MICROSOFT PROJECT 2010® TUTORIAL 2— THE BASELINE PROJECT PLAN

Introduction

In this tutorial, you will learn the following skills to help transform your work breakdown structure (WBS) into a baseline project plan:

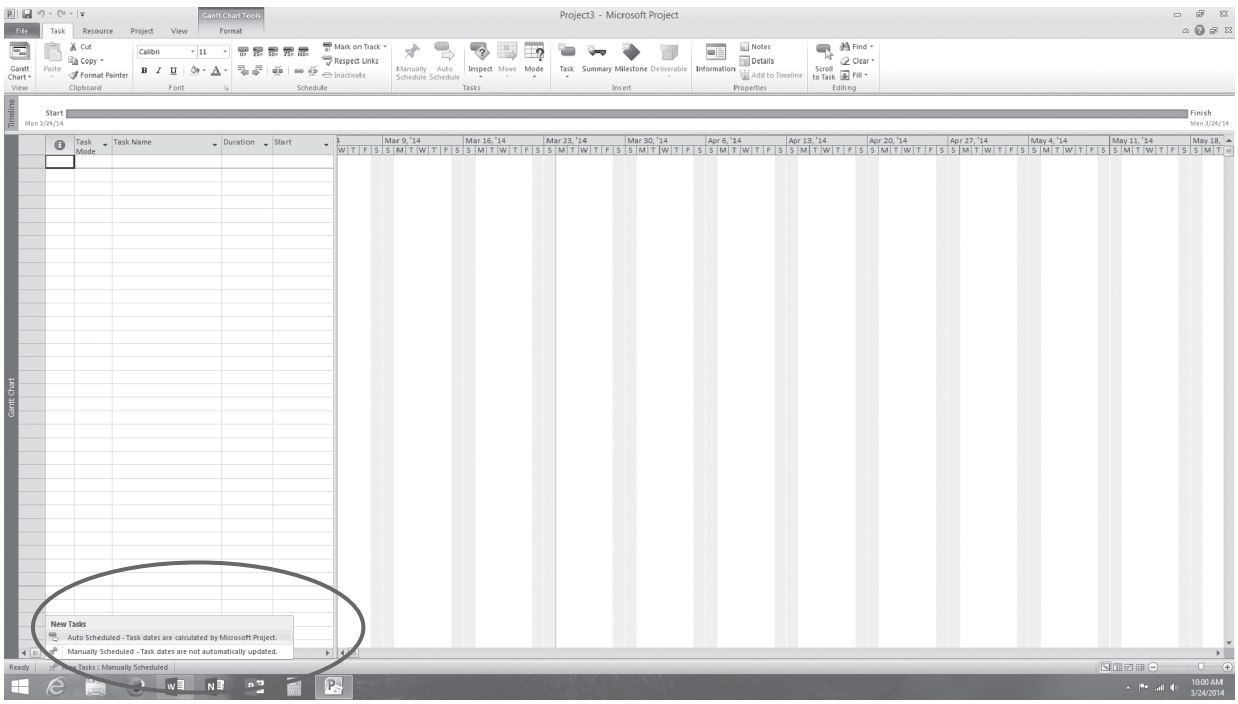
- *Setting Project Start and End Dates*
- *Changing the Work Calendar*
- *Linking and Unlinking Tasks*
- *Effort-Driven Tasks*
- *Task Dependencies (Precedence Diagramming)*
- *Adding Lead (and lag) Times*
- *Changing the Project View*
- *Checking for Overallocated Resources*
- *Printing the Project Summary Report*

Auto Scheduling

MSP allows you to choose between Auto Scheduling and Manual Scheduling the whole project or specific tasks.

YOUR TURN

For now, choose Auto Scheduling at the bottom left corner of MSP. Now when you enter new tasks, your project plan will be updated automatically.



Review—Create a WBS

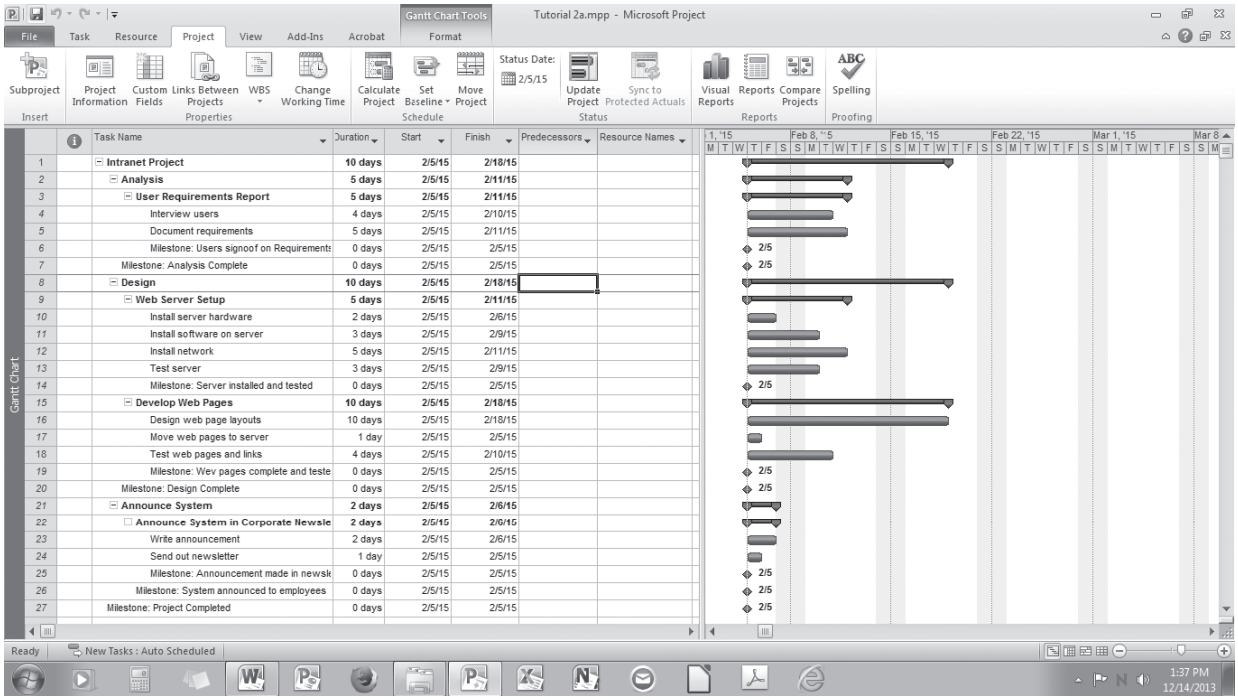
Let's begin the tutorial with a quick review by setting up a work breakdown structure (WBS). Refer to Microsoft Project 2010 Tutorial—Creating the WBS if you need help setting up your WBS.

YOUR TURN

Enter the following tasks and estimates and organize your WBS using the work package concept described in the previous tutorial:

Intranet Project				
	Analysis			
		User Requirements Report		
			Interview users	4 days
			Document requirements	5 days
		Milestone: Users signoff on Requirements Report		0 days
	Milestone: Analysis Complete			0 days
	Design			
		Web Server Setup		
			Install server hardware	2 days
			Install software on server	3 days
			Install network	5 days
			Test server	3 days
		Milestone: Server installed and tested		0 days
		Develop Web Pages		
			Design Web page layouts	10 days
			Move Web pages to server	1 day
			Test Web pages and links	4 days
		Milestone: Web pages complete and tested		0 days
	Milestone: Design Complete			0 days
	Announce System			
		Announcement in Corporate Newsletter		
			Write announcement	2 days
			Send out newsletter	1 day
		Milestone: Announcement made in newsletter		0 days
	Milestone: System announced to employees			0 days
Milestone: Project Completed				0 days

Your WBS should look like the following:

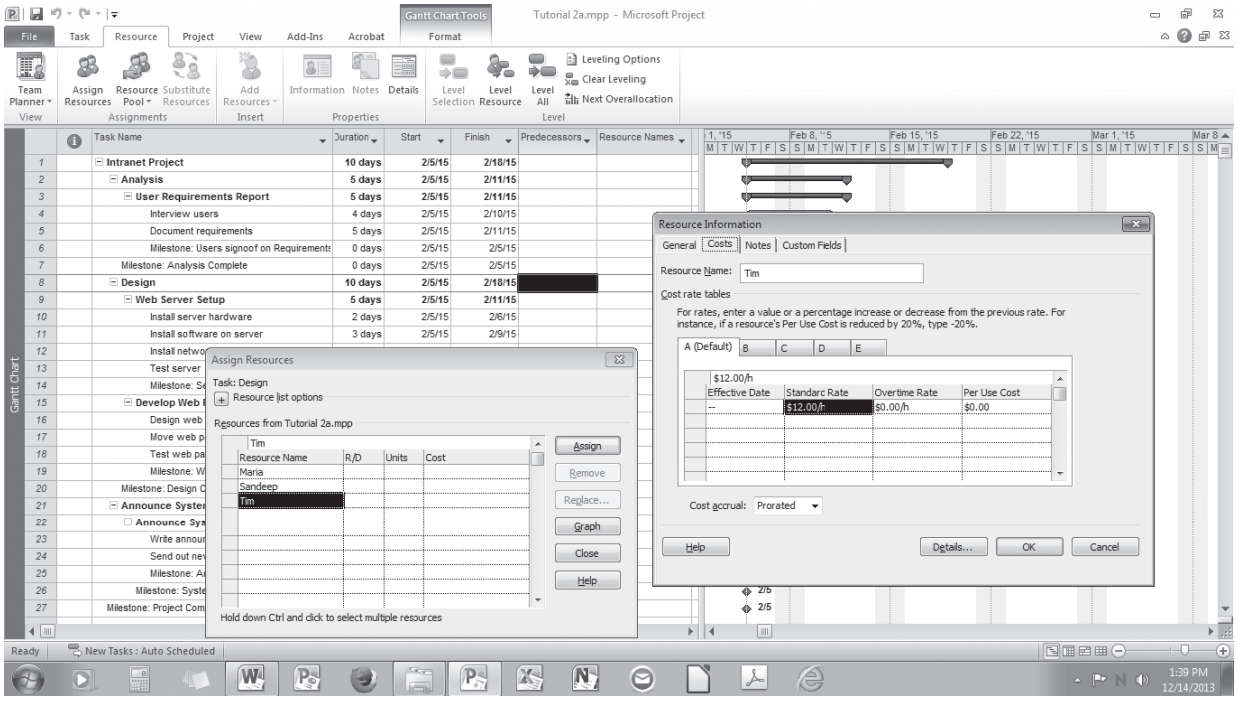


YOUR TURN

Now let's add some resources to our project. Using the Resource Allocation Dialog Box, enter the following resources and their associated costs.

Maria	$35.00/h
Sandeep	$25.00/h
Tim	$12.00/h

Your resource pool should look like the following:

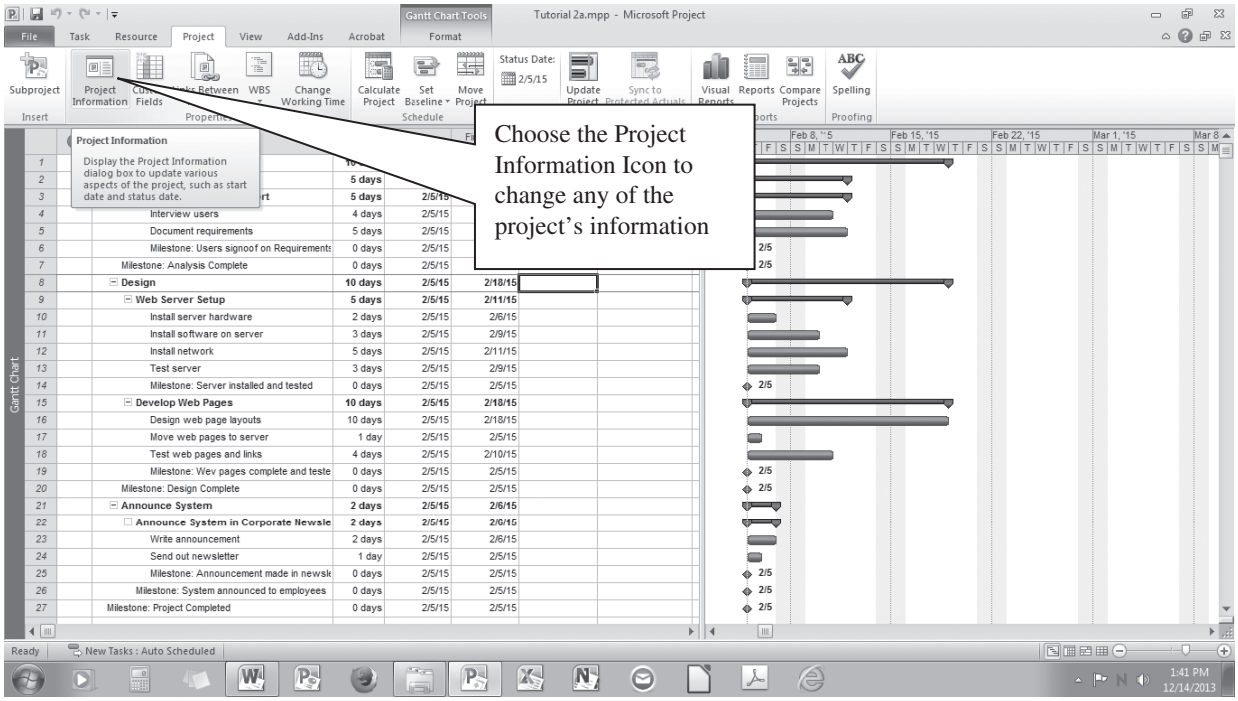


Project Start Dates

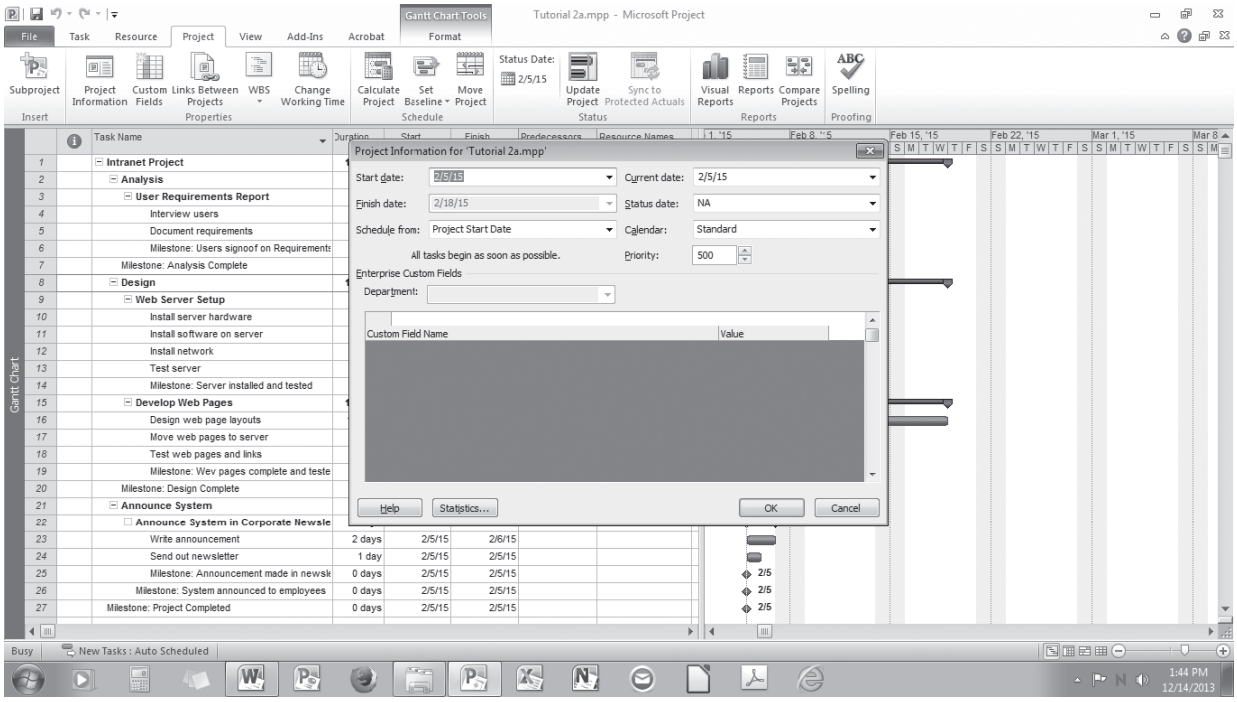
Before we continue developing our project plan, one of the most basic steps is to determine the project start date. For example, we may be planning a project that will start next week, next month, or next year. In this case, we tell MSP when the project will start (i.e., the project start date) and all of our planning efforts (along with MSP) will help us determine the scheduled or planned completion of our project. This would be forward planning.

On the other hand, we may be planning a project when we already know its required completion date, so our planning efforts need to tell us when the project should start. This is backward planning in that we need to determine the date our project needs to start in order to be completed by the required date. For example, our project may have to be completed by December 31st. MSP can help us determine the date when we must start our project in order to meet this deadline.

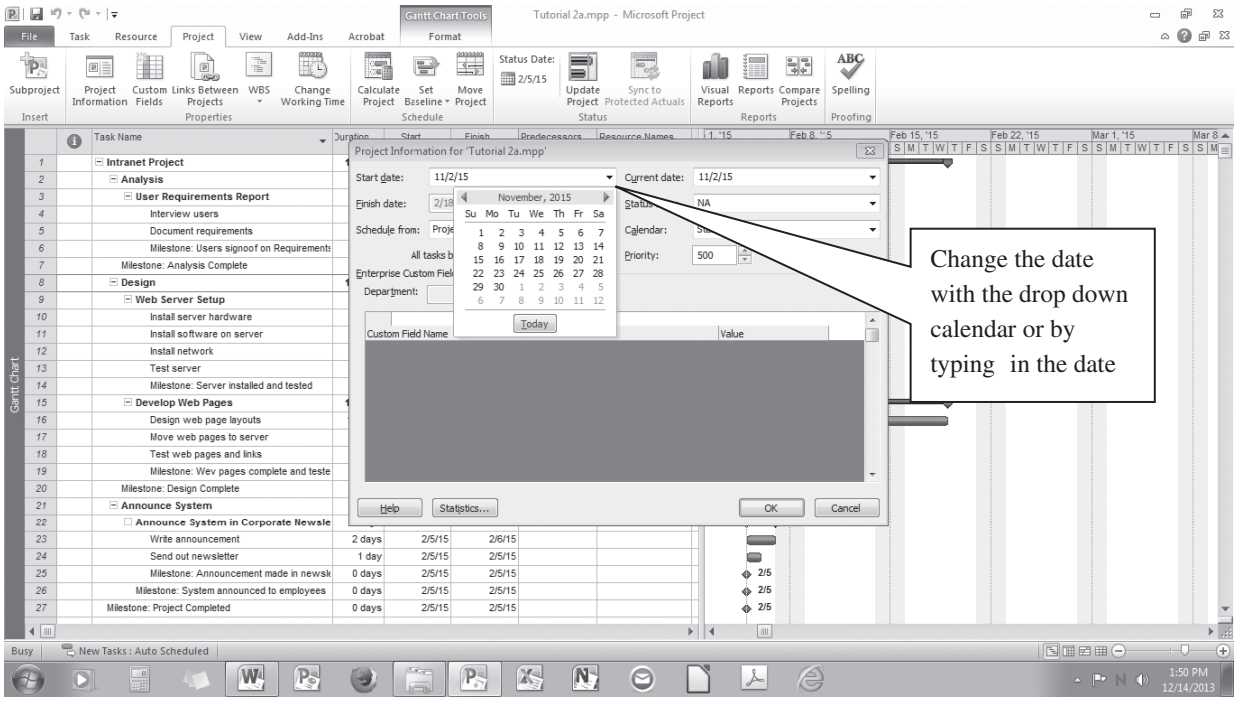
To change the project start date, just choose **Project Information from the Project Ribbon**.



Then choose either Project **Start Date** (to plan your project from a specific start date) or **Project Finish Date** (to plan your project from a specific completion date) from the **Schedule From:** drop down box.



To schedule your project with a start date, just click on the drop down box **Start Date:** and a calendar function will appear. Just click on a specific date to tell MSP when. Similarly, just choose **Project Finish Date** from the **Schedule From:** drop down box and choose a specific date from the calendar function in the **Finish Date:** drop down box.



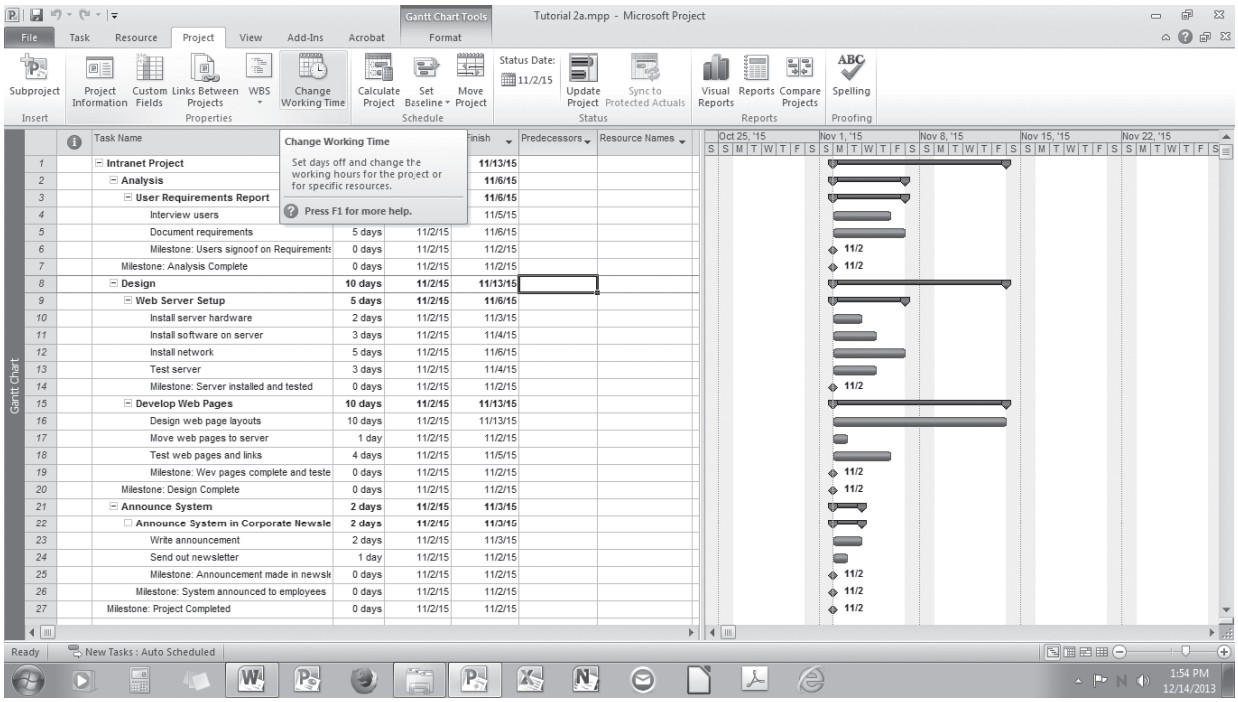
YOUR TURN

Change the start date for your project to the first working day in the next upcoming November. For example, if today is October 27th, then the first working day is Monday, November 1st. Click the ***OK button*** *to make the change. Also, change the current date to the same day.*

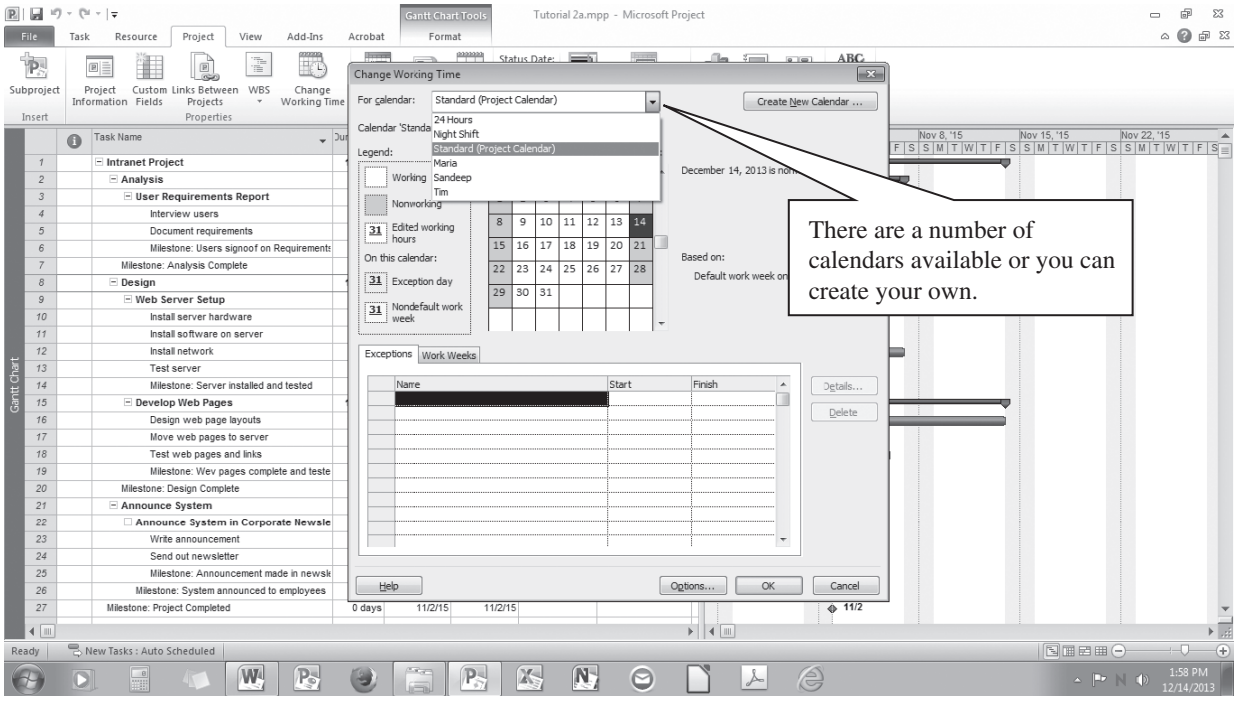
Work Calendars

MSP is set up with a standard work calendar where people (i.e., resources) work 8-hour days—Mondays through Fridays. Moreover, the default work time is 8 AM to 12 PM and 1 PM to 5 PM that includes an hour off for lunch. There are no set holidays; therefore, you have to tell MSP if your project team will have any additional days off because of non-working holidays or vacation.

To view or change the work calendar, choose **Change Working Times from the Project Ribbon.**



The following screen will appear:

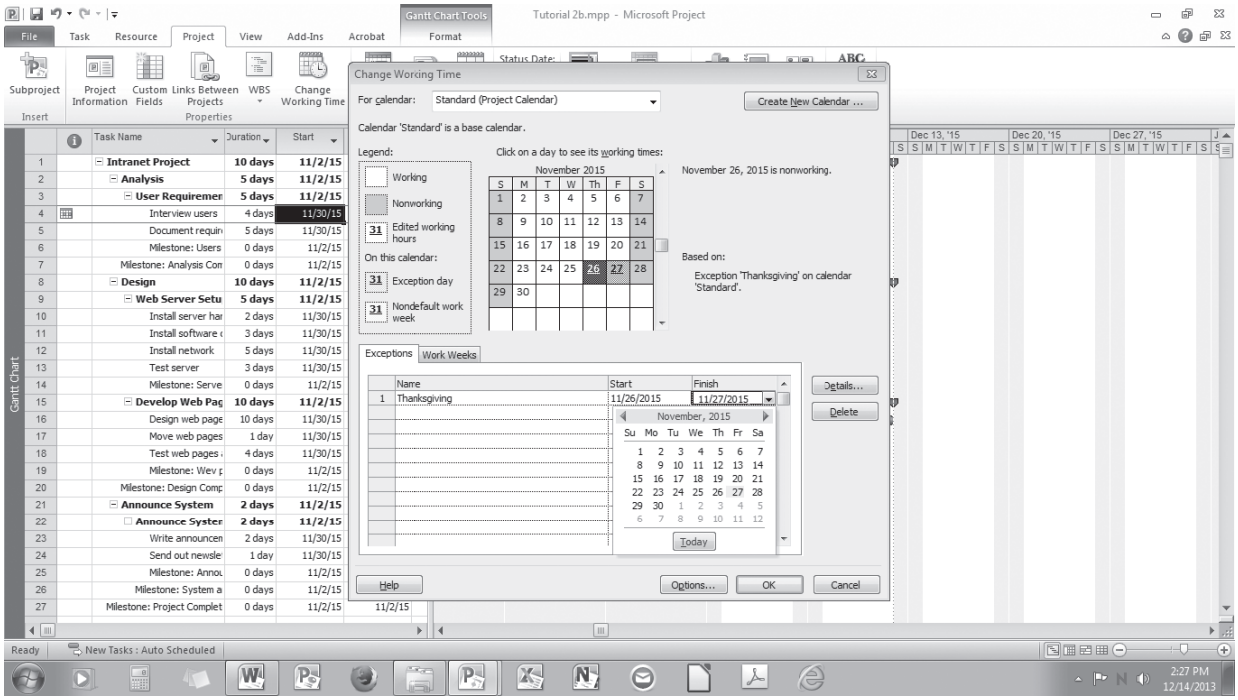


By clicking on the **For Calendar:** drop down box, you can see that there are several calendars: 24 Hours, Night Shift, Standard, and one for each resource. Most projects will use a standard calendar, but as you can see, this can be customized to fit your needs.

For example, let's say that the project team will be working in the United States and that the fourth Thursday and Friday in November will be non-working days due to the Thanksgiving holiday.

To make these two days non-working holidays, use the scroll bar on the right side of the calendar to move to November.

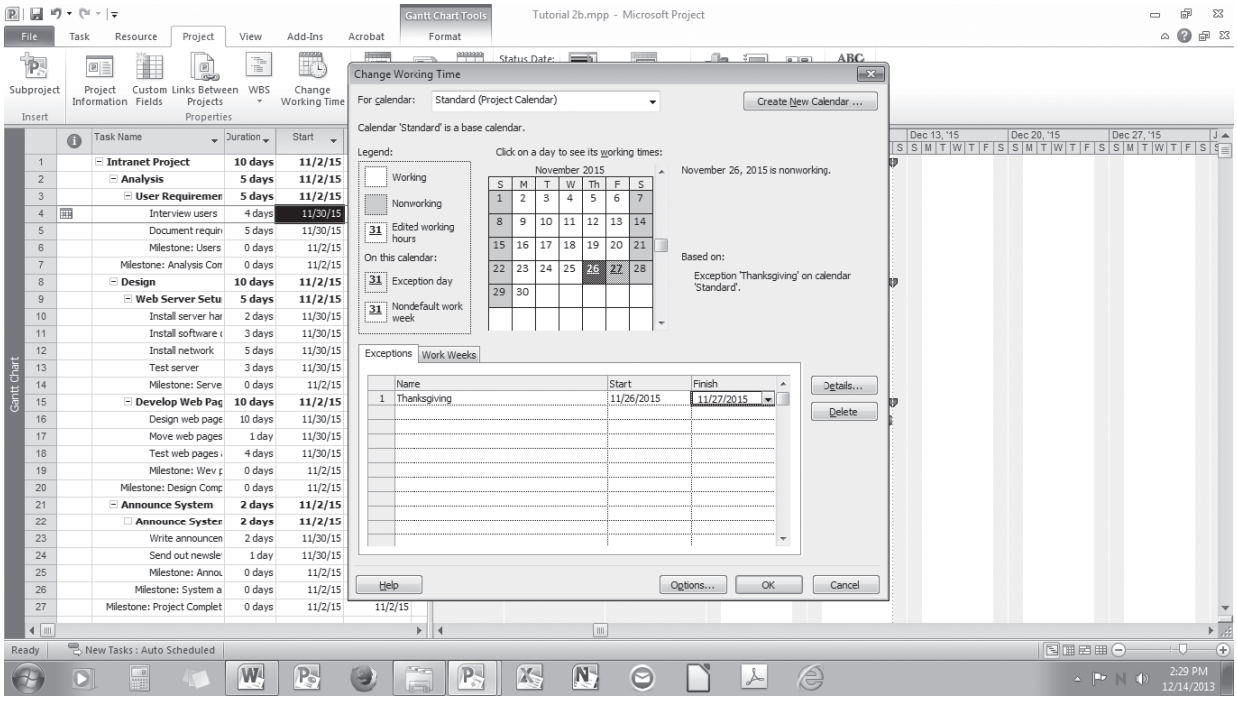
Click on the day or days you want to change (e.g., November 26th*)* and then click the **Exceptions** tab to display it, and then click a blank row and type a name for this exception (e.g., Thanksgiving).



You can extend the holiday to both Thursday and Friday by choosing the calendar dropdown box in the **Finish column** to choose November 27th as an additional nonworking day. Note: Depending on the year, the exact dates may be different.

YOUR TURN

Thanksgiving is celebrated on the last Thursday of November. If you haven't already, make the last Thursday and Friday of November non-working days. Click the ***OK button*** *to make these changes to your schedule. Your working calendar should look something like the following:*



Assigning Resources to Tasks

Once you have your tasks organized and resources added to MSP, you can assign one or more resources to a particular task. To do this, make sure that the Assign Resources Dialog Box is open. If it is not, just click on the Assign Resources icon from the Resource tab on the Ribbon. Click the *Close Button* to close the Resource Dialog Box.

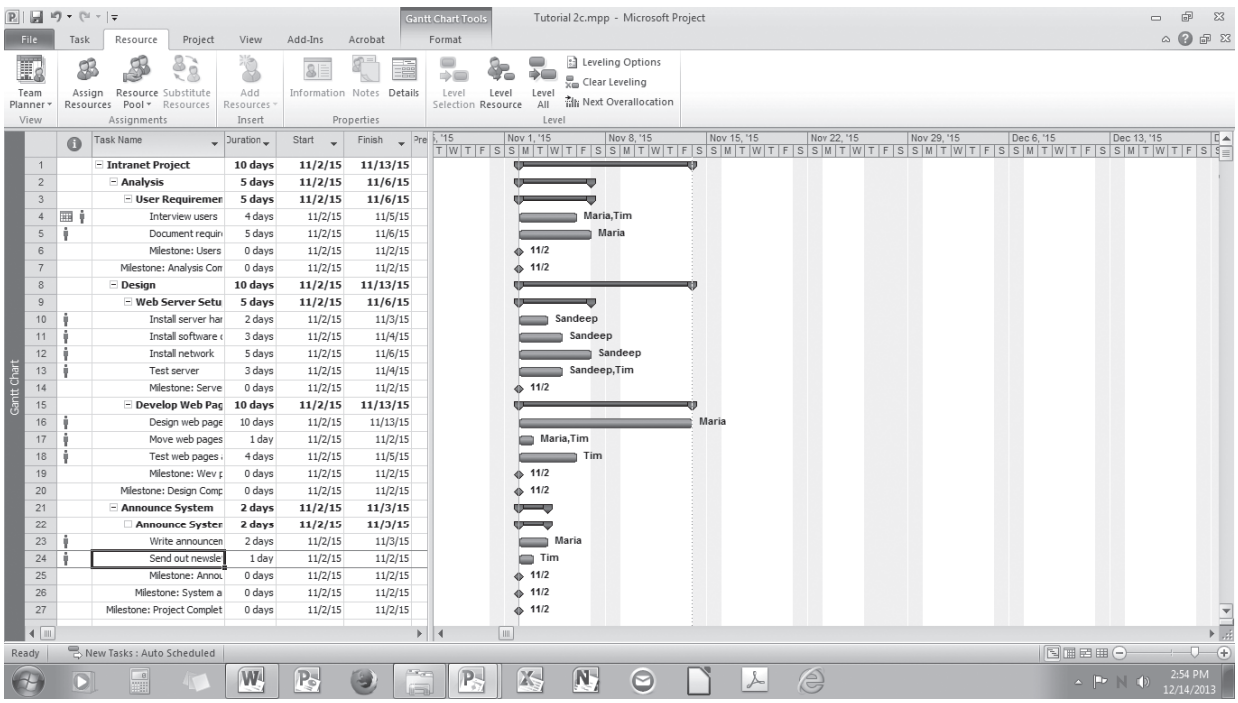
Click on a task that will be assigned a resource, click on the resource you want to assign to that particular task, and click the Assign Button. The name of the resource will be displayed next to the bar on the Gantt Chart

YOUR TURN

Allocate the following resources to the project's tasks.

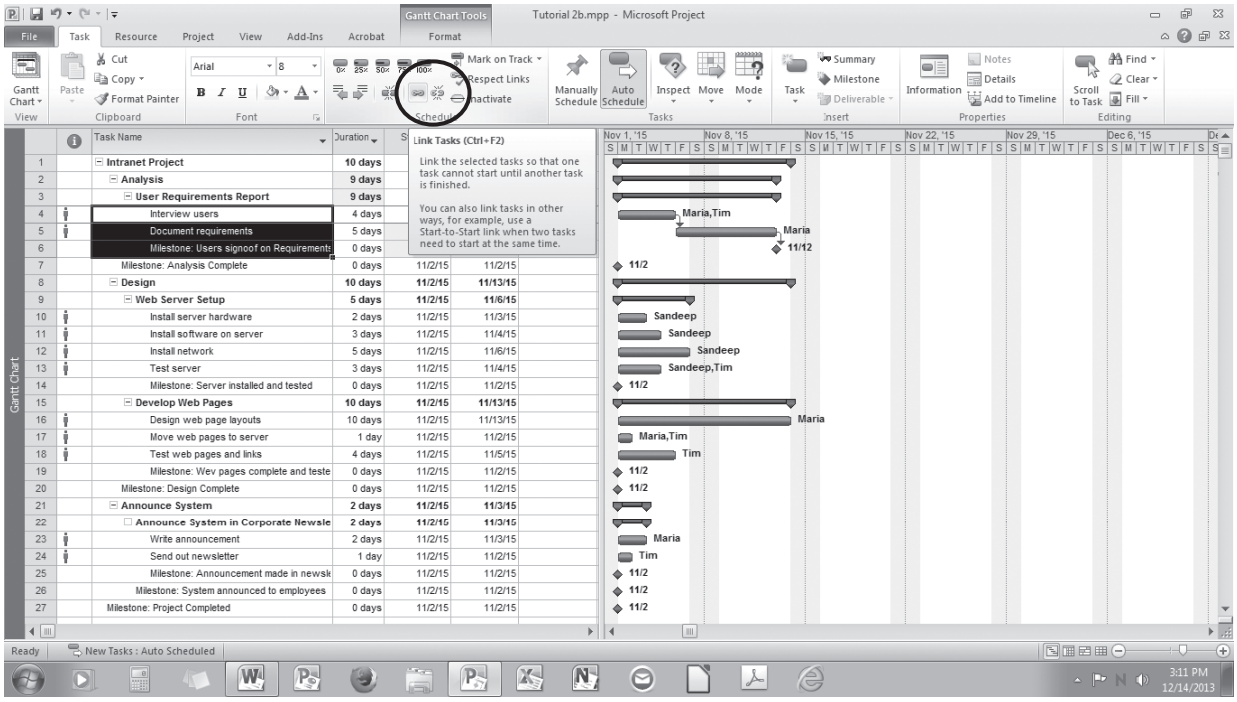
Interview Users	Maria, Tim
Document requirements	Maria
Install server hardware	Sandeep
Install software on server	Sandeep
Install network	Sandeep
Test server	Sandeep, Tim
Design Web page layouts	Maria
Move Web pages to server	Maria, Tim
Test Web pages and links	Tim
Write announcement	Maria
Send out newsletter	Tim

Your project plan should look as follows*:*

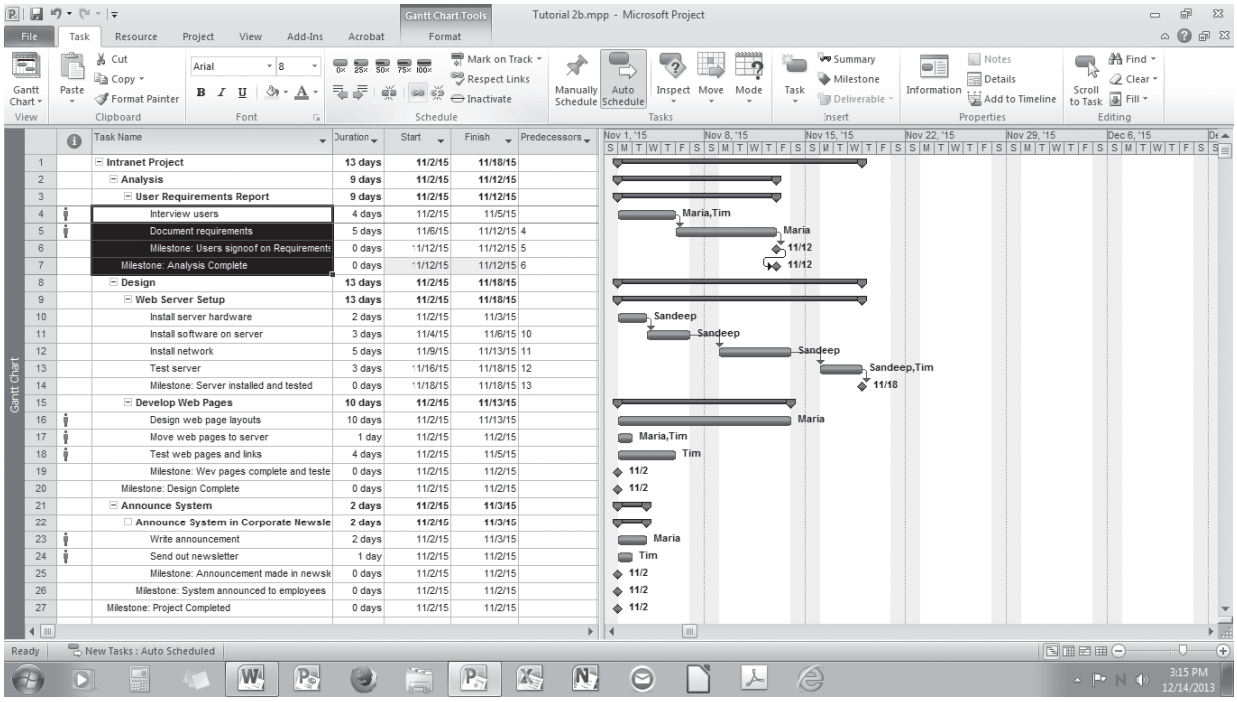


Linking/Unlinking Tasks

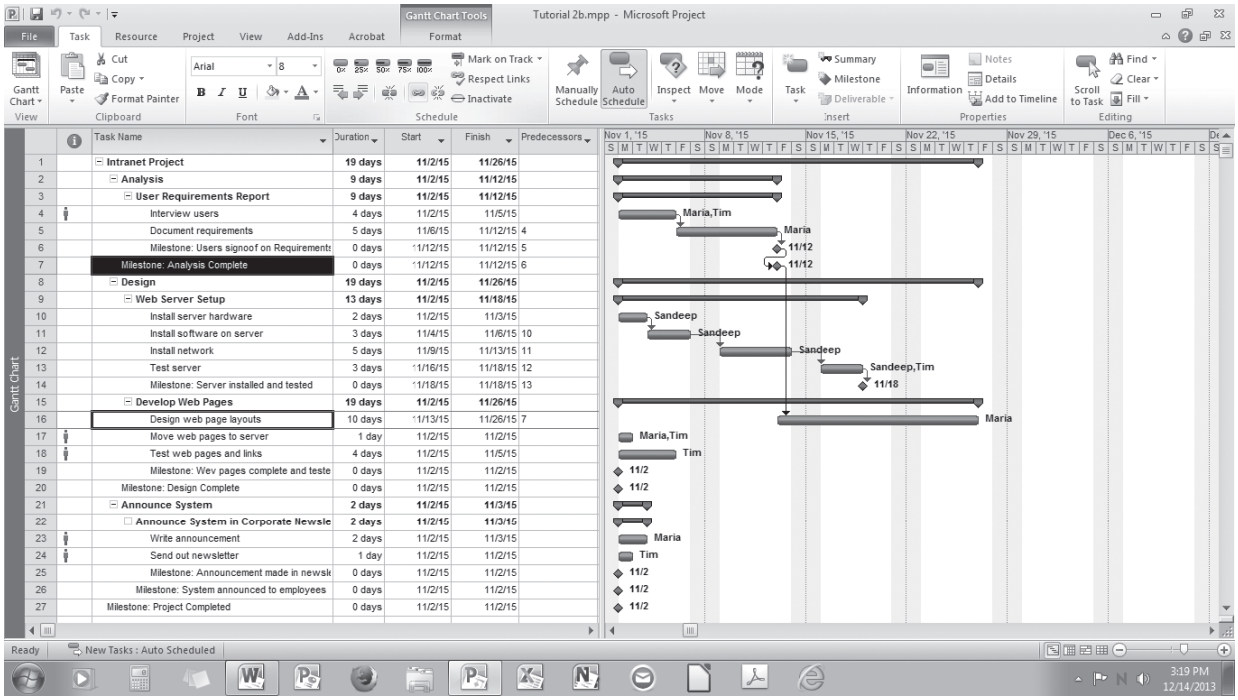
Linking tasks shows how tasks are dependent upon one another. To link tasks, just use your mouse to select the tasks/milestones you want to link and then click on the Link button. By default, your tasks will now show a finish-to-start relationship. Normally, you will link both tasks and milestones.



You can begin by linking specific tasks associated with a phase or deliverable. Also, you don't have to link phases or deliverables. Notice the black bar that shows you how long the project, phases, and deliverables will take to complete. This provides a quick and useful summary of your project at a glance.

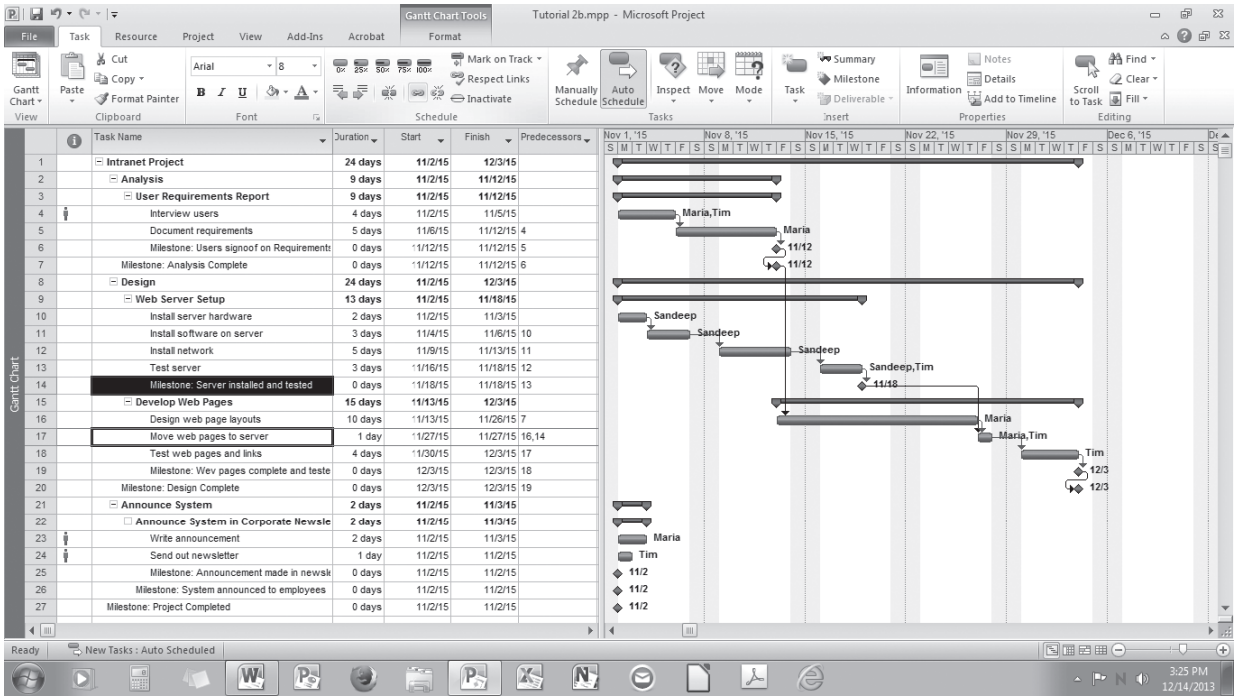


Since the Design phase should not start until the last milestone of the Analysis phase is complete, we can link the milestone with the first task of the Design phase by (1) clicking your mouse on the cell **Milestone: Analysis Complete**, (2) then holding down the Ctrl key, and (3) clicking your mouse on the cell, **Develop Web Page layouts**. We will make the assumption that setting up, installing the server, and testing it, will be independent of developing the web pages. However, the team cannot install the web pages and test them until the **Milestone: Server installed and tested** has been achieved.

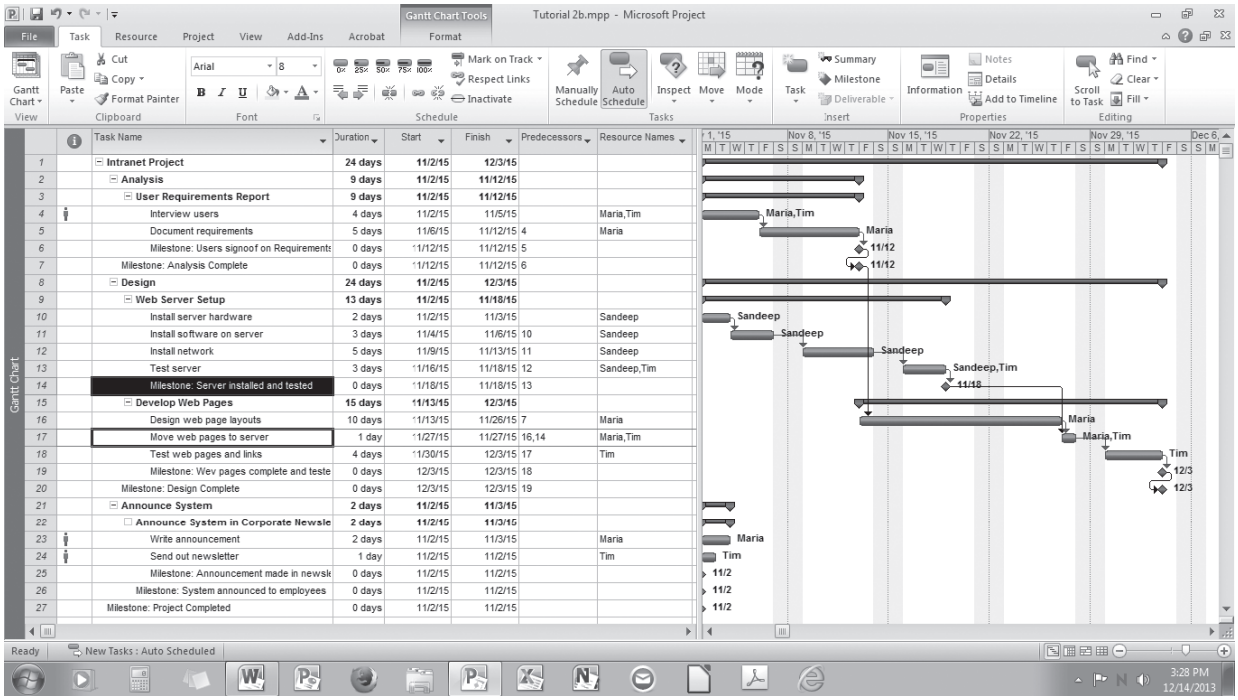


To create a link, just click on the **Link button** or press **Ctrl-F2**. You can also link to more than one ask.

In our example, let's say that the task, **Move Web pages to server**, can't be done until the web pages are designed and the **Milestone: Server installed and tested** is complete. In this case we can link the tasks **Design web page layouts**, **Move pages to server**, and **Test web pages and links** first. Then we can link the **Milestone: Server installed and tested** with the **Move pages to server** task. This will create the following relationship:

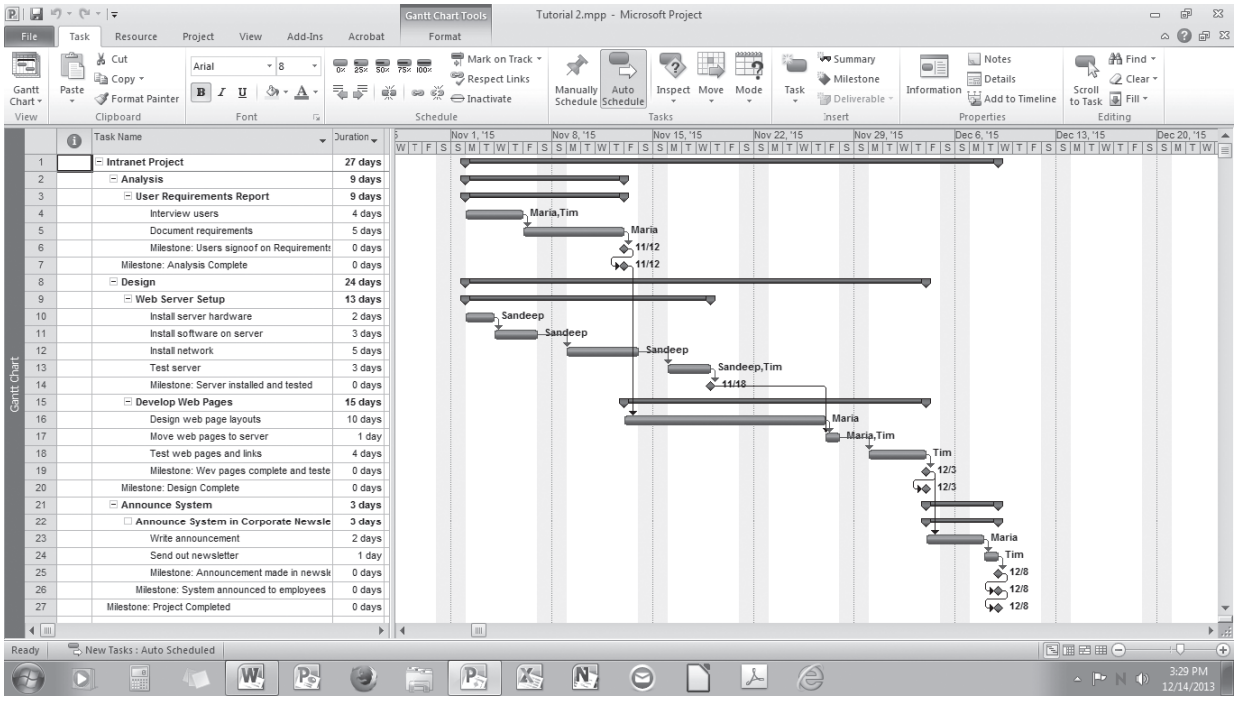


By moving the slider bar, you can see the MSP is creating the predecessor relationships accordingly.



YOUR TURN

If you haven't already, link the tasks as shown in the previous steps. Then link the tasks and milestones in the Announce System phase. Then link the ***Milestone: Design Complete*** *with the task* ***Write Announcement****. As you can see, this project is estimated to take 27 days.*

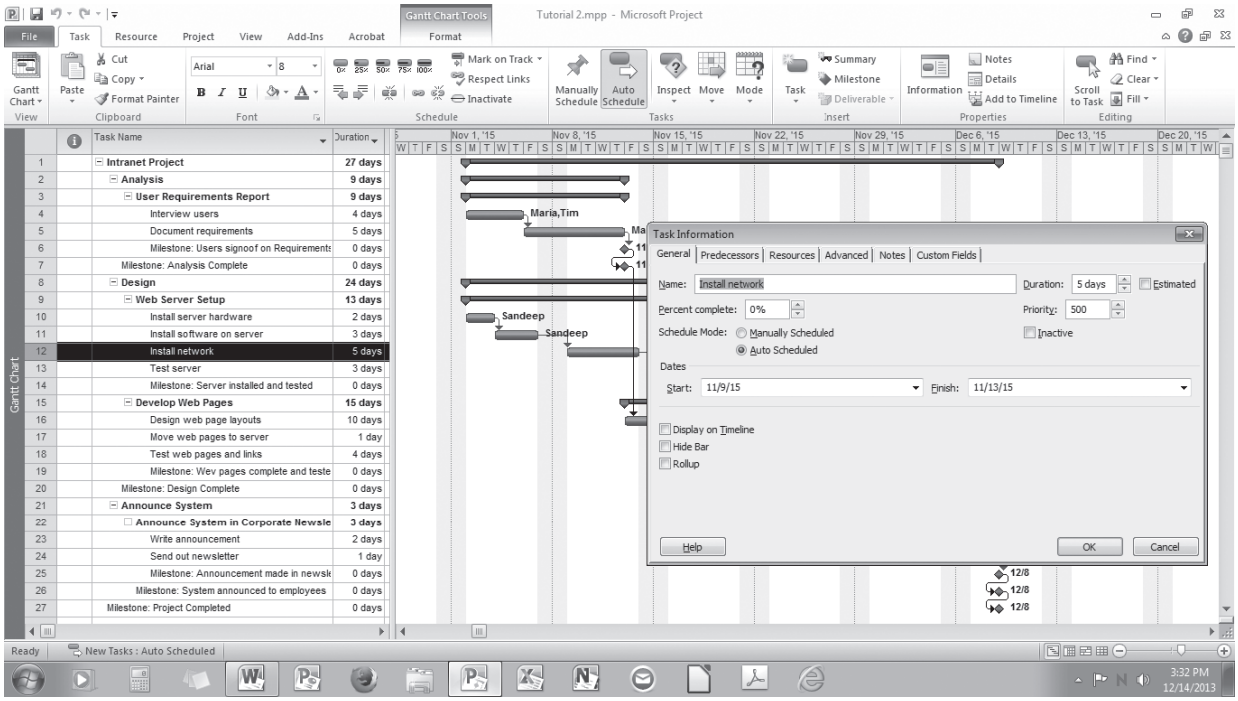


	Task Name	Duration
1	Intranet Project	27 days
2	Analysis	9 days
3	User Requirements Report	9 days
4	Interview users	4 days
5	Document requirements	5 days
6	Milestone: Users signoof on Requirements	0 days
7	Milestone: Analysis Complete	0 days
8	Design	24 days
9	Web Server Setup	13 days
10	Install server hardware	2 days
11	Install software on server	3 days
12	Install network	5 days
13	Test server	3 days
14	Milestone: Server installed and tested	0 days
15	Develop Web Pages	15 days
16	Design web page layouts	10 days
17	Move web pages to server	1 day
18	Test web pages and links	4 days
19	Milestone: Wev pages complete and teste	0 days
20	Milestone: Design Complete	0 days
21	Announce System	3 days
22	Announce System in Corporate Newsle	3 days
23	Write announcement	2 days
24	Send out newsletter	1 day
25	Milestone: Announcement made in newsl	0 days
26	Milestone: System announced to employees	0 days
27	Milestone: Project Completed	0 days

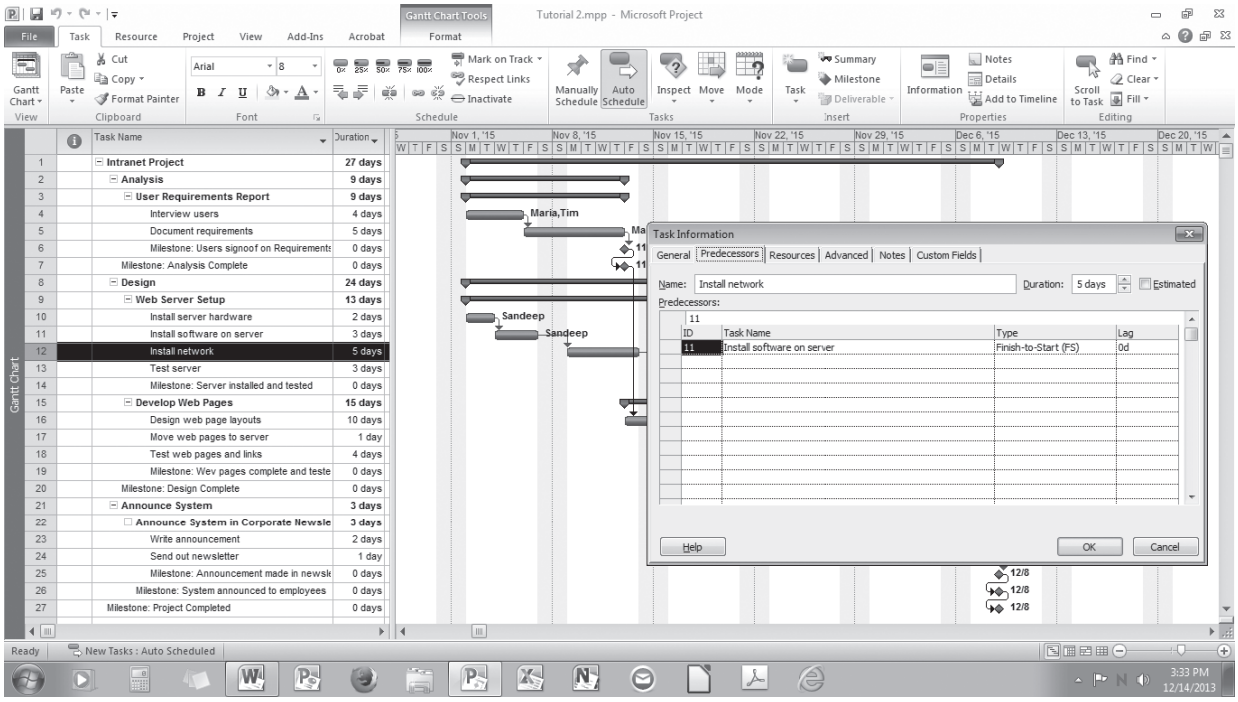
Precedence Diagramming

Let's say that our client would like us to shorten the schedule. One way is to perform tasks in parallel (start-to-start or finish-to-finish) instead of sequentially (finish-to-start). To see what happens to our project schedule, we can change two tasks (**Install server software** and **Install network**) from finish-to-start to start-to-start. In this case, both tasks can start at the same time.

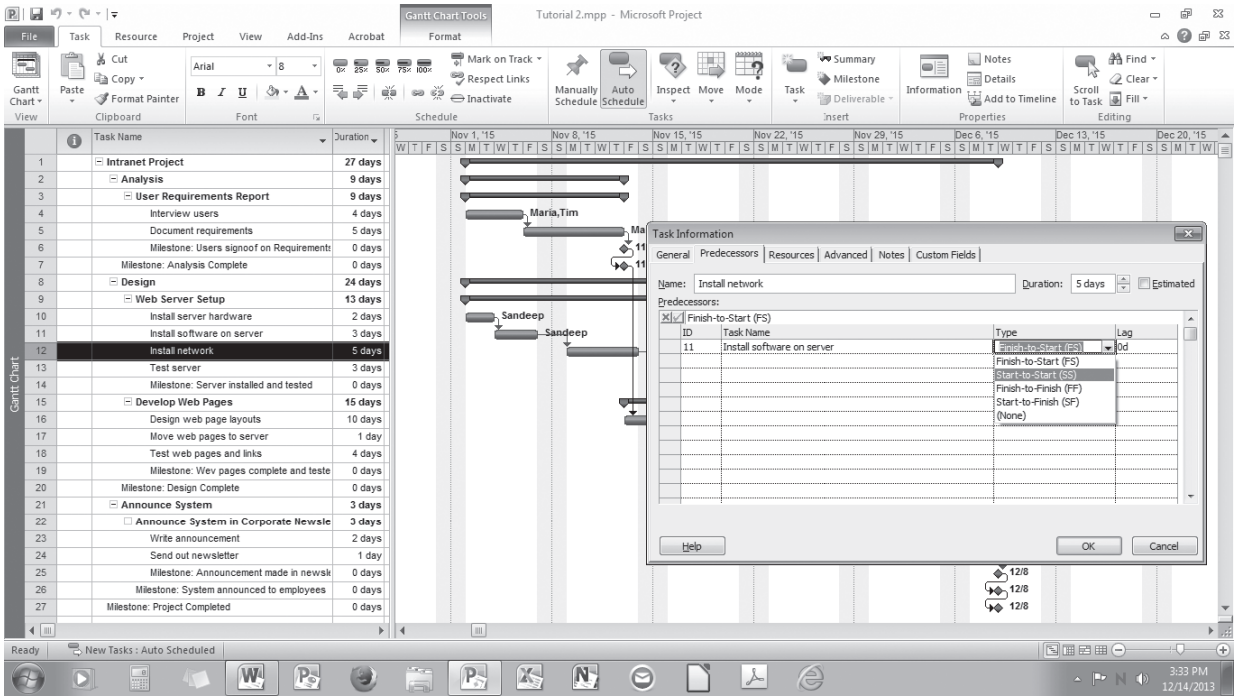
To make this change, double click on the task, **Install network**. The **Task Information dialog box** appears.



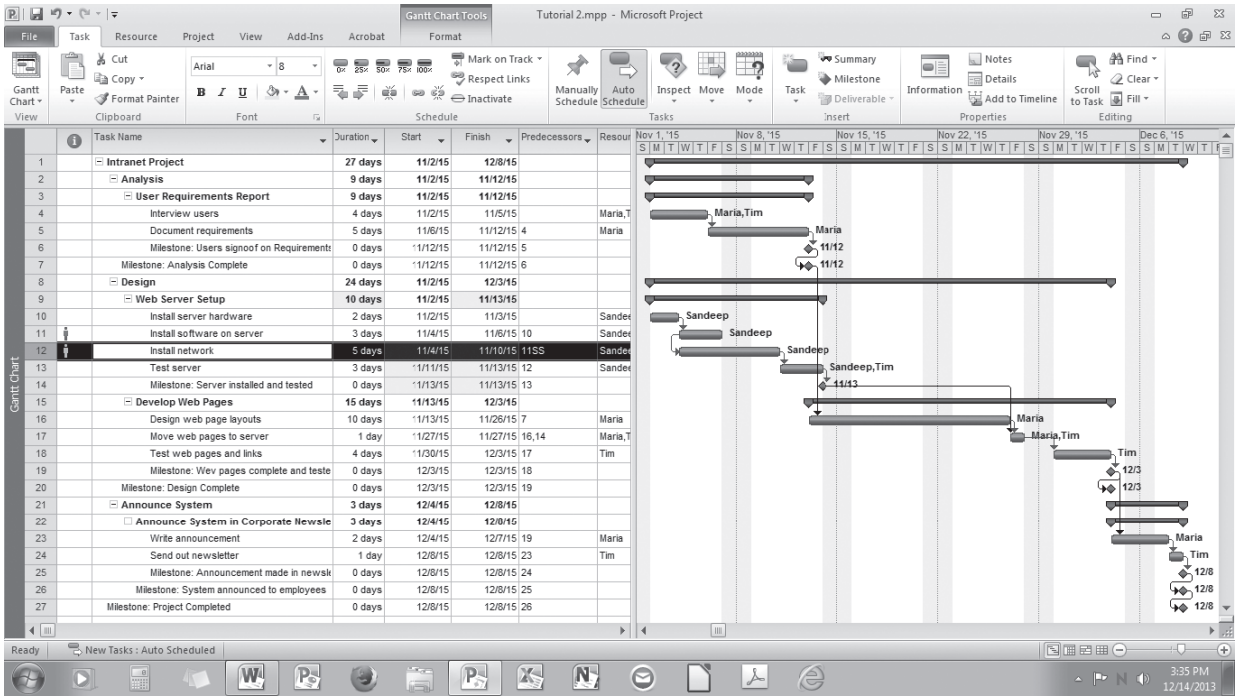
Next, click on the **Predecessors tab**.



Click on the cell under **Type:** ***Finish-to-Start (FS***). Choose ***Start-to-Start*** from the drop down box and click the **OK button**. Notice you can change the type of relationship to any one of the four Precedence Diagramming relationships here. Also, you can add time between tasks by clicking on the lag cell and increasing lag or you can overlap two tasks by decreasing lag.



If you look at your project, you will see that the project schedule did not change. The project is still estimated to take 27 days.



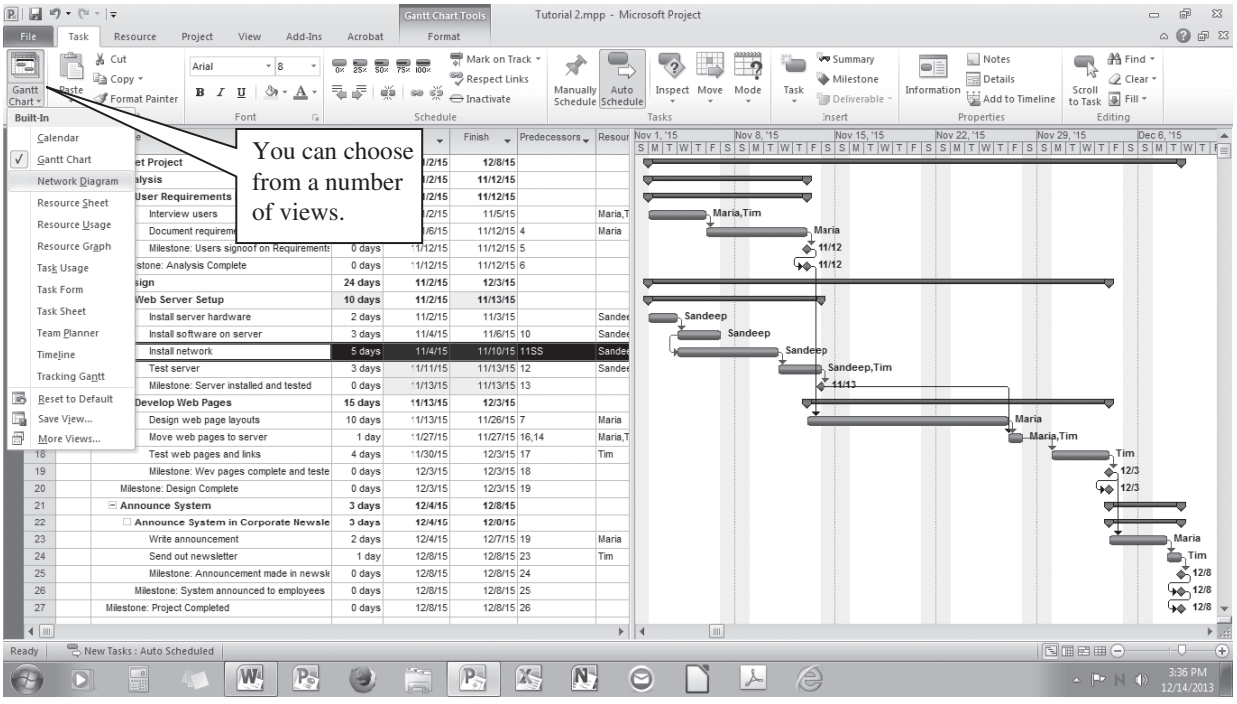
YOUR TURN

Change the relationship between install server software and install network from finish-to-start to a start-to-start.

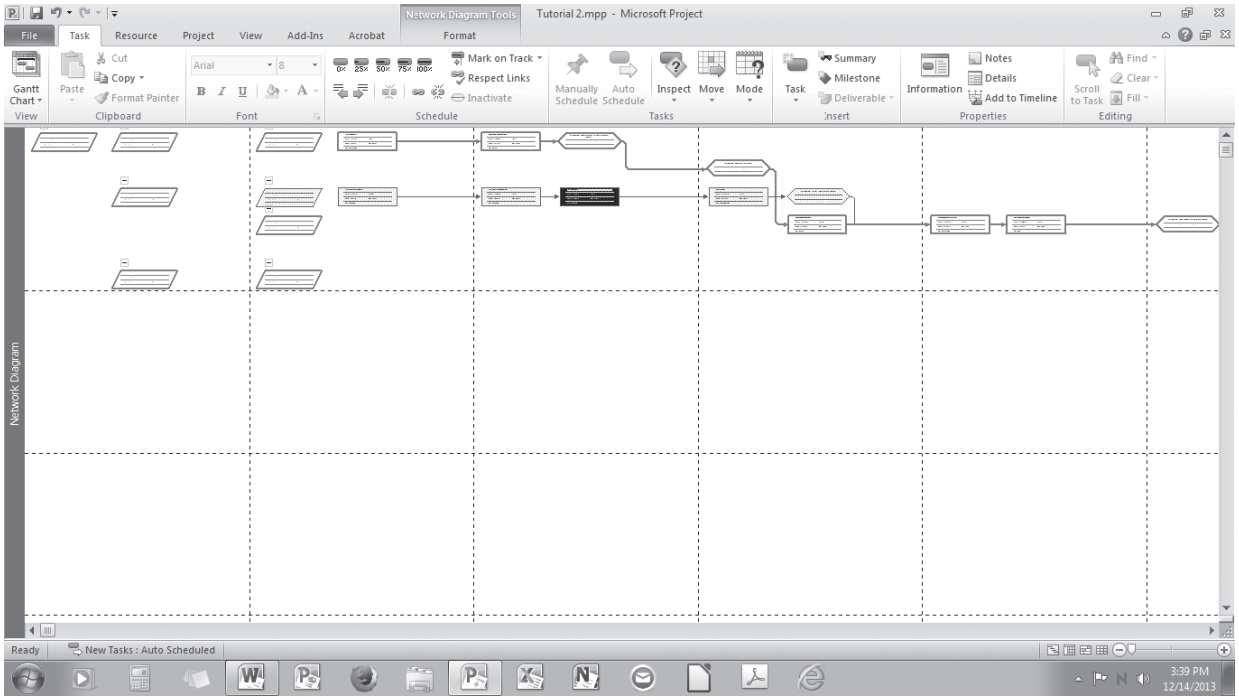
Network Diagram (PERT/CPM)

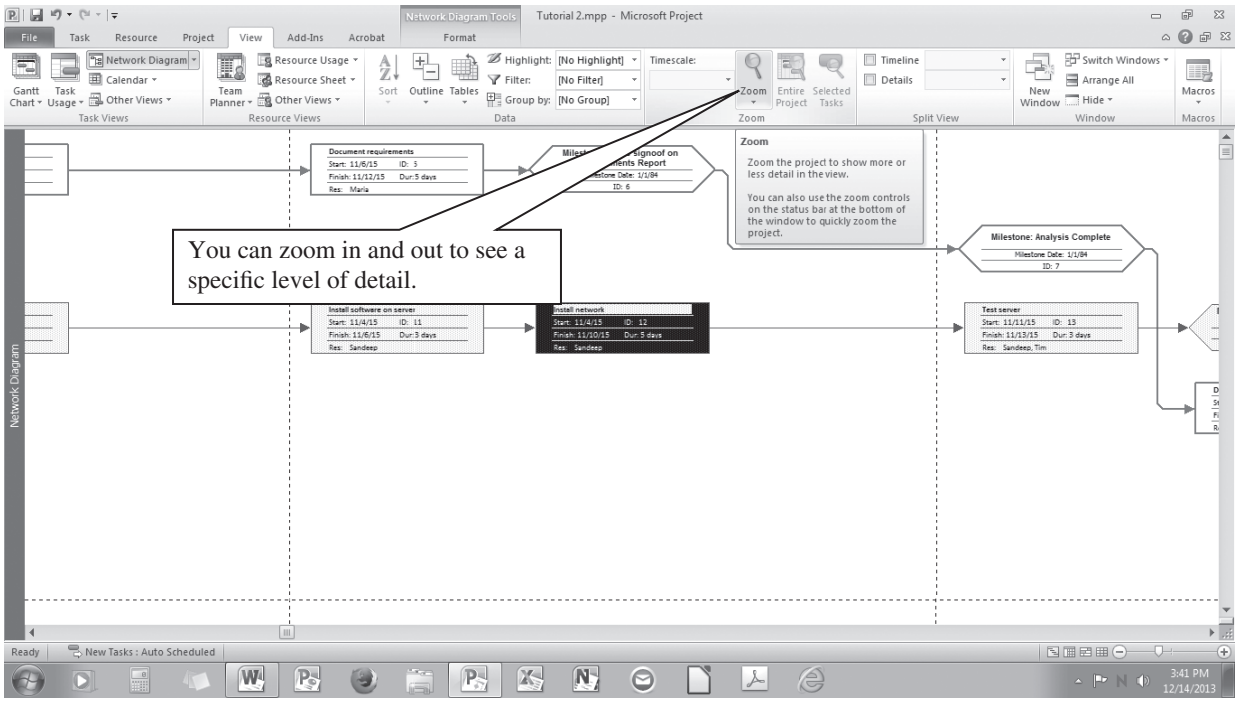
To understand why the project schedule did not change, we have to look at the network diagram. This network diagram is really the PERT/CPM tool.

To view your project's Critical Path, **Network Diagram** from the drop down box under the Gantt Chart icon.



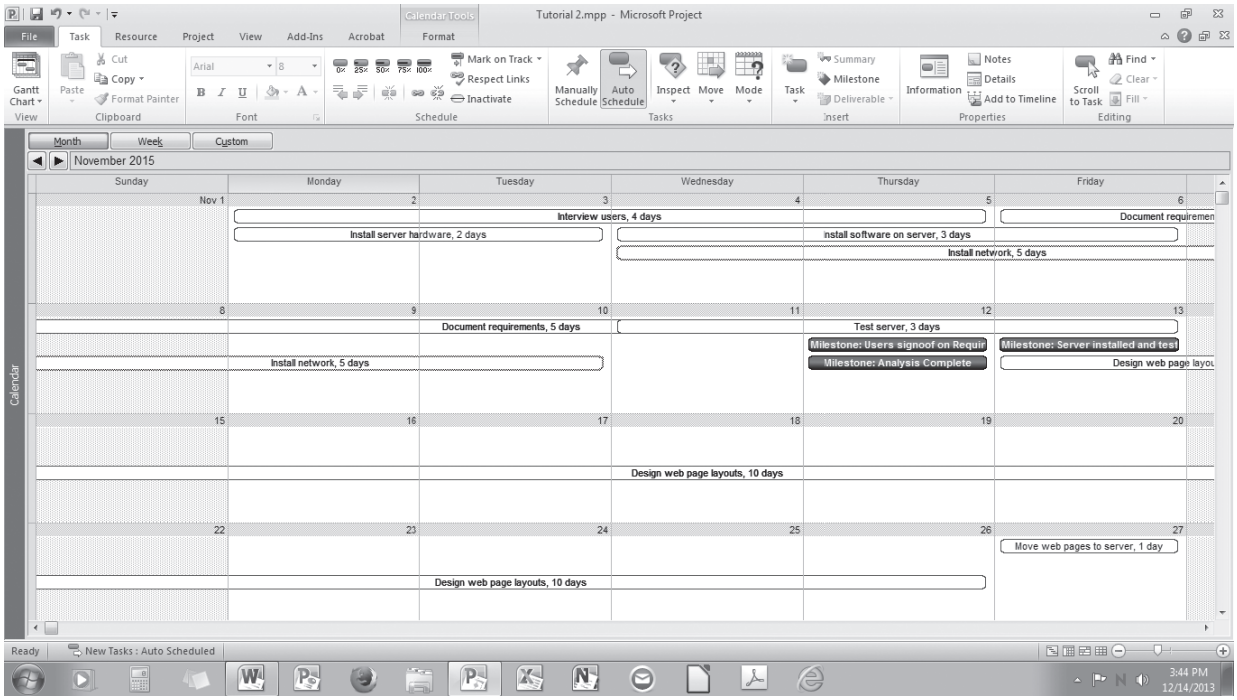
The tasks on the Critical Path are shown in red. To see the whole diagram, choose **View→Zoom**. You can then choose to zoom in a particular task or zoom out to view the entire Network Diagram. The scale will depend on the size of your diagram and the number of tasks.





It appears that changing the dependence relationship between install software and install network did not impact our project's schedule because these two tasks are not on the Critical Path.

You can see your project in the Calendar View by choosing **Calendar** from the different views. Be sure to click on the Task Ribbon to access the different views.



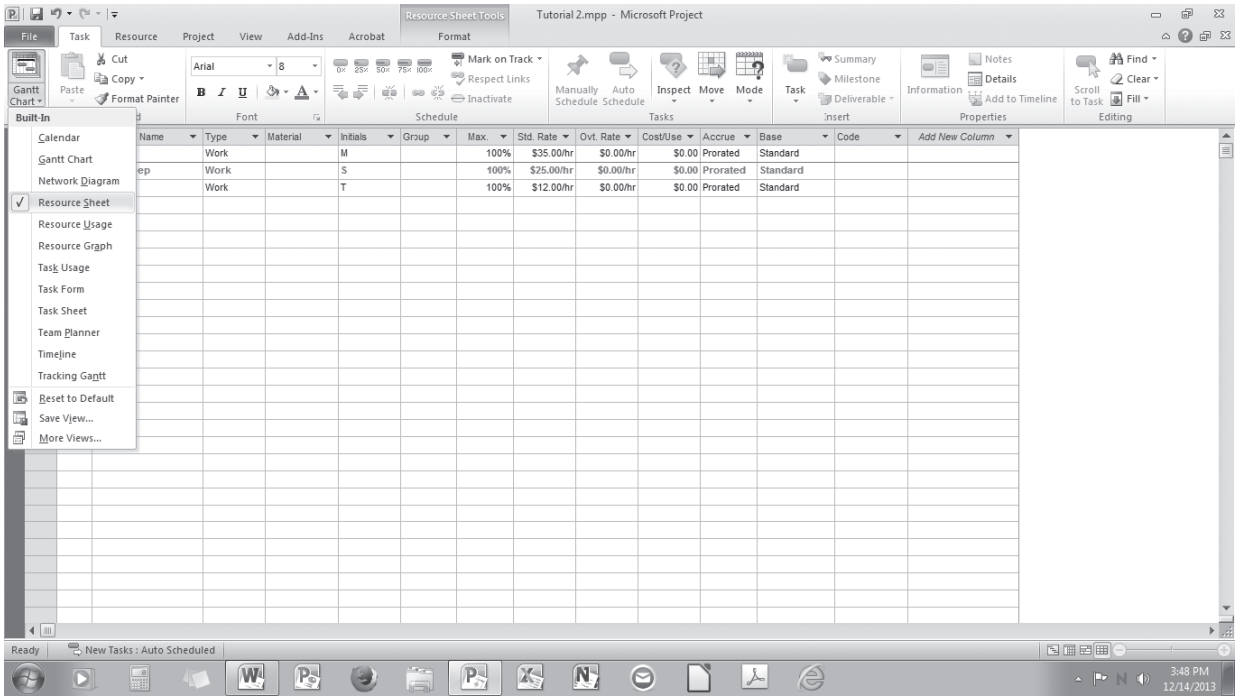
YOUR TURN

Try viewing your project in the different views.

Resource Usage and Overallocated Resources

As a project manager, it's your responsibility to make sure that your resources (i.e., project team) are being used efficiently and effectively. Although we might like to think our subordinates are capable of multitasking, the truth is people or resources should not be overallocated.

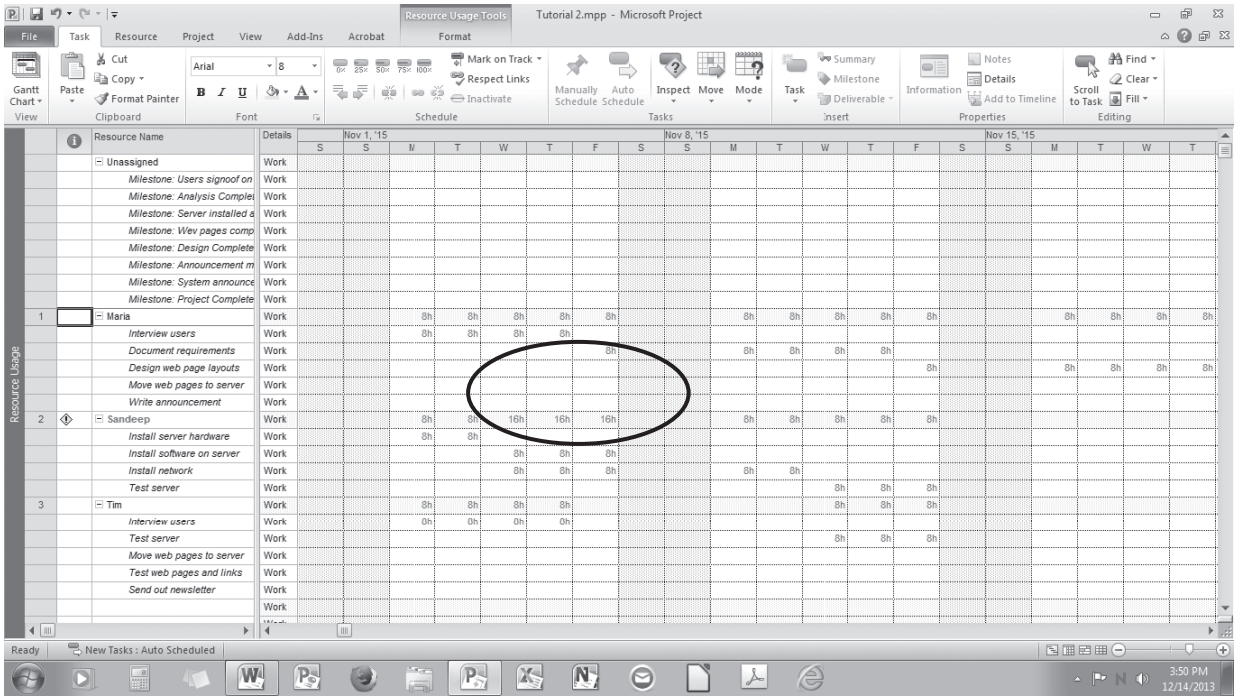
One way to see if resources are overallocated is to view the Resource Graph, Resource Sheet, or Resource Usage views. Choose the **View Ribbon, and then choose Resource Graph, Resource Sheet**, or **Resource Usage** to see if you have any overallocated resources (i.e., people assigned to more than one task at the same time).



Overallocated resources will be highlighted in red and require your attention. It appears from the **Resource Sheet** that Sandeep is overallocated.

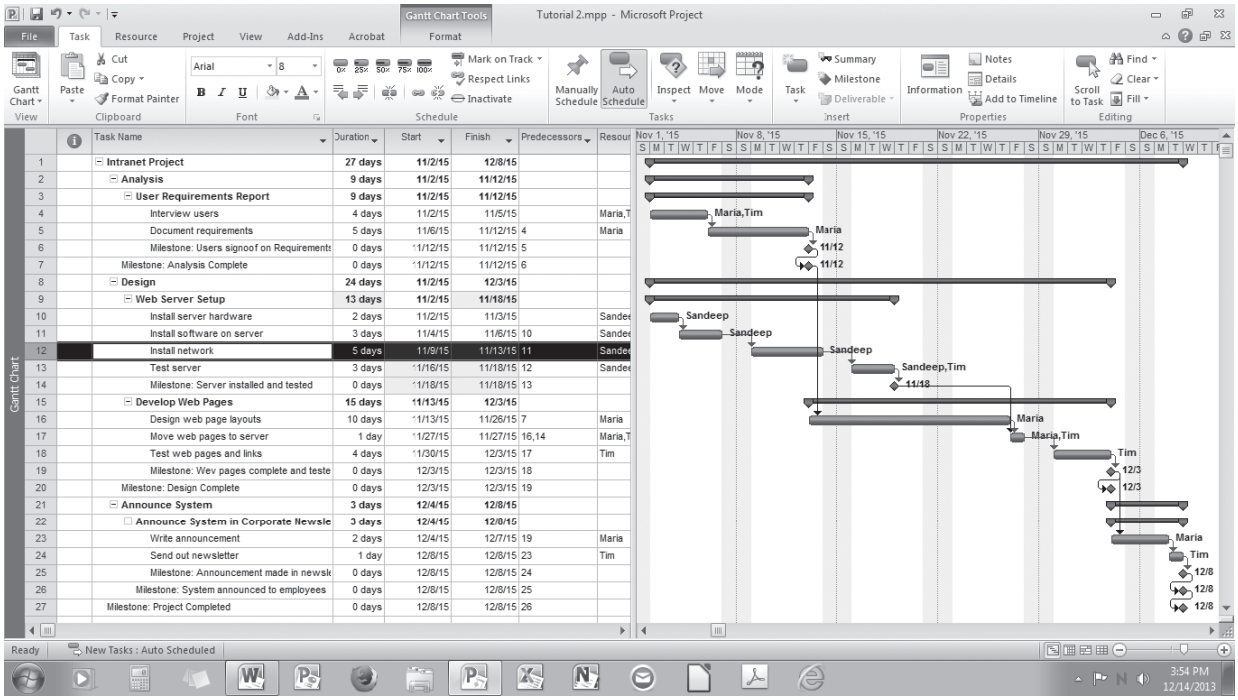
MSP can "level" overallocated resources for you automatically, but this can sometimes lead to changes that you didn't anticipate or want. It's best to use one of the MSP Resource Allocation views to find any overallocated resources and then fix them yourself.

From the Resource Usage View, we can see the dates where Sandeep is being overcommitted. Not surprisingly, they fall under the two tasks, install server software and install network, that we made start-to-start. The easiest way to fix this would be to change the relationship of these tasks back to finish-to-start.



YOUR TURN

Change the relationship between install server software and install network back to finish-to-start. (Another way would be to assign a different resource to one of the parallel tasks, but for now we'll assume that only Sandeep is able to complete both of these tasks.) Your project plan should look as follows:

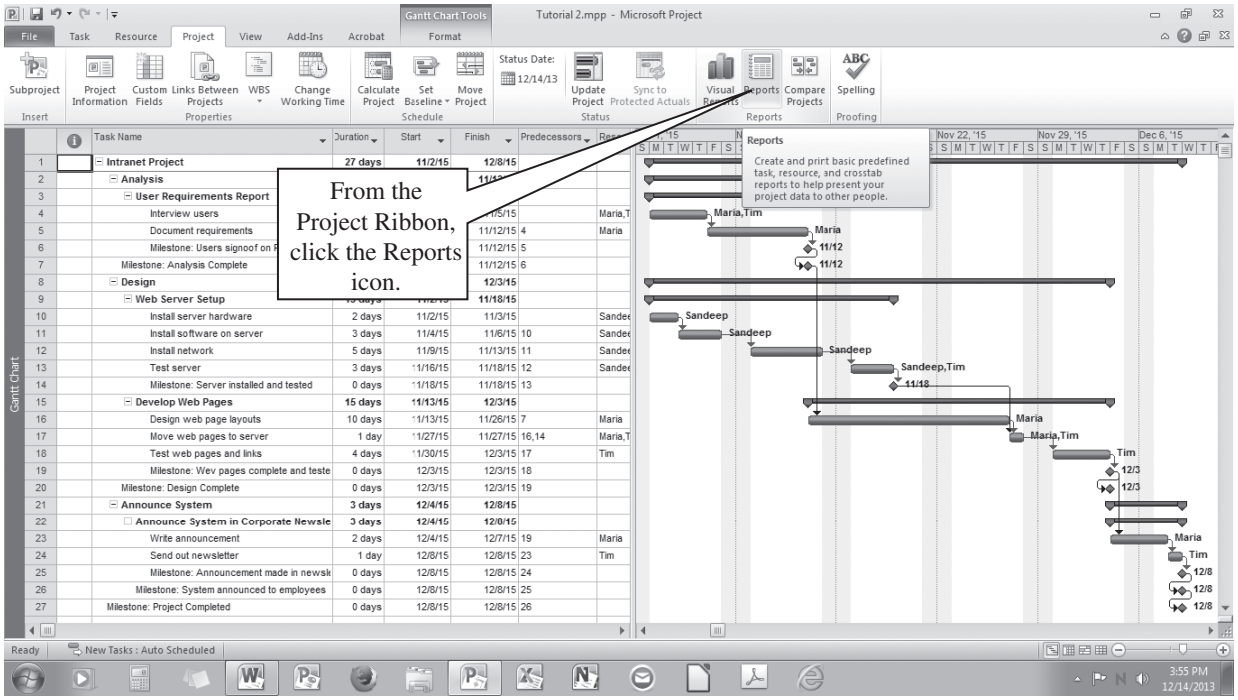


If you check the Resource Graph, Sheet, or Usage, you should see that Sandeep is no longer an overallocated resource.

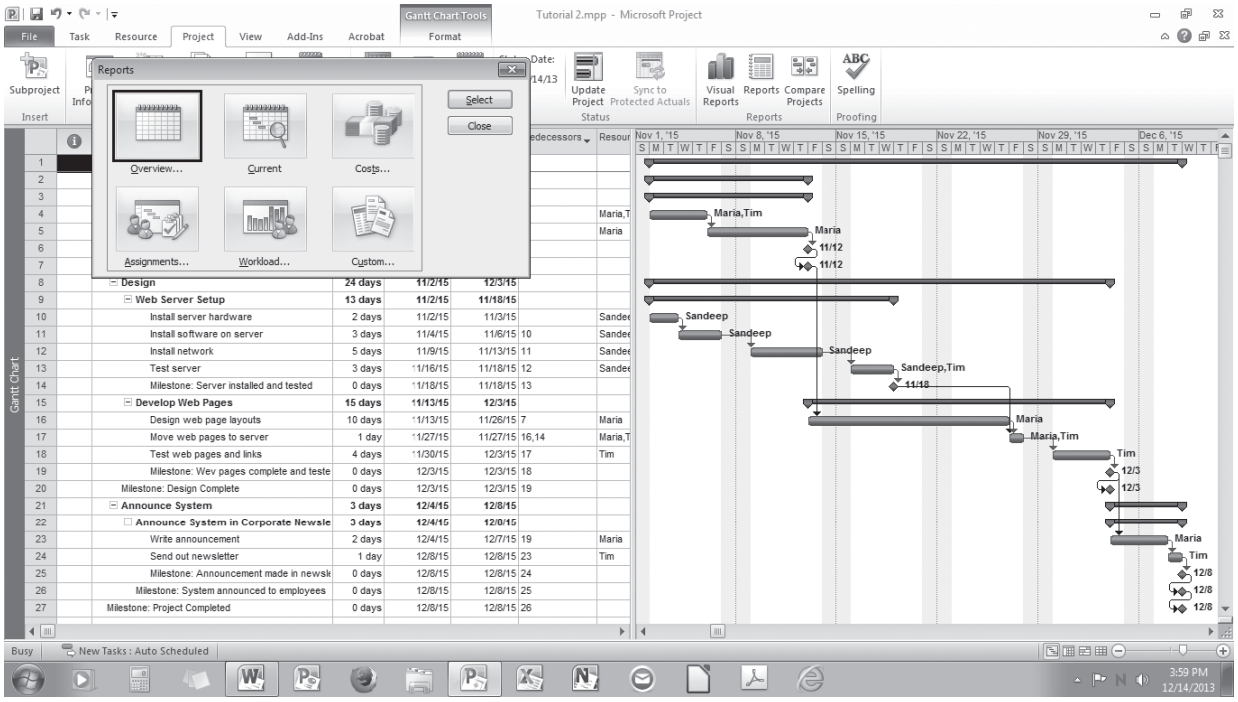
Printing the Project Summary Report

Although we will cover the many useful reports MSP has to offer in another tutorial, one useful report that gives you a good overview of your project is the Project Summary Report.

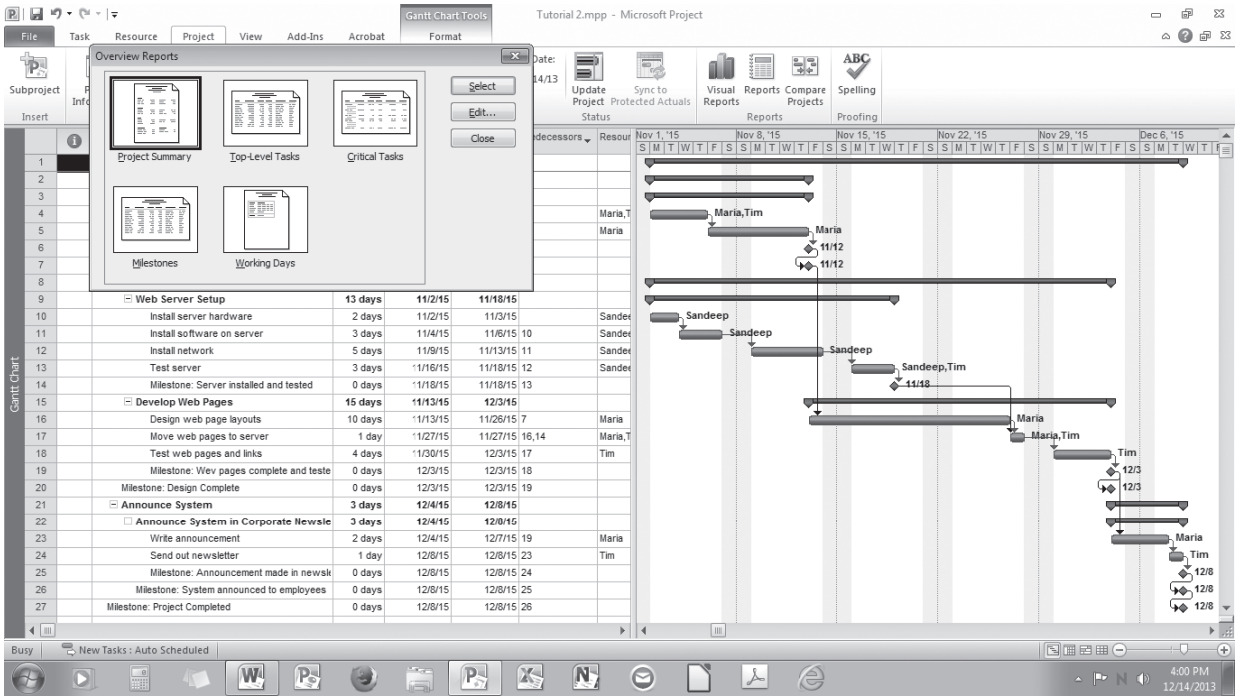
To obtain this report, choose **Report from the Project Ribbon** from the menu.



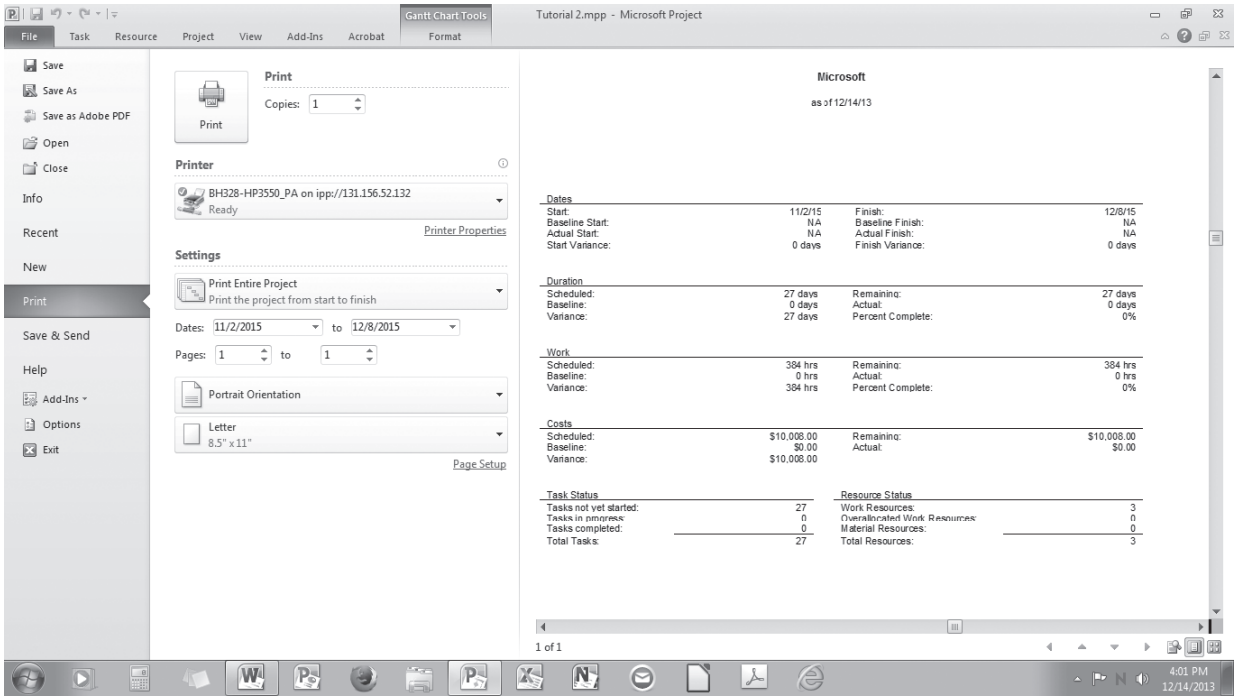
The following Reports Dialog Box will appear. Choose the **Overview** box and click the **Select button**



Then choose **Project Summary** and click the **Select button**.



Your Project Summary Report will display in Print Preview where you can view and/or print your report. As you can see, our project is estimated to take 27 days (384 hours) to complete and cost $10,008.00. You can also see that we don't have any overallocated resources. You now have a project schedule and budget.



YOUR TURN

Open the Project Summary Report to see if your project plan matches the one above. Don't forget to save your project!