Managing Projects with MS Project 2010

Session: 10

Fine Tuning Project Plans

Objectives

- Explain built-in filters, auto filters, and custom filters
- Describe how to highlight matching items
- Explain predefined and customized groups
- Explain how to use Task Inspector
- Explain how to make use of suggestions and warnings
- Explain how to use multiple Undo feature
- Explain how to fine tune resource tasks and level the overallocated resources

Introduction

- Project managers need to view and fine tune the project plan to find any issues that may occur and resolve them wherever possible.
- Fine tuning of a project plan may include changes to the project schedule or to the human resources, or the project budget.
- Also, fine tuning makes the project plan as practical as possible.

Applying Built-in Filters 1-4

- Filters in MS Project 2010 help project managers to view a project plan with such perspectives.
- Two major problem areas that filters can help the project managers to examine are:
  - Overallocated Resources
  - Tasks on a Critical Path
- Filters highlight tasks and resources meeting certain criteria of the project plan.
- Built-in filters can be set for tasks or resources based on the following criteria:

Tasks having a cost greater than the specified amount

Tasks on the critical path

Tasks occurring within a specific date range

Milestone tasks

Tasks using Resources from a resource group

Tasks having overallocated resources

Applying Built-in Filters 2-4

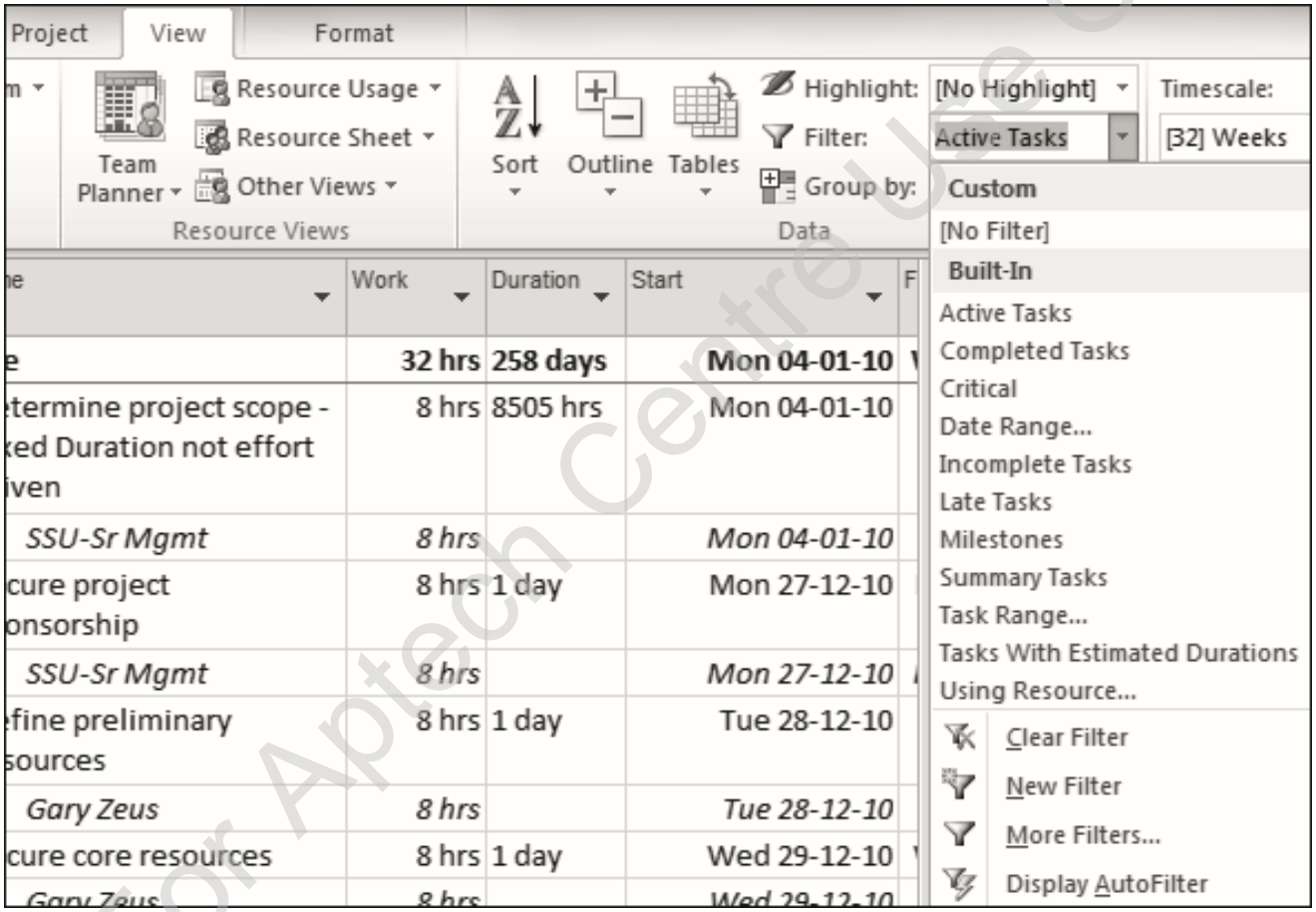
- Steps to open built-in filters in a **Task** view are as follows:

1. Open the project in any **Task** views such as **Task Sheet** view.
2. Click the **Filter** drop-down list located under **Data** group of the **Ribbon** to display built-in filters.
3. Select the respective built-in filter from the list to display relevant information on the sheet.

- If a filter is applied on any **Resource** views such as **Resource Sheet** view, the **Filter** drop-down displays built-in list for resources.

Applying Built-in Filters 3-4

- Following figure displays list of built-in filters in **Task Sheet** view:



Applying Built-in Filters 4-4

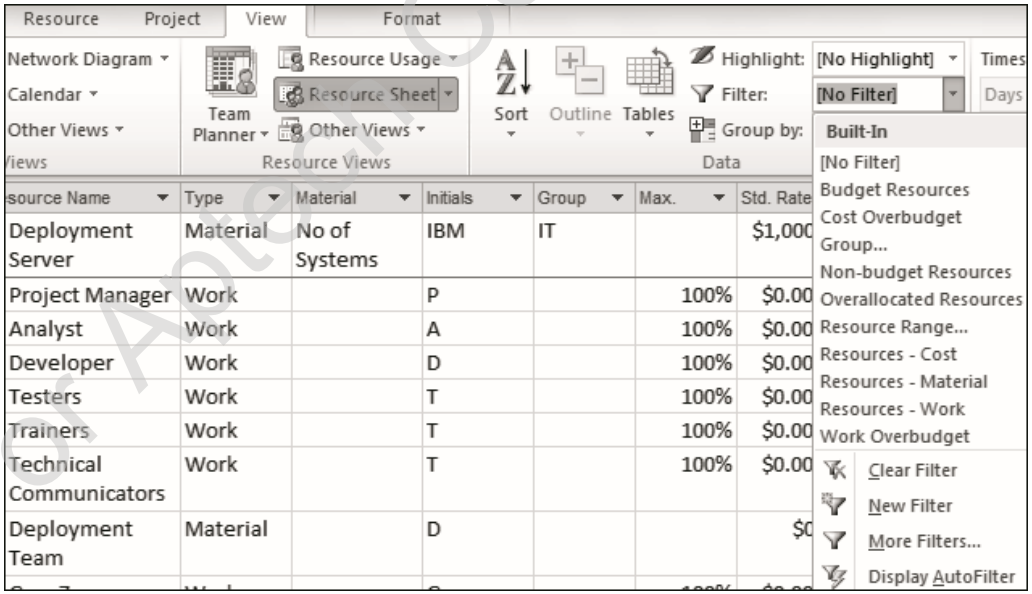
- Steps to open built-in filters in **Resource** views are as follows:

Open the project in any **Resource** views such as **Resource Sheet** view.

Click the **Filter** drop-down list under **Data** group of the **Ribbon** to display built-in filters.

Select the respective built-in filter from the list to display relevant information on the sheet.

- Following figure displays list of built-in filters in **Resource Sheet** view:

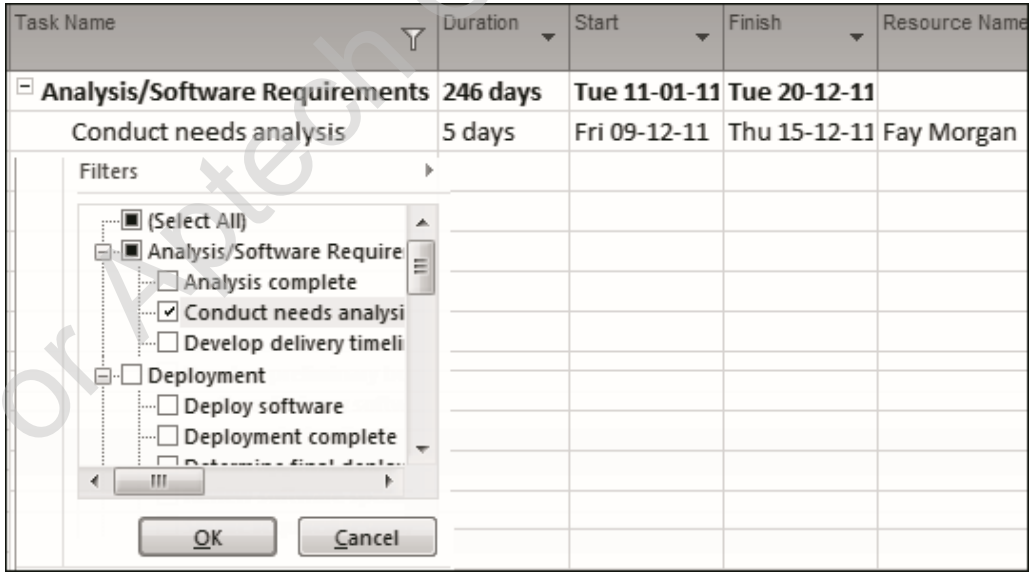


Auto Filtering 1-2

- Steps to create an **AutoFilter** are as follows:

1. Open the project in any table view that contains the columns to filter. Arrows appear for each column.
2. Click the arrow of the column to filter. Use either the list or the **Filters** submenu to select a filter.
3. To use the list, first deselect the **Select All** check box and then click to reselect individual items to show.

- Deselect the **Select All** check box and select a specific task in the list, to filter and display the task in the **Task Sheet** view as shown in the following figure:



Auto Filtering 2-2

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- To use **Filters** submenu, click a predefined filter. Click Group by **Duration** to display all the tasks having one day duration.

- Following figure shows the outcome of applying the AutoFilter:

Task Name	Duration	Start	Finish	Resource Names
Duration: 1 day	**1d**	**Wed 26-05-10**	**Thu 08-12-11**	
Secure project sponsorship	1 day	Mon 27-12-10	Mon 27-12-10	SSU-Sr Mgmt
Define preliminary resources	1 day	Tue 28-12-10	Tue 28-12-10	Gary Zeus
Secure core resources	1 day	Thu 08-12-11	Thu 08-12-11	Gary Zeus
Incorporate feedback on softwar	1 day	Thu 13-01-11	Fri 14-01-11	Fay Morgan
Develop delivery timeline	1 day	Fri 14-01-11	Mon 17-01-11	Gary Zeus
Secure required resources	1 day	Tue 18-01-11	Tue 18-01-11	Gary Zeus
Incorporate feedback into functi	1 day	Fri 11-02-11	Fri 11-02-11	SSU-Sr Mgmt

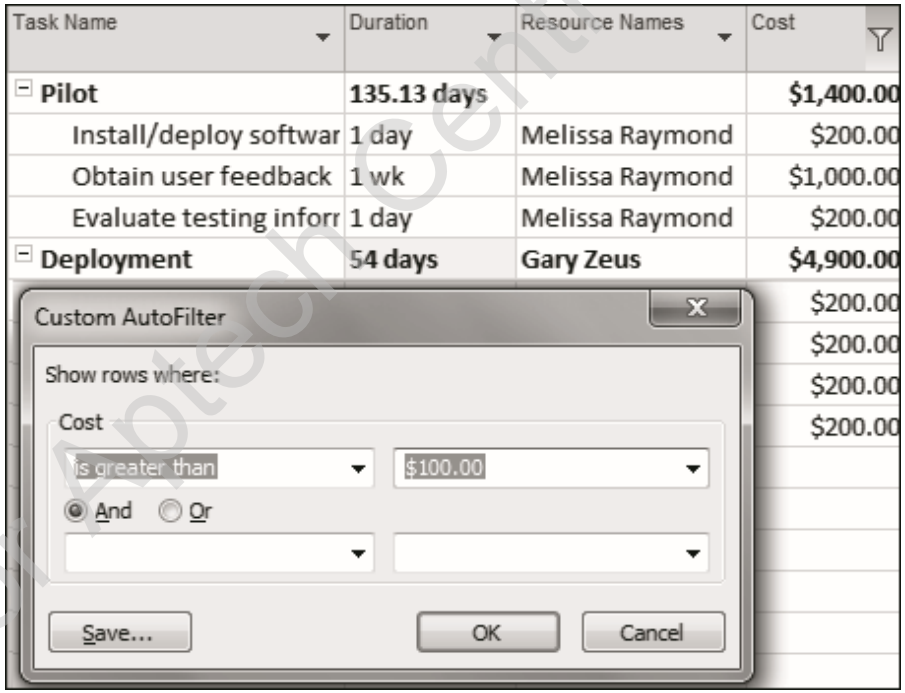
Defining and Using Custom Filters 1-2

- Filters often need customization to generate project information based on specific criteria.
- Custom filters help project managers to derive specific details of a project.
- Tasks or resources not meeting the filter criteria will not appear on the sheet.
- Following figure displays the cost column of tasks:

Task Name	Duration	Resource Names	Cost
Pilot	**135.13 days**		**$1,400.00**
Identify test group	1 day	Gary Zeus	$0.00
Develop software delivery mechanism	1 day		$0.00
Install/deploy software	1 day	Melissa Raymond	$200.00
Obtain user feedback	1 wk	Melissa Raymond	$1,000.00
Evaluate testing information	1 day	Melissa Raymond	$200.00
Pilot complete	0 days		$0.00
Deployment	**55 days?**		**$4,900.00**
Determine final deployment strategy	1 day	Melissa Raymond	$200.00
Develop deployment methodology	1 day	Melissa Raymond	$200.00
Secure deployment resources	1 day	Melissa Raymond	$200.00
server setup	1 day?	Deployment Team[]	$0.00
Train support staff	1 day	Melissa Raymond	$200.00
Deploy software	1 day	Melissa Raymond	$200.00

Defining and Using Custom Filters 2-2

- To find the tasks having costs greater than $100, click the arrow located on the cost column and select **Filters** from the drop-down.
- This shows a list of filter conditions that can be applied.
- Click is greater than to display the **Custom AutoFilter** dialog box filter.
- This displays cost related fields **greater than** $100 as shown in the following figure:



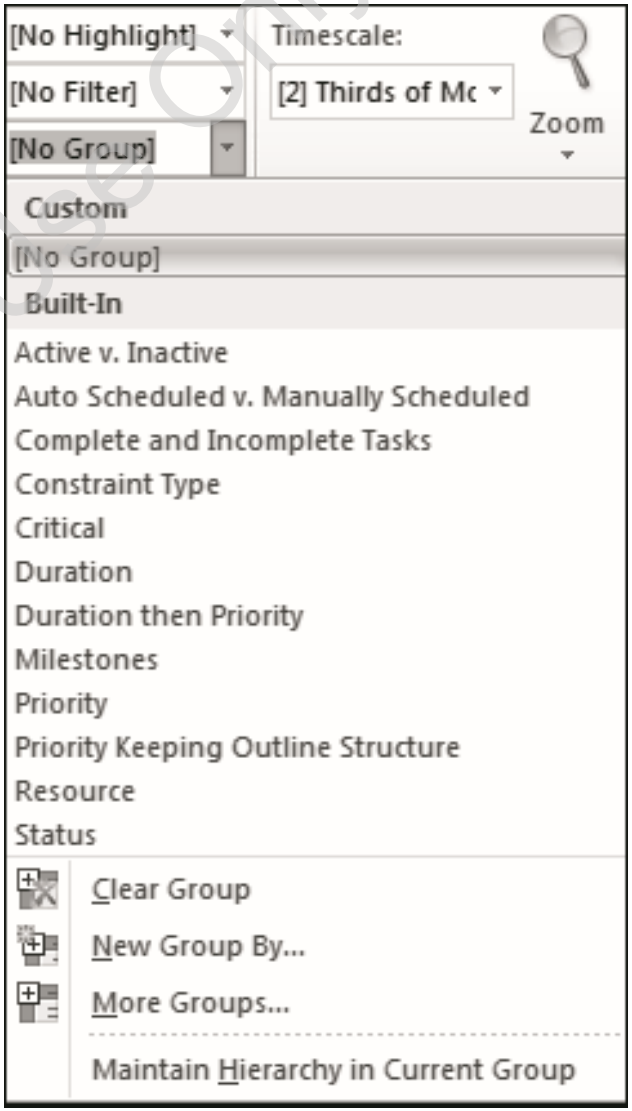
Highlighting Matching Items

- To highlight items meeting filter criteria and without removing the non-matching items from the view, use the **Highlight** list in the **Data** group of the **View** tab on the **Ribbon**.
- Following figure illustrates the display of highlighted matching items having cost more than $100:

Task Name	Duration	Resource Names	Cost
Pilot	135.13 days		$1,400.00
Identify test group	1 day	Gary Zeus	$0.00
Develop software delivery mechanism	1 day		$0.00
Install/deploy softwar	1 day	Melissa Raymond	$200.00
Obtain user feedback	1 wk	Melissa Raymond	$1,000.00
Evaluate testing inforr	1 day	Melissa Raymond	$200.00
Pilot complete	0 days		$0.00
Deployment	54 days	Gary Zeus	$4,900.00
Determine final deplo	1 day	Melissa Raymond	$200.00
Develop deployment	1 day	Melissa Raymond	$200.00
Secure deployment re	1 day	Melissa Raymond	$200.00
server setup	1 day?	Deployment Team[1]	$0.00
Train support staff	1 day	Melissa Raymond	$200.00
Deploy software	1 day	Melissa Raymond	$200.00
Deployment complete	0 days		$0.00

Predefined Groups 1-2

- Grouping items help project managers to organize information by certain criteria.
- Like filters, MS Project provides predefined groups and custom groups.
- Groups can collapse and expand based on tasks or resources.
- Predefined groups in MS Project 2010 are quick and easy to apply.
- The figure depicts the predefined groups:

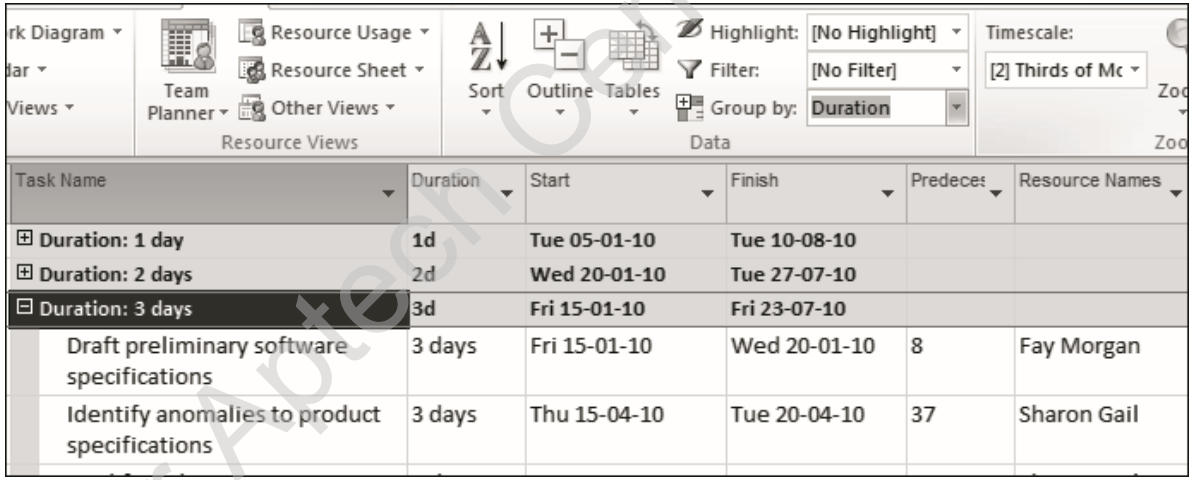


Predefined Groups 2-2

- Steps to apply a predefined group to a project are as follows:

1. Open a project in any resource view such as **Resource Sheet** view to group resources or any task view such as **Gantt Chart** view to group tasks.
2. On the View menu, click the **Group by** list in the **Data** group of the **Ribbon** and then choose the criteria in the list.

- For example, project information is grouped and organized based on the duration of tasks as shown in the following figure:



- The Gantt Chart displays tasks groups by duration that can collapse and expand.

3. To redisplay in the original order, click the arrow on **Group by** drop-down and select **No Group** in the Group list on the **View** menu.

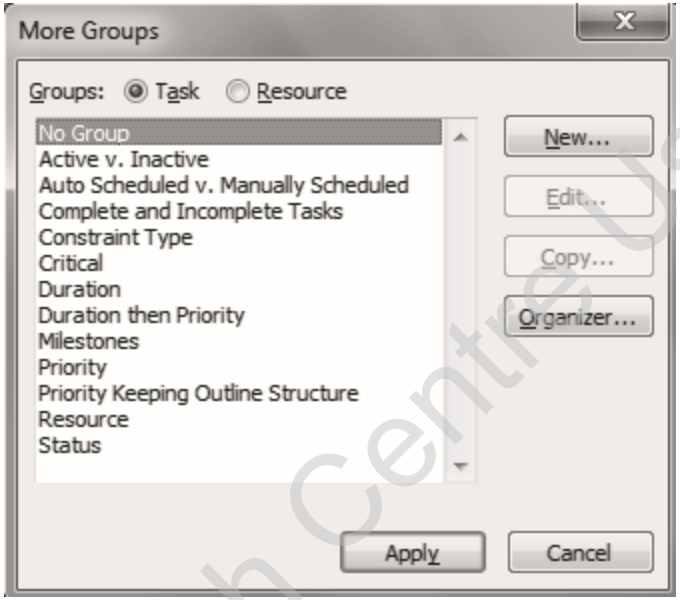
Customizing Groups 1-4

- Like filters, groups often need customization to organize project information by certain criteria.
- Custom groups consists of three elements namely, field name, field type, and order.
- Tasks in a certain order such as descending order, project managers need to customize to create such group.
- Steps to create a custom group are as follows:

1. Open a project in any view, on the **View** tab under **Data** area on the **Ribbon**, click **Group** by drop-down list and click **More Groups** to display the **More Groups** dialog box.

Customizing Groups 2-4

- The **More Groups** dialog box as shown in the following figure:

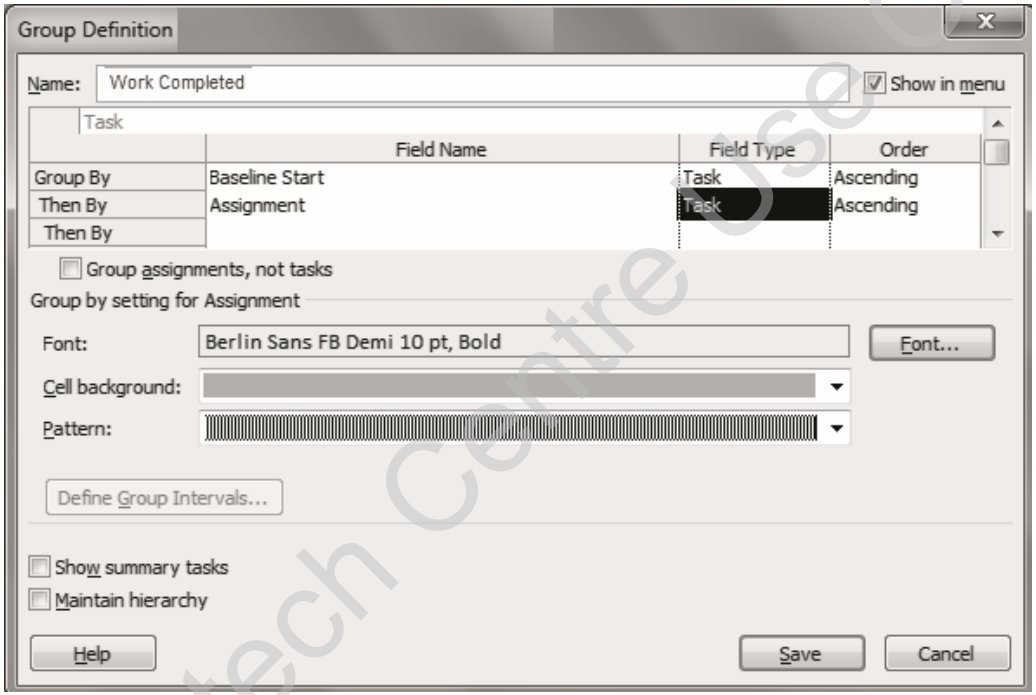


2. • Select either **Task** or **Resource** radio buttons to include the new group to that list.

3. • Click the **New** button to display the **Group Definition** dialog box.

Customizing Groups 3-4

- The **Group Definition** dialog box is shown in the following figure:



4. • Type a name for the group in the **Name** field.

5. • On the first line of the **Field Name** column, click the down arrow to display the list, then select a field name, and click it.

Customizing Groups 4-4

6. • Perform actions similar to Step 5 for Field **Type** and **Order** columns.

7. • To add other sorting criteria, click **Then By** row and make choices for the **Field Name, Field Type**, and **Order** columns.

8. • To show the new group in the list on the **Group** box, select the Show in menu check box on the formatting toolbar.

9. • Depending on the field name chosen, make settings for the **Font, Cell background**, and **Pattern** to format the group.

10. • To define intervals for the groups to be organized, click the **Define Group Intervals** button to display the **Define Group Intervals** dialog box.

11. • Use settings in the box to set starting time and an interval.

12. • Click **Save** to save the new group and then click **Apply** so that it appears in the plan.

Inspecting Tasks

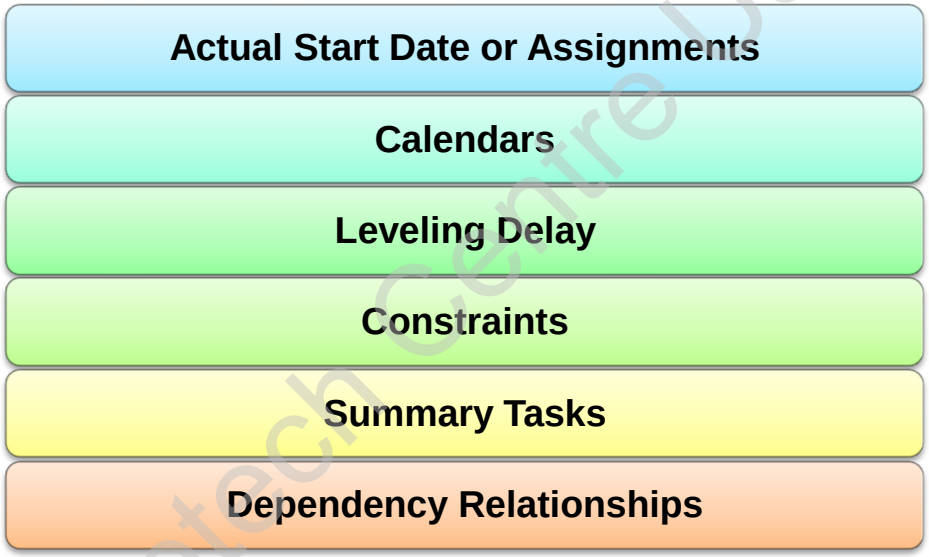
- In a project comprising number of tasks, dependencies, calendars, and so forth, it is tough to manually inspect each and every task.

MS Project 2010 supports four key features that help the project manager to fine tune the project before finalizing the project plan.

Task Inspector	**Task Warnings and Suggestions**	**Multiple Undo**	**Change Highlighting**

Task Inspector 1-2

- The timing of a task in the project is affected by certain conditions called task drivers.
- The Task Inspector is a task driver that helps to recognize such conditions, which include the following:



- Steps to display the **Task Inspector** are as follows:

1. Open project in any task oriented view such as **Gantt Chart** view and on the **Task** menu, click the **Inspect** button on the **Tasks** group of the **Ribbon** and then **Inspect Task** to display the **Task Inspector**.

Task Inspector 2-2

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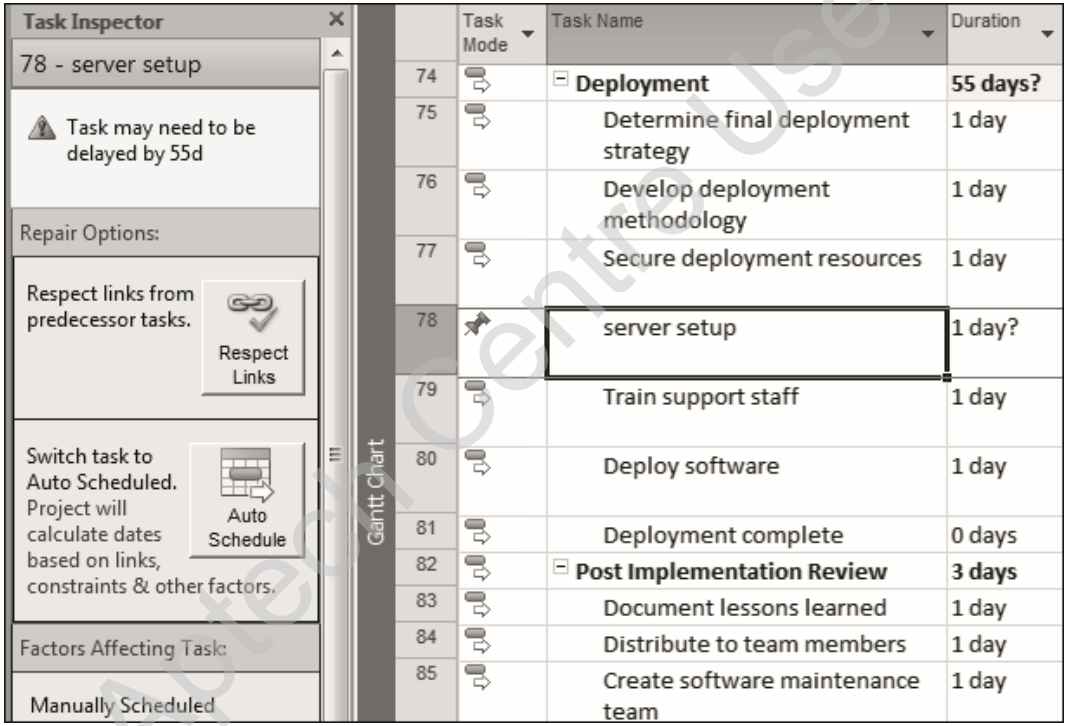
- Click the task to inspect, and the **Task Inspector** pane explains the driving conditions of the selected task's timing as shown in the following figure:



3

- Click another task to display its respective drivers and details. **Task Inspector** warns and suggests various **Repair Options** such as **Respect Links** and **AutoScheduled** for a fix to apply it to the task.

Task Warnings and Suggestions 1-3

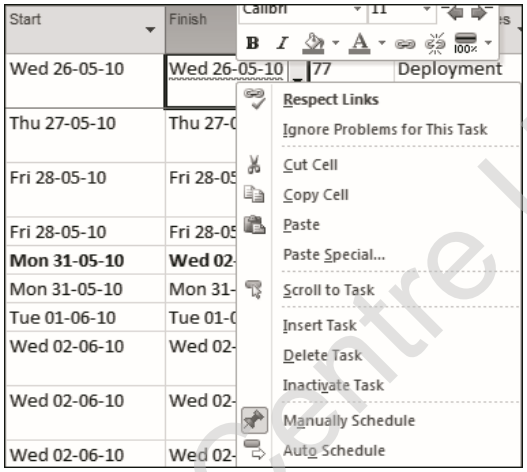
- MS Project reschedules auto scheduled tasks, while establishing task dependencies.
- Though MS Project cannot automatically move manually scheduled tasks, it calculates the occurrence of the task based on its links and conditions.
- Whenever a potential scheduling problem occurs with a manually scheduled task, MS Project alerts in the form of warnings and suggestions as follows:

Warnings appear as **red curly underlines**, generally under the task end date in the Finish column of the task sheet.

Suggestions appear as **green curly underlines**, generally under the task start date in the Start column of the task sheet.

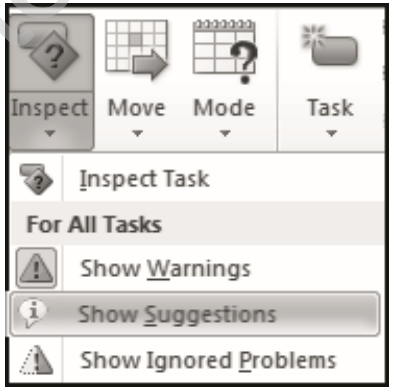
Task Warnings and Suggestions 2-3

- To fix a warning that appears with curly underline for a cell, right-click it to display a shortcut menu with options to fix the potential schedule problem as shown in the following figure:



Steps to view suggestions are as follows:

1. Click the drop-down arrow on the **Inspect** button in the **Tasks** group of the **Task** tab and select **Show Suggestions** as shown in the following figure:



Task Warnings and Suggestions 3-3

2. To apply a schedule change option, select and click the shortcut option.

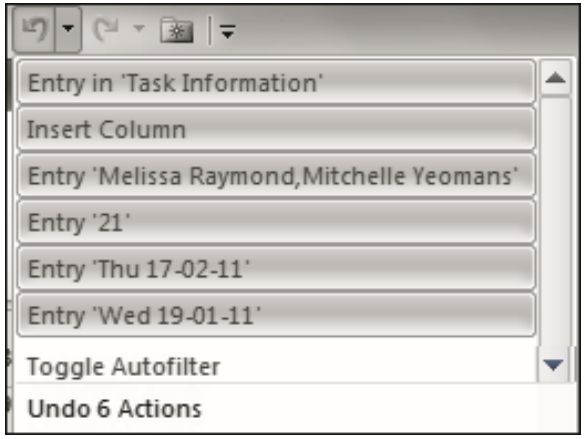
Following are the details of options in the shortcut menu:			
Reschedule to Available Date	**Respect Links**	**Switch to Auto Schedule**	**Fix in Task Inspector**

Using Multiple Ctrl+Z

- Project managers often try different scenarios that involve several changes to the project and undoing several actions in a row is a major technology challenge.
- MS Project 2010 offers the multiple undo (Ctrl+Z) feature so that the manager can try several changes when finalizing or making adjustments to a project.
- Steps to undo multiple changes are as follows:

1. Click the down arrow of the **Undo** button on the **Quick Access** toolbar and then select the change to undo.
2. Alternatively, the user can use Ctrl+Z to undo the latest change.
3. To perform multi level undo and to roll back to a specific action, hold the Ctrl key and tap Z every time to display the sequence of recent actions or select a specific activity from the Undo actions list.

- The figure illustrates the display of undo actions.



Highlighting Changes 1-3

- Another useful tool to see the changes made while fine tuning the project schedule is change highlighting.
- This feature can be turned On and Off by adding the **Change Highlighting** button to the custom **Ribbon** tab.
- Steps to customize the **Ribbon** are as follows:

1. Open the project and click **File** and select **Options.**
2. Click **Customize Ribbon** in the list located on the left of the **Project Options** dialog box.
3. Click the **New** button below the list, then click **Add**, and use the **Rename** button to rename the **New Tab (Custom)** and **New Group (Custom)** items in the list as preferred.
4. Click the **Choose commands from** drop-down and select **All Commands** in the list displayed.

Highlighting Changes 2-3

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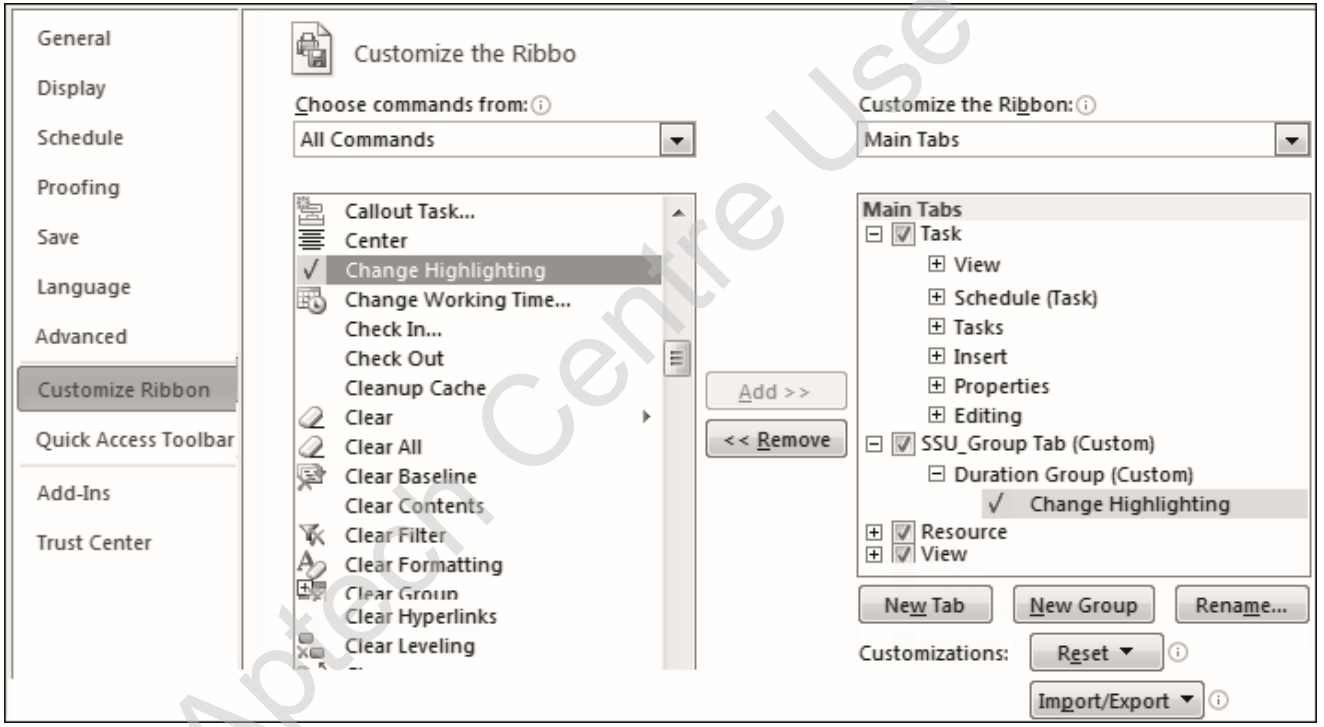
- Drag **Change Highlighting** from the list of **All Commands** onto the new custom group on the created custom tab in the list on the right as shown in the following figure:



6

- Click **OK** to save changes.

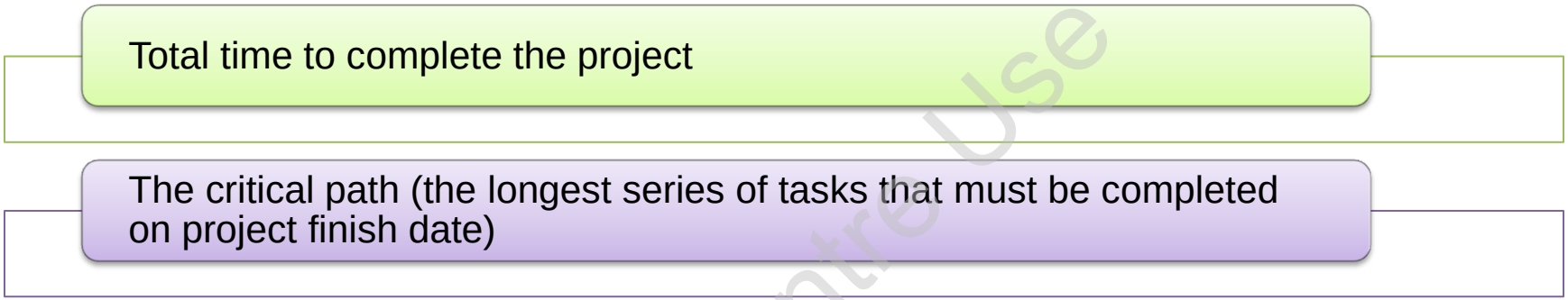
Highlighting Changes 3-3

- Following figure illustrates the display of the newly added tab on the **Ribbon**:

- To delete the custom group and its contents from the list, right-click the custom group in the right section of the **Project Options** dialog box and click **Remove**.

Fine Tuning Resource Tasks 1-2

- Before finalizing the project plan, the project manager must make sure of two things:



- Considering human errors, project manager can use filters and groups to identify the critical path and see that not too many tasks are on the critical path.
- The project manager can add some slack time to the plan to allow any inevitable delays.
- Ideally, every task in a project should have slack time as things can come up unexpectedly.
- Also, slack cannot be added to every task as it probably pushes the timing of the project to a large extent.

Fine Tuning Resource Tasks 2-2

- Following are the few things to look for while modifying resource tasks:

If the start date of a task is delayed because of a resource's unavailability, switch resources to let the task start sooner.

MS Project calculates the duration of some auto scheduled tasks (Fixed Work and Fixed Units with effort-driven scheduling) based on the number of resources available to do the work. Adding more resources to such tasks shortens the project duration.

Assigning more skilled resources to some tasks, reduce the hours of work to complete the task.

Assigning more resources to tasks on the critical path makes the duration shorter that makes the overall project schedule shorter.

Hiring an outside vendor sometimes is a viable option though it can impact the project cost.

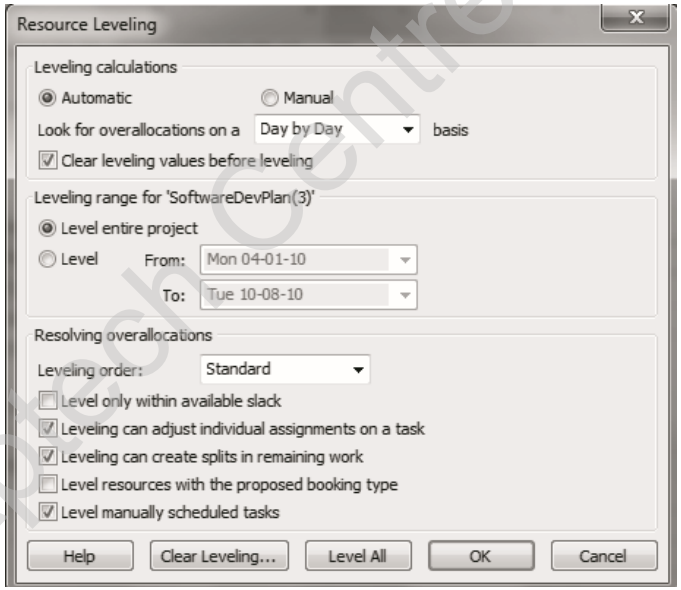
Leveling Overallocated Resources 1-3

- **Gantt Chart** view displays overbooked resources with an overallocation icon in the indicator column.
- To fix the overallocation, right-click the icon and choose **Reschedule to Available Date**.
- Even after choosing **Reschedule to Available Date**, if the icon still remains on the indicator column, the manager need to look at other methods to resolve the problem.
- Right-clicking the icon again and choosing Fix in **Task Inspector** enables the Task Inspector to provide ideas for fixing the overallocation.
- **Resource leveling** is a MS Project feature in which it tries to resolve resource overallocation in a project.
- The feature works in two ways:
  - By delaying a task until the overbooked resource is available
  - By splitting tasks

Leveling Overallocated Resources 2-3

- Steps to level the resources in a project are as follows:

1. Open a project and click the **Resource** tab.
2. In the **Resource** tab, click **Leveling Options** on the **Ribbon** to display **Resource Leveling** dialog box as shown in the following figure:



3. Make a choice between **Automatic** or **Manual**.

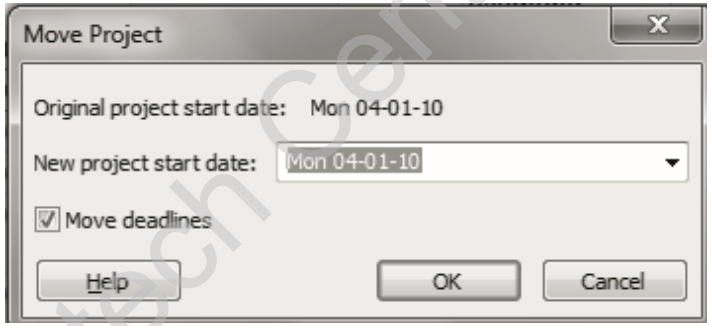
Leveling Overallocated Resources 3-3

4. • Set the **Leveling range**.
5. • Select a choice from the **Leveling Order** drop-down list that shows **Standard, ID Only**, and **Priority, Standard**.
6. • Select any of the five check boxes to control the level.
7. • Finally, click the **Level All** button to perform the leveling operation.
8. • To reverse leveling, click **Clear Leveling** on the **Resource** menu under **Level** tab of the **Ribbon**.

Project Rescheduling

- Project rescheduling happens when a project is put on hold for various reasons.
- Scope and resources are the essential aspects of a project.
- If they are unchanged, rescheduling the entire project to start from a later date than rebuilding from the scratch helps project managers to a larger extent.
- Steps to reschedule a project are as follows:

Open the project and on the **Project** tab, click **Move Project** under **Schedule** group of the **Ribbon**. This displays the **Move Project** dialog box as shown in the following figure:



Enter the new project start date in the **New project start date** box, or choose a date from the drop-down calendar.

Deselect the **Move deadlines** check box to skip moving any deadlines that are assigned to tasks.

Click **OK** to reschedule the project.

Summary

- The first step in fine tuning a project plan is to filter and view the plan from different perspectives.
- By default, MS Project 2010 turns on AutoFilter for all the columns and in any view.
- MS Project 2010 facilitates to highlight items meeting filter criteria and without removing the non-matching items from a view.
- MS Project provides predefined groups and custom groups that are quick and easy to apply.
- MS Project 2010 provides three elements in custom groups namely, field name, field type, and order.
- The Task Inspector helps to organize tasks, their dependencies, and calendars.
- Whenever there is a potential scheduling problem with a manually scheduled task, MS Project alerts in the form of warnings and suggestions.
- Warnings appear as red curly underlines and suggestions appear as green curly underlines in MS Project 2010.