MICROSOFT PROJECT 2010 - II

Course Material

This 2-day course is for intermediate and advanced users of the MS Project scheduling application who want to increase their capabilities managing projects in MS Project. Overall, the objective of the course is to give participants advanced skills in resource assignment, tracking, and leveling; using custom fields and filters to create various views of the schedule model; and managing multiple projects and shared resource pools with Project 2010.

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Course Agenda

Day 1		Day2	
8:30 - 9:00	Personal Introductions	8:30 - 9:45	Progressing the Schedule
9:00 - 10:15	MS Project I Review	9:45 - 10:15	Collaborating Project Information
10:15 - 10:30	BREAK	10:15 - 10:30	BREAK
10:30 - 11:30	More on Resources & Assignments	10:30 - 11:30	Collaborating Project Information
11:30 - 12:30	LUNCH	11:30 - 12:30	LUNCH
12:30 - 2:00	More on Resources & Assignments	12:30 - 2:00	Using Resource Pools
2:00 - 2:15	BREAK	2:00 - 2:15	BREAK
2:15 - 4:00	Progressing the Schedule	2:15 - 3:30	Using Resource Pools
		3:30 - 4:00	Evaluations

LESSON 1: MS PROJECT I REVIEW

Topic 1: Creating the Project

Topic 2: Calendar Basics

Topic 3: Creating the WBS

Topic 4: Entering Dependencies

Topic 5: Resources and Assignments

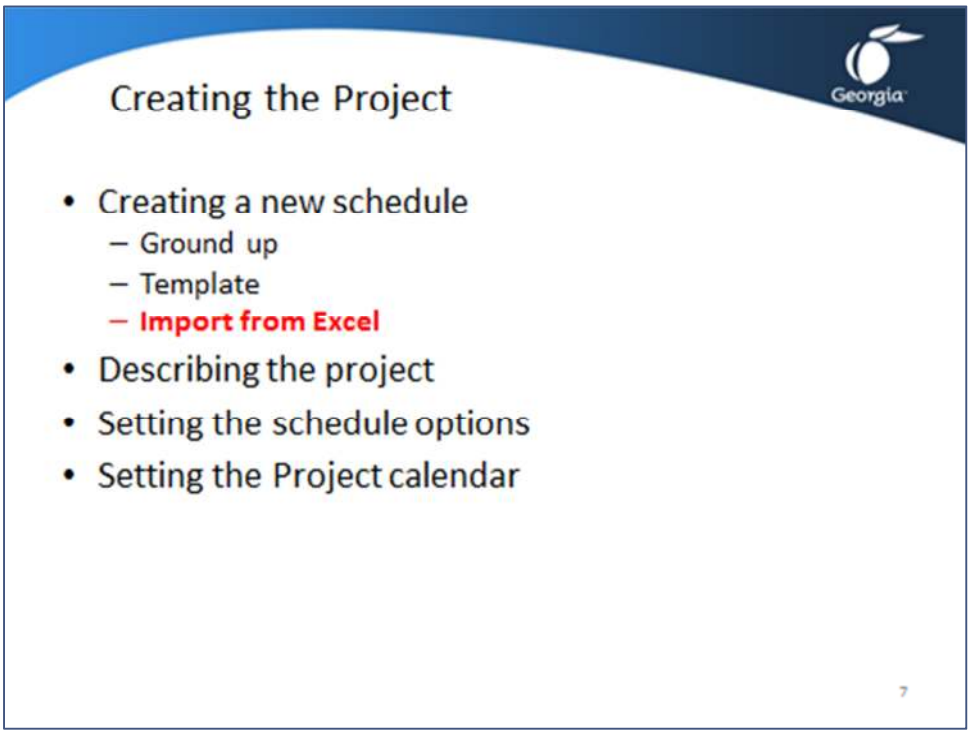
Student Learning Objectives

After completing this lesson you should be able to

- Understand the basic functions covered in the MS Project I course

Approximate Presentation time: 1 hour 15 minutes

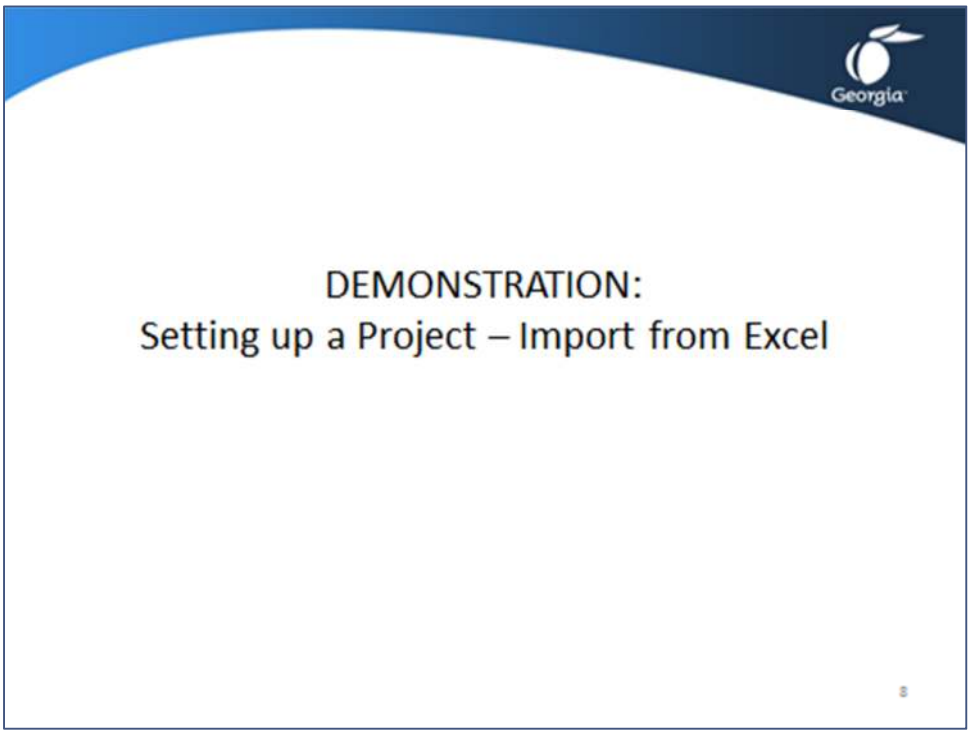
Topic 1: Creating the Project



We recommend the following process when setting up a new project schedule. This topic will define each step in detail.

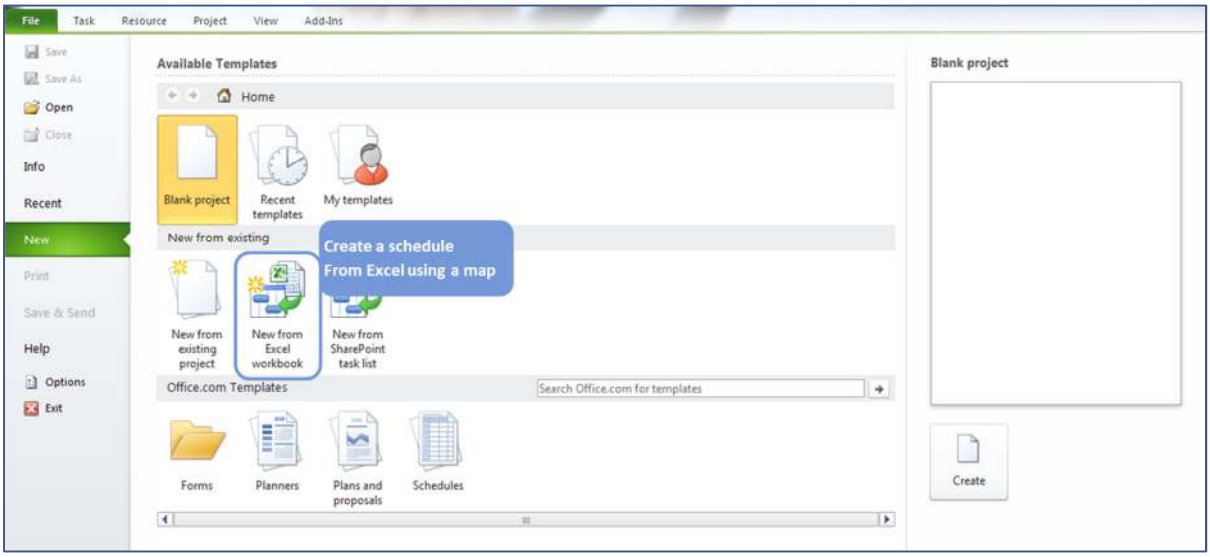
- Creating a new schedule from the ground up or from a template, or an Excel Spreadsheet using a **map**.
- Describing the project
- Setting the schedule options
- Setting the project calendar

Demonstration: Setting Up a New Schedule – Using Excel and Maps

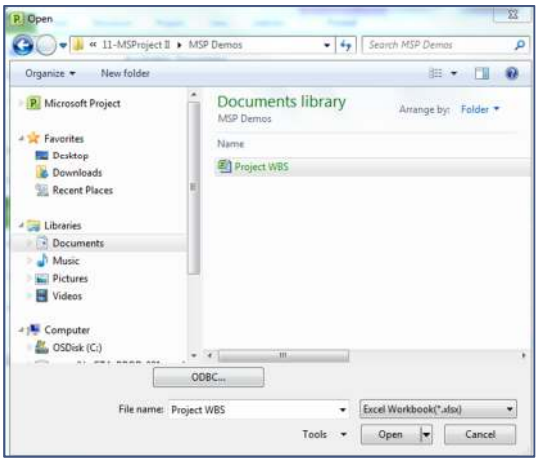


Open the MS Project application.

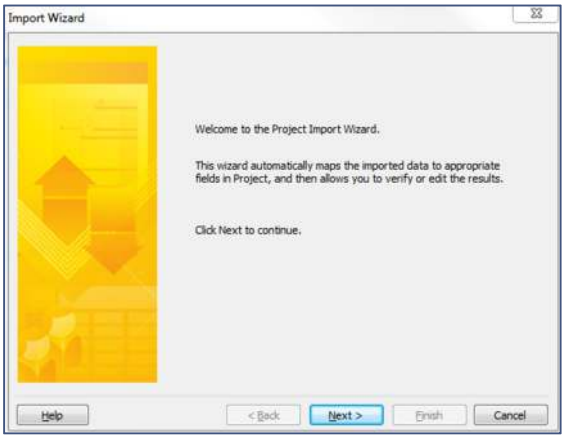
Click ribbon tab **File** and click **New** and the following screen appears.
In the **New from existing** section select the **New from Excel workbook** option.

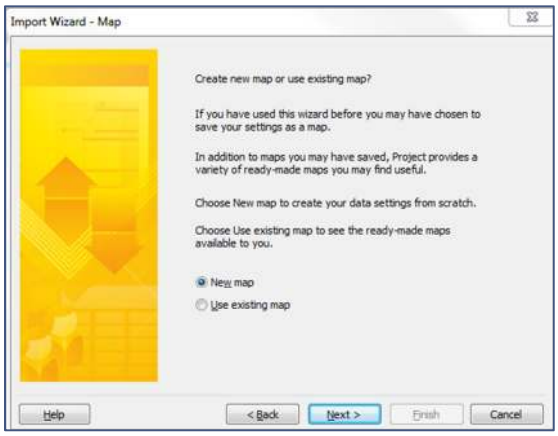


Select an Excel workbook from the Open dialog box, such as depicted in the view below.

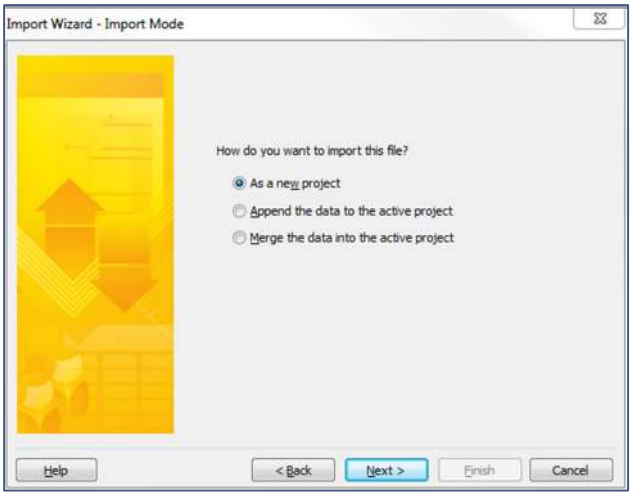


The Import Wizard dialog box will appear. Click Next to continue. Select the map to use. It is recommended to save the map after completing the insert. The first time through, select New map and click next.

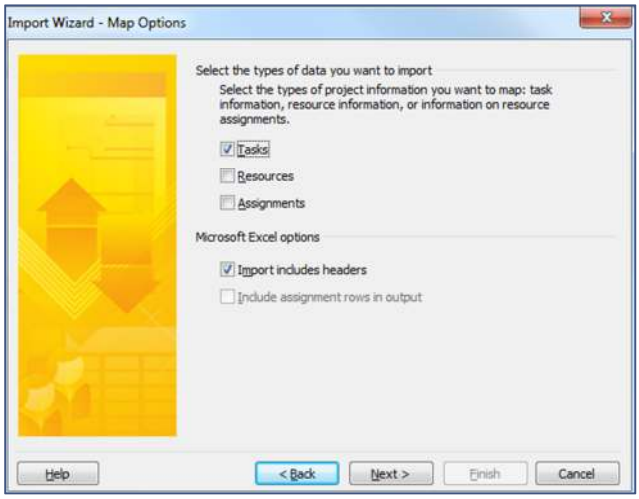




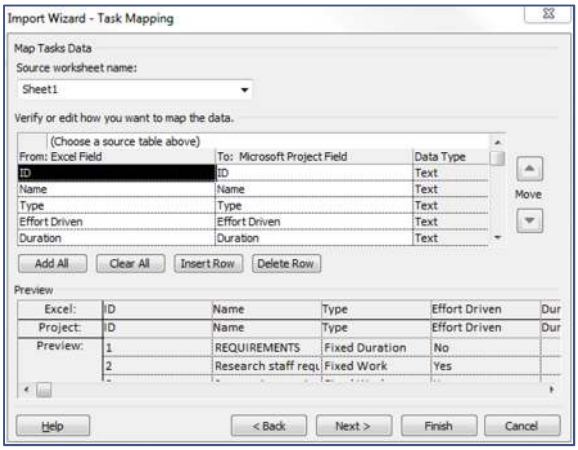
The import Mode dialog box will appear. Select the “As a new project” option and click Next.

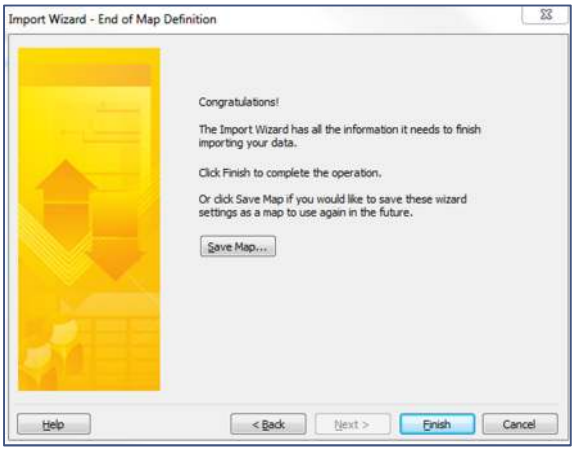


The Map Options dialog box now appears. Select the *Tasks* option and the *Import includes headers* option. Click Next.

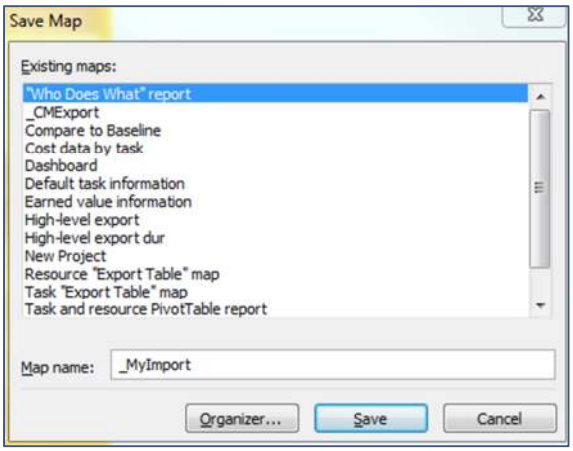


The Task Mapping dialog box appears. You will need to select the worksheet your schedule data is on in the Source sheet name drop down box. The field names will appear in the verify table and a sample of the data to import will display in the preview table. If the data looks correct click **Next**.

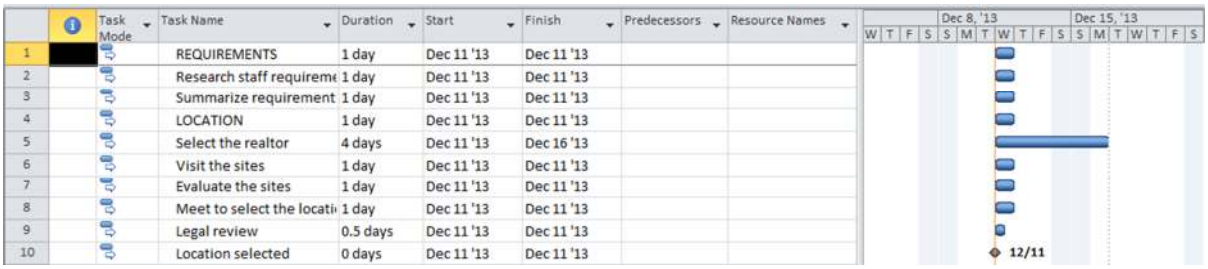




Click **Save Map**. Click **Save**. Click **Finish** on the End of Map Definition dialog box



The following is a result of the Excel to Project import.

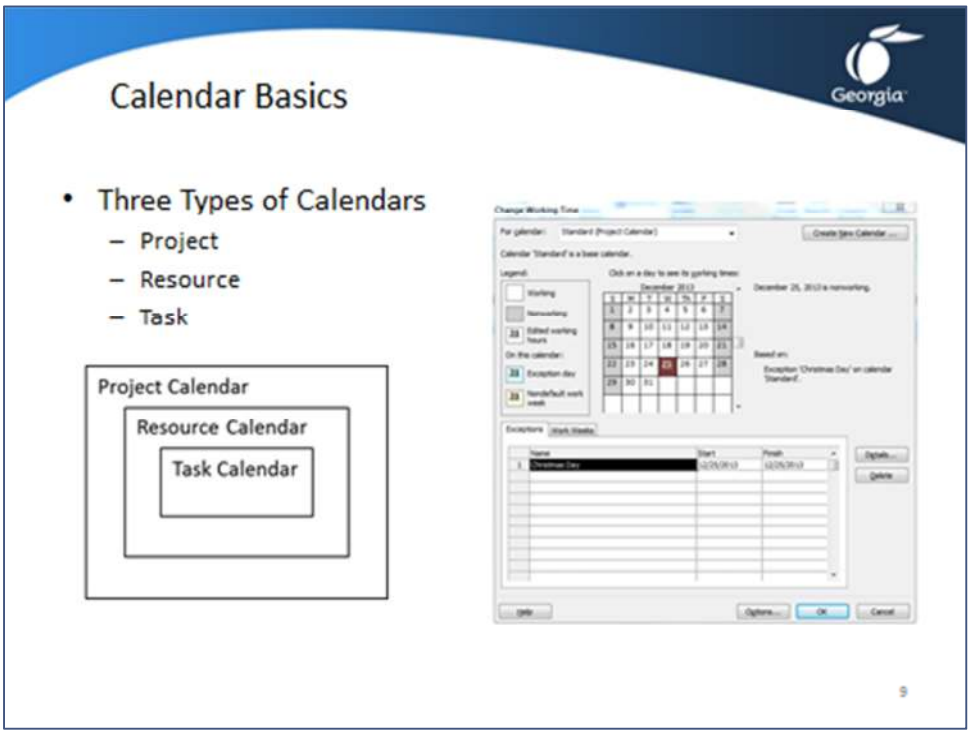


	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		REQUIREMENTS	1 day	Dec 11 '13	Dec 11 '13		
2		Research staff requireme	1 day	Dec 11 '13	Dec 11 '13		
3		Summarize requirement	1 day	Dec 11 '13	Dec 11 '13		
4		LOCATION	1 day	Dec 11 '13	Dec 11 '13		
5		Select the realtor	4 days	Dec 11 '13	Dec 16 '13		
6		Visit the sites	1 day	Dec 11 '13	Dec 11 '13		
7		Evaluate the sites	1 day	Dec 11 '13	Dec 11 '13		
8		Meet to select the locati	1 day	Dec 11 '13	Dec 11 '13		
9		Legal review	0.5 days	Dec 11 '13	Dec 11 '13		
10		Location selected	0 days	Dec 11 '13	Dec 11 '13		

From this point you will want to:

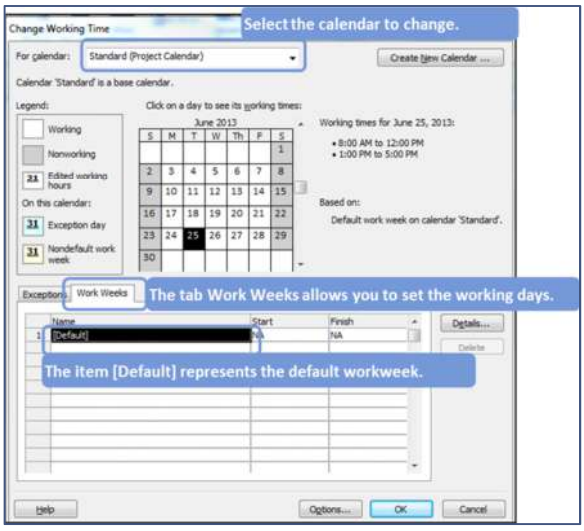
- Describe the project (Project tab, Project Information dialog box)
- Set the schedule options (File tab, Options, Schedule section)
- Set the project calendar (Project tab, Change Working Time)

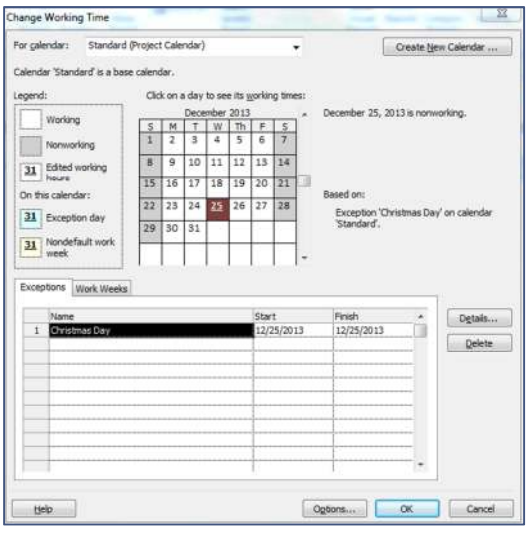
Topic 2: Calendar Basics



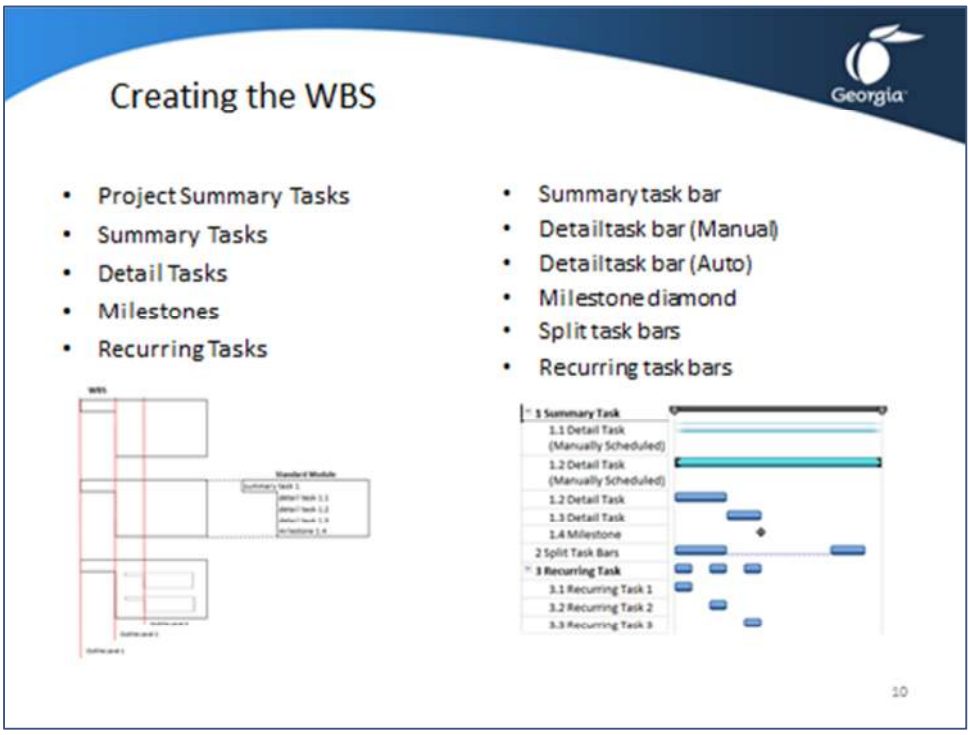
The **Change Working Time** dialog (**Project** ribbon) allows you to set the project calendar. The default project calendar is called *Standard (Project Calendar)*. On the project calendar you indicate:

- *Workweek*
  - The *Working days* (business days) and nonworking days.
  - The *Working times* on the business days.
- National and corporate *holidays* are called *Exceptions* in MS Project.





Topic 3: Creating the WBS



Categories of Tasks:

- Project Summary Task
- Summary Tasks
- Detail Tasks
- Milestones
- Recurring Tasks

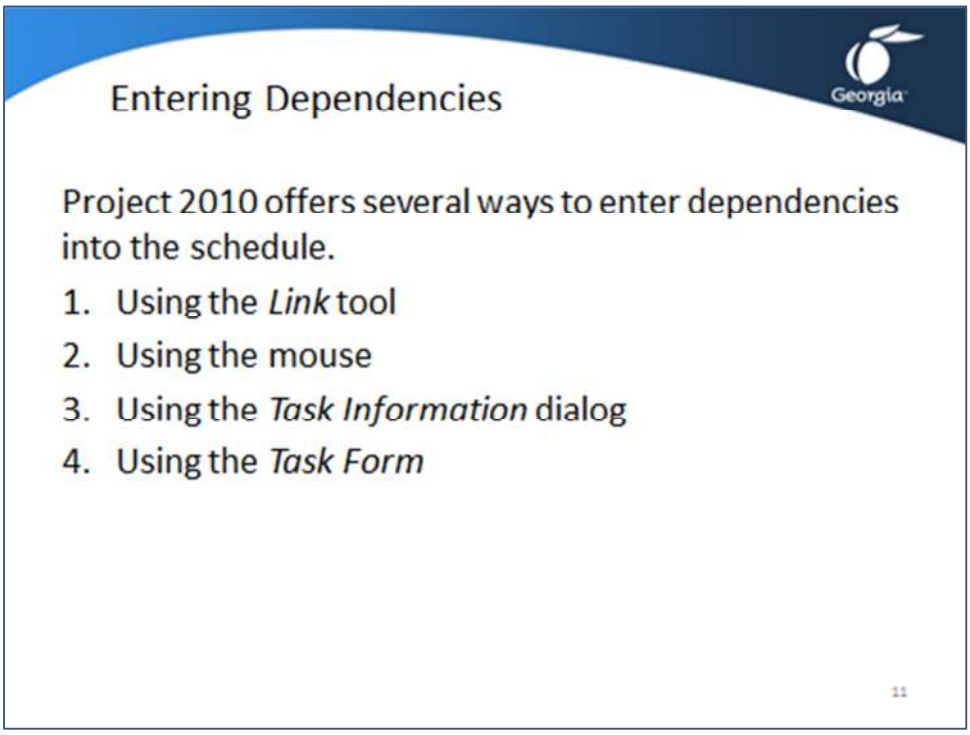
Entering Tasks:

- Detail Tasks
- Summary Tasks
- Split Tasks
- Recurring Tasks
- Milestones

Changing the WBS

- Editing and Deleting Tasks
- Copying and Moving Tasks

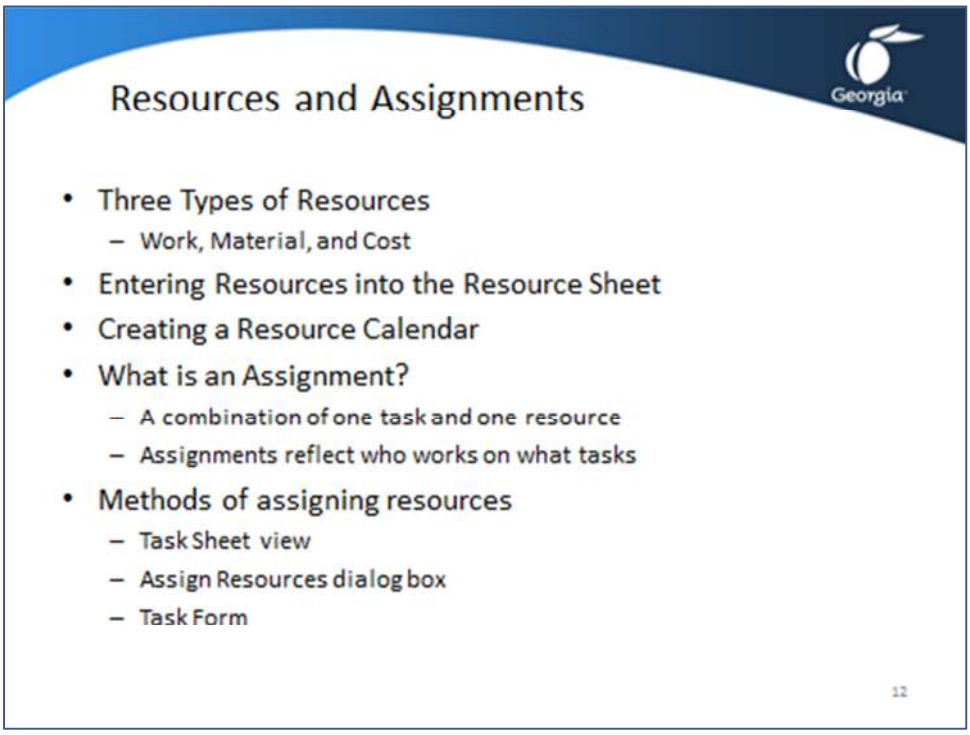
Topic 4: Entering Dependencies



Project 2010 offers a variety of ways to enter dependencies into the schedule. The Gantt Chart view is the primary view used to accomplish this. You should understand the following methods for entering a dependency:

- Using the *Link tool*
- Using the mouse
- Using the *Task Information* dialog
- Using the *Task Form*

Topic 5: Resources and Assignments



You should understand the following topics related to resources:

- The three types of resources; Work, Material, and Cost
- How to enter a resource into the Resource Sheet
- Creating a resource calendar
- Understand an assignment; a combination of one task and one resource. Assignments reflect who works on what task.
- Understand the methods to assign a resource to a task; the task sheet view, the assign resources dialog box, or using the task form.

Notes

LESSON 2: MORE ON RESOURCES

Topic 1: Adding Custom Fields

Topic 2: Resource Availability and Costs

Topic 3: Resource Leveling

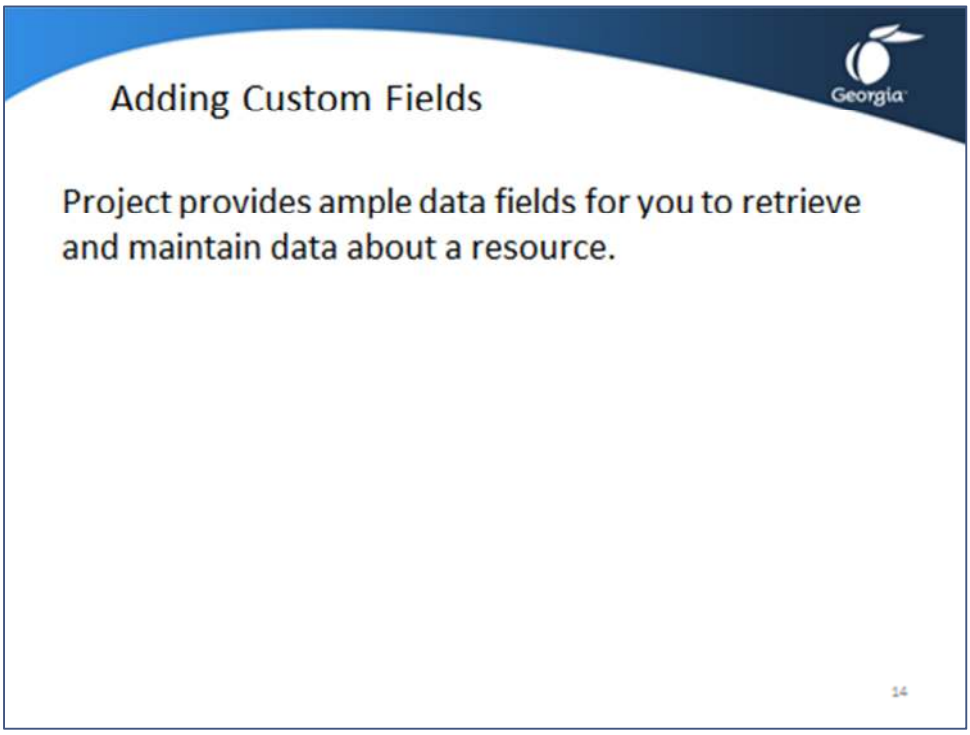
Student Learning Objectives

After completing this lesson you should be able to

- Understand how to view resource availability
- Understand how to assign a cost to a resource
- Understand how to resolve resource over allocation
- Understand how to use resource leveling

Approximate Presentation time: 2 hours 30 minutes

Topic 1: Adding Custom Fields



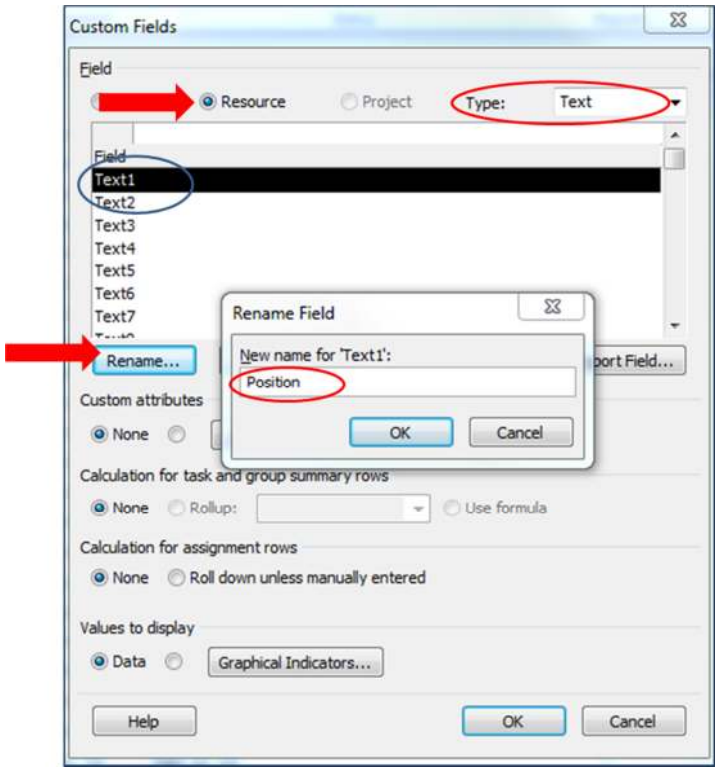
How to add Custom Fields to the Resource Sheet

Project does not always provide you with the necessary data fields to capture organizational specific information about a resource. This is why an ample number of customizable fields are provided to you. An explanation of how to create and insert these fields into the Resource sheet is provided below. A more detailed discussion on how to use custom fields will be handled in a later lesson.

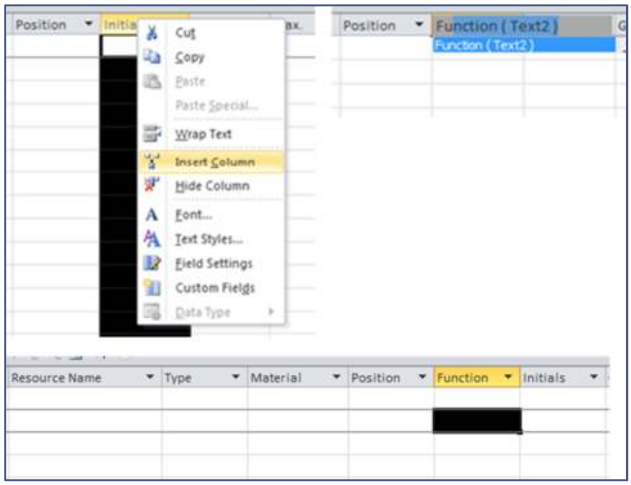
Open the file *Demo Lesson 2 Resource Sheet.mpp* in the MSPII Demos folder.

Set up the Resource Sheet for Custom Fields

1. Click ribbon **Project**, button **Custom Fields**; select the **Resource** radio button and select from the list **Type**, the item **Text** to display extra text fields. Click the **Rename** button and rename field **Text1** to *Position* and **Text2** to *Function*. Click **OK** to exit the Custom Fields dialog box.

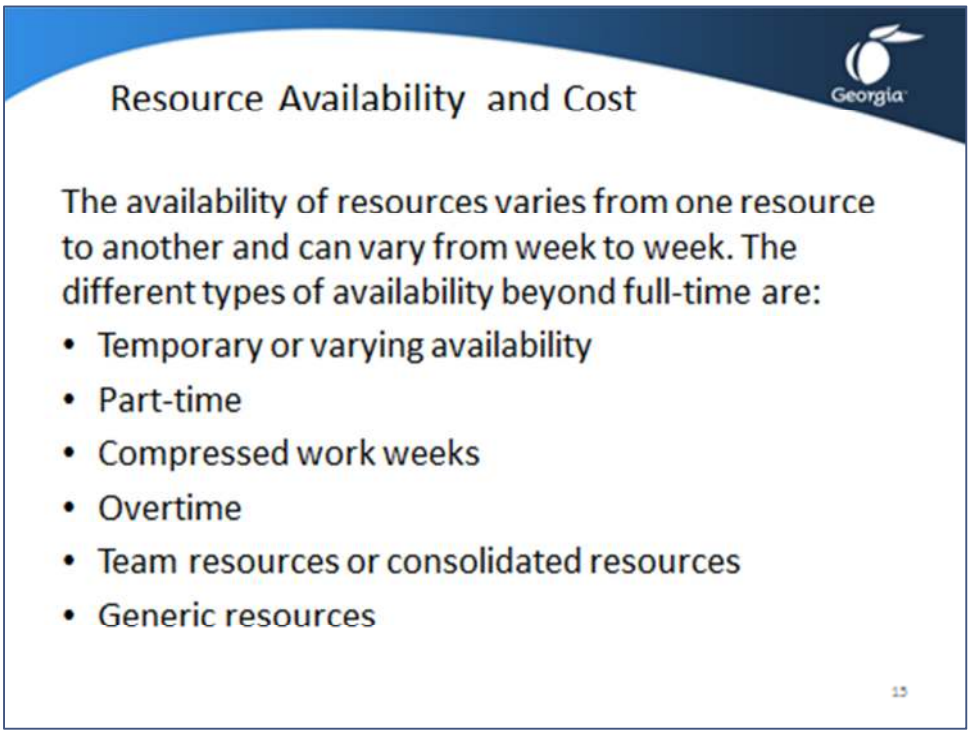


2. Next, insert these new fields into the **Resource Sheet**.
3. Click ribbon **View**, button **Resource Sheet**. Right click on the **Initials** column and select *Insert Column*. Type in Position and select that field. Repeat this step for the field *Function*.



4. Close the files and do not save.

Topic 2: Resource Availability and Costs



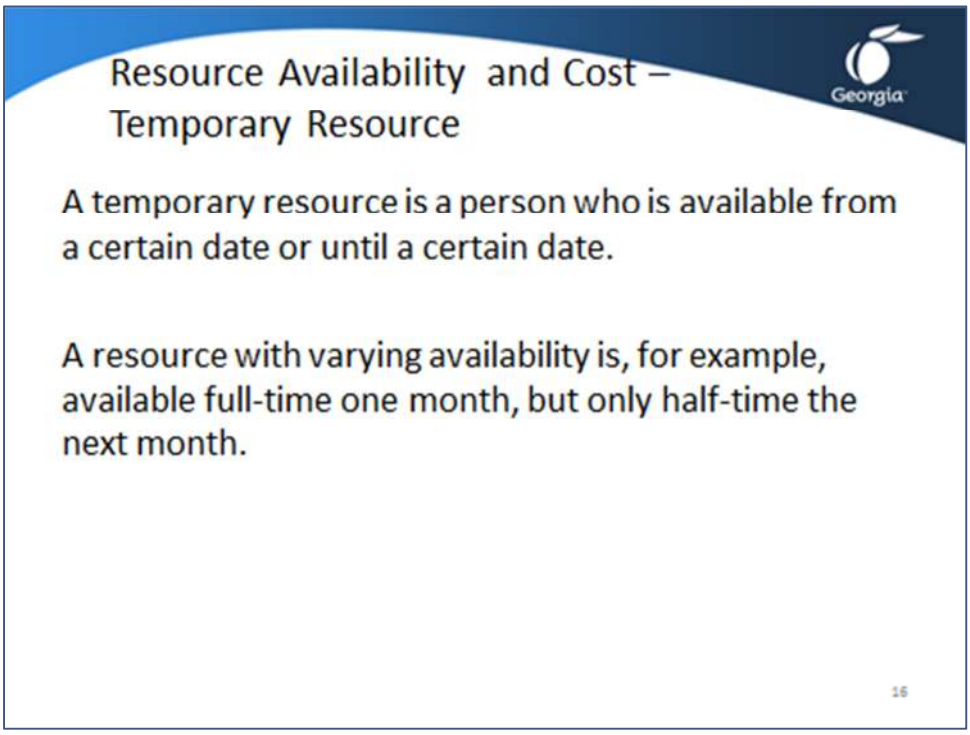
The availability of resources varies from one resource to another and can vary from week to week. The different types of availability beyond full-time are:

1. Temporary or varying availability
2. Part-time
3. Compressed work weeks
4. Overtime
5. Team resources or consolidated resources
6. Generic resources

Each of these types will be explained below.

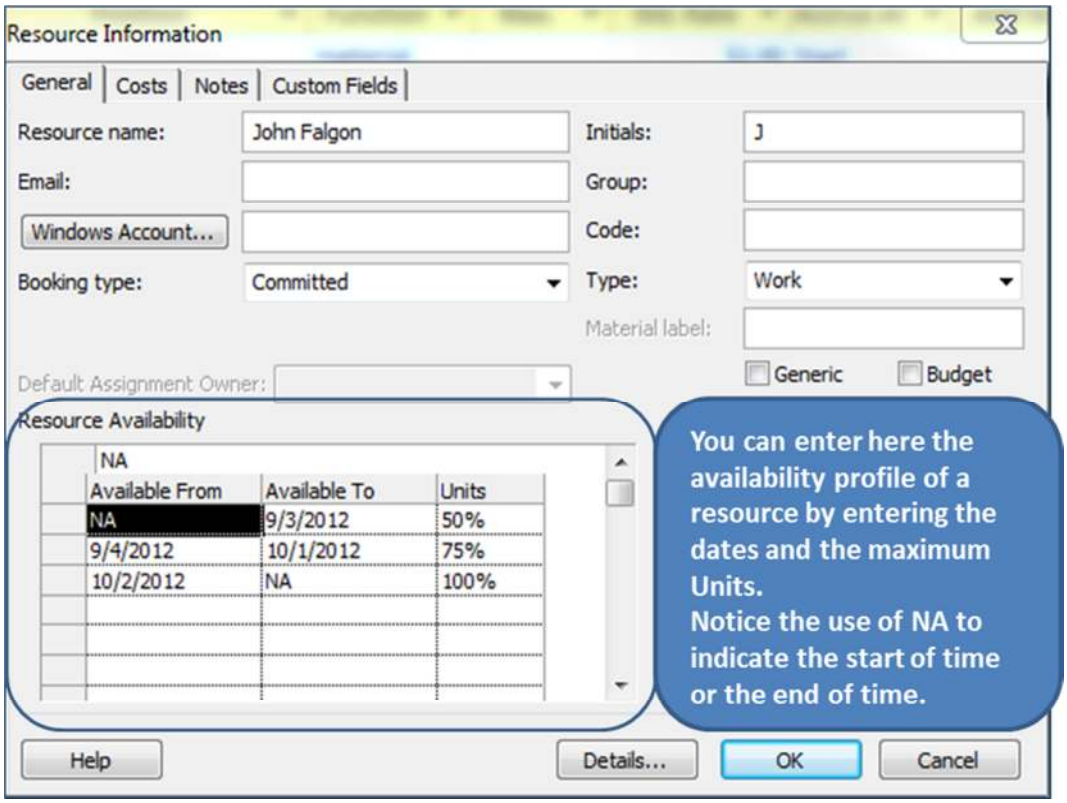
Open the file *Demo Lesson 2 Resource Costs.mpp* in the MSPII Demos folder.

Topic 2: Resource Availability and Costs – Temporary Resource



A temporary resource is a person who is available from a certain date or until a certain date. A resource with varying availability is, for example, available full-time one month, but only half-time the next month. You can set up an entire profile of availability, such as 80% in April, 50% in May, 100% in June, and so on. To enter the *availability profile*:

1. Double-click a resource in the **Resource Sheet**, OR select the resource, click the **Information** button on the **Resource** ribbon.
2. Click the **General** tab; the dialog should now look like:

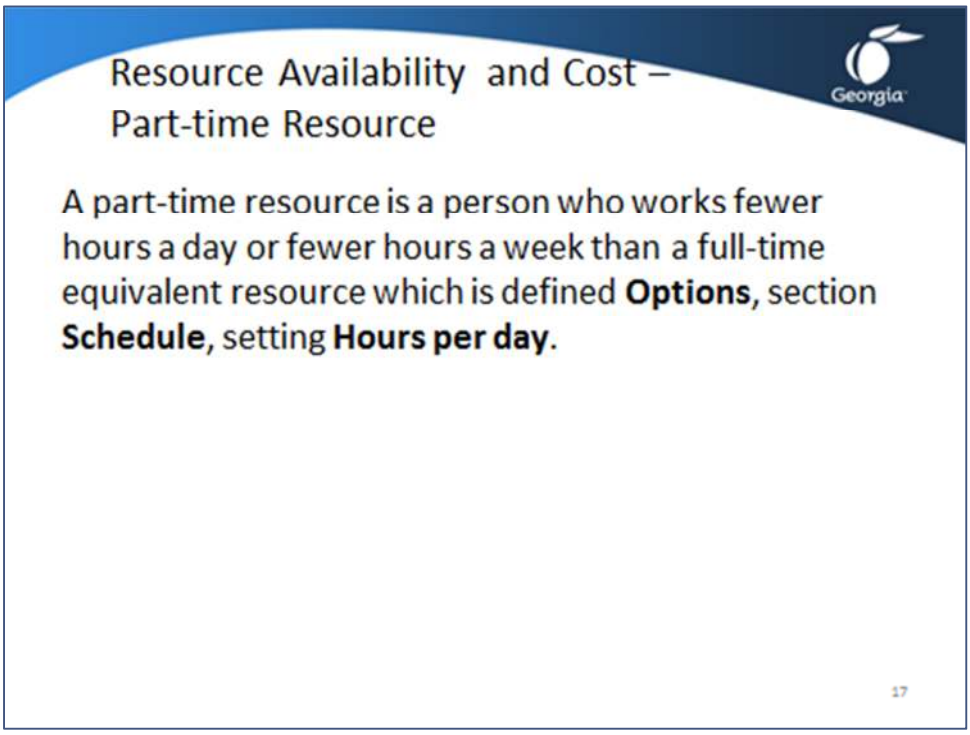


3. In the fields **Available From** and **Available To** enter the dates when the resource is available; in the field **Units** enter the maximum availability. If you leave one date set to *NA*, it means *the-start-of-time* in the **Available From** field and *the-end-of-time* in the **Available To** field. If you set the **Units** to 0 it means unavailable. For example, **Available From** set to *NA* and **Available To** set to Sep 3, 2012 and **Units** set to 100% means temporarily full-time available until Sep 3, 2012 inclusive, after that not available.

Note: In an availability profile, you only need to enter the **Available To** dates and MS Project will automatically enter the corresponding **Available From** dates; it takes the next day.

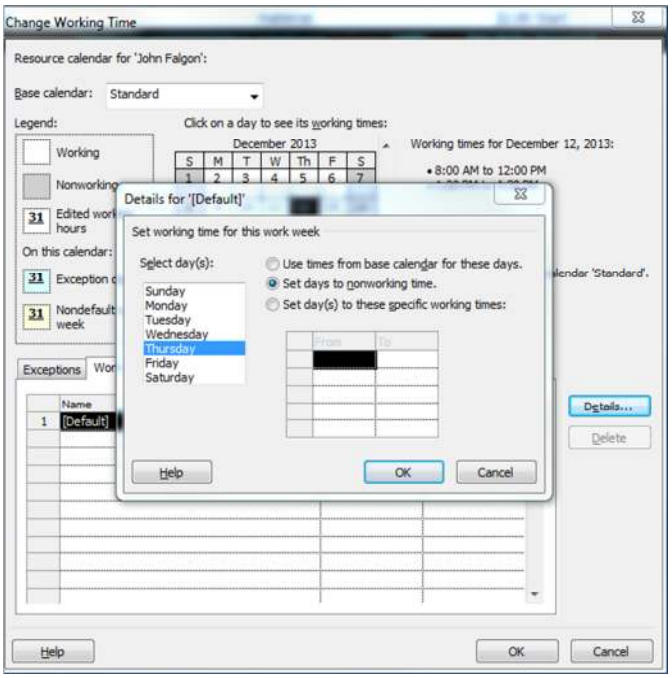
MS Project stores the **Units** numbers you entered in the **Max Units** field. The **Max Units** filed can only display one percentage of all percentages entered in the availability profile. The one number displayed in the **Max Units** field will be the **Units** percentage as per the current date. As time goes by, the field **Max Units** will display all the different values from the availability profile.

Topic 2: Resource Availability and Costs – Part-time Resource

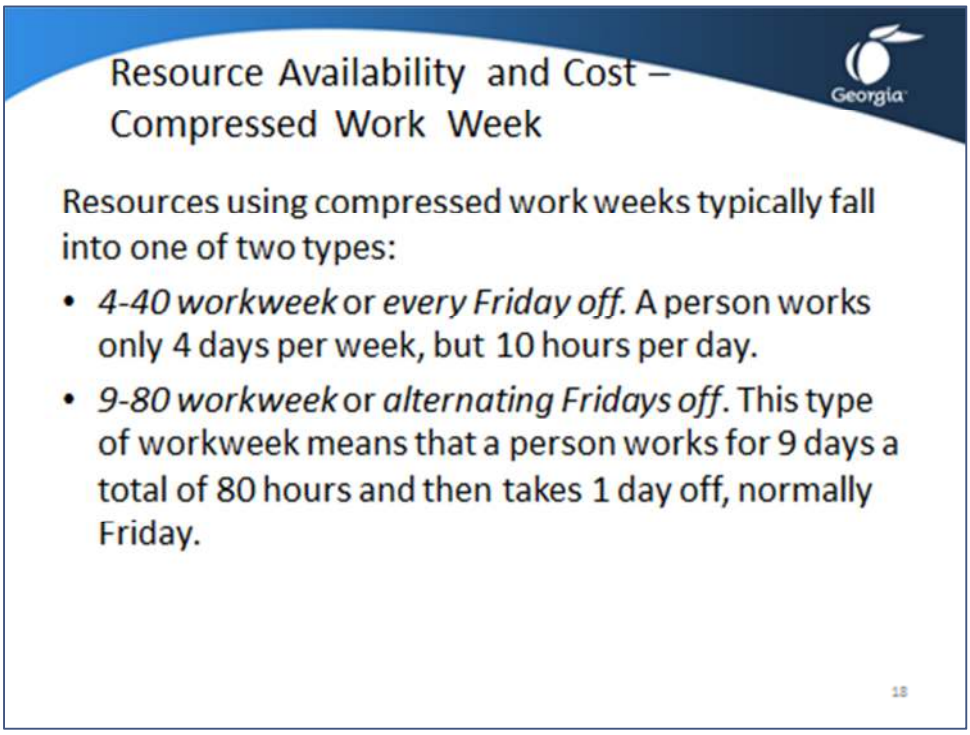


A part-time resource is a person who works fewer hours a day or fewer hours a week than a full-time equivalent resource which is defined **Options**, section **Schedule**, setting **Hours per day**. To enter the *availability profile*:

1. For someone working 4 hours each workday. Set the working-time hours in the resource calendar to only 4 hours per day.
2. For people who work 4 out of 5 weekdays; enter this into the schedule by changing a weekday a nonworking day in their resource calendar. Double-click the resource, click on the **General** tab, click the **Change Working Time** button, click the **Work Weeks** tab, click **Details** and edit the workweek.



Topic 2: Resource Availability and Costs – Compressed Workweek



Resources using compressed work weeks typically fall into one of two types:

- *4-40 workweek* or *every Friday off.* A person works only 4 days per week, but 10 hours per day.
- *9-80 workweek* or *alternating Fridays off*. This type of workweek means that a person works for 9 days a total of 80 hours and then takes 1 day off, normally Friday.

4-40 Workweek

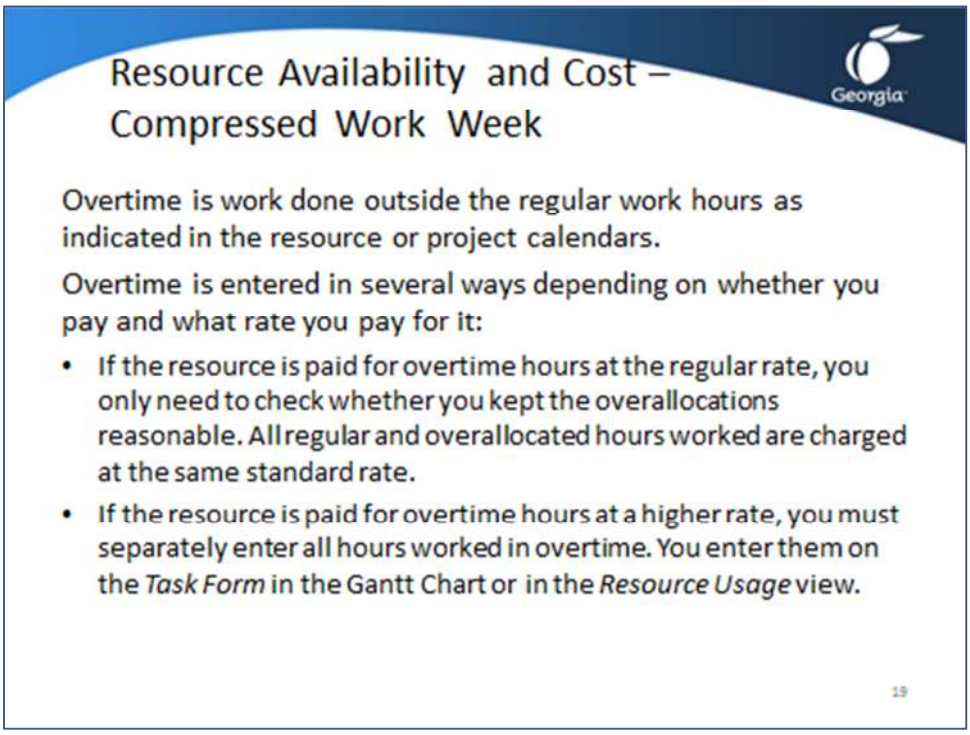
1. Click ribbon **Project**, **Change Working Time**; the **Change Working Time** dialog appears.
2. Click **Create New Calendar**, the Create New Base Calendar dialog appears. Enter a **Name** for the calendar, select the **Create new base calendar** button and click **OK**. You are now in the **Change Working Time** dialog, but with the new calendar active.
3. Click tab **Work Weeks**, select **[Default]** and click **Details**, the dialog will appear.
4. Select the working days **Monday** through **Thursday** by dragging over them.
5. Select the **Set day(s) to these specific times** button.
6. Enter the longer working hours that correspond to a 10-hour workday in the **From** and **To** fields, i.e. 7AM-12PM and 12:30PM-17:30PM. Click **OK**.
7. The *4-40 workweek* calendar is now created.
8. To use it for a resource, switch to the **Resource Sheet**, click in the **Base Calendar**, click the drop down arrow and select the *4-40 workweek* calendar.

The steps to create the 9-80 workweek calendar are similar, notice below.

9-80 Workweek

1. Click ribbon **Project**, **Change Working Time**; the **Change Working Time** dialog appears.
2. Click **Create New Calendar**, the Create New Base Calendar dialog appears. Enter a **Name** for the calendar, select the **Create new base calendar** button and click **OK**. You are now in the **Change Working Time** dialog, but with the new calendar active.
3. Click tab **Work Weeks**, select **[Default]** and click **Details**, the dialog will appear.
4. Select the working days **Monday** through **Friday** by dragging over them.
5. Select the **Set day(s) to these specific times** button.
6. Enter the longer working hours that correspond to a 9-hour workday in the **From** and **To** fields, i.e. 7AM-12PM and 12:30PM-17:30PM. Click **OK**. You will be returned to the **Change Working Time** dialog.
7. Click the **Exceptions** tab and enter a descriptive name like *Every other Friday off*, click **Details**.
8. Select the **Non-working** button, the **Weekly** button, enter 2 in **Recur every 2 weeks on**, select **Friday**; enter the date range. Click **OK**. Every other Friday is now marked as non-working.
9. The *9-80 workweek* calendar is now created.
10. To use it for a resource, switch to the **Resource Sheet**, click in the **Base Calendar**, click the drop down arrow and select the *9-80 workweek* calendar.

Topic 2: Resource Availability and Costs – Overtime Availability



Overtime is work done outside the regular work hours as indicated in the resource or project calendars. Typically, the overtime feature is used only during project execution, when you need to compensate for slippages. Overtime is entered in several ways depending on whether you pay and what rate you pay for it:

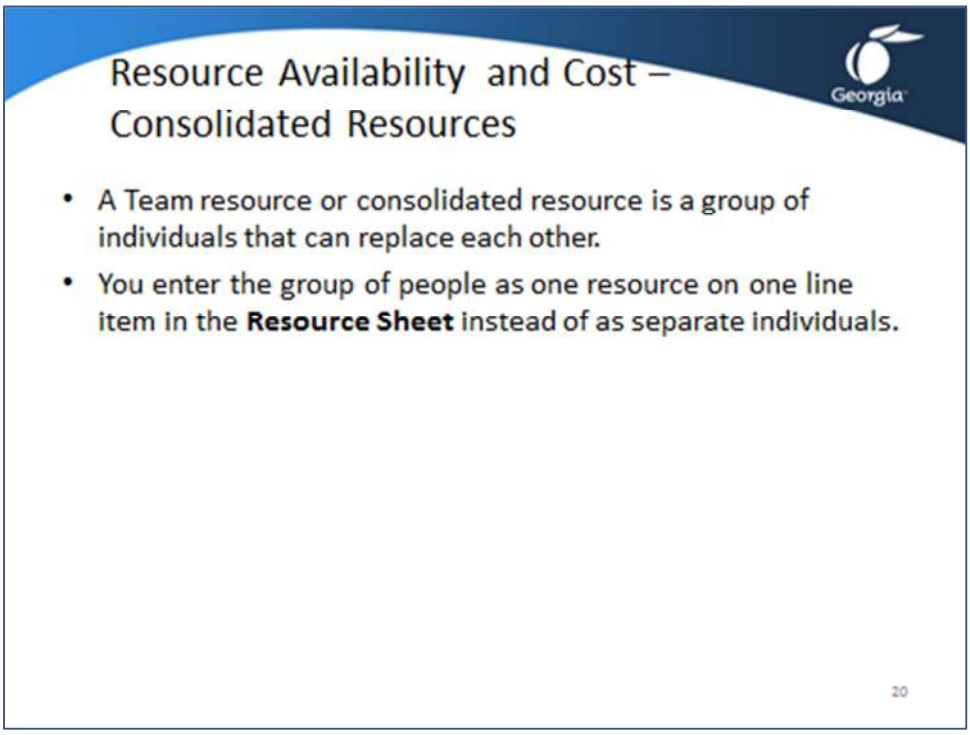
- If the resource is paid for overtime hours at the regular rate, you only need to check whether you kept the overallocations reasonable. All regular and overallocated hours worked are charged at the same standard rate.
- If the resource is paid for overtime hours at a higher rate, you must separately enter all hours worked in overtime. You enter them on the *Task Form* in the Gantt Chart or in the *Resource Usage* view.

Entering Overtime Hours at the Overtime Rate:

1. Click ribbon **View**, **Resource Sheet** and enter the overtime rate in the field **Ovt. Rate**.
2. Click the top part of **Gantt Chart** on the **View** ribbon – the Gantt Chart view appears.
3. Set the **Task Mode** field to **Auto Scheduled** – the **Ovt. Work** field will now be enabled.
4. Select **Details** on the **View** ribbon to display the **Task Form** view in the bottom.
5. Right-click anywhere in the gray area one the Task Form and select **Work** from the popup menu.
6. Select the task first in the top view, the Gantt Chart, then indicate in the bottom view Task Form in the field **Ovt. Work** how many of the hours shown in the field Work will be worked in overtime.

7. Upon making changes in the Task Form, the **Previous** button transforms to **OK** and when you click it, the data are entered into the schedule. The overtime hours will be charged at the overtime rate.

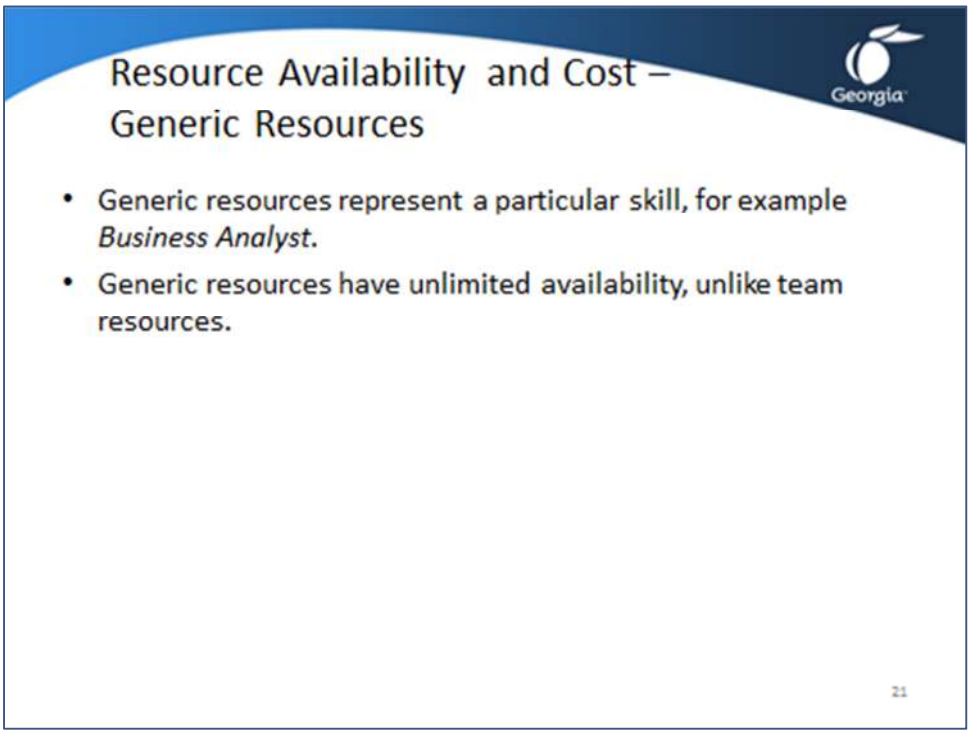
Topic 2: Resource Availability and Costs – Team (Consolidated) Resources



A Team resource or consolidated resource is a group of individuals that can replace each other. You enter the group of people as one resource on one line item in the **Resource Sheet** instead of as separate individuals.

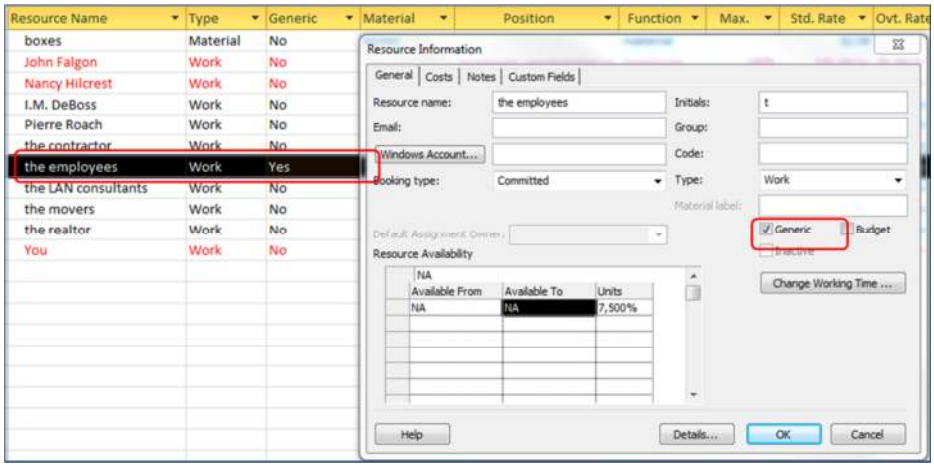
To ensure that you do not assign more workload than there is availability, it is recommended that you set the maximum units (*Max Units*) to the number of *full-time equivalent* individuals who are part of the team resource. Full-time equivalency is defined in the **Hours per day** setting (ribbon **File**, **Options** button, tab **Schedule**). For example, if you have 2 full-timers and 2 half-timers on a team, the maximum units for that team resource should be set to (2*1) + (2*0.5) = 3 or 300%. MS Project will mark any workload that exceeds the availability red and overallocations will be easy to find.

Topic 2: Resource Availability and Costs – Generic Resources

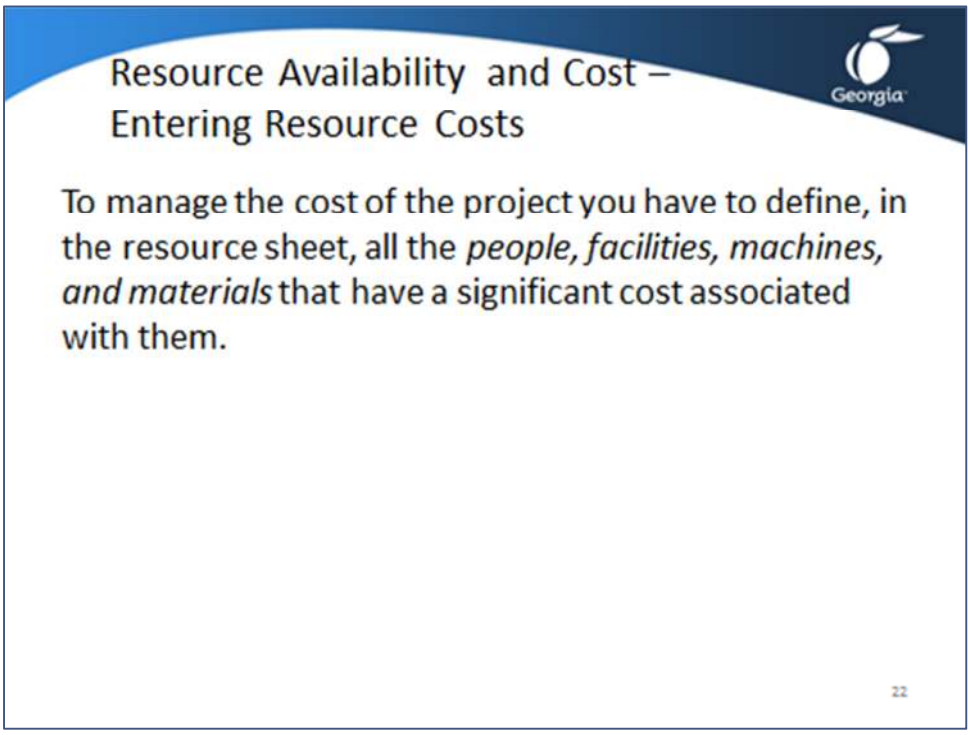


Generic resources represent a particular skill, for example *Business Analyst*. Generic resources have unlimited availability, unlike team resources. Project managers can always assign generic resources when they do not know what named resources (individuals) they will get. Generic resources have the field **Generic** set to **Yes**.

1. To create a generic resource, enter the name in the column **Resource Name** (field **Name**). The name should reflect the skill or role.
2. Insert the column **Generic** and enter **Yes**, **or** double-click on the resource – **the Resource Information** dialog appears, click the **General** tab and select **Generic**.



Topic 2: Resource Availability and Costs – Entering Resource Costs



To manage the cost of the project you have to define, in the resource sheet, all the *people, facilities, machines, and materials* that have a significant cost associated with them. We will now discuss how to enter the different cost scenarios.

Entering Human Resource Costs

You hire a programmer at $600/day, you can enter this in the resource sheet with the following steps:

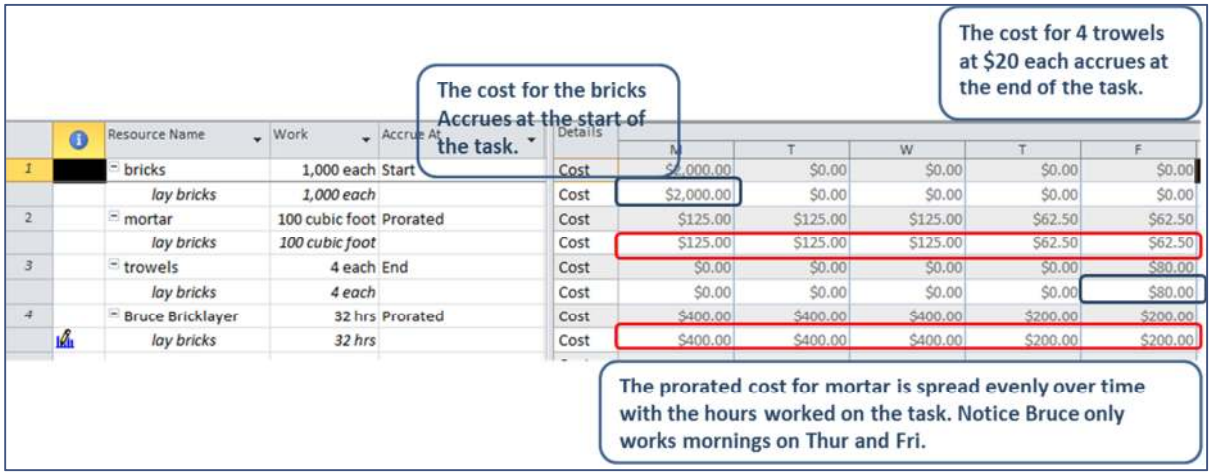
1. Click the ribbon **View** and click **Resource Sheet**.
2. Enter the name of the resource in the field **Resource Name**.
3. Leave the **Type** of resource set to the default setting of **Work**.
4. Enter the rate in column **Std. Rate** (**Standard Rate** field); for the programmer you would enter *$600/d*.
5. Enter the other cost rates in the **Ovt. Rate** column (**Overtime Rate** field) and **Cost/Use** (**Cost per Use** field), if applicable.
6. Select an **Accrue At** option; select **Start, Prorated, or End**. The accrual determines when the cost will be incurred in the schedule and is important for cash flow reports.
7. Assign the human resource to the tasks.

Entering Material Costs for Consumable Materials

Enter Material Costs this way:

1. Click the ribbon **View** and click **Resource Sheet**.
2. Enter the name of the resource in the field **Resource Name**.
3. Click in the **Type** field for the resource and select **Material** from the drop down list.
4. Enter a Material Label, which will show up in the other views.
5. In column **Std. Rate** (**Standard Rate** field); enter the cost per unit for this resource. You cannot enter time units.
6. You can fill in the **Cost/Use** column as well. This could be a transportation cost let's say. This cost is always accrued at the start of the task.
7. Select an **Accrue At** option; select **Start, Prorated, or End**. The accrual determines when the cost will be incurred in the schedule and is important for cash flow reports.

This screen shot of the **Resource Usage** view shows how the accrual for material costs works. The 1,000 bricks cost $2 each and accrue at the start of the task: 1,000 * 2 = $2,000. The mortar costs $5 per cubic foot and accrues evenly with the hours worked on the task. The 4 trowels at $20 each accrue at the end of the task.

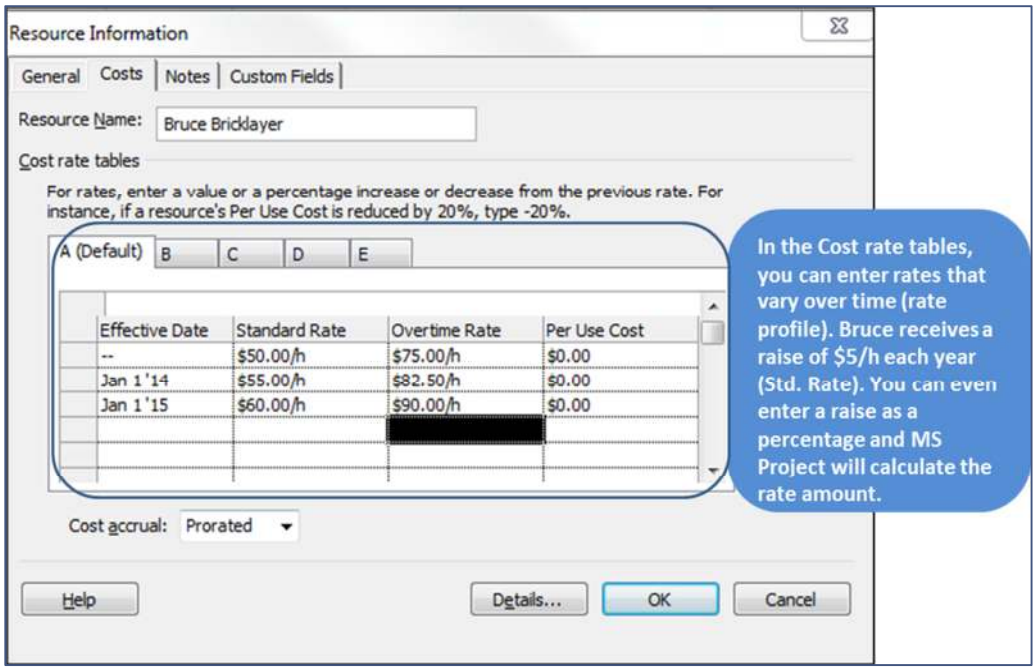


	Resource Name	Work	Accrue At	Details	M	T	W	T	F
1	bricks	1,000 each	Start	Cost	$2,000.00	$0.00	$0.00	$0.00	$0.00
	lay bricks	*1,000 each*		Cost	$2,000.00	$0.00	$0.00	$0.00	$0.00
2	mortar	100 cubic foot	Prorated	Cost	$125.00	$125.00	$125.00	$62.50	$62.50
	lay bricks	*100 cubic foot*		Cost	$125.00	$125.00	$125.00	$62.50	$62.50
3	trowels	4 each	End	Cost	$0.00	$0.00	$0.00	$0.00	$80.00
	lay bricks	*4 each*		Cost	$0.00	$0.00	$0.00	$0.00	$80.00
4	Bruce Bricklayer	32 hrs	Prorated	Cost	$400.00	$400.00	$400.00	$200.00	$200.00
	lay bricks	*32 hrs*		Cost	$400.00	$400.00	$400.00	$200.00	$200.00

Entering Varying Cost Rates for Labor or Materials

Cost rates can vary over time which creates a *rate profile*. You can enter varying cost rates in the cost rate table in the **Resource Information** dialog:

1. Click the ribbon **View** and click **Resource Sheet**.
2. Double-click a resource and the Resource Information dialog appears. Click the Costs tab and the dialog will look like:



3. Enter the Effective Date..
4. Enter the rates that will apply after that date, OR enter the percentage that you want to increase or decrease the rate by, i.e. +10% or -10%
5. Repeat steps 3 and 4 as many times as the rate will change over time.
6. Click OK. MS Project will calculate cost using the applicable rate.

Close *Demo Lesson 2 Resource Costs* but do not save the file.

Exercise 2.1: Defining Resource Availability and Costs

The purpose of this exercise is to create a *rate profile* for selected labor resources for the relocation project.

Open the *Exercise 2.mpp* file.

1. Click the ribbon **View** and click **Resource Sheet**.
2. Enter availability information for the following resource:

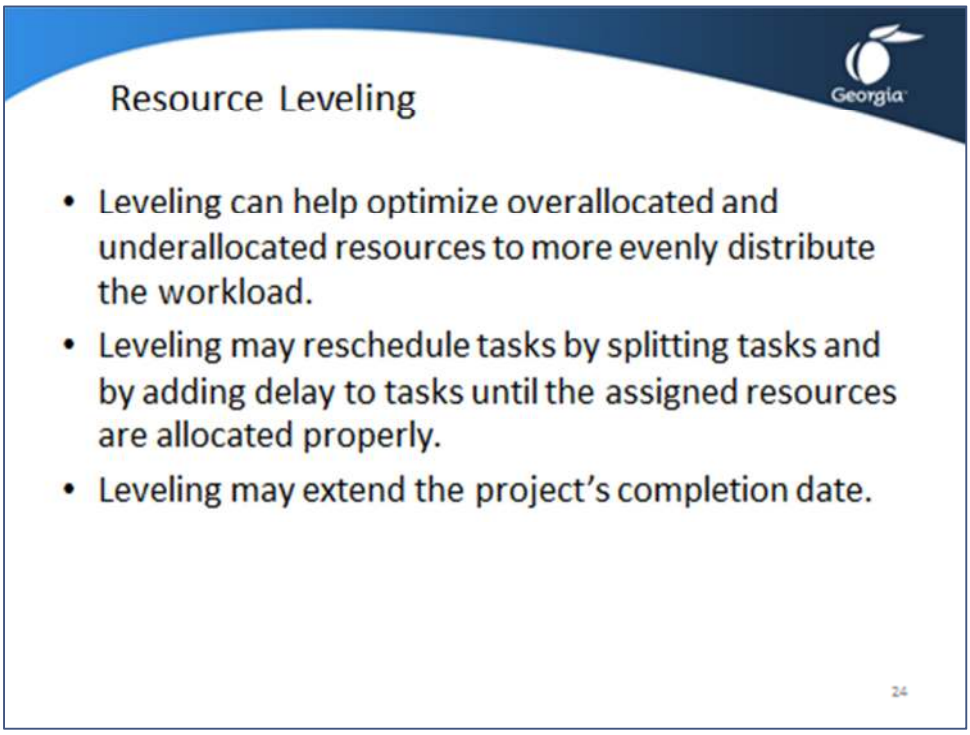
Resource Name	Avail From	Avail To	Units
John Falgon	NA	8/10/12	50%
	8/13/12	8/31/12	75%
	9/3/12	NA	100%

3. Enter cost rates in Table A for the following resource:

Resource Name	Effective Date	Standard Rate	Ovt. Rate
Nancy Hilcrest	-	$35.00/h	$55.00/h
	1/1/13	+10%	+10%
	7/1/13	$45.00/h	$65.00/h

4. Click OK.
5. Close the file but do not save.

Topic 3: Resource Leveling



When a schedule is complete, you should review the allocation of resources. Leveling can help optimize overallocated and underallocated resources to more evenly distribute the workload. Leveling may reschedule tasks by splitting tasks and by adding delay to tasks until the assigned resources are allocated properly. Leveling may extend the project's completion date. Day by day leveling looks for overallocation on a daily basis (more than 8 hours per day), whereas week by week leveling looks for overallocation on a weekly basis (more than 40 hours per week).

If your project is deadline oriented, you may choose to add resources in order to resolve over allocations.

Leveling Options

Level Selection
Use this to level only the tasks that are selected. To select multiple tasks that are next to each other, select the first task in the selection, then press SHIFT while selecting the last task in the selection. To select multiple tasks that are not next to each other, select each task by pressing CTRL while selecting the task.

Level Resource
Use this to level only those tasks with specific resources assigned. Click Level Resource, and then select the resource to which tasks are assigned. Use CTRL to select multiple resources. If the selected resource is working on tasks that have multiple resources, the other assignments will not get moved.

Level All
Use this to level all resources in all tasks within the project schedule.

Leveling Options
Use this to modify the settings that Project uses for leveling.

Clear Leveling
Use this to undo the effects of the previous leveling.

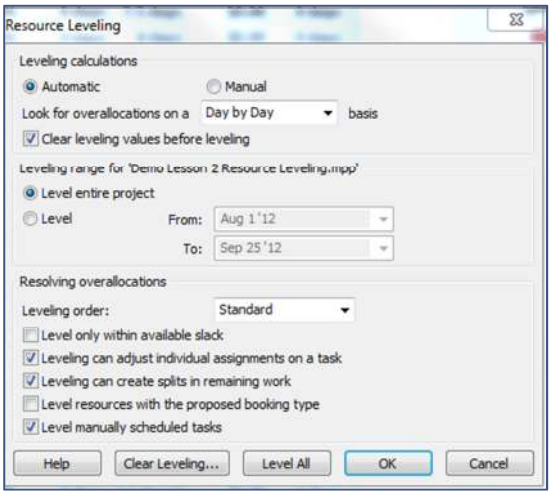
Next Overallocation
Use this to go to the next task with overallocated resources and to more easily see the effects of leveling on individual tasks.

Topic 4: Demonstration – Resource Leveling

The purpose of this exercise is to level overallocated resources for the relocation project.

Open the *Demo Lesson 2 Resource Leveling A.mpp* file.

1. Click **Task**, **Gantt Chart**.
2. Click the ribbon **Resource** and select **Leveling Options**.
   Examine these options and accept the following default selection:
   a. Leveling Calculations: Automatic
   b. Look for overallocations on a: Day by Day basis
   c. Check: Clear Leveling values before leveling
   d. Leveling Range: Level the entire project
   e. Leveling Order: Standard
   f. (Un)select the options at the bottom as per the below screen shot



3. Click **OK**.
4. Examine the changes in the **Gantt Chart** view and the **Resource Usage** view.
5. Close the file.

Exercise 2.2: Resource Leveling

The purpose of this exercise is to level overallocated resources for the relocation project.

Open the *Exercise 2A.mpp* file.

1. Click **Task**, **Gantt Chart**.
2. Click the ribbon **Resource** and select **Leveling Options**.
   Examine these options and accept the following default selection:
   a. Leveling Calculations: Automatic
   b. Look for overallocations on a: Day by Day basis
   c. Check: Clear Leveling values before leveling
   d. Leveling Range: Level the entire project
   e. Leveling Order: Standard
   f. (Un)select the options at the bottom as per the below screen shot
3. Click **OK**.
4. Examine the changes in the **Gantt Chart** view and the **Resource Usage** view.
5. Click **Task**, **Gantt Chart**.
6. Which tasks had date changes?
7. Close the file and compare your results *to Exercise 2B.mpp*

Notes

LESSON 3: PROGRESSING THE SCHEDULE

Topic 1: Introduction to Schedule Progressing

Topic 2: Baseline the Schedule

Topic 3: Progressing the Schedule and Updating Tasks

Topic 4: Progressing the Schedule and Task Types

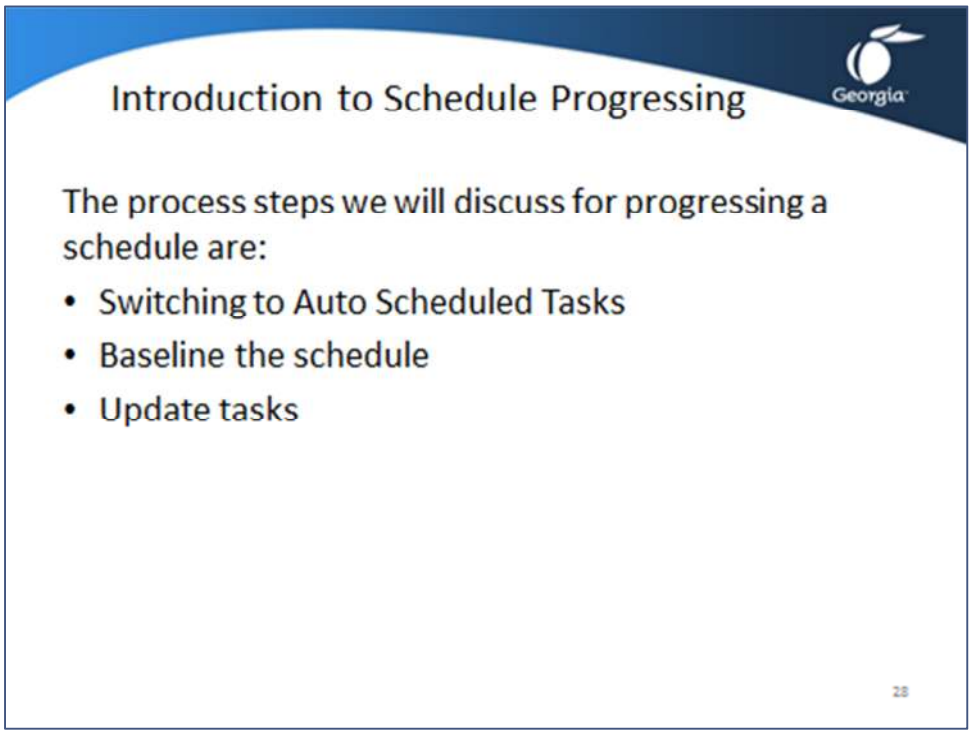
Student Learning Objectives

After completing this lesson you should be able to

- Understand how to prepare your schedule for updating
- Understand how to set and maintain the project baseline
- Understand how to update task using actual and remaining duration

Approximate Presentation time: 3 hours

Topic 1: Introduction to Schedule Progressing

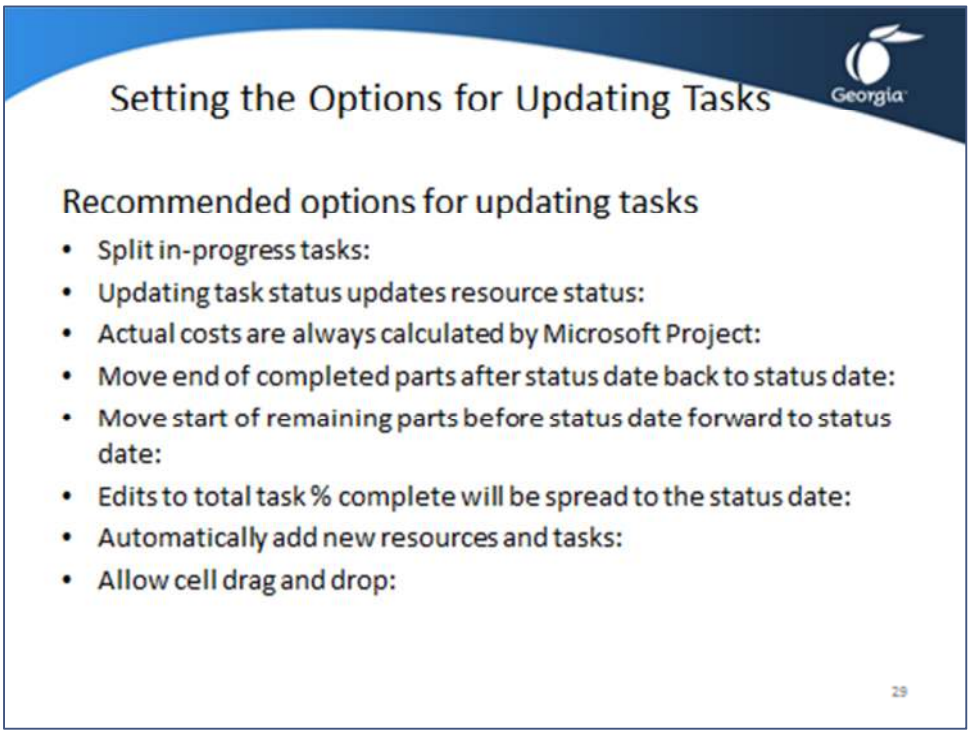


When the schedule is approved, you capture that version of the baseline. You can then start the first tasks in your project. As team members make progress, you will be updating your schedule regularly to maintain an up-to-date schedule. In this lesson we will discuss how you can approach the ideal situation where you keep your schedule alive and up-to-date during project execution in order to continuously forecast the project.

The process steps we will discuss for updating a schedule are:

- Switching to Auto Scheduled Tasks
- Baseline the schedule
- Update tasks

Topic 1: Setting the Options for Updating Tasks



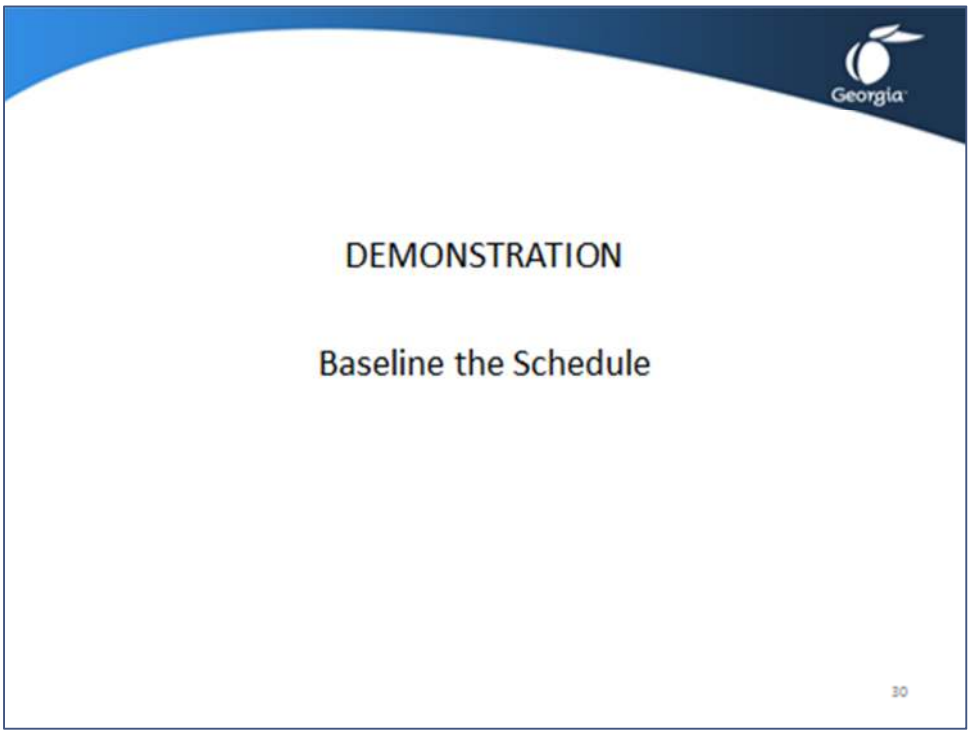
Click the ribbon **File**, **Options** and click on the tab indicated in the table below where you want to change settings. These are the recommended options when using **Actual** and **Remaining Duration** for updating tasks.

Tab	Option
Schedule	Section **Scheduling options for this project:** **Split in-progress tasks:** Checked Allows moving the uncompleted portion of a task to after the Status Date by splitting the task bar. With this option cleared, the options on the Advanced tab cannot split any task bars and will behave differently as a result. It is recommended selecting it.
	Section **Calculation options for this project:** **Updating task status updates resource status:** Checked Updating the tasks will update the actual work of the assignments. It is recommended you keep this option checked for task updates. Only clear it if you want to update the tasks and the assignments.
	Section **Calculation options for this project:** **Actual costs are always calculated by Microsoft Project**: either checked or unchecked Updating the tasks will update the *actual cost*. It is up to you whether you want MS Project to do that. If you clear this option, you can enter the actual cost.
Advanced	Section **Calculation options for this project:** **Move end of completed parts after status date back to status date:** Checked This moves the actual duration bar to before the status date; actual work done is

Tab	Option
	moved into the past. It is recommended you turn this on; it will help you keep the forecasts accurate. **And move start of remaining parts back to status date:** Checked The remaining duration bar will cuddle up to the status date (unless there are dependencies that keep it where it is). The choice is up to you.
	Move start of remaining parts before status date forward to status date: Checked This moves the remaining duration bar to after the status date; work still to be completed is moved to the future. It is recommended you turn this on; it will help you keep the forecasts accurate. It has no effect on tasks that have not started yet, but should have started as per the status date. These tasks will still have to be rescheduled to after the status date to put them into the future where they belong. **And move end of completed parts forward to status date:** Checked or Unchecked This moves the actual duration bar to cuddle up to the status date. The choice is yours.
	Edits to total task % complete will be spread to the status date: Unchecked If a task is falling behind, the progress entered will be evenly spread to the status date. This option is only relevant if you enter % Complete, which is not recommended.
	Section **General options for this project:** **Automatically add new resources and tasks:** Unchecked This prevents a typo in a resource name from accidentally adding a new resource, and works similarly for tasks. It is recommended clearing it.
	Section **Edit:** **Allow cell drag and drop:** Unchecked This prevents accidentally dragging data on top of other data in your baselined schedule. It is recommended to clear this option.

It is recommended that you switch all tasks in your schedule to Auto Scheduled at this point. You will not see the impacts of your updating if you continue to use *manually scheduled* tasks. They are not rescheduled by the network logic.

Topic 2: Baseline the Schedule



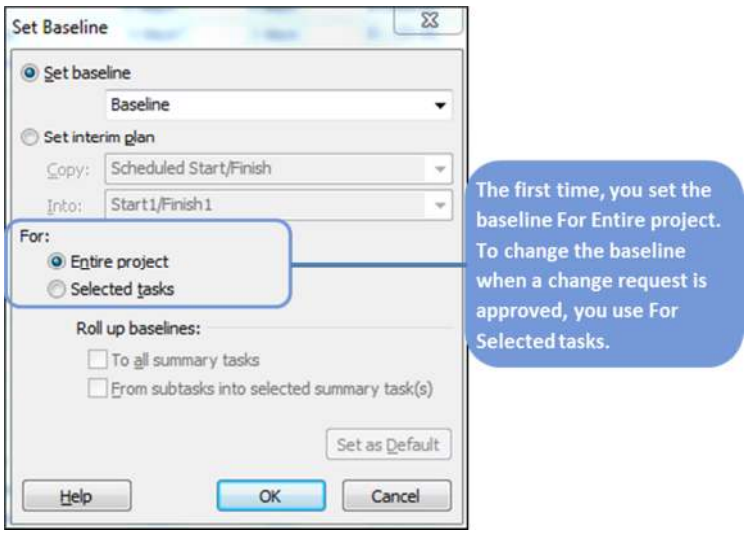
The baseline schedule is a frozen copy of the approved schedule. It is the target you work towards and compare progress against.

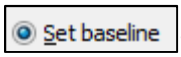
Open the demonstration file **Demo Lesson 3 Updating 1**.

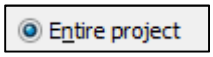
Setting the First Baseline Schedule

1. Click ribbon **Project**, 

, item **Set Baseline** – the next dialog appears:



2. Select 

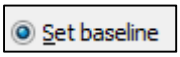
.
3. To set the baseline for all tasks, select 

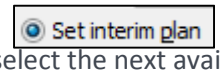
.
4. Click **OK** – the current schedule is copied to the **Baseline** fields.
5. If you suspect that you will receive change requests that will result in multiple baselines, it is a good idea to prepreserve the current baseline by copying it also into **Baseline1**.

Preserving a Baseline Schedule

Change requests will necessitate changing the baseline. It is a good idea to preserve every steady-state baseline that was in effect at some time. You can preserve up to 10 baselines.

1. Click ribbon **Project**, 

, item **Set baseline**; the **Set Baseline** dialog box appears.
2. Check what the next available baseline is in the 

list; baselines that are currently in use have a date behind their name in the pull-down list.
3. Select 

and, from the list **Copy**, select the current **Baseline** and, from the list **Into**, select the next available baseline schedule.
4. Click **OK** – that day's date is captured in the name of the baseline schedule you used. This will help you manage multiple baselines.

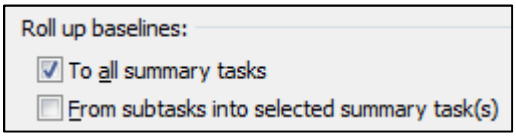
Updating the Baseline of Impacted Tasks

The baseline data of completed tasks should never be changed. Only tasks that have not been started yet and that are affected by change requests through dependencies can be re-baselined.

1. Click ribbon **Project**, 

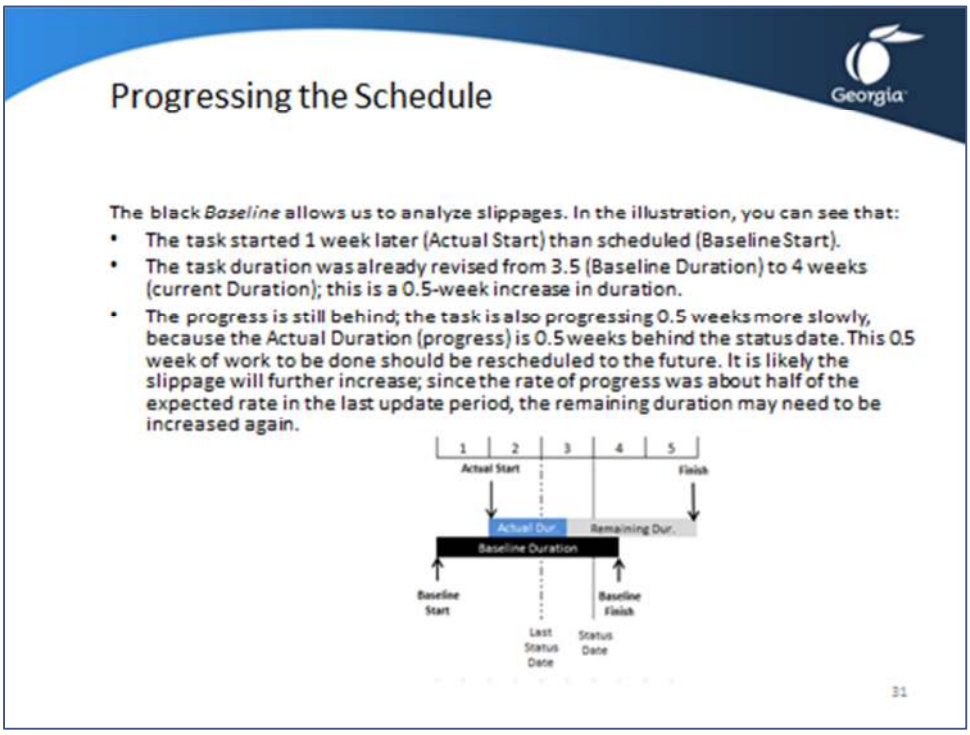
, item **Set baseline**; the **Set Baseline** dialog box appears.
2. Select the option **For:** 

.
3. **Roll up baselines** options should look like:

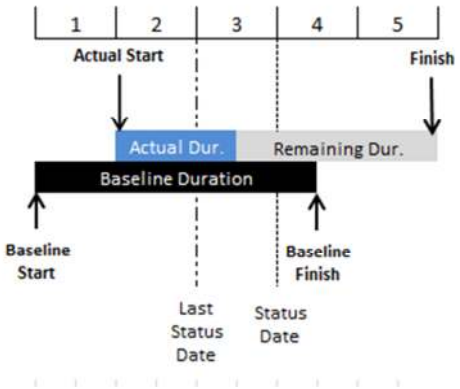


4. Click **OK**
5. Preserve the new **Baseline**.

Topic 3: Progressing the Schedule and Updating Tasks



The progress of the schedule can best be seen in the **Tracking Gantt** view. This view shows the task bars as shown in the illustration. The scheduled task will slowly but surely fill in with solid dark blue/red (*Actual*) to indicate how much progress has been made: field *Actual Duration*. Notice that the actual duration represents the number of days a team member has worked on the task so far – even though many people only think of it as the number of days the task took once it is completed.



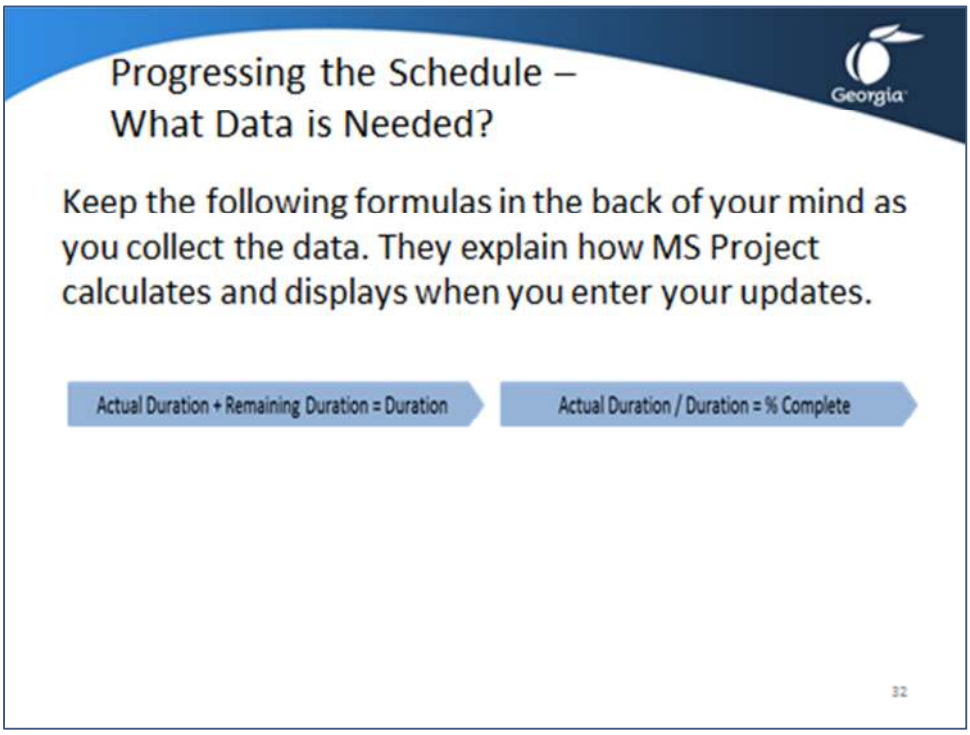
Ideally, the actual duration runs up to the *status date*, indicating that the task is progressing as scheduled. In the illustration you can see that the progress (*Actual Dur.*) has fallen behind. The rest of the bar represents the *Remaining Duration*. The remaining duration is how many days the task will take from the current status date to completion. Actual Duration plus Remaining Duration equals Duration.

The black *Baseline* allows us to analyze slippages. In the illustration, you can see that:

1. The task started 1 week later (Actual Start) than scheduled (Baseline Start).
2. The task duration was already revised from 3.5 (Baseline Duration) to 4 weeks (current Duration); this is a 0.5-week increase in duration.
3. The progress is still behind; the task is also progressing 0.5 weeks more slowly, because the Actual Duration (progress) is 0.5 weeks behind the status date. This 0.5 week of work to be

done should be rescheduled to the future. It is likely the slippage will further increase; since the rate of progress was about half of the expected rate in the last update period, the remaining duration may need to be increased again.

Topic 3: Progressing the Schedule and Updating Tasks



What Data Should Be Collected?

Keep the following formulas in the back of your mind as you collect the data. They explain how MS Project calculates and displays when you enter your updates.

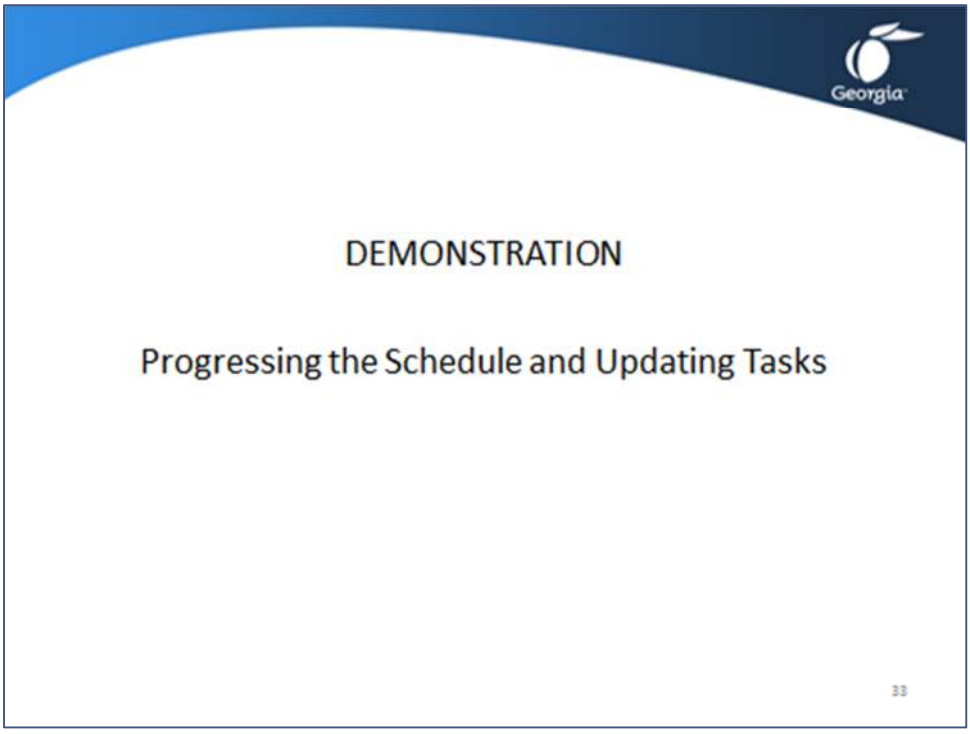
Actual Duration + Remaining Duration = Duration

Actual Duration / Duration = % Complete

It is recommended that you collect at least the **Remaining Duration** (or **Remaining Work**) from your team, and at most the following four data points. To dos, ask the following questions:

1. *On what date did you start the task?* (**Actual Start**)
2. *How many business days have you worked on the task as per the status date?* (**Actual Duration**)
3. *How many business days do you still need to finish the task after the status date?* (**Remaining Duration**)
4. *On what date was the task finished?* (**Actual Finish**)

Topic 3: Progressing the Schedule and Updating Tasks



Preparing the Tracking Gantt View for Updating

1. Open the demonstration file **Demo Lesson 3 Updating 2**.
2. Click ribbon **View**, click the bottom part of 

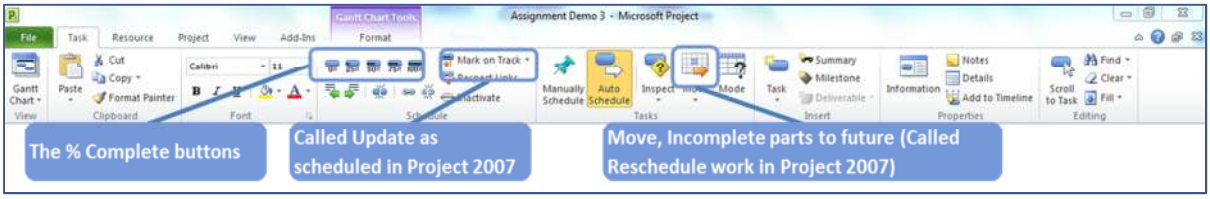
and select **Tracking Gantt** – the **Tracking Gantt** view appears. The current schedule is shown in the top half of the task bars (colored blue or red). The baseline is shown as the gray bottom half of the task bars.
3. Keep the critical task visible (ribbon **Format**, **Critical Tasks** checked).
4. Click ribbon **View**, 

and **Tracking** – the tracking table appears.
5. The tracking table has all the fields in which to enter data for task updates. It is recommended that you modify the table to make it look like the table in the following screenshot.

	Task Name	Act. Start	Act. Dur.	Rem. Dur.	Actual Finish	Act. Cost
1	**Scope**	**NA**	**0 days**	**3.5 days**	**NA**	**$0.00**
2	Determine project scope	NA	0 hrs	4 hrs	NA	$0.00
3	Secure project sponsorship	NA	0 days	1 day	NA	$0.00
4	Define preliminary resources	NA	0 days	1 day	NA	$0.00
5	Secure core resources	NA	0 days	1 day	NA	$0.00
6	Scope complete	NA	0 days	0 days	NA	$0.00
7	**Analysis/Software Requirements**	**NA**	**0 days**	**14 days**	**NA**	**$0.00**
8	Conduct needs analysis	NA	0 days	5 days	NA	$0.00
9	Draft preliminary software specifications	NA	0 days	3 days	NA	$0.00
10	Develop preliminary budget	NA	0 days	6 days	NA	$0.00

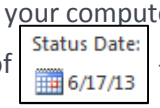
Enter actual progress and forecasts into a modified Tracking table.

6. Display the Task ribbon. The Task ribbon contains several useful tools for updating schedules.

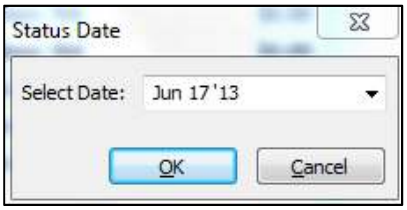


Setting the Status Date for Updating

If you do not enter the **Status Date**, Project 2010 will use the **Current Date** (that day's date) for the update. The Current Date is maintained by the clock in your computer.

1. Click the ribbon **Project** and click the bottom half of 

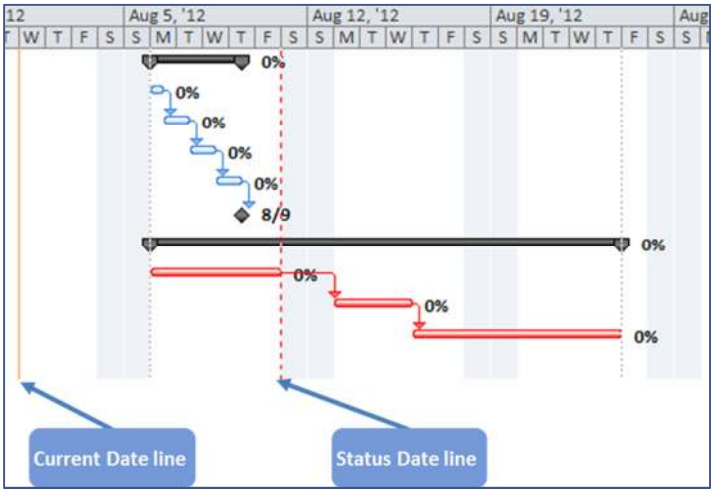
- the **Status Date** dialog appears.



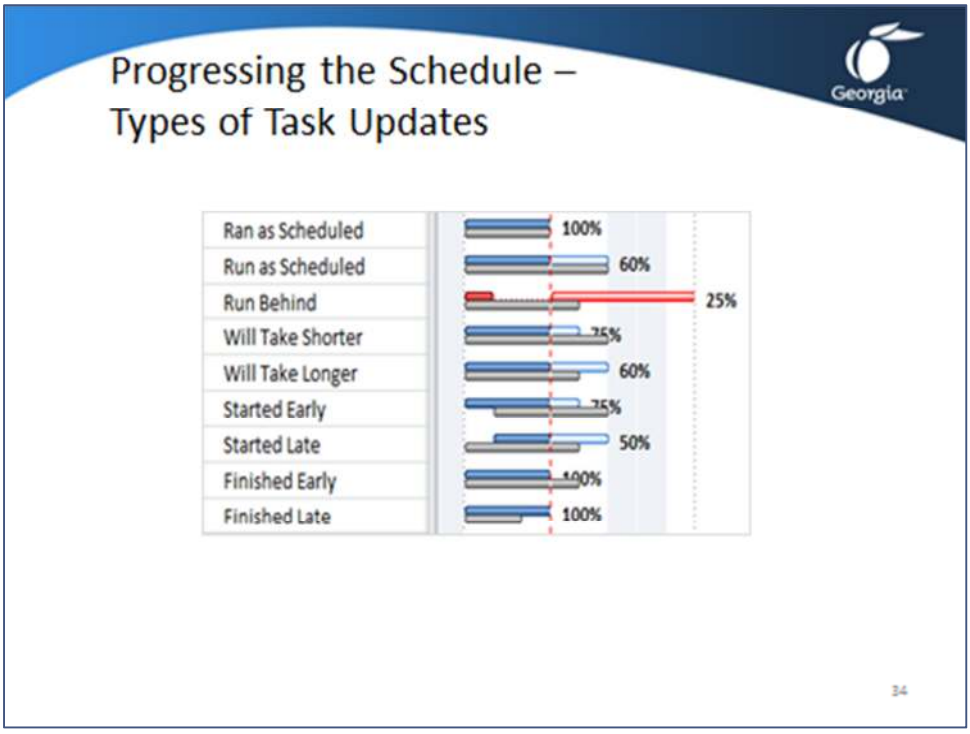
2. Change the **status date** to the date you want to update tasks and compare the schedule against the baseline.
3. The status date does not yet appear as a vertical line in the timescale. Click ribbon **Format**, 

, item **Gridlines** and select **Status Date** in the list as the line to change. Choose a dashed line in **Type** and a bright **Color**. The dashed line makes it different from dependency lines (arrows). Click **OK**.

4. The status line in now visible in the timescale, similar to:



Topic 4: Progressing the Schedule and Task Types



Tasks that Ran as Scheduled

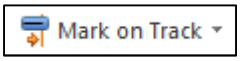
Simply mark these tasks as 100% complete in the Tracking Gantt view, as shown in the illustration.

1. Select the tasks that were completed as scheduled by dragging over them or by clicking on the first and, while holding down **Ctrl**, clicking on the rest of the tasks.
2. On the **Task** ribbon, click 

   OR in the **% Complete** field of the tracking table, enter 100%,
   OR in the **Actual Duration** field, enter a value equal to the **Remaining Duration**.

Tasks that Run as Scheduled

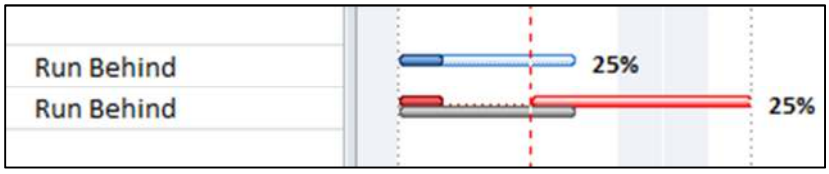
In this case you want to show actual progress up to the status date, as in the illustration.

1. Select the tasks that are on schedule by dragging over them or by clicking on the first and, while holding down **Ctrl**, clicking on the rest of the tasks.
2. On the **Task** ribbon, click 

- this updates all selected tasks as if they progress on schedule as per the status date.

Tasks that Run Behind

This situation will require more updating effort. Observe the first *Run Behind* task in the illustration. You can see that the progress is falling behind because the solid color denoting actual progress does not run up to the status date in the task bar. You will need to capture the actual number of days the resource worked on the task (**Actual Duration**), but because the task is behind, you will also have to bring forward the incomplete portion of the task bar (**Remaining Duration**) to after the *status date*, as is done in the second *Run Behind* task.



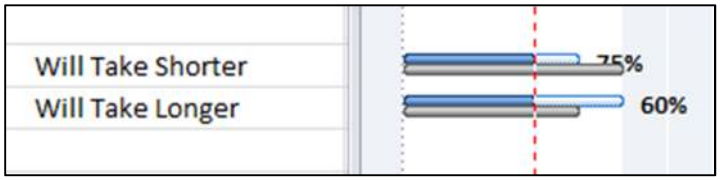
1. In the Tracking Gantt view, enter the **Actual Duration** of the task; MS Project will calculate the new remaining duration.
2. Revise this calculated **Remaining Duration** and MS Project will calculate **the % Complete**.
3. The remaining durations are automatically moved to the future if you selected **Move start of remaining parts before status date forward to status date** (in ribbon **File**, **Options**, tab **Advanced**). You can also accomplish this by:
    a. Selecting the task and clicking the **Task** ribbon, 

, and **selecting Incomplete Parts to Status Date** (This will split the task bar if the option **Split in-progress tasks** is in effect in ribbon **File**, **Options**, tab **Schedule**, section **Scheduling options for this project**).

Tasks that Will Take Longer or Shorter

In this situation, the resource(s) worked all the days on the task as planned, but the realization sinks in that the remaining duration will not suffice; the task was either overestimated or underestimated. You will need to increase or decrease the **Remaining Duration**.

Since you are going to change the duration, you will trigger a recalculation through the *formula* **Duration * Peak Units = Work**. You should not leave the task type set to **Fixed Duration**. It is recommended that you change the task type to **Fixed Units** before you start to update.



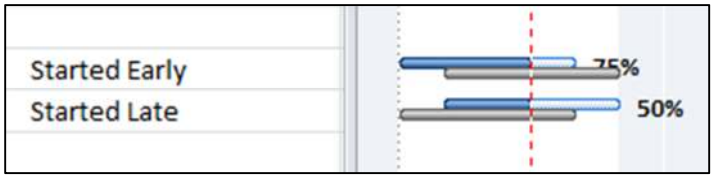
1. If needed, set the Type of task to *Fixed Units*.
2. Click the Mark on Track button on the **Task** ribbon

   OR

   Enter an **Actual Duration** for the task equal to the number of working days between the start of the task and the status date. As a result, the status bar now runs up to the status date.
3. Revise the **Remaining Duration** for the task.

Tasks that Started Late or Early

In this situation, the task did not start on the day that was planned. The illustration below reveals that the bottom task started late, whereas the top task started early. In the Late situation, the actual start date (left side of the top bar) is later than the baseline start date (the left side of its gray bottom bar).



1. In the Tracking Gantt view, point to the middle of the blue task bar; when you see a four-headed arrow mouse pointer, drag the task bar to its new start date.

   OR

   In the **Actual Start** field of the tracking table, enter the date.
2. Click the Mark on Track button on the **Task** ribbon – progress now runs up to the status date.

Tasks that Finished Late or Early

In this situation, you need to enter the finish dates. In the illustration below, you can see that the bottom task finished late relative to the gray baseline bar. The top task finished early.

1. In the Tracking Gantt view, point to the right side of the blue or red task bar and when you see a single-headed arrow mouse pointer, drag the finish to its new date. Set the task to 100% complete; click 100% on the Task ribbon.

   OR

   In the **Actual Finish** field of the tracking table, enter the date.

Exercise 3.1: Updating the Schedule for the Relocation Project – First Update

Instructions:

The goal of this exercise is to be able to update a schedule and to get accurate forecasts.

Open *Exercise 3A.mpp*. We will manage our project with this schedule and update it as we go along. Change to the **Tracking Gantt** view.

1. Click ribbon **View**, button **Table,** item **Tracking** to apply the Tracking table. Remove the column **% Comp.** and the **Phys. % Comp.** Move the column **Act. Finish** to after **Rem. Dur.** The order of the columns is the order in which to enter update information and is a memory bridge for updating.
2. Using ribbon **Project**, button **Set baseline**, item **Set baseline…** - set the baseline for the entire project.
3. Click ribbon **Project** and set the **Status Date** to *August 28, 2012 12:00 a.m.* and create a gridline for the status date in the Tracking Gantt timescale using ribbon **Format**, button **Gridlines**, item **Gridlines…**
4. Set the following options in ribbon **File**, **Options**, tab **Schedule**:
    a. **Split in-progress tasks** is unchecked
    b. **Updating task status updates resource status** is checked
    c. **Actual costs are always calculated by Project** is checked
5. Set the following options in ribbon **File**, **Options**, tab **Advanced**:
    a. **Move end of completed parts after status date back to status date** is checked
    b. **Move start of remaining parts before status date forward to status date** is checked
6. Switch the task type to **Fixed Units** and not **Effort-Driven** for all tasks.
7. Update the tasks in the project schedule. As of the status date the situation is:
    a. All the tasks until Contractor Contracted ran as scheduled.
    b. The contractor started early because he finished his previous contract early. He supplied the following update on the first and only task he started: relocate walls:

Task	Started	Actual Duration	Remaining Duration
Relocate walls	August 20, 2012	7 days	3 days

8. Check whether the schedule is updated correctly:
    a. Check whether there are any remaining durations scheduled before the status date. Reschedule these after the status date.
    b. Check if there are actual durations after the status date and reschedule these before the status date.
9. Describe the status of project in your own words.
10. Do you need to take corrective actions?
11. Save all start and finish dates by setting an interim plan before entering any update information: click ribbon **Project**, button **Set Baseline**, item **Set Baseline** – the dialog appears. Select **Set interim plan** and **Entire project**. Click **OK**.
12. Save your file and compare it with the solution *Exercise 3B.mpp*.

Re-optimizing After First Update

Instructions:
The goal of this exercise is to be able to improve a schedule so that it is closer to its baseline schedule again.

Continue to work with your file *Relocation.mpp* or open *Exercise 3B.mpp*. You find that your project may run late relative to the baseline. You want to take corrective action by making the following changes in your schedule.

Task name	Action
Relocate walls	Change the task type back to **Fixed Work**, then change the number of units to 15 for the balance of the activity: add 5 resources to help complete the activity. The result is a gain of 1 day.
Install electrical wiring	Enter an **Ovt. Rate** for the Contractor of $45 per hour (150%). Change the task type back to Fixed Work, then change the number of units to 8 for the activity. Have the resources work overtime to a total of 32 overtime hours. The duration shortens to almost 2.6 days.
Install cabinetry	Delete the dependency from *drying of paint* to *install cabinetry* and replace it with a dependency from *paint* to *install cabinetry*. *Install cabinetry* should be on schedule.
Install LAN cables	Change the dependency from *relocate walls* to *install LAN cables* to Finish-to-Finish with a 1.5 day lag. The *Install the LAN* activities should be on schedule.

Save your file and compare it with the solution *Exercise 3C.mpp*.

Exercise 3.2: Updating the Schedule for the Relocation Project – Second Update

Instructions:

The goal of this exercise is to be able to update a schedule and to get accurate forecasts.

Open *Exercise 3C.mpp*.

1. If needed, do the following:
    a. Display the Tracking Gantt view.
    b. Apply the Tracking table. Remove the columns **% Comp.** and the **Phys. % Comp.** Move the column **Act. Finish** to after **Rem. Dur.**
2. On the **Project** ribbon, set the **Status Date** to *September 4, 2012* and, if needed, create a gridline (ribbon **Format**, button **Gridlines**, item **Gridlines…**) for the status date in the Tracking Gantt timescale.
3. Verify if the following options are set:
   In ribbon **File**, **Options**, tab **Schedule**:
   Updating Task status updates resource status (checked)
   Actual costs are always calculated by Microsoft Project (checked)

   In ribbon **File**, **Options**, tab **Advanced**:
   Move end of completed parts after status date back to status date (checked)
   Move start of remaining parts before status date forward to status date (checked)
4. Switch the task type to **Fixed Units** and not **Effort-Driven** for the tasks needing update.
5. Update the tasks in the project schedule. The contractor supplied the following table with update data for the status of the project as of the status date. Tasks that are not listed in the table have not started yet.

Task Name	Actual Start	Act. Duration	Rem. Duration
Relocate walls	Aug 20, 2012	9 days	0 days
Install electric wiring	Aug 31, 2012	2.6 days	0 days
Paint	Sep 2, 2012	2 days	0 days
Drying of paint	Sep 2, 2012	2 elapsed days	0 elapsed days
Install cabinetry	Sep 4, 2012	1 day	4 days
Install LAN cables	Sep 1, 2012	2.5 days	0 days
Install LAN hardware	Sep 3, 2012	1.5 days	1 day
Select mover	Aug 31, 2012	2 days	0 days

6. Check whether the schedule is updated correctly:
    a. Check whether there are any remaining durations scheduled before the status date. Reschedule these after the status date.
    b. Check if there are actual durations after the status date and reschedule these before the status date.
7. Describe the status of project in your own words.
8. Do you need to take corrective actions?

9. Save all start and finish dates by setting an interim plan before entering any update information: click ribbon **Project**, button **Set Baseline**, item **Set Baseline** – the dialog appears. Select **Set interim plan** and **Entire project**. Click **OK**.
10. Save your file and compare it with the solution *Exercise 3D.mpp*.

Re-optimizing After Second Update

Instructions:
The goal of this exercise is to be able to improve a schedule so that it meets its baseline finish date.

Open *Exercise 3D.mpp*. You find this current schedule too risky; there is little buffer left. You decide to explore whether working overtime offers solutions. Enter the following overtime rates in the Resource Sheet:

Name	Std. Rate	Overtime Rate
employees	$25/h	$50/h
contractor	$30/h	$50/h
LAN consultants	$75/h	$100/h
realtor	$35/h	$45/h

1. What is the cost of the project currently? The cost is ……
2. You will enter overtime on the task lay carpet. You promised to pay the contractor the overtime rate. The contractor has agreed to work overtime for the balance of the activity. Schedule 90 hours of overtime on this task as overtime.
3. How much does your project cost if you pay the overtime rate for the contractor?

   The cost is …….. The extra cost of the overtime is: …….

Save your file and compare it with the solution *Exercise 3E.mpp*.

Exercise 3.3: Updating the Schedule for the Relocation Project – Third Update

Instructions:

The goal of this exercise is to be able to update a schedule and to get accurate forecasts.

Open *Exercise 3E.mpp*.

1. If needed, do the following:
    a. Display the Tracking Gantt view.
    b. Apply the Tracking table. Remove the columns **% Comp.** and the **Phys. % Comp.** Move the column **Act. Finish** to after **Rem. Dur.**
2. On the **Project** ribbon, set the **Status Date** to *September 11, 2012* and, if needed, create a gridline (ribbon **Format**, button **Gridlines**, item **Gridlines…**) for the status date in the Tracking Gantt timescale.
3. Verify if the following options are set:

    In ribbon **File**, **Options**, tab **Schedule**:
    Updating Task status updates resource status (checked)
    Actual costs are always calculated by Microsoft Project (checked)

    In ribbon **File**, **Options**, tab **Advanced**:
    Move end of completed parts after status date back to status date (checked)
    Move start of remaining parts before status date forward to status date (checked)
4. If needed, switch the task type to **Fixed Units** and not **Effort-Driven** for the tasks needing update.
5. Update the tasks in the project schedule. The contractor supplied the following table with update data for the status of the project as of the status date. Tasks that are not listed in the table have not started yet.

Task Name	Actual Start	Act. Duration	Rem. Duration
Install cabinetry	Sep 4, 2012	5 days	0 days
Install LAN hardware	Sep 3, 2012	2.5 days	0 days
Install LAN operating system	Sep 9, 2012	2.5 days	0 days
Lay carpet	Sep 8, 2012	4 days	0 days
Facility remodeled	Sep 11, 2012	0 days	0 days
Pack	Sep 10, 2012	2 days	0 days

6. Check whether the schedule is updated correctly:
    a. Check whether there are any remaining durations scheduled before the status date. Reschedule these after the status date.
    b. Check if there are actual durations after the status date and reschedule these before the status date.
7. Describe the status of project in your own words.
8. Do you need to take corrective actions?
9. Save all start and finish dates by setting an interim plan before entering any update information: click ribbon **Project**, button **Set Baseline**, item **Set Baseline** – the dialog appears. Select **Set interim plan** and **Entire project**. Click **OK**.

10. Save your file and compare it with the solution *Exercise 3F.mpp*.

Notes

LESSON 4: COLLABORATING PROJECT INFORMATION

Topic 1: Standard Views and Tables

Topic 2: Using Filters, Sorts, and Groups

Topic 3: Creating Custom Views

Topic 4: Using the Organizer

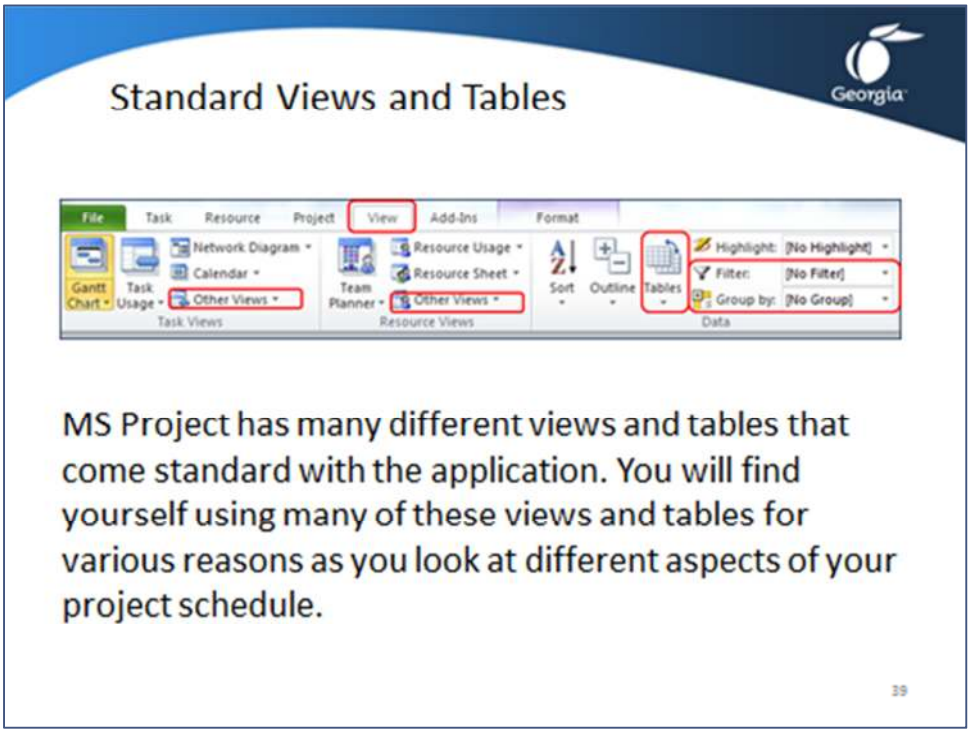
Student Learning Objectives

After completing this lesson you should be able to

- Understand the standard views and tables
- Understand the how to use sorts, filters and groups
- Understand how to use custom fields and create custom tables and views
- Understand how to use the organizer to copy custom report objects between projects

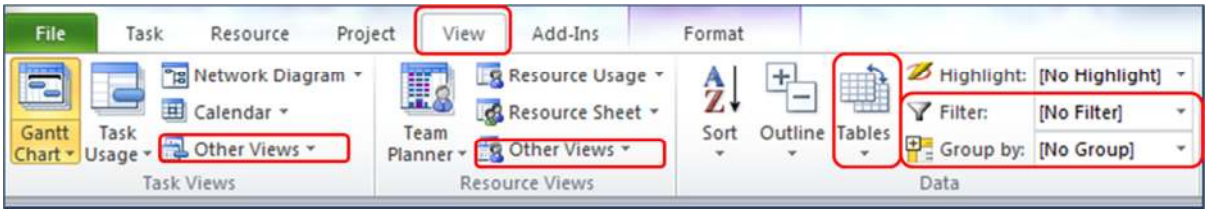
Approximate Presentation time: 1 hour 30 minutes

Topic 1: Standard Views and Tables

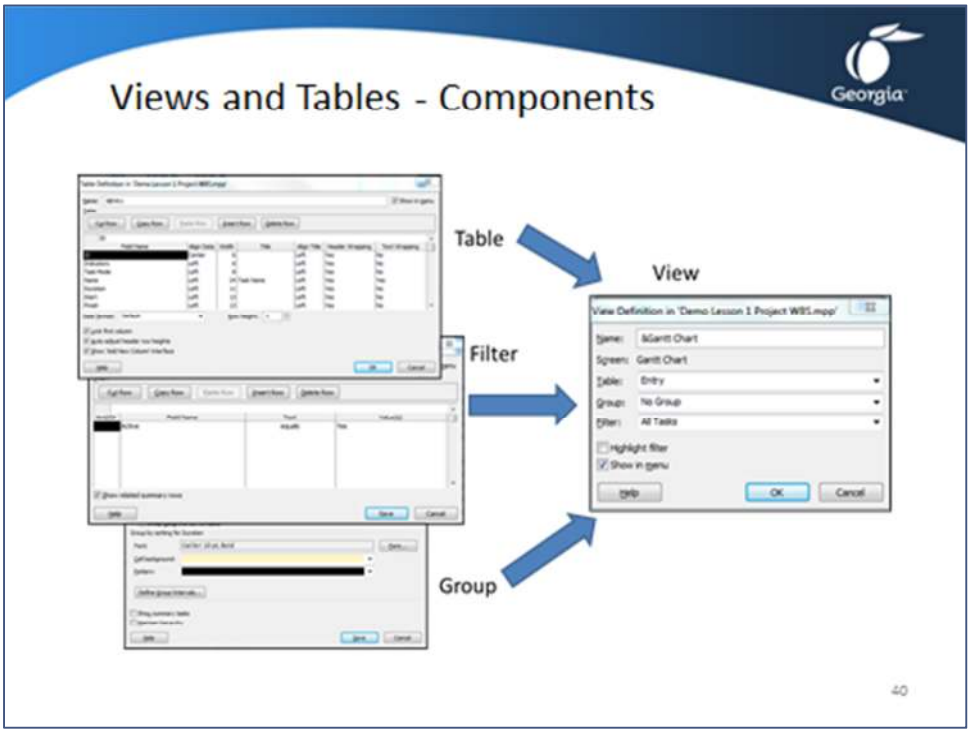


MS Project has many different views and tables that come standard with the application. You will find yourself using many of these views and tables for various reasons as you look at different aspects of your project schedule.

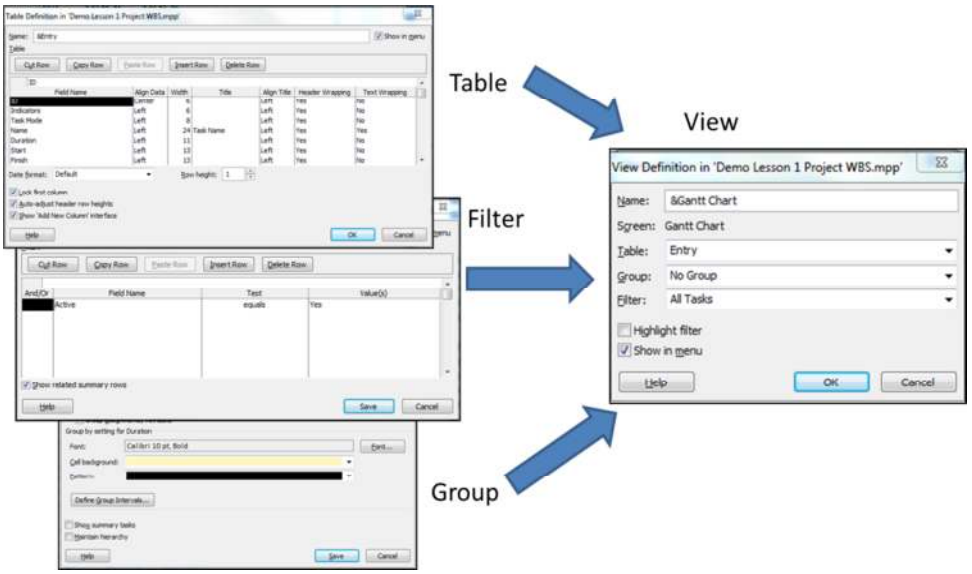
You can access these views and tables view the **View** ribbon and see **Task Views**, **Resource Views**, or various **Tables**.



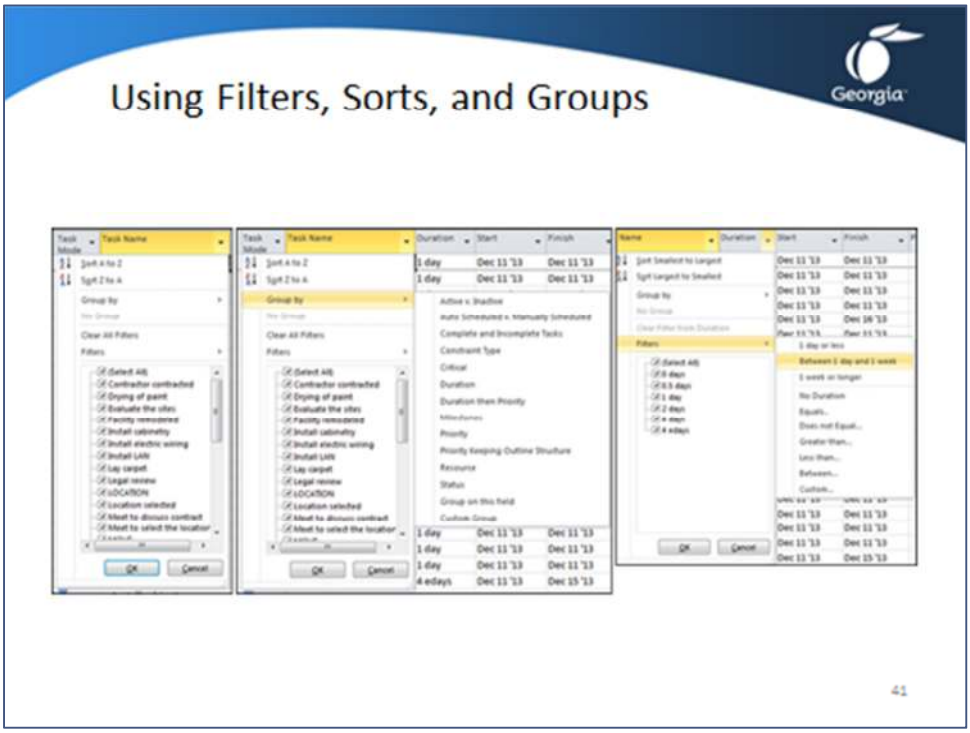
Topic 1: Standard Views and Tables - Components



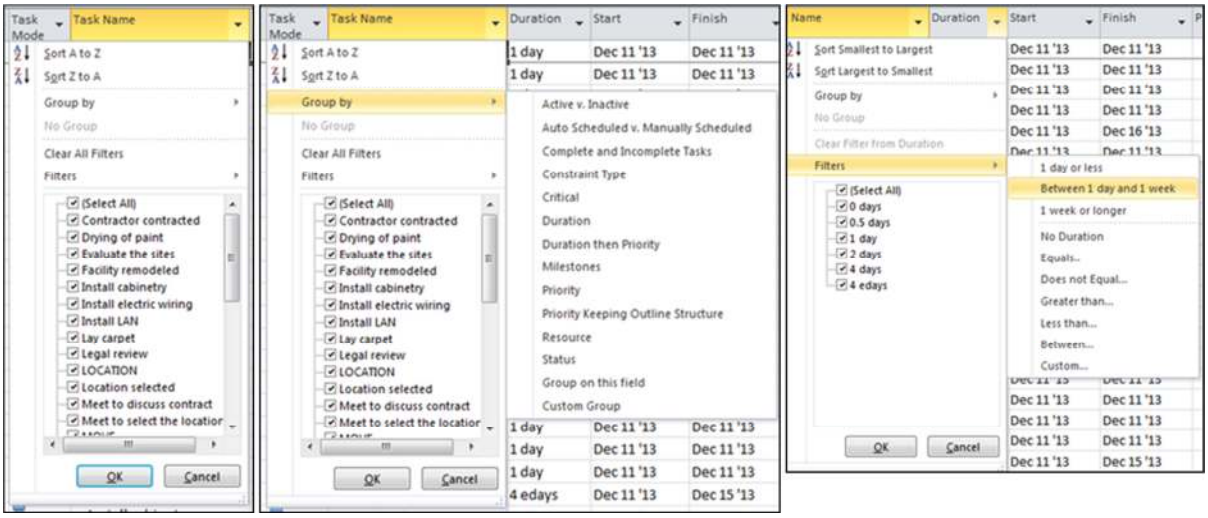
Views are composed of three components within MS Project as depicted below.



Topic 2: Using Filters, Sorts, and Groups



You can also sort, filter, or group any column easily by clicking on the down arrow at the right of the column name.



Exercise 4.1: Using Filters, Sorts, and Groups

Instructions:
The goal of this exercise is to be able to use filters, sorts, and groups.

Open the project file *Exercise 4a.mpp*.

Using Sort

1. Click on the Format ribbon tab, unselect **Project Summary Task** and **Summary Task**.
2. Click on the **View** ribbon tab, in the **Data** section select the **Sort** drop down list.
3. Select the **Sort by…** option, the **Sort** dialog box will appear.
4. In the **Sort by** drop down list select **Cost**, and select the **Descending** option.
5. Unselect the box labeled **Permanently renumber tasks**.
6. Click the **Sort** button.
7. This will sort the task list by cost from largest cost to smallest cost.
8. Which task has the largest cost and how much is it?

Using Filters

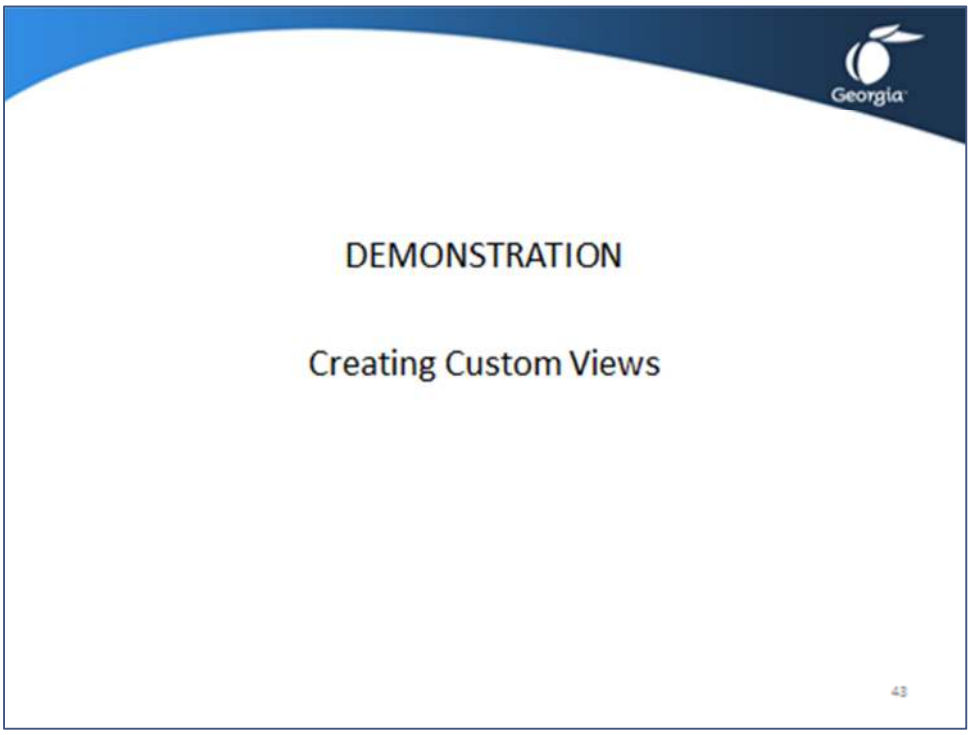
1. Now filter out tasks with **Effort Driven** equal to “No”.
2. Select the drop down arrow on the Effort Driven column.
3. Click “Yes” so that only “No” is selected.
4. Click the OK button.
5. Now remove the filter.
6. Select the drop down arrow on the Effort Driven column.
7. Click “Select All”.
8. Click the OK button.

Using Groups

1. Now group the tasks by **Type**.
2. Select the drop down arrow on the **Type** column.
3. Click on “Group on this field”.
4. The task list will now be grouped by the task type.
5. Now remove the grouping.
6. Select the drop down arrow on the **Type** column.
7. Click on “Group on this field” to remove the grouping.

Close and do not save the file.

Topic 3: Creating Custom Views



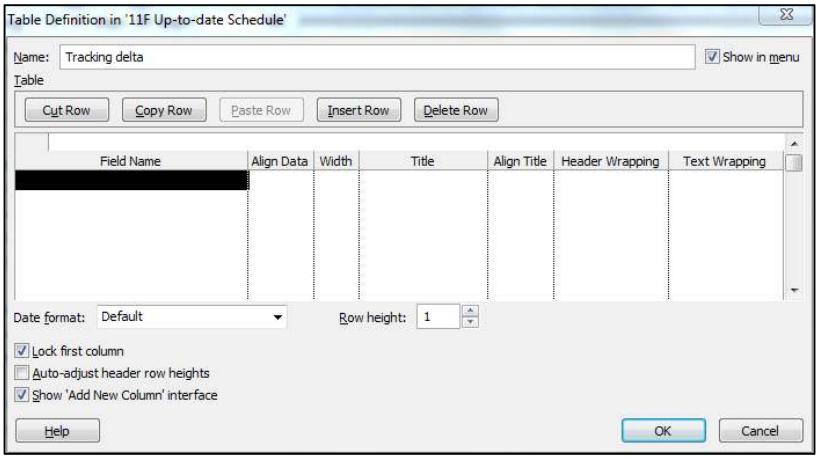
This topic will demonstrate how a view is created.

The steps we'll take to create this view are:

1. Design a new **Table**
2. Create a new **View** that displays the newly created Table.

Creating a Custom Table and View

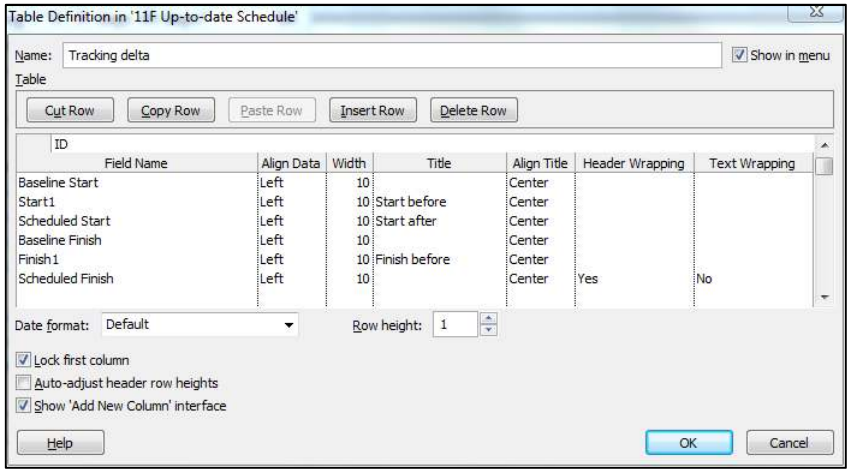
1. Open the demonstration file **Demo Lesson 4**.
2. Click ribbon **View**, in section Data click **Tables**, click **More Tables**. In the More Tables dialog select the Tracking table and click the **New** button. The dialog box will appear.



Enter the Field Names and Title data as follows:

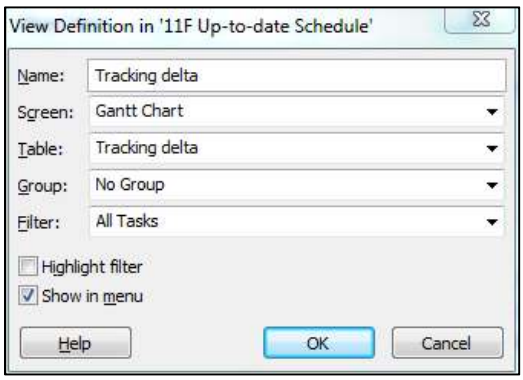
Field Name	Title
ID	
Name	Task Name
Baseline Start	
Start 1	Start before
Scheduled Start	Start after
Baseline Finish	
Finish 1	Finish before
Schedule Finish	Finish after

3. Your box should look like this:



4. Click **OK**. Click **Close** on the **More Tables** dialog.
5. Click ribbon **View**, in section Task Views click **Other Views**, click **More Views**. In the **More Views** dialog select the **Tracking Gantt** view and click **New**. Select **the Single View** option and click **OK**.

   The dialog for **View Definition** will appear:



Enter the data to resemble the illustration above. Click **OK**. Click **Close** on the **More Views** dialog.

6. To display this view click ribbon **View**, click the bottom of **Gantt Chart** button, select item **Tracking delta**.

Exercise 4.2: Reporting for the Relocation Project – Executive Overview

Instructions:

The goal of this exercise is to be able to create custom, one-page reports targeted at executives.

Continue to work with your file *Relocation.mpp* or open *Exercise 4a.mpp*.

1. Click ribbon **View**, button **Tables**, item **More Tables…** and create a new task table named *Executive Overview*. Use the columns **ID**, **Name**, **Duration**, and **Cost**.
2. Click ribbon **View**, list **Filter**, item **More Filters…** and create a new filter, *Executive Overview*, to display milestones plus summary tasks.
3. Click ribbon **View**, list **Other Views**, item **More Views…** and create a new view, *Executive Overview*, which is based on a Tracking Gantt view. Select **Show in menu** to display it as an item in the list of **Gantt Charts** on the **View** ribbon. Make sure when you apply the view *Executive Overview*, the corresponding table and filter that you created are both applied.
4. Hide the question marks in the **Duration** column by clicking ribbon **File**, **Options**, tab **Schedule** and clearing the options **Show that scheduled tasks have estimated durations** and **New scheduled tasks have estimated durations**.
5. Click ribbon **View**, find its section **Zoom** and click the down arrow of the list **Timescale**, and select **Timescale:** Apply the following settings in the **Timescale** dialog:

		Middle Tier	**Bottom Tier**
Field	**Units**	Months	Days
	Label	Jan, Feb, …	1, 2, …
	Count	1	7
	Align	Center	Center
	Size	100%	100%

6. In the **Page Setup** dialog (ribbon **File**, tab **Print**, hyperlink **Page Setup**), format the **Header**, **Footer**, and **Legend** as follows:

		Section	**Set to**	**Font**
Tab	**Header**	Center	&[View] &[Project Title]	Arial, Bold, 20
	Footer	Left	&[Manager] &[Company]	Arial, Regular, 8
		Right	&[Date]	Arial, Regular, 8
	Legend	Legend on	select **None**	

7. Save your file and compare the view you created to the view called *Executive Overview* in *Exercise 4b.mpp*.

Exercise 4.3: Reporting for the Relocation Project – Cost by Function

Instructions:

The goal of this exercise is to be able to create a custom cost report.

Continue to work with your file Relocation.mpp or open *Exercise 4b.mpp*.

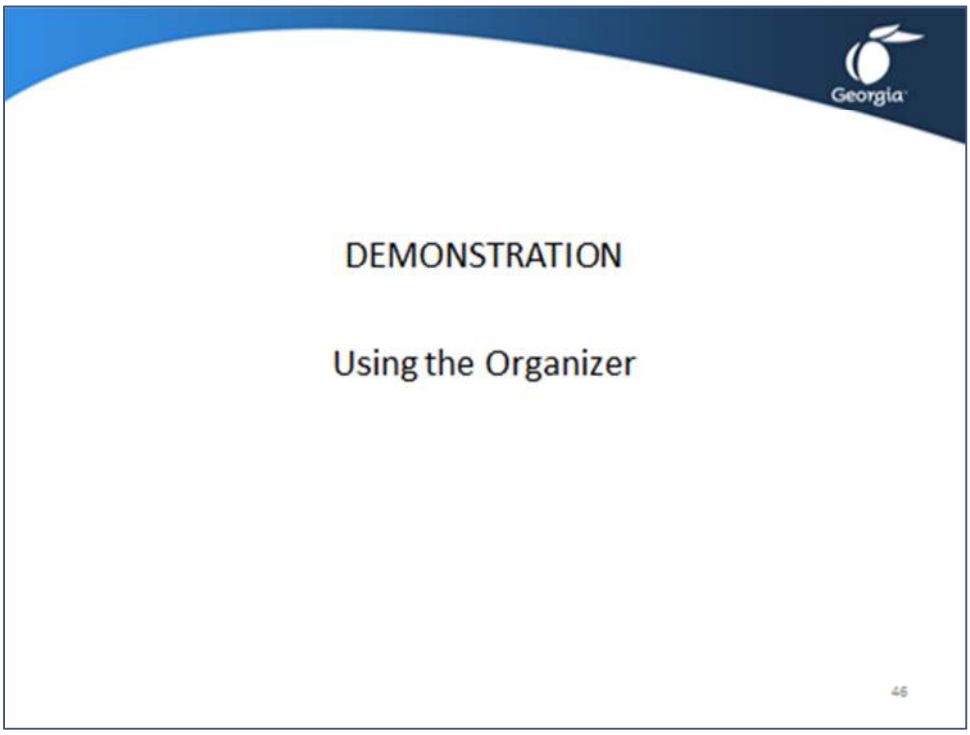
1. Switch to the **Resource Sheet** view.
2. Click ribbon **View**, button **Tables**, item **More Tables…** and create a new resource-related table named *Cost by Function* that shows the fields **ID**, **Name** (the title of this column will appear as **Resource Name**), **Position**, **Function**, and **Cost**.

   Click ribbon **Project**, list **Group by**, item **More Groups…** and create a grouping *Cost by Function* so that you can easily read the total cost by resource function of the project.
3. Click ribbon **View**, button **Other Views** and select item **More Views…** and create a new view based on the resource sheet that is named *Cost by Function* (select **Show in menu**). The view should apply the corresponding table and grouping that you created.
4. Best fit the column widths (Right-click the column headings and click **Field Settings**; the dialog shows up. Click **Best Fit**).
5. In the **Page Setup** dialog, enter the following settings:

Tab	**Section**	**Set to**
Page	Orientation	Portrait
	Scaling	**Fit to:** 1 page wide by 1 tall
Margins	Top, bottom, left, right	1 inch or 2.5 cm
	Borders Around	Every page
Header	Center Arial, Bold, 20	&[View] &[Project Title]
Footer	Left	&[Manager] &[Company]
	Center	None; delete the default entry
	Right	&[Date]

6. Save your file and compare the view you created to the view called *Cost by Function* in *Exercise 4c.mpp*.

Topic 5: Using the Organizer

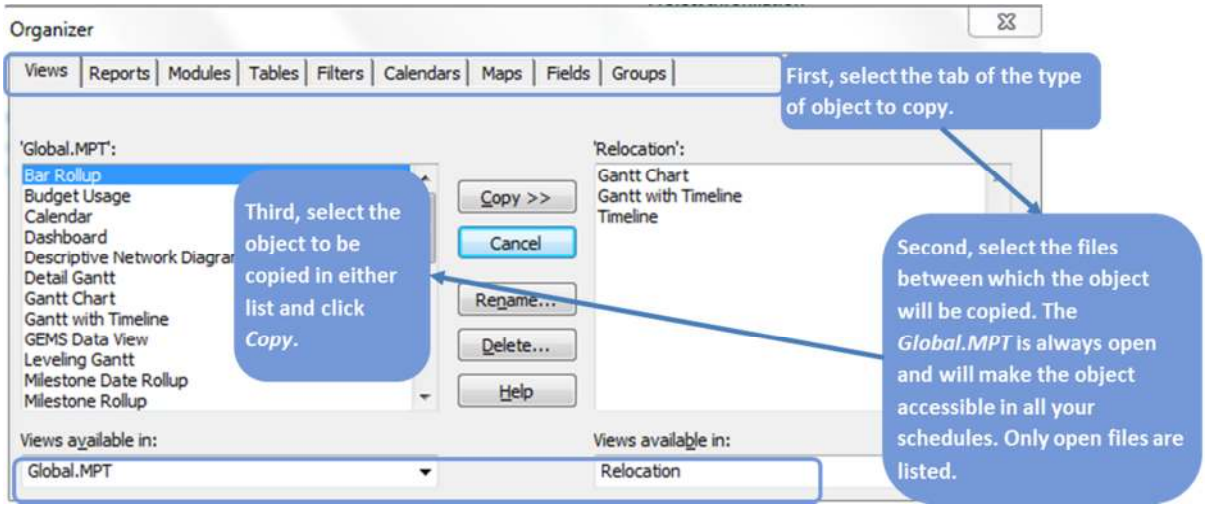


This topic will cover how to use the Organizer to move MS Project objects between projects. Open the demonstration file **Demo Lesson 4 Moving and Copying**.

Copying Objects between Projects (the Organizer)

Objects are views, reports, calendars and other things that change the appearance of the data or affect the scheduling. Copy objects between projects using the *Organizer*.

1. Click ribbon **File**, tab **Info**, button **Organizer** – the **Organizer** dialog appears:

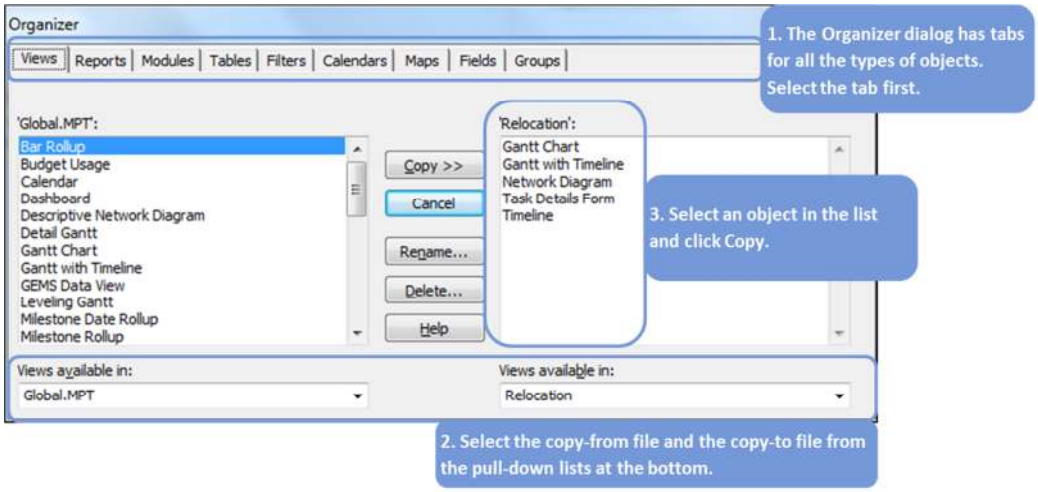


2. Click on the tab of the type of objects to transfer.
3. From the lists at the bottom of the dialog select the schedule from which to copy the object; in the other list, select the schedule to copy to. Only the files currently open will be in the list.
4. Select the object and click Copy >> to copy from the list to the right or << Copy to copy from right to left.
5. Click Close when done.

Copy Views to the Organizer

Once you have changed an existing view or created a new view object and formatted it, you can use it in all your other projects by putting it in your *Global.MPT* file. You can even share it with other people by giving them an MPP file containing the view object and all its components: fields, table, filter, and group objects.

1. Open the schedule that contains the object, and open the schedule into which you want to copy. You do not need to open the *Global.MPT*, as it is always open when MS Project is running.
2. Click the ribbon **File**, tab **Info**, button **Organizer…** - the Organizer dialog appears:



3. Activate the tab **Views** as the type of object to copy.
4. In the list **Views available in** on the left at the bottom of the dialog, select the schedule from which to copy the object; in a similar list on the right, select the schedule to which to copy.
5. Then select the view object to copy and click **Copy>>**.
6. Click the tab **Tables** and copy the table that the view uses.
7. Click the tab **Filters** and copy the filter objects that the view uses.
8. Click the tab **Groups** and copy the group object that the view uses.
9. Click **Close** when done or **Cancel**.

Notes

LESSON 5: USING RESOURCE POOLS TO MANAGE MULTIPLE PROJECTS

Topic 1: Create a Resource Pool

Topic 2: Create a Master Schedule

Topic 3: Create Task Dependencies Between Projects

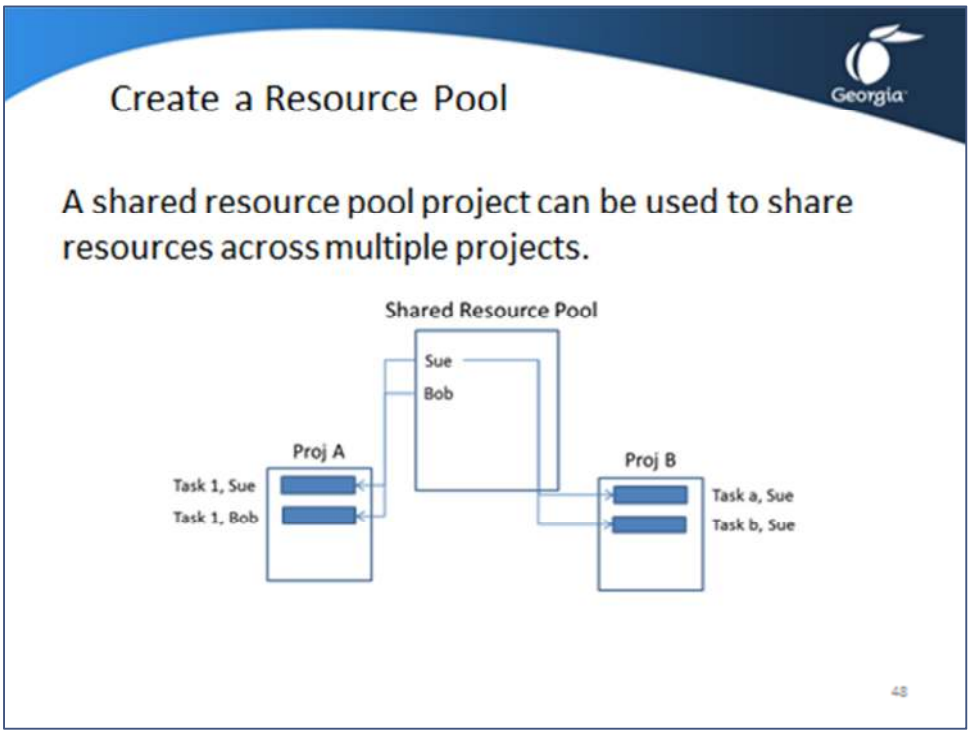
Student Learning Objectives

After completing this lesson you should be able to

- Understand how to manage multiple project (program)
- Understand how to create and use Resource Pools
- Understand how to use Earned Value fields in Views and reports

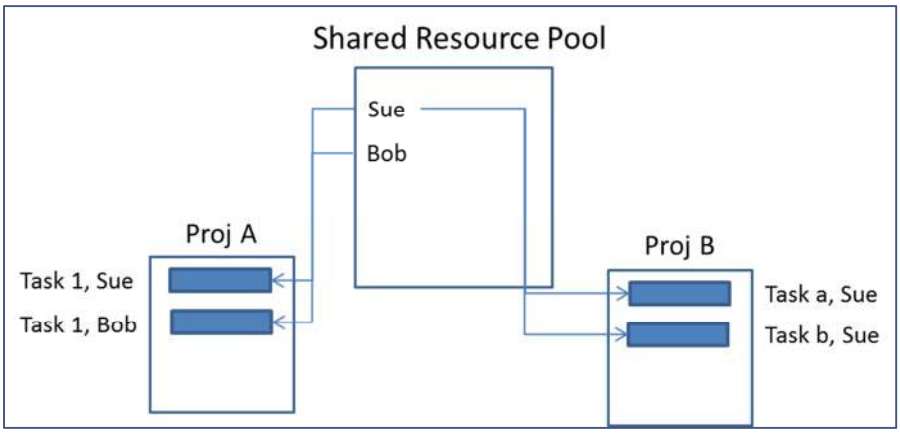
Approximate Presentation time: 2 hours 15 minutes

Topic 1: Create a Resource Pool



A shared resource pool project can be used to share resources across multiple projects. This may be helpful to see:

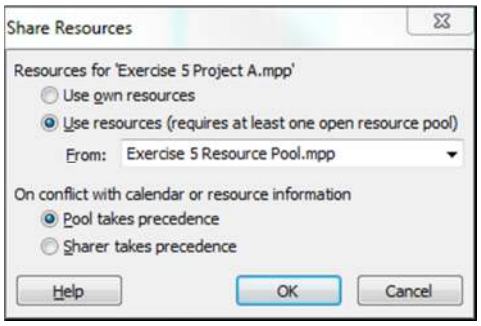
- Overallocated resources – can result in missed deadlines or unhappy team members.
- Underallocated resources – can result in missed opportunities to finish earlier or increased cost due to idle resources.
- To-do Lists – all tasks assigned to an individual resource or to a set of resources.
- Analytics – see how an individual or team performs across multiple projects and pinpoint areas of improvement or concern.



Exercise 5.1: Create a Resource Pool

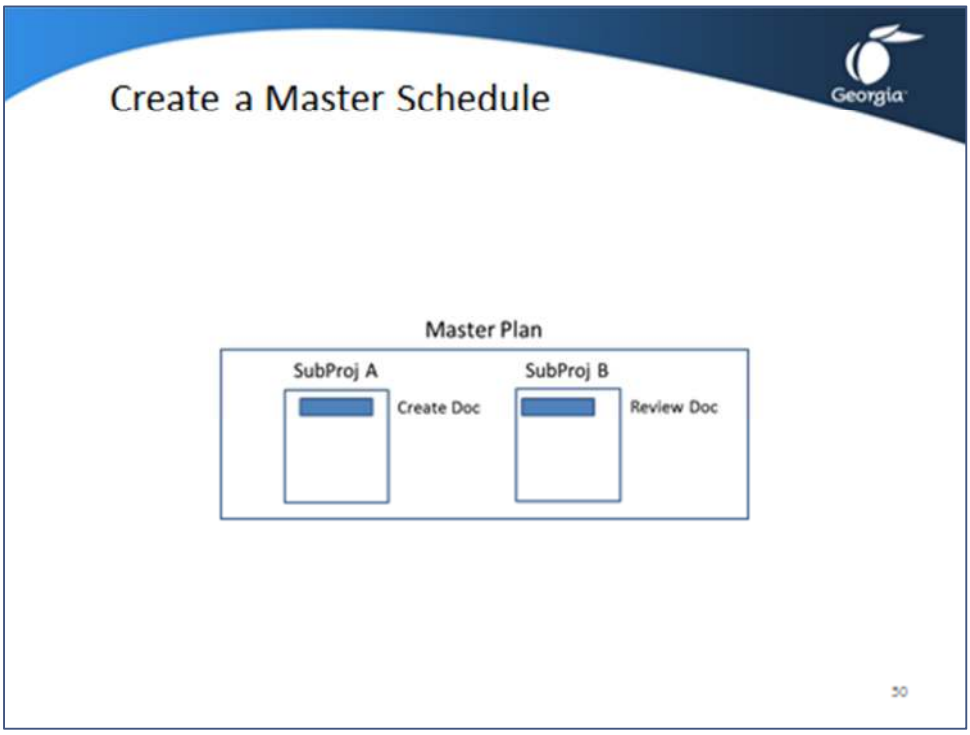
Instructions:
The goal of this exercise is to be able to create a shared resource pool to be used by multiple projects.

1. Open the file *Exercise 5 Resource Pool.mpp*
2. Open the file *Exercise 5 Project A.mpp*
3. On the **Resource** ribbon tab, click **Resource Pool** | **Share Resources**
4. In the **Share Resources** dialog box select **Use resources**



5. Choose the project from the drop down
6. Under **On conflict with calendar or resource information**, choose which project file should take precedence if there is conflicting resource information, such as calendars, rates, availability, and custom fields
7. Click **OK**
8. Validate the shared resources, click **View**, **Resource Sheet**
9. Close the file
10. **Repeat steps 2 – 8** for file *Exercise 5 Project B.mpp*
11. When finished close the resource pool.

Topic 2: Create a Master Schedule



Managing multiple projects is a juggling act; managing multiple projects with intertwined dependencies can be a nightmare.

Project 2010 provides tools to help you manage cross-project dependencies, even tasks in one project that are dependent on the completion of another project.

When you link one project to another by creating dependencies between tasks in those projects, you aren't necessarily combining two projects into one. You are making it possible to manage or monitor two separate projects from one location.

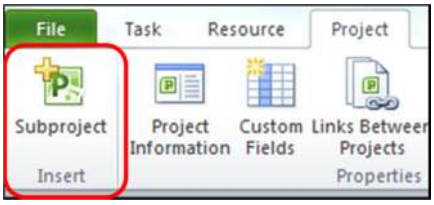
For example, your main project is the construction of an airplane. Your facility cannot attach the wings (a task in the main project) until another facility builds the wings (an entire project). Other tasks in the other project might also be beyond your control.

You can link the “wing building” project to your main project as a task that updates as new information is available. Or you can make “wing building” into a subproject of your master project. The choice depends on whether you simply want updates on the progress of the other project or you need to manage it directly.

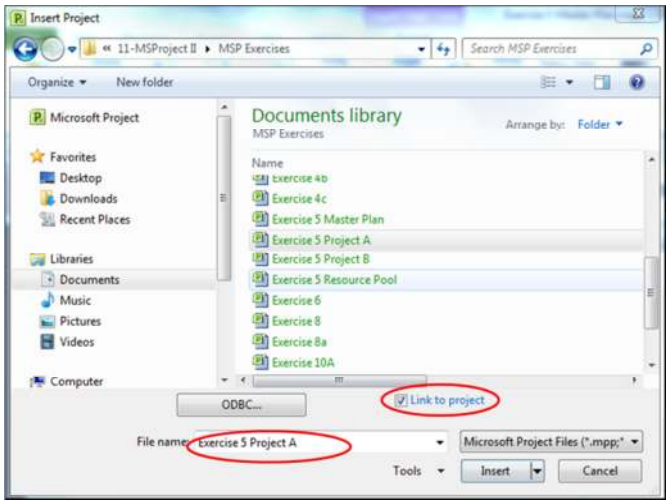
Exercise 5.2: Create a Master Schedule

Instructions:
The goal of this exercise is to create a Master schedule to manage multiple projects.

1. Open the file *Exercise 5 Master Plan.mpp*
2. In the **Gantt Chart** view of the Master Plan, click on the **Project** ribbon tab, and click **Subproject**.

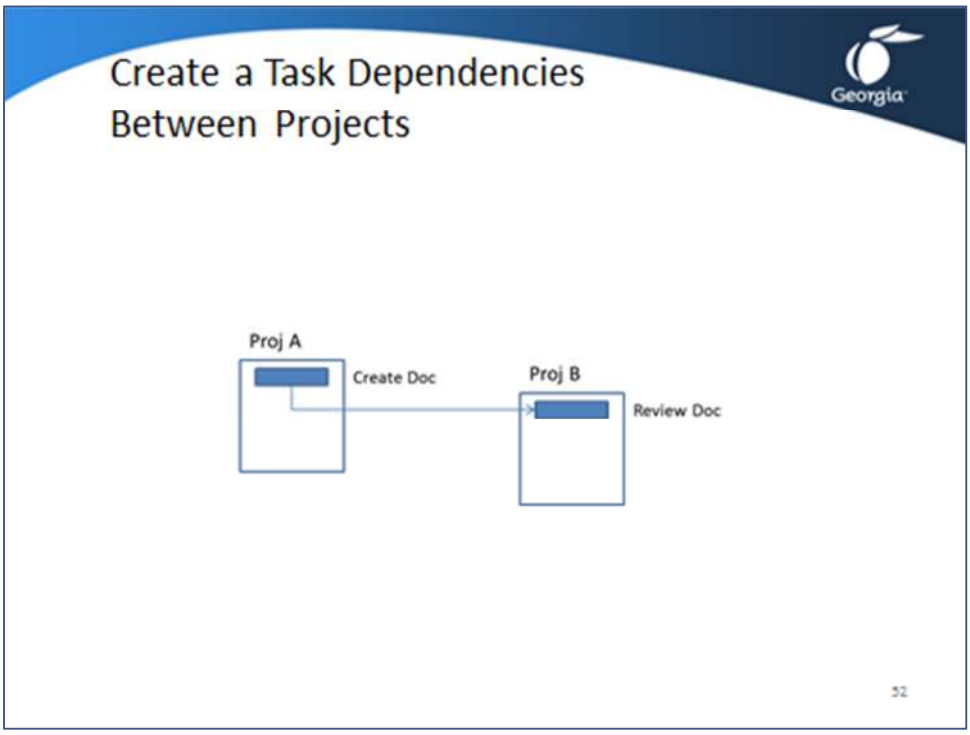


3. Select *Exercise 5 Project A* and click **Insert**



4. Click on the next blank row below the inserted project and click on **Subproject** again
5. Select *Exercise 5 Project B* and click **Insert**
6. Expand **Project A**
7. In the **Open Resource Pool Information** dialog box, ensure **Open resource pool to see assignments across sharer files** is selected and click **OK**. This dialog box is a feature of the shared resource pool, not the master plan.
8. Expand **Project B**
9. Click on **File** and **Save**
10. In the **Microsoft Project** dialog box, click **Yes to All**
11. In the next **Microsoft Project** dialog box, click **OK** to update the resource pool

Topic 3: Create Task Dependencies Between Projects



There will be occasions when a project is dependent upon the completion of a task from another project. This can be accomplished with two individual projects or projects that have been inserted into a master plan.

Exercise 5.3: Create Task Dependencies Between Projects

Instructions:

The goal of this exercise is to be able create a task dependency between two projects.

1. Open *Exercise 5 Project CD.mpp*
2. Under **Project C**, select **Task 4**, hold down the CTRL key and select **Task c** under **Project D**
3. Link the two tasks using the link icon (**Task** ribbon, Schedule section, click )
4. Notice the Predecessors column to see how the link between projects is stored.
   C:\Users\<user>\<folder>\Exercise 5 Project C.mpp\4
5. Save and close the master plan
6. In the Microsoft Project dialog box, click Yes to All to save all subprojects

Notes

APPENDIX 1 – SETTING OPTIONS FOR MS PROJECT

Set Options for MS Project

It is recommended that the following options be set when using MS Project. Access by clicking the ribbon **File**, click the **Options** button, and the Options dialog appears.

Tab	Applies To	Set to
General	**Setup**	Date format: Jan 28 '09
Schedule	**Setup**	Hours per day : 7.5 (enter by typing)
		Hours per week: 37.5
		Days per month: 20
		☑ Show scheduling messages
		Show assignment units as a : Decimal
		Duration is entered in: Days
		Work is entered in: Days
		Default Task type: Fixed Duration
		☐ New tasks are effort driven
		Calculate project after each edit: ◉ On
	WBS	Section **Scheduling options for this project:** **New tasks created: Manually Scheduled** or **Auto Scheduled**. Use **Manually Scheduled** if you create a draft or high-level schedule. If you create a detailed schedule use **Auto Scheduled**. **Default task type** Many people enter the duration immediately. If you do this we recommend setting this option to **Fixed Duration**. If you normally enter **Work** estimates, we recommend **Fixed Work** as the default task type. In this way you protect the estimates you enter. It is the default task type for new tasks you create. On a task-by-task basis you can still decide what type serves you best and switch the task **Type** to it. **New tasks are effort driven** (un-checked) This option changes the number of resources assigned (assignment units); we recommend you turn it off for **Fixed Duration** and **Fixed Units** tasks. It functions like **Fixed Work** tasks and we recommend you use the task type instead. **Fixed Work** tasks are by definition effort-driven and have this option always on.
	Estimates	Section **Scheduling options for this project:** **Duration is entered in:** MS Project will use the setting as the default time unit for the field *Duration*. With the default duration time unit set to days, you can type in 5 instead of 5d to get 5 days. You do not need to type a 'd' in the duration fields. Choose the unit that fits the majority of your inputs to save some keystrokes. The Duration field will display whatever time unit you entered.
		Work is entered in: Explanation is the same as for previous Duration field. Unlike the Duration field, the Work field will convert all entries to its default time

Tab	Applies To	Set to
		unit. If you switch the time unit, MS Project will convert all values.
		Show that scheduled tasks have estimated durations (checked) will add a question mark to the durations that you did not enter yourself.
		New scheduled tasks have estimated durations (checked) will add a question mark to durations of new tasks you may create.
	Dependencies	**Autolink inserted or moved tasks** should be on. This allows MS Project to set or break dependencies inside a waterfall chain of Finish-to-Start dependencies.
		If **Update Manually Scheduled tasks when editing links** is selected, MS Project will reschedule **Manually Scheduled** tasks. Three reasons linking **Manually Scheduled** tasks does not make sense: 1. A default duration of *1 day?* is entered for the task that does not yet have a duration. This removes the flexibility of **Manually Scheduled** tasks. 2. Links between **Manually Scheduled** tasks are *static dependencies* and only work when they are created. If changes happen the links no longer work. 3. If you do not switch to Auto Scheduled tasks you will receive many warnings that beg your attention.
	Resources	Section **Schedule:** **Show assignment units as a: Percentage** or **Decimal** Units of resources can be expressed as a percentage or in decimals in the resource-related **Max Units** field (availability) and in the assignment –related field **Units** field (workload). This is a global option and applies to all your projects, existing or new. For example, you have a resource that is available half-time to your project. This option
	Assignments	Section **Schedule:** **Show assignment units as a: Percentage** Percentage is the best choice when you have part-time resources. If there are mostly *team resources* (consolidated), **Decimal** is better, since “5 carpenters” is easier to understand than “500% carpenters”. This option is a global option; if you change it to **Decimal** in one project, all your projects will use decimal numbers.
		In the **Scheduling options for this project** section**:** **Default task type:** Fixed Units Choose the type of task for any new tasks you create.
		New tasks are effort driven (unchecked): Using this option may result in MS Project changing assignment units. For now, turn it off.
	Updating	Section **Scheduling options for this project:** **Split in-progress tasks:** Checked Allows moving the uncompleted portion of a task to after the Status Date by splitting the task bar. With this option cleared, the options on the Advanced tab cannot split any task bars and will behave differently as a result. It is recommended selecting it.

Tab	Applies To	Set to
		Section **Scheduling options for this project:** **Updating task status updates resource status:** Checked Updating the tasks will update the actual work of the assignments. It is recommended you keep this option checked for task updates. Only clear it if you want to update the tasks and the assignments.
		Section **Scheduling options for this project:** **Actual costs are always calculated by Microsoft Project**: either checked or unchecked Updating the tasks will update the *actual cost*. It is up to you whether you want MS Project to do that. If you clear this option, you can enter the actual cost.
	Reports	Section **Scheduling options for this project:** **Show that scheduled tasks have estimated durations:** Unchecked Clear this if you want to hide the question marks in the duration field.
		Section **Scheduling options for this project:** **New scheduled tasks have estimated durations:** Unchecked Clear this if you want to hide the question marks in the duration field.
Advanced	**WBS**	Section **Edit**: **Allow cell drag and drop** (checked) This allows you to move or copy the selected cells by dragging the selected area by its border. With this option on, you can quickly rearrange your WBS by dragging tasks. This option is global across all your schedules.
	Estimates	Section **Display options for this project** **Minutes, Hours, Days, Weeks, Months,** and **Years** This allows you to change the way time units are shown in your project. The shorter you make the time unit, the more space you save. Select **All New Projects** first from the list if you want the short labels to be used from then on.
	Resources	**Section General Options for this Project:** **Default standard rate:** By entering a rate you can reduce the amount of typing you have to do. If the standard rate is set to $50/hr, you do not need to enter a rate for any resource that is $50/hr.
		Default overtime rate: By entering a rate you can reduce the amount of typing you have to do.
	Updating	Section **Calculation options for this project:** **Move end of completed parts after status date back to status date:** Checked This moves the actual duration bar to before the status date; actual work done is moved into the past. It is recommended you turn this on; it will help you keep the forecasts accurate. **And move start of remaining parts back to status date:** Checked The remaining duration bar will cuddle up to the status date (unless there are dependencies that keep it where it is). The choice is up to

Tab	Applies To	Set to
		you.
		Move start of remaining parts before status date forward to status date: Checked This moves the remaining duration bar to after the status date; work still to be completed is moved to the future. It is recommended you turn this on; it will help you keep the forecasts accurate. It has no effect on tasks that have not started yet, but should have started as per the status date. These tasks will still have to be rescheduled to after the status date to put them into the future where they belong. **And move end of completed parts forward to status date:** Checked or Unchecked This moves the actual duration bar to cuddle up to the status date. The choice is yours.
		Edits to total task % complete will be spread to the status date: Unchecked If a task is falling behind, the progress entered will be evenly spread to the status date. This option is only relevant if you enter % Complete, which is not recommended.
		Section **General options for this project:** **Automatically add new resources and tasks:** Unchecked This prevents a typo in a resource name from accidentally adding a new resource, and works similarly for tasks. It is recommended clearing it.
		Section **Edit:** **Allow cell drag and drop:** Unchecked This prevents accidentally dragging data on top of other data in your baselined schedule. It is recommended to clear this option.
	Reports	Section **Display options for this project:** You can change the time units for **Minutes**, **Hours**, **Days**, **Weeks**, **Months**, and **Years** to one character to save space on the screen.

APPENDIX 2 – BEST PRACTICES CHECKLIST FOR MS PROJECT

Best Practices Checklist for MS Project

Applies to	Checklist
Setup	Does the schedule contain a succinct description of the objectives or final product of the project? Use the field **Comments** (ribbon **File**, tab **Info**, button **Project Information** on the right side of the screen, **Advanced Properties, Summary** tab) which makes it a visible note on the project summary task.
	Do the business days, the working hours and holidays on the project calendar align with a typical, full-time resource on the project?
	Do the working hours on the Standard (Project Calendar) (ribbon Project, button Change Working Time) correspond to the Hours per day option (ribbon File, Options, tab Schedule)?
WBS	Are there deliverables in the task list? If there are not, the schedule does not have a WBS. Deliverables should be captured using nouns (maybe with adjectives, but without verbs).
	Is the list of deliverables complete, but lean?
	Are all expected deliverables explicitly included in the WBS?
	Are the project management deliverables, like schedule and budget included in the WBS?
	Are there only deliverables in the WBS that were explicitly agreed upon by the client or project sponsor?
	Does the WBS have a logical hierarchy?
	Is there one milestone for each deliverable?
Estimates	Do all tasks have an estimate? **Manually Scheduled** tasks: If one of the essential pieces of data is missing i.e. duration, start, or finish, the task is called *unscheduled* and is just a placeholder with its **Placeholder** field set to **Yes**. By filtering on this field you can easily check if you have entered all estimates. **Auto Scheduled** tasks**:** these tasks always have the three pieces of information, because MS Project will enter default durations of 1 day, if needed, and dates (the project start date as the default start date).
	Are the estimates that you collected consistent with the working hours entered in the Standard (Project Calendar)? If they are not consistent the schedule will be too long or too short. Gross working time estimates should be entered in a schedule with gross working hours on the project calendar (typically 8:00 AM – 5:00 PM). Pure working time estimates should be entered in a schedule with the pure working hours on the project calendar – a shorter working day. If you estimate that the productive hours are 70% of the time spent at work, the working hours should be 70% * 8h = 5.6 hours, rounded to 5.5 hours. Working hours correspond to this are, for example, 9:00 AM – 12:00 PM and 1:00 PM – 3:30 PM. It is recommended that you set the working hours like these on the project calendar if you want to work with pure work time estimates.

Applies to	Checklist
	Are the *estimates* reasonable given the work that needs to be performed? Some types of tasks are easily underestimated; for example, writing documents takes a lot of time, at least 2 hours per page. For other tasks, you will need some subject matter expertise to verify the estimates. Sometimes estimates are overestimated. Some project managers incorporate waiting time into duration estimates. Waiting time is more appropriately modeled as a lag on the dependency. Reviews or approval cycles include waiting times.
	Is the amount of effort on overhead tasks reasonable compared to the total amount of effort (Work)? The percent of overhead effort needs to be between 10% and 30% of the total effort in the project.
Dependencies	Have you turned the **Task Mode** of all tasks to Auto Scheduled?
	Is the network of dependencies complete?
	Is the network of dependencies correct?
	Is the network logic simple enough?
	Does the resulting high-level schedule make sense?
	Have you turned off **Autolink** after checking the network?
Deadlines	Is the project deadline date captured in the schedule? The deadline or constraint date for this should be set on the project finish milestone. A constraint date should only be used if the project target finish date is a very hard date.
	Are deadlines used to capture target dates on milestones that are promised to clients? Are deadlines used to capture agreed upon dates?
	Does the schedule have as few constraint dates as possible?
Resources	Are all the resources identified in the **Resource Sheet**?
	Are all resources named consistently using a naming convention?
	Is the availability of the resource appropriately modeled?
	Do all resources have their **Type** field set right?
	Are the rates entered in the appropriate fields?
Assignments	Are you using the task-related field **Type** for **Auto-Scheduled** detail tasks?
	Is **Effort-Driven** off for **Fixed Duration** and **Fixed Units** tasks (Auto-Scheduled)?
	Are there no assignments on the summary tasks?
	Do all detail tasks have a human resource assigned?
Updating	Is the baseline schedule present, complete, correct, relevant, and challenging?
	Are the appropriate options selected in ribbon **File**, **Options** for the chosen updating strategy?
	Is the **Status Date** set to an appropriate date?
	Is the task type for soon-to-be-updated tasks set to **Fixed Units** and **not Effort-Driven**?

Applies to	Checklist
	Are all actual durations scheduled in the past when they actually happened?
	Are all remaining durations scheduled in the future when they will happen?
Reporting	Is there a one-page status report for the schedule that is readily available as a separate View object? This can be one of the following: • A view that supports Earned Value Management • A view that displays only major milestones with their forecast dates relative to their baseline dates
	Does the one-page report give an appropriate impression of the health of the project? • If using Earned Value, verify that the schedule supports the Earned Value values. For example, if the Schedule Variance is positive, the schedule should show that the deadlines are easily met. • If using a milestone view, ask this question: are the right milestones chosen to represent the health of a large project?

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