

TOPIC A

Create a Work Breakdown Structure

Now that you've added tasks to a project plan, you need a way to group and organize those tasks. In this topic, you will create and modify a work breakdown structure and milestones.

Work Breakdown Structures

The **work breakdown structure (WBS)** is the hierarchical arrangement of the task list. Creating a WBS from your task list helps you organize your tasks and breaks down large tasks into smaller tasks.

The WBS should detail the full scope of work needed to complete the project. This breakdown is essential for estimating project cost, assigning resources, and effective scheduling. Project progress will be based on comparisons between the actual work and the plan as detailed in the WBS. It is important to hone your task list into a completed WBS during the planning process.

The work breakdown structure can be drawn as a graphic that is displayed much like an organization chart with finite components, or it can be drawn as a simple outline.
















		Task Mode ▾	Task Name ▾	Duration ▾
0			My HR Manual WBS	15 days
1			Begin Project	0 days
2			Research Phase	2 days
3			Review Existing HR Manual	1 day
4			Review Common Industry Practices	1 day
5			Review Government Regulations	2 days
6			Interview Department Heads	1 day
7			Outline Phase	3 days
8			Create Outline	3 days
9			Review with Legal Department	1 day
10			Review with Department Heads	2 days

Figure 4-1: A work breakdown structure.

Summary Tasks and Subtasks

A **summary task** is one that has related **subtasks** grouped below it. In the **Gantt Chart** view, summary tasks are shown with bold text in the left pane and horizontal brackets in the right pane. Subtasks are indented underneath their summary tasks. You can hide some or all of the subtasks underneath a summary task for a high-level view of a project. Summary tasks can also be made into subtasks of a higher summary task, which is helpful if you have complex projects.

Schedule and cost information from subtasks are accumulated at the summary task level. The start date of a summary task is determined by the earliest start date of any of its subtasks. To display or hide the subtasks in your project plan, use the summary task's outline symbols, the expand  and collapse  symbols, which appear to the left of the task name.

▾ Research Phase	6 days	Summary Task
Review Existing HR Manual	1 day	Subtasks
Review Common Industry Practices	1 day	
Review Government Regulations	2 days	
Interview Department Heads	1 day	
▾ Outline Phase	9 days	
Create Outline	3 days	
Review with Legal Department	1 day	
Review with Department Heads	2 days	
Revise Outline	1 day	

Figure 4-2: You can collapse and expand summary tasks and subtasks in the Gantt Chart view.

You can create new summary tasks in the **Gantt Chart** view using the **Insert Summary Task** button in the **Insert** command group on the **Task** tab of the ribbon. You can convert a regular task into a summary task using the **Outdent Task** button in the **Schedule** command group on the **Task** tab. Conversely, you can convert a regular task into a subtask using the **Indent Task** button in the **Schedule** command group on the **Task** tab. Both of these operations will change the durations of the affected tasks.

Grouping tasks under a summary task does not automatically create dependencies among the subtasks. You must link subtasks manually (if they aren't already linked).

You can change the duration of summary tasks, but doing so will not always change the duration of the subtasks. It's better to change the duration of the subtasks, which will change the duration of the summary task.

Two Approaches to Summary Tasks

Sometimes you will create a comprehensive list of project tasks and then group them into summary tasks (the bottom-up approach). Other times you will create a list of high-level tasks that become summary tasks as you add lower-level subtasks below each one (the top-down approach). Neither approach is necessarily better than the other. The bottom-up approach works well when you already have a good idea what needs to happen to complete the project. The top-down approach works best if you only have a general idea of how the project will unfold.


The Project Summary Task

Every new project automatically contains a *project summary task*. All new tasks you add to a project will be subtasks of the project summary task. Project hides the project summary task by default in new projects. In **Gantt Chart** view, you can unhide it by selecting the **Format** contextual tab in the ribbon, finding the **Show/Hide** group, and checking the **Project Summary Task** check box. The project summary task will appear as the first task in the Gantt chart and is helpful as it contains the summary, or roll-up, of the overall project plan. The project summary task will take the name of the project plan file, but you can change it to anything more convenient—the file name will not be changed.

	i	Task Mode	Task Name	Duration
0		☛	My HR Manual WBS	15 days
1		☛	Begin Project	0 days
2		☛	Research Phase	2 days
3		☛	Review Existing HR Manual	1 day
4		☛	Review Common Industry Practices	1 day
5		☛	Review Government Regulations	2 days
6		☛	Interview Department Heads	1 day

Project Summary Task

Figure 4-3: The project summary task is the highest level task in the work breakdown structure.

 **Note:** The project summary task is sometimes referred to as "Task 0."

Outline Numbers

When you are working with complex projects that have a number of summary tasks and subtasks, you may find it helpful to see the outline numbers that Project can assign to each task. Project uses a decimal outlining scheme to show the sequencing and level of tasks. Project hides the outline numbers by default. In the **Gantt Chart** view, you can unhide the outline numbers by selecting the **Format** contextual tab on the ribbon, finding the **Show/Hide** group, and checking the **Outline Number** check box. The outline numbers will appear before each task in the Gantt chart.

	i	Task Mode	Task Name	Duration
0		☛	My HR Manual WBS	15 days
1		☛	1 Begin Project	0 days
2		☛	2 Research Phase	2 days
3		☛	2.1 Review Existing HR Manual	1 day
4		☛	2.2 Review Common Industry Practices	1 day
5		☛	2.3 Review Government Regulations	2 days
6		☛	2.4 Interview Department Heads	1 day
7		☛	3 Outline Phase	3 days
8		☛	3.1 Create Outline	3 days
9		☛	3.2 Review with Legal Department	1 day
10		☛	3.3 Review with Department Heads	2 days

Outline Numbers

Figure 4-4: Outline numbers help you refer to tasks and levels using a numbering system.

Task Notes

Task notes are additional or supporting information that is added to a task. You can add notes to record specifications, customer requirements, quality measures, or any general information related to

a task. Project also offers the flexibility to attach related documents, including Microsoft® Word or Microsoft® Excel® files, or to create hyperlinks to supporting information.

You can also add a note to the project summary task. To do this, add a comment to the **Summary** tab of **Project Information** in **Backstage View**. The comment will become the project summary task note.

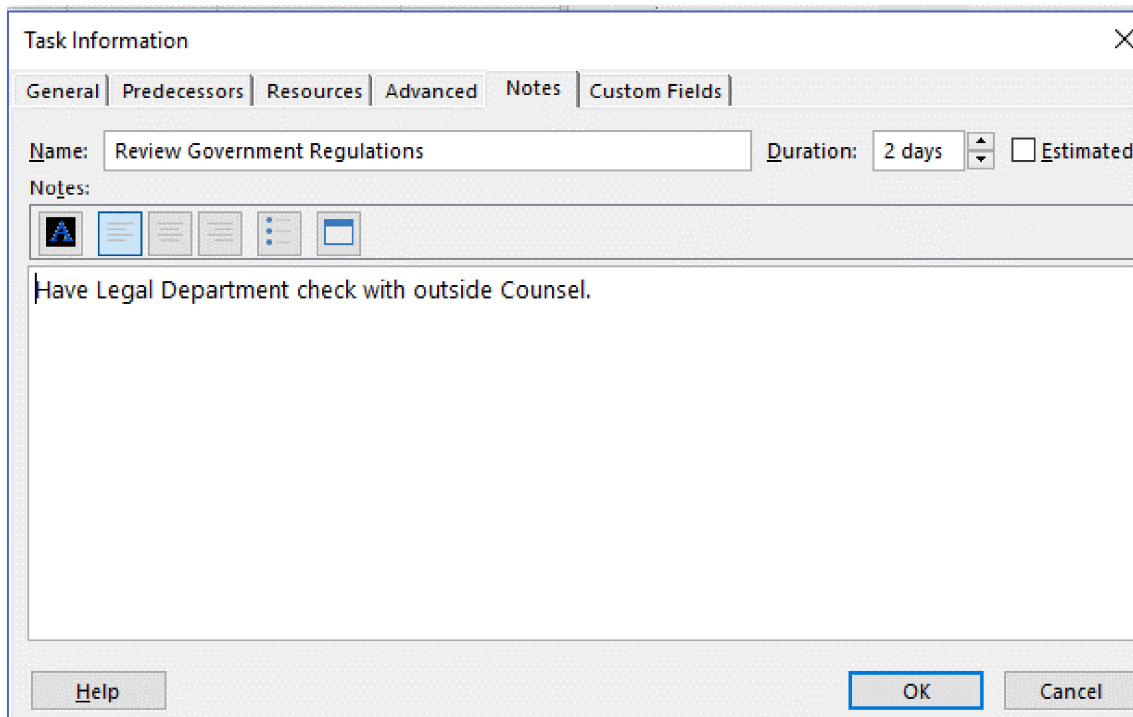




Figure 4–5: You can enter text into the Notes tab of the Task Information dialog box.


There are three methods for adding notes.

Method	Description
Type	You can type text directly into the Notes field. You can then format the text using the buttons shown above the field or common keyboard shortcuts (such as Ctrl+B for bold, Ctrl+I for italics, and Ctrl+U for underline).
Copy and paste	You can copy text or graphics from a source document (such as Microsoft Word, Excel, or PowerPoint®) and paste them into the Notes field. Formatting from the source document is generally retained by the Notes field.

Method	Description
Insert object	You can import a file into the Notes field by selecting the Insert Object button. Almost any Microsoft® Windows® file can be inserted. You have several options for insertion: You can choose to insert a new file or an existing file. If you are inserting an existing file, you can choose to insert a copy of the original file or link to the original file. Finally, you can choose to display the file's contents or an icon of the file.

	Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Create a Work Breakdown Structure .
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	Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Outline Tasks .
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	Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Add Notes to a Task .
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ACTIVITY 4-1

Creating a Work Breakdown Structure

Data File

C:\091098Data\Managing Tasks\HR Manual WBS.mpp

Before You Begin

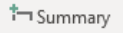
Microsoft Project is open.

Scenario

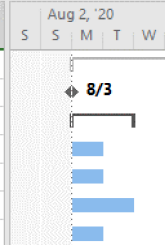
Your project plan is coming together nicely. You have added all of the tasks and durations to it, and now it is time to organize all of your tasks into a work breakdown structure.

1. Open the **HR Manual WBS.mpp** project plan file.
 - a) On the **Open** tab in **Backstage View**, select **Browse**.
 - b) In the **Open** dialog box, navigate to the **C:\091098Data\Managing Tasks** folder containing your class files.
 - c) Select **HR Manual WBS.mpp** and select **Open**.

2. Display the project summary task.
 - a) If necessary, scroll to the top of the **Task Entry** table so that **Task 1 Begin Project** is visible.
 - b) In the **Tell Me** bar, type **Summary Task**
 - c) In the results list, select **Show Project Summary Task**.
If necessary, scroll up to verify that **Task 0: HR Manual WBS** is visible.
 - d) Place the cursor on the vertical line between the **Task Name** and **Duration** columns, and drag to the right until the names of each task are totally visible. Alternatively, you can double-click that vertical line to expand the **Task Name** column.

3. Enter the **Research Phase** summary task.
 - a) Select the ID number for **Task 2 Review Existing HR Manual**.
 - b) Hold **Shift** and select the ID number for **Task 5 Interview Department Heads**.
 - c) On the ribbon, select **Task→Summary**. 
 - d) Type **Research Phase** and press **Enter** to add the new summary task to the **Task Entry** table. Verify that a new **Task 2 Research Phase** is visible, that the four subtasks are indented below it, and that a summary task icon is visible on the Gantt chart.

	Task Mode	Task Name	Duration	Start	Finish	
0		HR Manual WBS	15 days	Mon 8/3/20	Fri 8/21/20	
1		Begin Project	0 days	Mon 8/3/20	Mon 8/3/20	
2		Research Phase	2 days	Mon 8/3/20	Tue 8/4/20	
3		Review Existing HR Manual	1 day	Mon 8/3/20	Mon 8/3/20	
4		Review Common Industry Practices	1 day	Mon 8/3/20	Mon 8/3/20	
5		Review Government Regulations	2 days	Mon 8/3/20	Tue 8/4/20	
6		Interview Department Heads	1 day	Mon 8/3/20	Mon 8/3/20	



4. Using the procedures in Steps 3a-c and the following figure, add the remaining summary tasks.

- **Outline Phase**
- **Development Phase**
- **Edit Phase**
- **Review Phase**
- **Print Phase**
- **Publication Phase**

Task Name
Begin Project
Research Phase
Review Existing HR Manual
Review Common Industry Practices
Review Government Regulations
Interview Department Heads
Outline Phase
Create Outline
Review with Legal Department
Review with Department Heads
Revise Outline
Development Phase
Write Content
Write Policies
Write Benefits
Write Procedures
Add Graphics
Edit Phase
Check Grammar, Spelling, and Proofread
Check for Legal Accuracy
Review Phase
Review with Legal Department
Review with Department Heads
Review with Senior Management
Consolidate Reviews
Print Phase
Write Printing Specifications
Select Printing Vendor
Print Proof
Review Proof
Print Final
Publication Phase
Distribute to Employees
Post to Extranet
Project Complete

Note that **Project Complete** is not bold, because it is not a summary task.

5. Show outline numbers on the WBS.

- a) On the ribbon, select **Format**.

- b) In the **Show/Hide** group, place a check in the **Outline Number** check box.
- c) Place the cursor on the vertical line between the **Task Name** and **Duration** columns, and drag to the right until the names of each task are totally visible. Alternatively, you can double-click that vertical line to expand the **Task Name** column.



Note: You can also automatically adjust the **Task Name** row heights by double-clicking between the two row numbers.

6. Add a note to the **Review Government Regulations** task.

- a) Double-click **2.3 Review Government Regulations**.
- b) In the **Task Information** dialog box, select the **Notes** tab.
- c) In the **Notes** field, enter *Have Legal Department check with outside counsel*.
- d) Select **OK** to close the **Task Information** dialog box.
Verify that the **Task Note** icon appears in the **Indicators** column and position the cursor over it to display the note text.



Note: If the note text is not immediately visible, you might need to save the file first by using the file name noted in Step 7.

7. Save your changes as **My HR Manual WBS.mpp**.

- a) On the ribbon, select **File→Save As**.
 - b) Select **Browse** and then navigate to **C:\091098Data\Managing Tasks**.
 - c) In the **File name** field, enter *My HR Manual WBS.mpp* and then select **Save**.
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