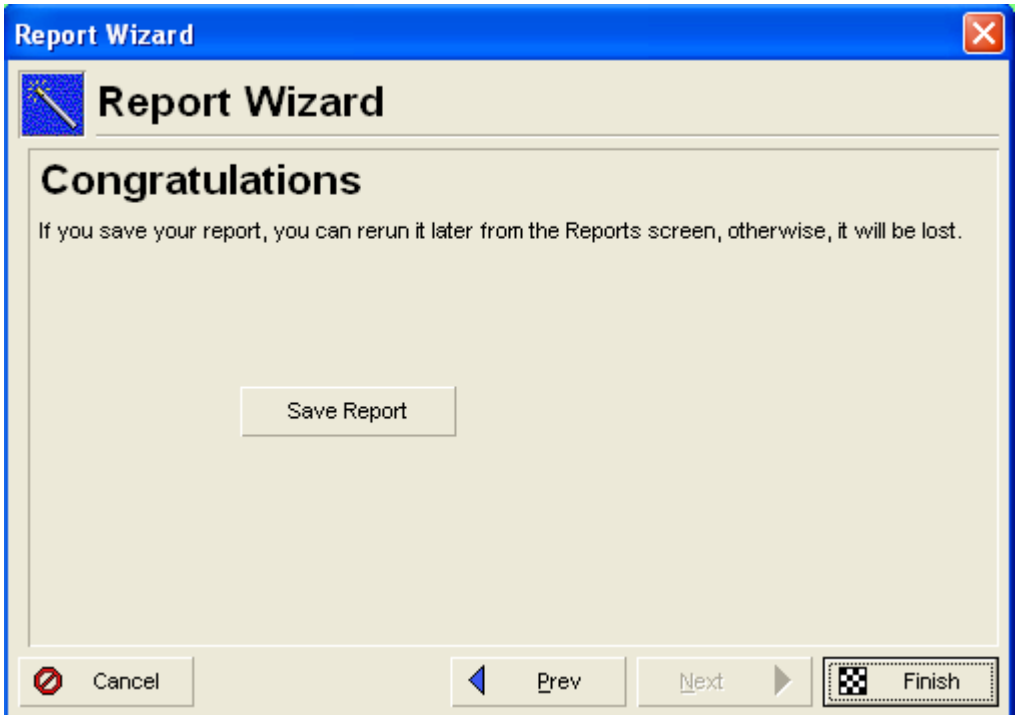
27. Type in report title **Quarterly COPS2008 Cash Flow**
28. Click *Next*



29. Click *Run Report*



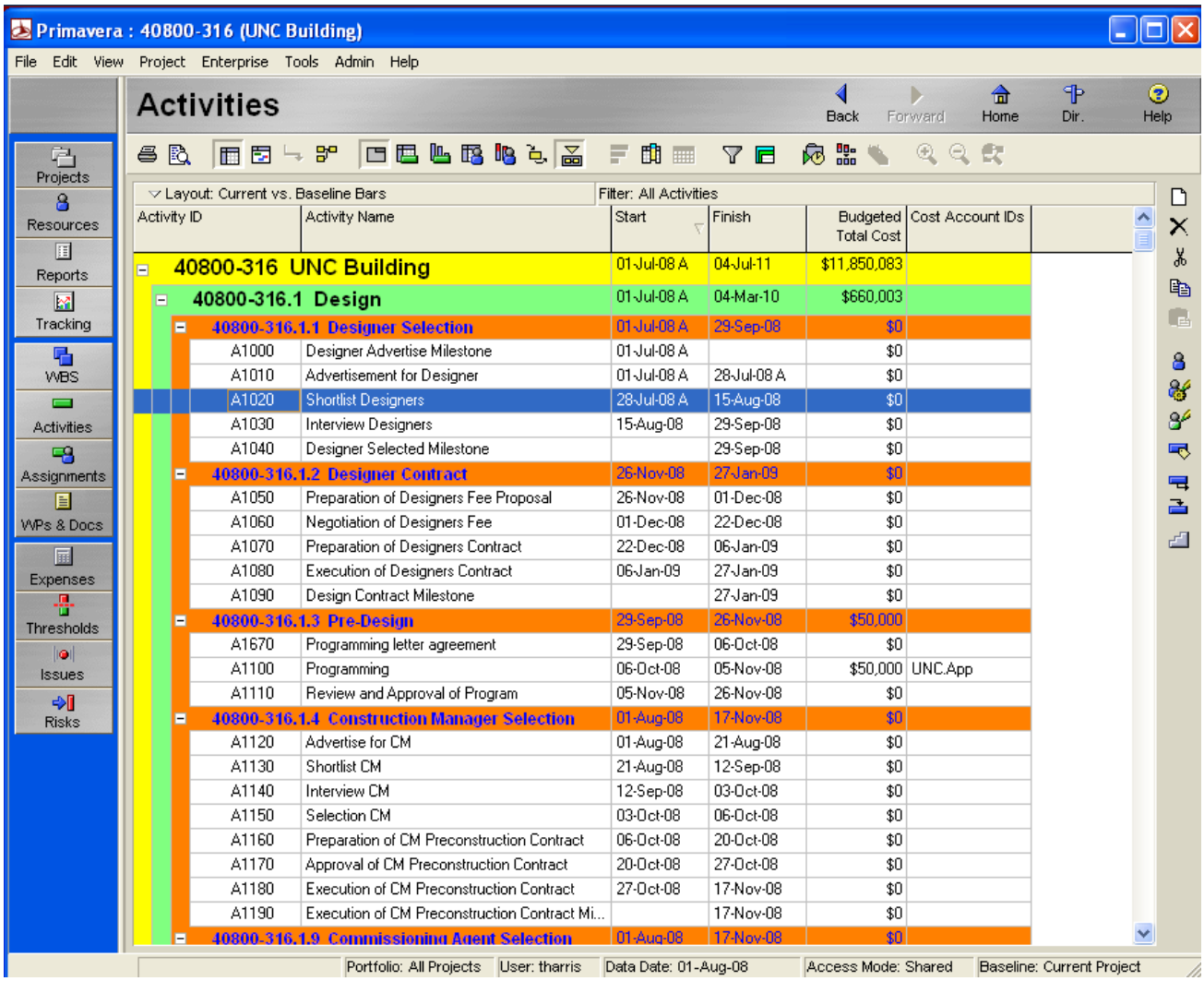
30. View pages of report, then close
31. Click *Next*



32. Click *Save Report*
33. Click *Finish*

Creating a Report Using the Current Layout

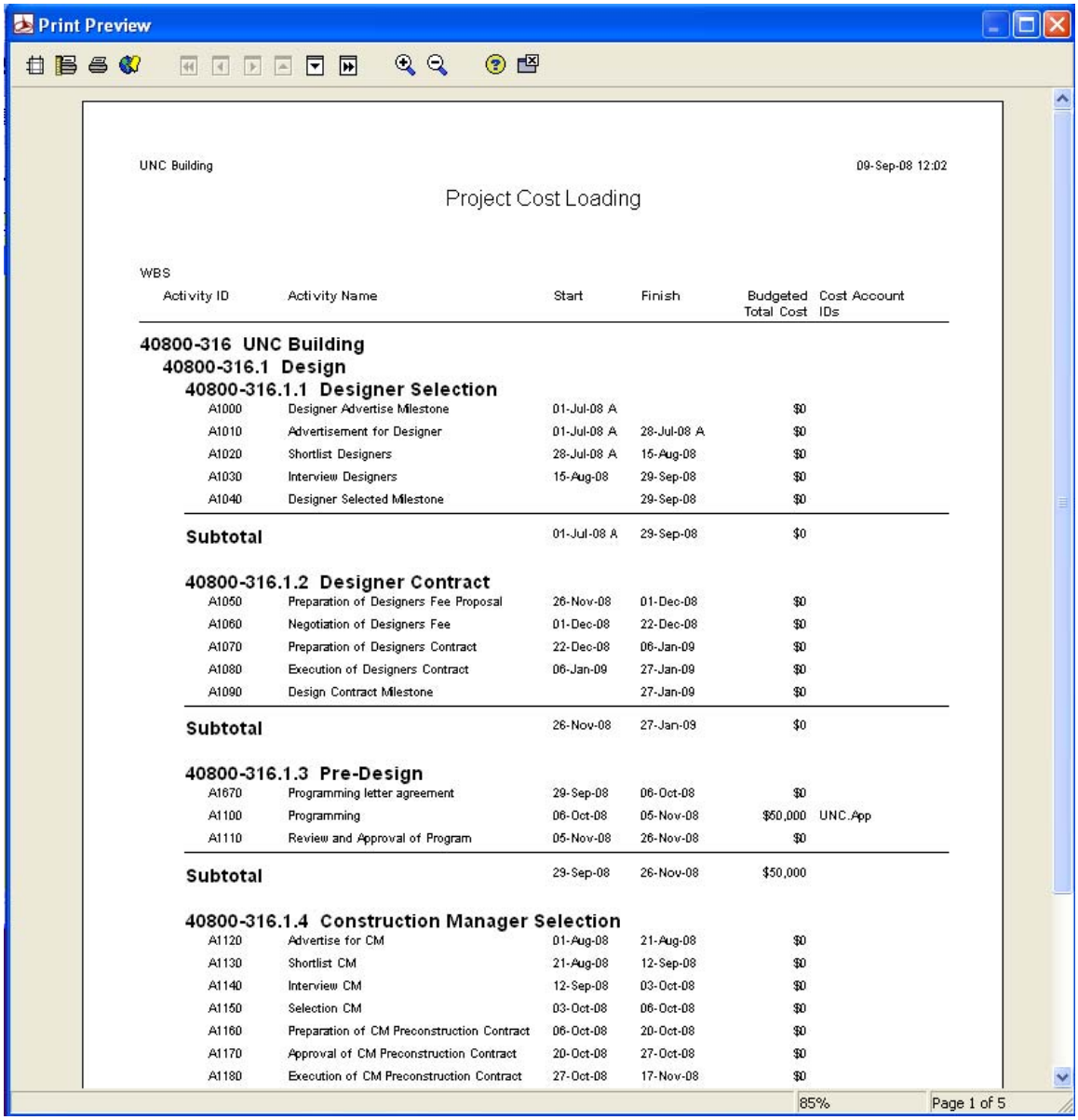
The Report wizard can also be used to create reports based on the layout that is currently displayed. Reports can be modified as they are being built through the wizard.



Steps

1. Adjust columns in layout to look like above.
2. In the Tools menu, click *Report Wizard*

3. In the Create or Modify Report window, select *Use Current Screen.*
4. Click *Next* for the next three screens, reviewing the data selected for each screen.
5. On the Report Title screen, type in **Project Cost Loading.**
6. Click *Next.*
7. On the Report Generated dialog, click *Run Report*.

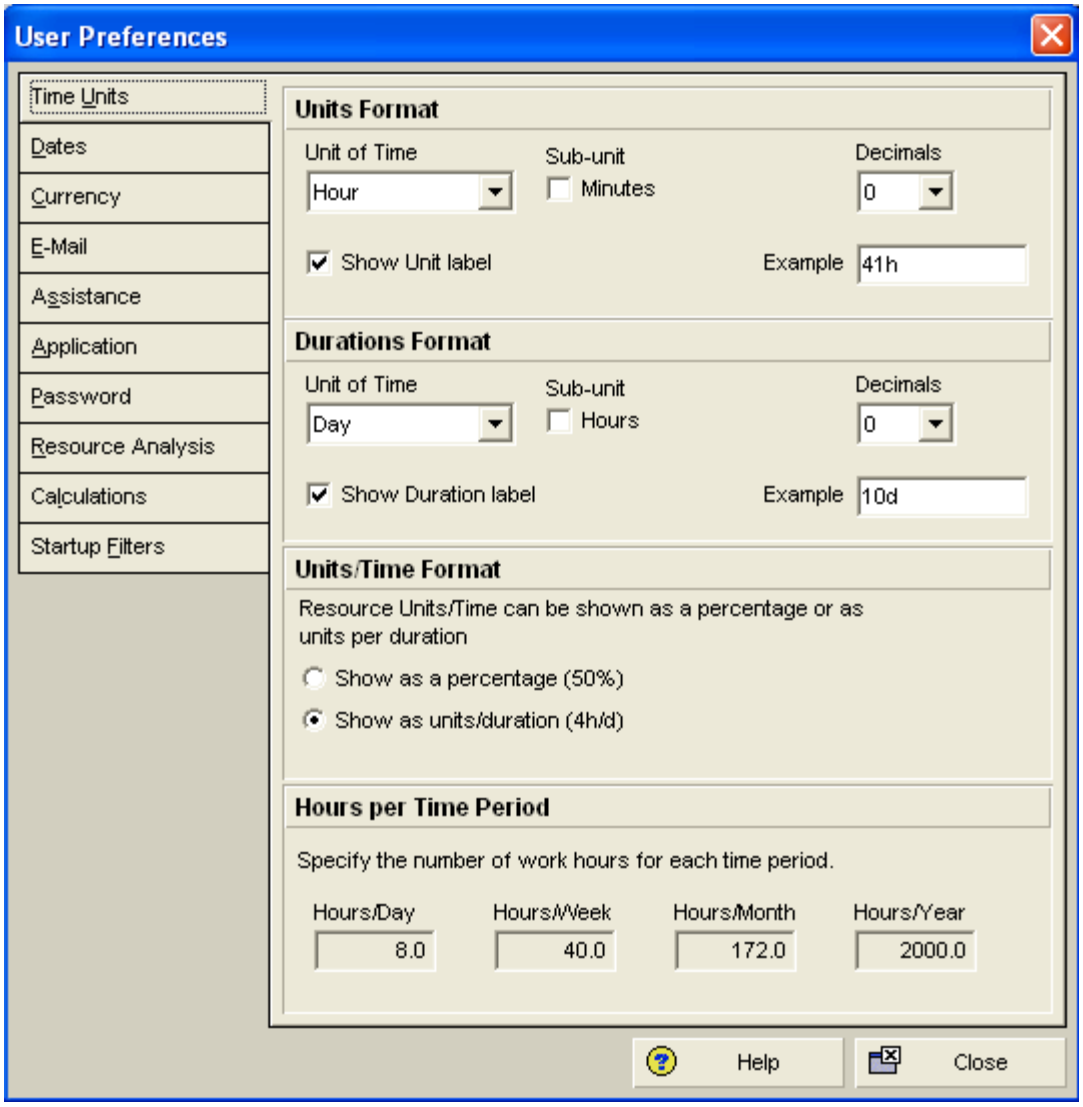


WBS Activity ID	Activity Name	Start	Finish	Budgeted Total Cost	Cost Account IDs
40800-316 UNC Building					
40800-316.1 Design					
40800-316.1.1 Designer Selection					
A1000	Designer Advertise Milestone	01-Jul-08 A		$0	
A1010	Advertisement for Designer	01-Jul-08 A	28-Jul-08 A	$0	
A1020	Shortlist Designers	28-Jul-08 A	15-Aug-08	$0	
A1030	Interview Designers	15-Aug-08	29-Sep-08	$0	
A1040	Designer Selected Milestone		29-Sep-08	$0	
Subtotal		01-Jul-08 A	29-Sep-08	$0	
40800-316.1.2 Designer Contract					
A1050	Preparation of Designers Fee Proposal	26-Nov-08	01-Dec-08	$0	
A1060	Negotiation of Designers Fee	01-Dec-08	22-Dec-08	$0	
A1070	Preparation of Designers Contract	22-Dec-08	06-Jan-09	$0	
A1080	Execution of Designers Contract	06-Jan-09	27-Jan-09	$0	
A1090	Design Contract Milestone		27-Jan-09	$0	
Subtotal		26-Nov-08	27-Jan-09	$0	
40800-316.1.3 Pre-Design					
A1670	Programming letter agreement	29-Sep-08	06-Oct-08	$0	
A1100	Programming	06-Oct-08	05-Nov-08	$50,000	UNC.App
A1110	Review and Approval of Program	05-Nov-08	26-Nov-08	$0	
Subtotal		29-Sep-08	26-Nov-08	$50,000	
40800-316.1.4 Construction Manager Selection					
A1120	Advertise for CM	01-Aug-08	21-Aug-08	$0	
A1130	Shortlist CM	21-Aug-08	12-Sep-08	$0	
A1140	Interview CM	12-Sep-08	03-Oct-08	$0	
A1150	Selection CM	03-Oct-08	06-Oct-08	$0	
A1160	Preparation of CM Preconstruction Contract	06-Oct-08	20-Oct-08	$0	
A1170	Approval of CM Preconstruction Contract	20-Oct-08	27-Oct-08	$0	
A1180	Execution of CM Preconstruction Contract	27-Oct-08	17-Nov-08	$0	

User Preferences

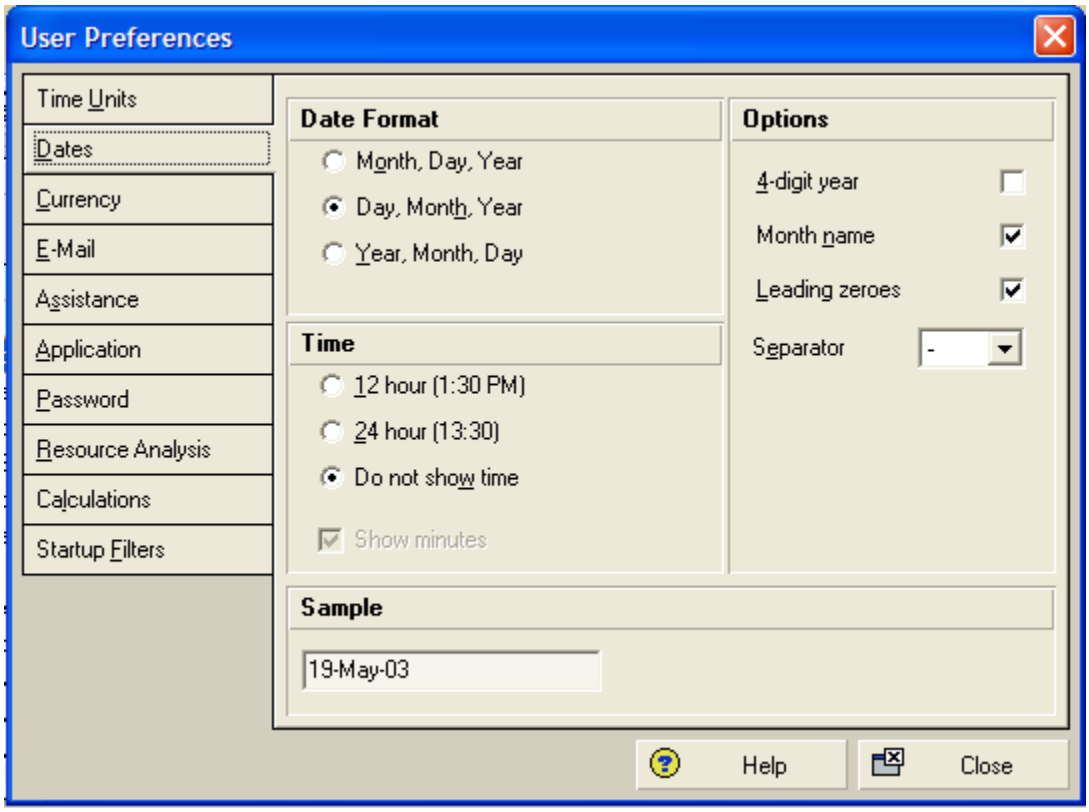
Select **Edit…User Preferences** for the drop down menu. Set the parameters as follows:

1. Time Units



User Preferences

2. Dates

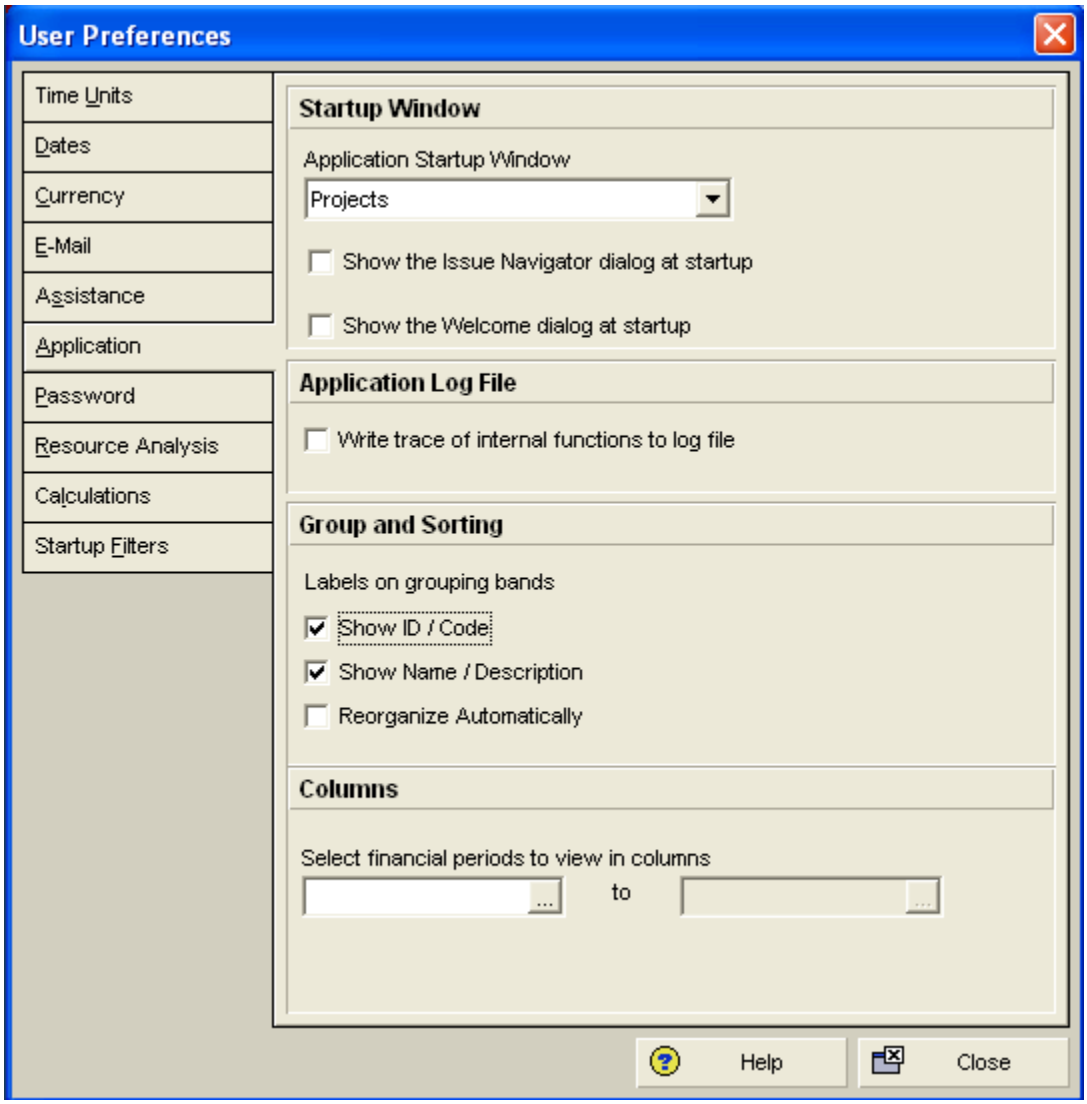


3. Currency – No Change

4. E-Mail – Type your return address

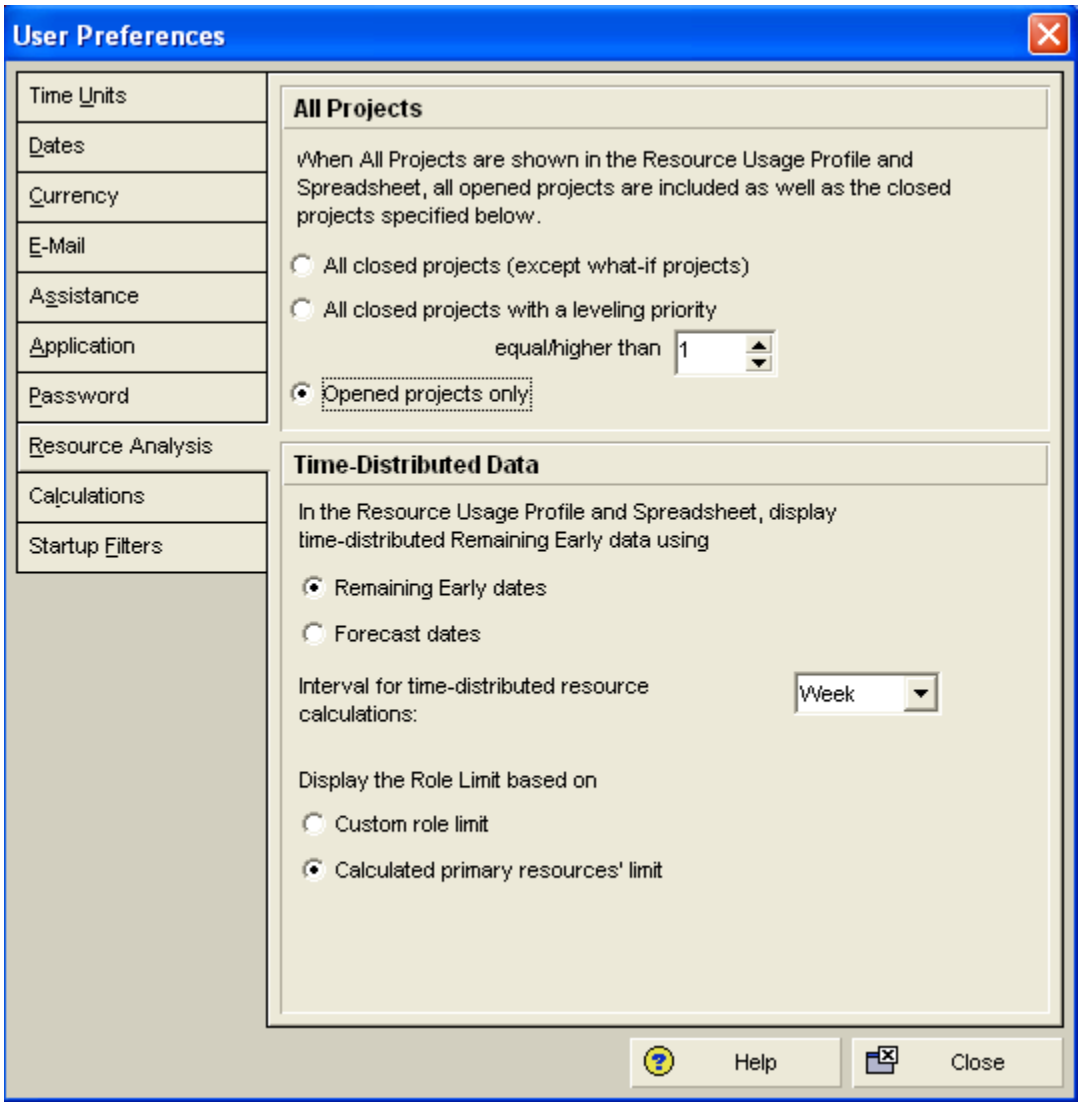
5. Assistance – Unchecking all is recommended

6. Application – Startup Window - Projects recommended

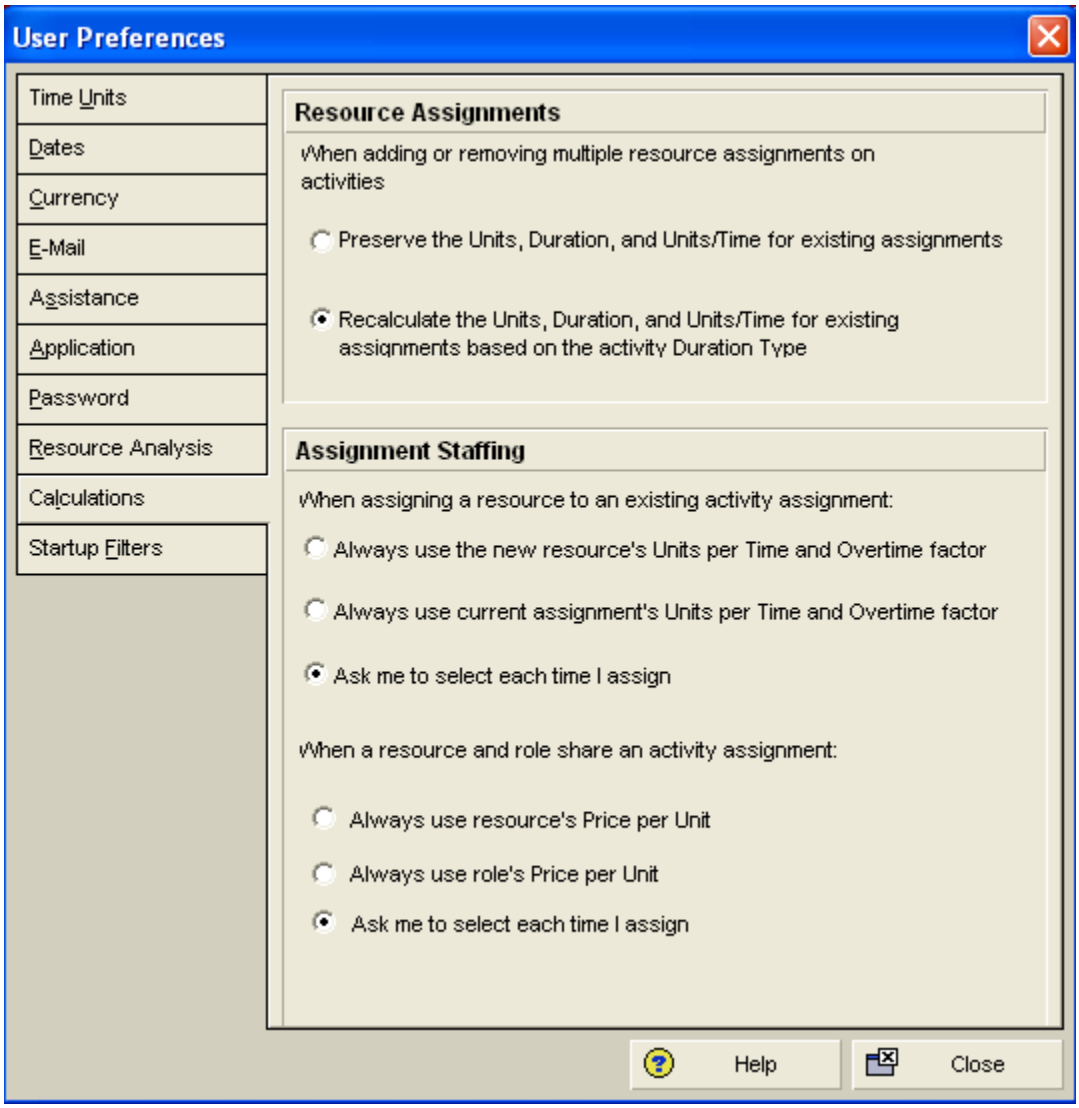


7. Password – Set as needed

8. Resource Analysis



9. Calculations



10. Startup Filters