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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<td>8:30 - 9:00    Personal Introductions</td>
<td>8:30 - 9:45    Progressing the Schedule</td>
</tr>
<tr>
<td>9:00 - 10:15    MS Project I Review</td>
<td>9:45 - 10:15    Collaborating Project Information</td>
</tr>
<tr>
<td>10:15 - 10:30    BREAK</td>
<td>10:15 - 10:30    BREAK</td>
</tr>
<tr>
<td>10:30 - 11:30    More on Resources &amp; Assignments</td>
<td>10:30 - 11:30    Collaborating Project Information</td>
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<tr>
<td>11:30 - 12:30    LUNCH</td>
<td>11:30 - 12:30    LUNCH</td>
</tr>
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<td>12:30 - 2:00    More on Resources &amp; Assignments</td>
<td>12:30 - 2:00    Using Resource Pools</td>
</tr>
<tr>
<td>2:00 - 2:15    BREAK</td>
<td>2:00 - 2:15    BREAK</td>
</tr>
<tr>
<td>2:15 - 4:00    Progressing the Schedule</td>
<td>2:15 - 3:30    Using Resource Pools</td>
</tr>
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<td>3:30 - 4:00    Evaluations</td>
<td></td>
</tr>
</tbody>
</table>
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.
The following is a result of the Excel to Project import.

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
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*
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.
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
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.
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.
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:

![Resource Information dialog](image)

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.
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.
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.
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.
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.
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**.
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.
**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:

![Resource Information Dialog](image)

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.

**In the Cost rate tables, you can enter rates that vary over time (rate profile). Bruce receives a raise of $5/h each year (St. Rate). You can even enter a raise as a percentage and MS Project will calculate the rate amount.**

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:

<table>
<thead>
<tr>
<th>Resource Name</th>
<th>Avail From</th>
<th>Avail To</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Falgon</td>
<td>NA</td>
<td>8/10/12</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>8/13/12</td>
<td>8/31/12</td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td>9/3/12</td>
<td>NA</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Resource Name</th>
<th>Effective Date</th>
<th>Standard Rate</th>
<th>Ovt. Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nancy Hilcrest</td>
<td>-</td>
<td>$35.00/h</td>
<td>$55.00/h</td>
</tr>
<tr>
<td></td>
<td>1/1/13</td>
<td>+10%</td>
<td>+10%</td>
</tr>
<tr>
<td></td>
<td>7/1/13</td>
<td>$45.00/h</td>
<td>$65.00/h</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tab</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Schedule</strong></td>
<td><strong>Section Scheduling options for this project:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Split in-progress tasks:</strong> Checked</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td><strong>Section Calculation options for this project:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Updating task status updates resource status:</strong> Checked</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td><strong>Section Calculation options for this project:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Actual costs are always calculated by Microsoft Project:</strong> either checked or unchecked</td>
</tr>
<tr>
<td></td>
<td>Updating the tasks will update the <strong>actual cost</strong>. It is up to you whether you want MS Project to do that. If you clear this option, you can enter the actual cost.</td>
</tr>
<tr>
<td><strong>Advanced</strong></td>
<td><strong>Section Calculation options for this project:</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Move end of completed parts after status date back to status date:</strong> Checked</td>
</tr>
<tr>
<td></td>
<td>This moves the actual duration bar to before the status date; actual work done is</td>
</tr>
<tr>
<td>Tab</td>
<td>Option</td>
</tr>
<tr>
<td>-----</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td>moved into the past. It is recommended you turn this on; it will help you keep the forecasts accurate. <strong>And move start of remaining parts back to status date</strong>: 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.</td>
</tr>
<tr>
<td></td>
<td><strong>Move start of remaining parts before status date forward to status date</strong>: 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. <strong>And move end of completed parts forward to status date</strong>: Checked or Unchecked This moves the actual duration bar to cuddle up to the status date. The choice is yours.</td>
</tr>
<tr>
<td></td>
<td><strong>Edits to total task % complete will be spread to the status date</strong>: 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.</td>
</tr>
<tr>
<td></td>
<td>Section <strong>General options for this project</strong>: <strong>Automatically add new resources and tasks</strong>: 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.</td>
</tr>
<tr>
<td></td>
<td>Section <strong>Edit</strong>: <strong>Allow cell drag and drop</strong>: Unchecked This prevents accidentally dragging data on top of other data in your baselined schedule. It is recommended to clear this option.</td>
</tr>
</tbody>
</table>

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:

   The first time, you set the baseline For Entire project. To change the baseline when a change request is approved, you use For Selected tasks.
2. Select \[\text{Set baseline}\].

3. To set the baseline for all tasks, select \[\text{Entire project}\].

4. Click \text{OK} – the current schedule is copied to the \text{Baseline} fields.

5. If you suspect that you will receive change requests that will result in multiple baselines, it is a good idea to preserve the current baseline by copying it also into \text{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 \text{Project}, \[\text{Set baseline}\]; the \text{Set Baseline} dialog box appears.

2. Check what the next available baseline is in the \[\text{Set baseline}\] list; baselines that are currently in use have a date behind their name in the pull-down list.

3. Select \[\text{Set interim plan}\] and, from the list \text{Copy}, select the current \text{Baseline} and, from the list \text{Into}, select the next available baseline schedule.

4. Click \text{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 \text{Project}, \[\text{Set baseline}\]; the \text{Set Baseline} dialog box appears.

2. Select the option \text{For:} \[\text{Selected tasks}\].

3. \text{Roll up baselines} options should look like:

<table>
<thead>
<tr>
<th>Roll up baselines:</th>
</tr>
</thead>
<tbody>
<tr>
<td>To all summary tasks</td>
</tr>
<tr>
<td>From subtasks into selected summary task(s)</td>
</tr>
</tbody>
</table>

4. Click \text{OK}

5. Preserve the new \text{Baseline}. 
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)
Preparation 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 [Gantt Chart] and select **Tracking Gantt** – the **Tracking** 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.
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 is now visible in the timescale, similar to:
### 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 ![100% Complete icon](image)
   - 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 ![Mark on Track ▼](image)
   - 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, ![Move ▼](image), 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

\[
\text{Duration} \times \text{Peak Units} = \text{Work}
\]

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:

<table>
<thead>
<tr>
<th>Task</th>
<th>Started</th>
<th>Actual Duration</th>
<th>Remaining Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relocate walls</td>
<td>August 20, 2012</td>
<td>7 days</td>
<td>3 days</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Task name</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relocate walls</td>
<td>Change the task type back to <strong>Fixed Work</strong>, 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.</td>
</tr>
<tr>
<td>Install electrical</td>
<td>Enter an <strong>Ovt. Rate</strong> 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.</td>
</tr>
<tr>
<td>Install cabinetry</td>
<td>Delete the dependency from <strong>drying of paint</strong> to <strong>install cabinetry</strong> and replace it with a dependency from <strong>paint</strong> to <strong>install cabinetry</strong>. <strong>Install cabinetry</strong> should be on schedule.</td>
</tr>
<tr>
<td>Install LAN cables</td>
<td>Change the dependency from <strong>relocate walls</strong> to <strong>install LAN cables</strong> to Finish-to-Finish with a 1.5 day lag. The <strong>Install the LAN</strong> activities should be on schedule.</td>
</tr>
</tbody>
</table>

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.

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

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:

<table>
<thead>
<tr>
<th>Name</th>
<th>Std. Rate</th>
<th>Overtime Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>employees</td>
<td>$25/h</td>
<td>$50/h</td>
</tr>
<tr>
<td>contractor</td>
<td>$30/h</td>
<td>$50/h</td>
</tr>
<tr>
<td>LAN consultants</td>
<td>$75/h</td>
<td>$100/h</td>
</tr>
<tr>
<td>realtor</td>
<td>$35/h</td>
<td>$45/h</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Actual Start</th>
<th>Act. Duration</th>
<th>Rem. Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install cabinetry</td>
<td>Sep 4, 2012</td>
<td>5 days</td>
<td>0 days</td>
</tr>
<tr>
<td>Install LAN hardware</td>
<td>Sep 3, 2012</td>
<td>2.5 days</td>
<td>0 days</td>
</tr>
<tr>
<td>Install LAN operating system</td>
<td>Sep 9, 2012</td>
<td>2.5 days</td>
<td>0 days</td>
</tr>
<tr>
<td>Lay carpet</td>
<td>Sep 8, 2012</td>
<td>4 days</td>
<td>0 days</td>
</tr>
<tr>
<td>Facility remodeled</td>
<td>Sep 11, 2012</td>
<td>0 days</td>
<td>0 days</td>
</tr>
<tr>
<td>Pack</td>
<td>Sep 10, 2012</td>
<td>2 days</td>
<td>0 days</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td></td>
</tr>
<tr>
<td>Name</td>
<td>Task Name</td>
</tr>
<tr>
<td>Baseline Start</td>
<td></td>
</tr>
<tr>
<td>Start 1</td>
<td>Start before</td>
</tr>
<tr>
<td>Scheduled Start</td>
<td>Start after</td>
</tr>
<tr>
<td>Baseline Finish</td>
<td></td>
</tr>
<tr>
<td>Finish 1</td>
<td>Finish before</td>
</tr>
<tr>
<td>Schedule Finish</td>
<td>Finish after</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Field</th>
<th>Middle Tier</th>
<th>Bottom Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>Months</td>
<td>Days</td>
</tr>
<tr>
<td>Label</td>
<td>Jan, Feb, ...</td>
<td>1, 2, ...</td>
</tr>
<tr>
<td>Count</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Align</td>
<td>Center</td>
<td>Center</td>
</tr>
<tr>
<td>Size</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Tab</th>
<th>Section</th>
<th>Set to</th>
<th>Font</th>
</tr>
</thead>
<tbody>
<tr>
<td>Header</td>
<td>Center</td>
<td>&amp;[View] &amp;[Project Title]</td>
<td>Arial, Bold, 20</td>
</tr>
<tr>
<td>Footer</td>
<td>Left</td>
<td>&amp;[Manager] &amp;[Company]</td>
<td>Arial, Regular, 8</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>&amp;[Date]</td>
<td>Arial, Regular, 8</td>
</tr>
<tr>
<td>Legend</td>
<td>Legend on</td>
<td>select None</td>
<td></td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Tab</th>
<th>Section</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page</td>
<td>Orientation</td>
<td>Portrait</td>
</tr>
<tr>
<td></td>
<td>Scaling</td>
<td>Fit to: 1 page wide by 1 tall</td>
</tr>
<tr>
<td>Margins</td>
<td>Top, bottom, left, right</td>
<td>1 inch or 2.5 cm</td>
</tr>
<tr>
<td></td>
<td>Borders Around</td>
<td>Every page</td>
</tr>
<tr>
<td>Header</td>
<td>Center</td>
<td>&amp;{View} &amp;{Project Title}</td>
</tr>
<tr>
<td></td>
<td>Arial, Bold, 20</td>
<td></td>
</tr>
<tr>
<td>Footer</td>
<td>Left</td>
<td>&amp;{Manager} &amp;{Company}</td>
</tr>
<tr>
<td></td>
<td>Center</td>
<td>None; delete the default entry</td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>&amp;{Date}</td>
</tr>
</tbody>
</table>

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

   - First, select the tab of the type of object to copy.

   - Second, select the files between which the object will be copied. The **Global.MPT** is always open and will make the object accessible in all your schedules. Only open files are listed.

   - Third, select the object to be copied in either list and click **Copy**.
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 \(\text{Copy >>}\) to copy from the list to the right or \(\text{<< Copy}\) to copy from right to left.
5. Click \(\text{Close}\) 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:

![Organizer dialog](image)

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**.
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
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

![Share Resources dialog box]

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.
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
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 ![link icon])
4. Notice the Predecessors column to see how the link between projects is stored. 
   
5. Save and close the master plan
6. In the Microsoft Project dialog box, click Yes to All to save all subprojects
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.

<table>
<thead>
<tr>
<th>Tab</th>
<th>Applies To</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>Setup</td>
<td>Date format: Jan 28 '09</td>
</tr>
<tr>
<td>Schedule</td>
<td>Setup</td>
<td>Hours per day : 7.5 (enter by typing)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hours per week: 37.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Days per month: 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[✓] Show scheduling messages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Show assignment units as a : Decimal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Duration is entered in: Days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Work is entered in: Days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default Task type: Fixed Duration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[☐] New tasks are effort driven</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calculate project after each edit: [☐] On</td>
</tr>
<tr>
<td>WBS</td>
<td>Section</td>
<td>Scheduling options for this project:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default task type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>New tasks are effort driven (un-checked)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>Estimates</td>
<td>Section</td>
<td>Scheduling options for this project:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Duration is entered in:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Work is entered in:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Explanation is the same as for previous Duration field. Unlike the Duration field, the Work field will convert all entries to its default time</td>
</tr>
<tr>
<td>Tab</td>
<td>Applies To</td>
<td>Set to</td>
</tr>
<tr>
<td>-----------</td>
<td>-------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>unit. If you switch the time unit, MS Project will convert all values.</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Show that scheduled tasks have estimated durations</strong> (checked) will add a question mark to the durations that you did not enter yourself.**</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>New scheduled tasks have estimated durations</strong> (checked) will add a question mark to durations of new tasks you may create.**</td>
</tr>
<tr>
<td>Dependencies</td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>
|           |                   | **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. |
<table>
<thead>
<tr>
<th>Tab</th>
<th>Applies To</th>
<th>Set to</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Section Scheduling options for this project:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Updating task status updates resource status: Checked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Section Scheduling options for this project:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Actual costs are always calculated by Microsoft Project: either checked or unchecked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Section Reports Scheduling options for this project:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Show that scheduled tasks have estimated durations: Unchecked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clear this if you want to hide the question marks in the duration field.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Section Reports Scheduling options for this project:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New scheduled tasks have estimated durations: Unchecked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clear this if you want to hide the question marks in the duration field.</td>
<td></td>
</tr>
<tr>
<td>Advanced</td>
<td>Section WBS Edit:</td>
<td>Allow cell drag and drop (checked)</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Section Estimates Display options for this project</td>
<td>Minutes, Hours, Days, Weeks, Months, and Years</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Section Resources General Options for this Project:</td>
<td>Default standard rate:</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Default overtime rate:</td>
<td>By entering a rate you can reduce the amount of typing you have to do.</td>
</tr>
<tr>
<td></td>
<td>Section Updating Calculation options for this project:</td>
<td>Move end of completed parts after status date back to status date: Checked</td>
</tr>
<tr>
<td></td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>And move start of remaining parts back to status date: Checked</td>
<td>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</td>
</tr>
<tr>
<td>Tab</td>
<td>Applies To</td>
<td>Set to</td>
</tr>
<tr>
<td>-----------</td>
<td>---------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Move start of remaining parts before status date forward to status date:</td>
<td>Checked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This moves the remaining duration bar to after the status date; work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>still to be completed is moved to the future. It is recommended you</td>
</tr>
<tr>
<td></td>
<td></td>
<td>turn this on; it will help you keep the forecasts accurate. It has no</td>
</tr>
<tr>
<td></td>
<td></td>
<td>effect on tasks that have not started yet, but should have started as</td>
</tr>
<tr>
<td></td>
<td></td>
<td>per the status date. These tasks will still have to be rescheduled to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>after the status date to put them into the future where they belong.</td>
</tr>
<tr>
<td></td>
<td>And move end of completed parts forward to status date:</td>
<td>Checked or Unchecked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This moves the actual duration bar to cuddle up to the status date.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The choice is yours.</td>
</tr>
<tr>
<td></td>
<td>Edits to total task % complete will be spread to the status date:</td>
<td>Unchecked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If a task is falling behind, the progress entered will be evenly spread</td>
</tr>
<tr>
<td></td>
<td></td>
<td>to the status date. This option is only relevant if you enter %</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Complete, which is not recommended.</td>
</tr>
<tr>
<td></td>
<td>Section General options for this project:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Automatically add new resources and tasks:</td>
<td>Unchecked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This prevents a typo in a resource name from accidentally adding a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>new resource, and works similarly for tasks. It is recommended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>clearing it.</td>
</tr>
<tr>
<td></td>
<td>Section Edit:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Allow cell drag and drop:</td>
<td>Unchecked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This prevents accidentally dragging data on top of other data in your</td>
</tr>
<tr>
<td></td>
<td></td>
<td>baseline schedule. It is recommended to clear this option.</td>
</tr>
<tr>
<td>Reports</td>
<td>Section Display options for this project:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>You can change the time units for Minutes, Hours, Days, Weeks,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Months, and Years to one character to save space on the screen.</td>
</tr>
</tbody>
</table>
APPENDIX 2 – BEST PRACTICES CHECKLIST FOR MS PROJECT
<table>
<thead>
<tr>
<th>Applies to</th>
<th>Checklist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setup</td>
<td>Does the schedule contain a succinct description of the objectives or final product of the project? Use the field <strong>Comments</strong> (ribbon <strong>File</strong>, tab <strong>Info</strong>, button <strong>Project Information</strong> on the right side of the screen, <strong>Advanced Properties</strong>, <strong>Summary</strong> 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 <strong>Project</strong>, button <strong>Change Working Time</strong>) correspond to the Hours per day option (ribbon <strong>File</strong>, <strong>Options</strong>, tab <strong>Schedule</strong>)?</td>
</tr>
<tr>
<td>WBS</td>
<td>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?</td>
</tr>
<tr>
<td>Estimates</td>
<td>Do all tasks have an estimate? <strong>Manually Scheduled</strong> tasks: If one of the essential pieces of data is missing i.e. duration, start, or finish, the task is called <strong>unscheduled</strong> and is just a placeholder with its <strong>Placeholder</strong> field set to <strong>Yes</strong>. By filtering on this field you can easily check if you have entered all estimates. <strong>Auto Scheduled</strong> 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.</td>
</tr>
</tbody>
</table>
### Checklist

<table>
<thead>
<tr>
<th>Applies to</th>
<th>Checklist</th>
</tr>
</thead>
</table>
| **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?** |
<table>
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<tbody>
<tr>
<td></td>
<td>Are all actual durations scheduled in the past when they actually happened?</td>
</tr>
<tr>
<td></td>
<td>Are all remaining durations scheduled in the future when they will happen?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reporting</th>
<th>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:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• A view that supports Earned Value Management</td>
</tr>
<tr>
<td></td>
<td>• A view that displays only major milestones with their forecast dates relative to their baseline dates</td>
</tr>
</tbody>
</table>

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<th>Reporting</th>
<th>Does the one-page report give an appropriate impression of the health of the project?</th>
</tr>
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<td></td>
<td>• 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.</td>
</tr>
<tr>
<td></td>
<td>• If using a milestone view, ask this question: are the right milestones chosen to represent the health of a large project?</td>
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</tbody>
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