

MS Project Professional 2016

Tutorial #2 - Demo

CS 587 – Software Project Management

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Illinois Institute of Technology



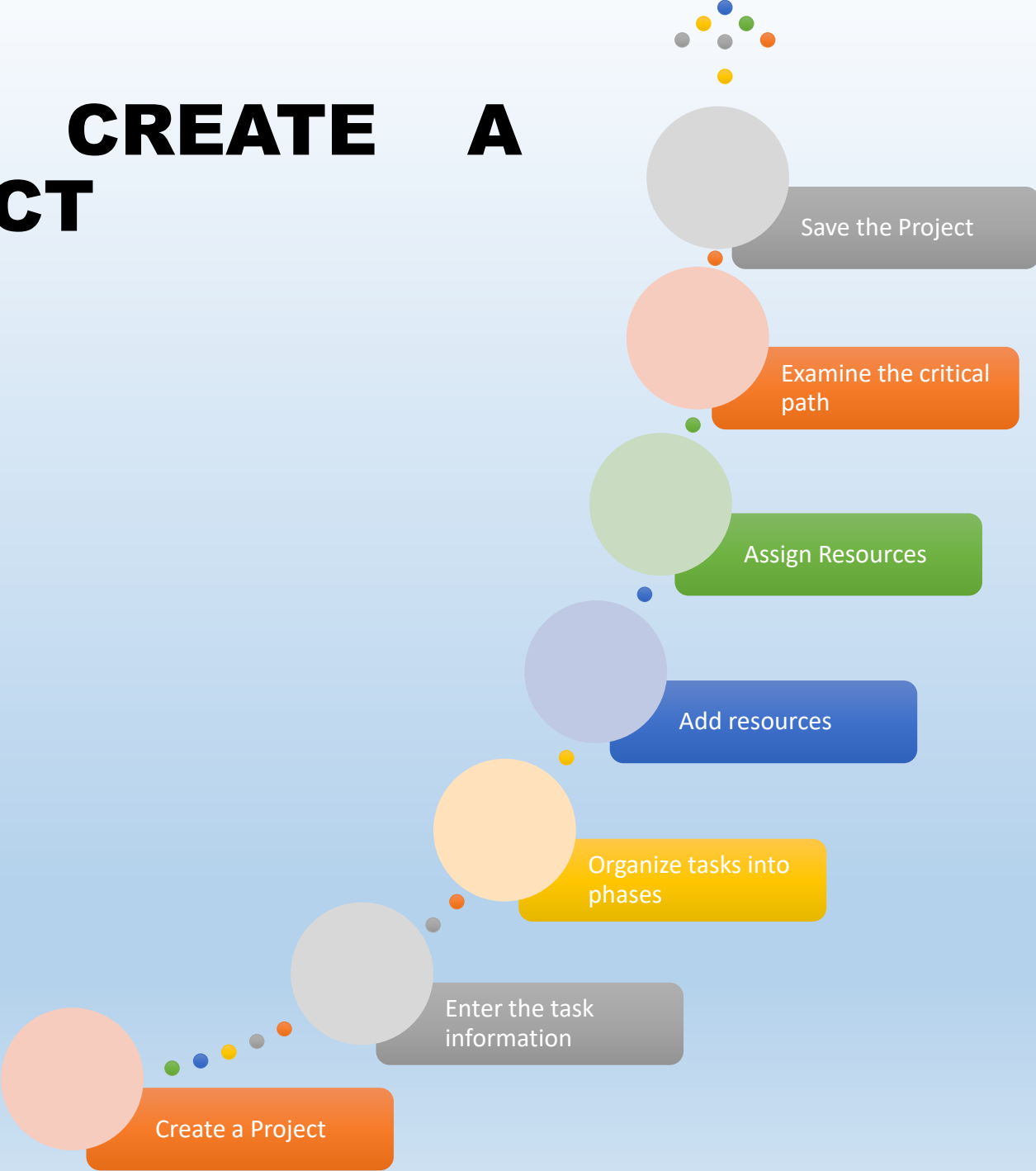
-Presentation by
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Develop the Following Development Project

Activity	Predecessor	Human Resources	Duration
1. Requirement definition and analysis		<ul style="list-style-type: none"> •Requirement Engineer •Team Leader •Project Manager 	3 Days
2. Requirement Review	1	<ul style="list-style-type: none"> •Business Analyst •Team Leader •Project Manager 	1 Day
3. Analysis	2	<ul style="list-style-type: none"> •Designer •Team Leader 	6 Days
4. Analysis Review	3	<ul style="list-style-type: none"> •Team Leader •Project Manager •Designer 	1 Day
5. Design	4	<ul style="list-style-type: none"> •Designer •Team Leader 	4 Days
6. Design Review	5	<ul style="list-style-type: none"> •Team Leader •Project Manager •Designer 	1 Day
7. Programming	6	<ul style="list-style-type: none"> •Programmer 	4 Days
8. Code Review	7	<ul style="list-style-type: none"> •Programmer •Team Leader •Tester •Requirement Engineer 	3 Days
9. Testing	8	<ul style="list-style-type: none"> •Testers •Requirement Engineer 	6 Days
10. Installation	9	<ul style="list-style-type: none"> •Programmer •Team Leader •Program Manager 	2 Days

STEPS TO CREATE A NEW PROJECT



Step 1: Creating a new project

Project

Recent

SampleProject.mpp
Desktop

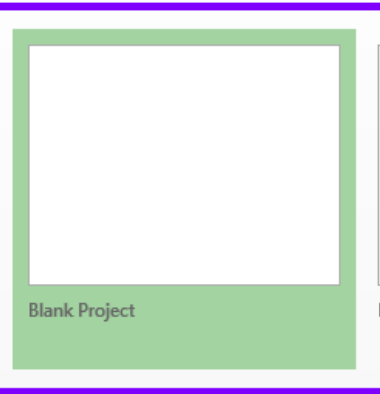
SampleProject.mpp
Documents » MY_SPM

SP.mpp
Documents » MY_SPM

Open Other Projects

Search for online templates

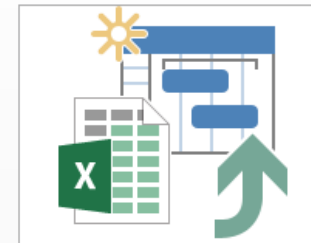
Suggested searches: Project Management Project Plan Projects Schedules Themes Analysis Industry



Blank Project



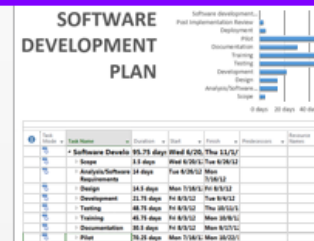
New from existing project



New from Excel workbook



New from SharePoint Tasks List



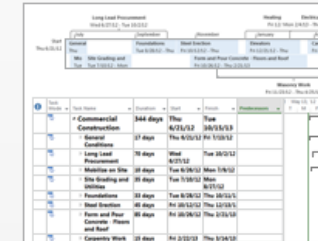
Software Development Plan



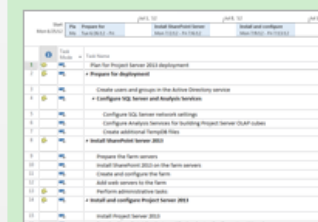
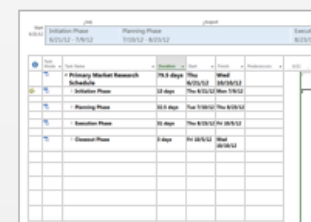
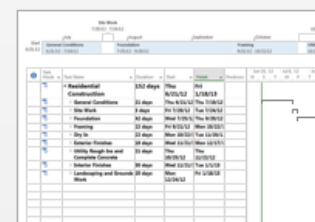
Agile project management



Create a budget



Commercial Construction



➤ Create a new project called “SampleProject”

The screenshot displays the Microsoft Project Professional interface for a new project named "SampleProject". The title bar indicates the file path: C:\Users\parin\Desktop\SampleProject - Project Professional.

ribbon:

- FILE:** Standard file operations (Save, Undo, Redo, Print, etc.).
- TASK:** Task management tools (Gantt Chart View, Paste, Cut, Copy, Format Painter).
- RESOURCE:** Resource management tools.
- REPORT:** Reporting tools.
- PROJECT:** Project management tools (Mark on Track, Respect Links, Inactivate).
- VIEW:** View management tools (Manually Schedule, Auto Schedule).
- FORMAT:** Formatting tools (Font, Paragraph, Styles).
- Tasks:** Task manipulation tools (Inspect, Move, Mode).
- Insert:** Insertion tools (Task, Milestone, Deliverable, Summary).
- Properties:** Property management tools (Information, Notes, Details, Add to Timeline).
- Editing:** Editing tools (Find, Clear, Scroll to Task, Fill).

Timeline: The timeline bar shows the project start on Mon 1/25/16 and the finish on Mon 1/25/16. The central text reads "Add tasks with dates to the timeline".

Gantt Chart: The Gantt chart area is currently empty, showing a grid for task scheduling. The task list table below the timeline is also empty.

Task Name	Duration	Start	Finish	Predecessors	Resource Names
-----------	----------	-------	--------	--------------	----------------

Calendar: The calendar view on the right shows the week of Jan 17, '16 to Feb 7, '16. The days of the week are listed at the top of each column.

Status Bar: The status bar at the bottom indicates "READY" and "NEW TASKS : MANUALLY SCHEDULED".

Step 2: Entering the Task Information

- Write the name of each task in the spreadsheet using the column “**Task Name**”
- Write the duration in days of each task in the spreadsheet using the column “**Duration**”
- Write the predecessors of each task in the spreadsheet using the column “**Predecessors**” (If you can’t see the column, try to expand the vertical bar that divides the spreadsheet to the Gantt Chart)

➤ Entering Taskname, Duration and Predecessors

The screenshot displays the Microsoft Project Professional interface. The ribbon at the top includes 'Task Sheet Tools' and 'SampleProject.mpp - Project Professional'. The 'Task' tab is active, showing various tools for task management. The main area shows a task sheet with columns for Task Name, Duration, Start, Finish, and Predecessors. Red boxes highlight the 'Task Name', 'Duration', and 'Predecessors' columns for the first task, 'Sample Project'.

Task	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1	Sample Project	14.83 days	Thu 2/1/18	Wed 2/21/18		
2	Requirements	1.33 days	Thu 2/1/18	Fri 2/2/18		
3	Requirement Definition	1 day	Thu 2/1/18	Thu 2/1/18		Requirement Engineer, Project Manager
4	Requirement Review	0.33 days	Fri 2/2/18	Fri 2/2/18	3	Business Analyst, Project Manager
5	Analysis	3.5 days	Fri 2/2/18	Wed 2/7/18		
6	Analysis Review	0.5 days	Wed 2/7/18	Wed 2/7/18	4	Designer, Team Leader
7	Design	2.5 days	Wed 2/7/18	Mon 2/12/18	6	Designer, Project Manager
8	Design Review	0.5 days	Fri 2/9/18	Mon 2/12/18	7	Designer, Team Leader
9	Coding	5.5 days	Mon 2/12/18	Mon 2/19/18	9	Designer, Project Manager
10	Programming	4 days	Mon 2/12/18	Fri 2/16/18	10	Programmer
11	Code Review	1.5 days	Fri 2/16/18	Mon 2/19/18	12	Requirement Engineer, Project Manager
12	Testing	13.83 days	Thu 2/1/18	Tue 2/20/18		
13	Test Plan	10 days	Thu 2/1/18	Wed 2/14/18		Tester
14	Testing	1 day	Mon 2/19/18	Tue 2/20/18	13	Tester, Requirement Engineer
15	Installation	1 day	Tue 2/20/18	Wed 2/21/18	16	Project Manager, Team Leader

Step 3: Organize Tasks into Phases

- Before

Task Name	Duration
Requirement definition and analysis	3 days
Requirement Review	1 day
Analysis	6 days
Analysis Review	1 day
Design	4 days
Design Review	1 day
Programming	4 days
Code Review	3 days
Testing	6 days
Installation	2 days

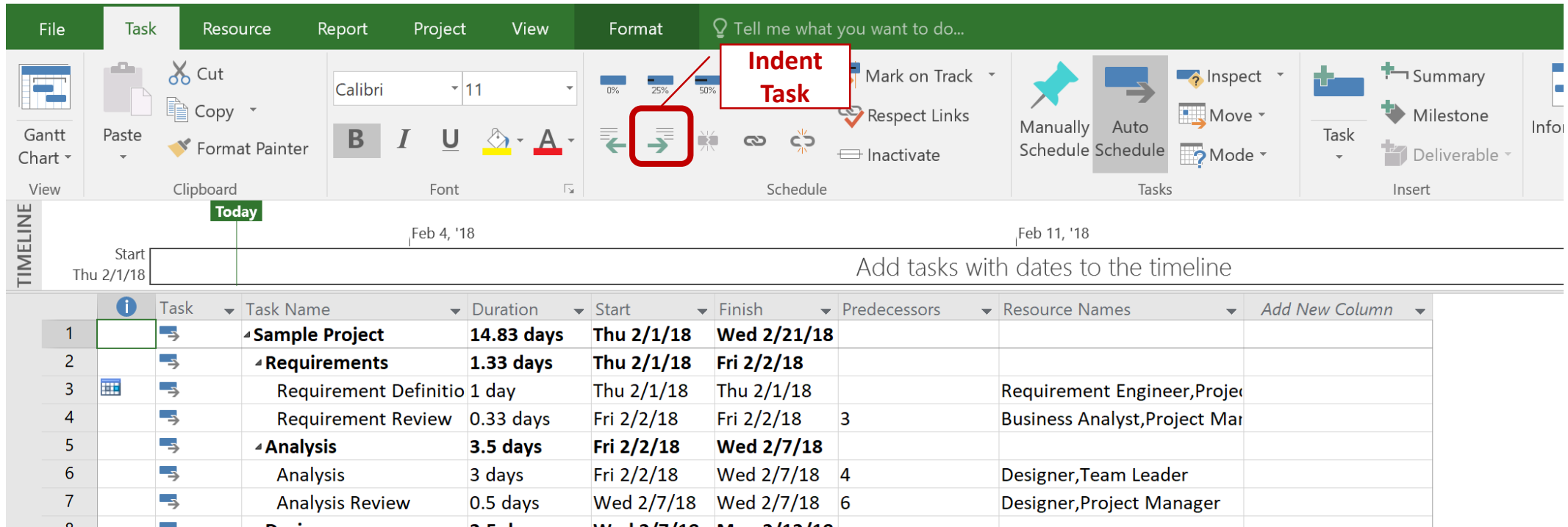
- After

Task Name	Duration
▾ SampleProject	31 days
▾ Requirements	4 days
Requirement definition and analysis	3 days
Requirement Review	1 day
▾ Analysis	7 days
Analysis	6 days
Analysis Review	1 day
▾ Design	5 days
Design	4 days
Design Review	1 day
▾ Coding	7 days
Programming	4 days
Code Review	3 days
Testing	6 days
Installation	2 days

Step 3: Organize Tasks into Phases

- Group the tasks by the Phase according to the table of tasks shown before, and add a group that encloses the phases named “**SampleProject**”, and this will represent the plan as a whole
- You may do this by:
 - Adding a new task “**SampleProject**”
 - Highlight the task you want to indent
 - Click the indent icon
- Insert a new task at the beginning that will group everything. Here we insert “Requirements Phase” first

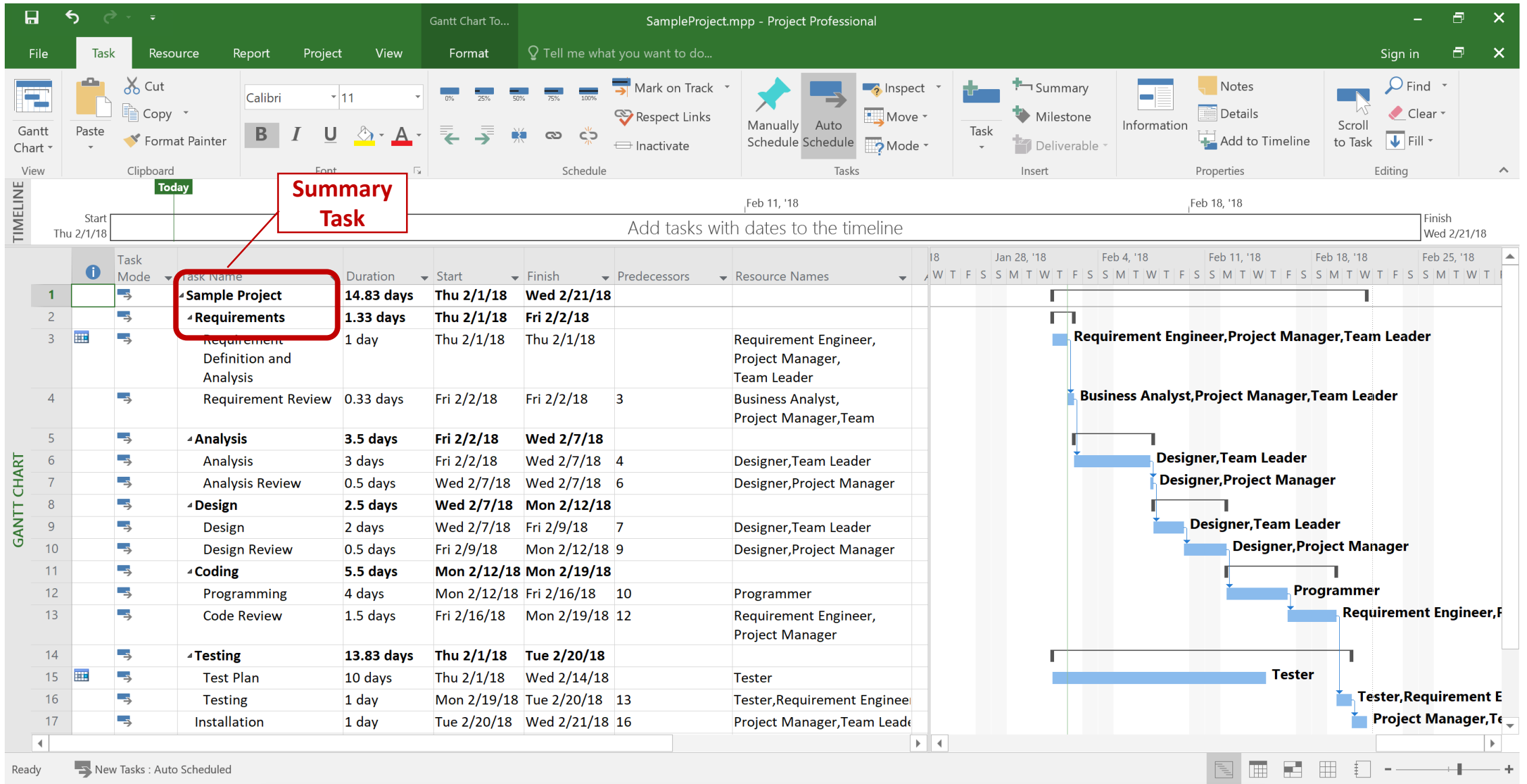
➤ Highlight the tasks that are going to be added as sub tasks and click “indent” icon



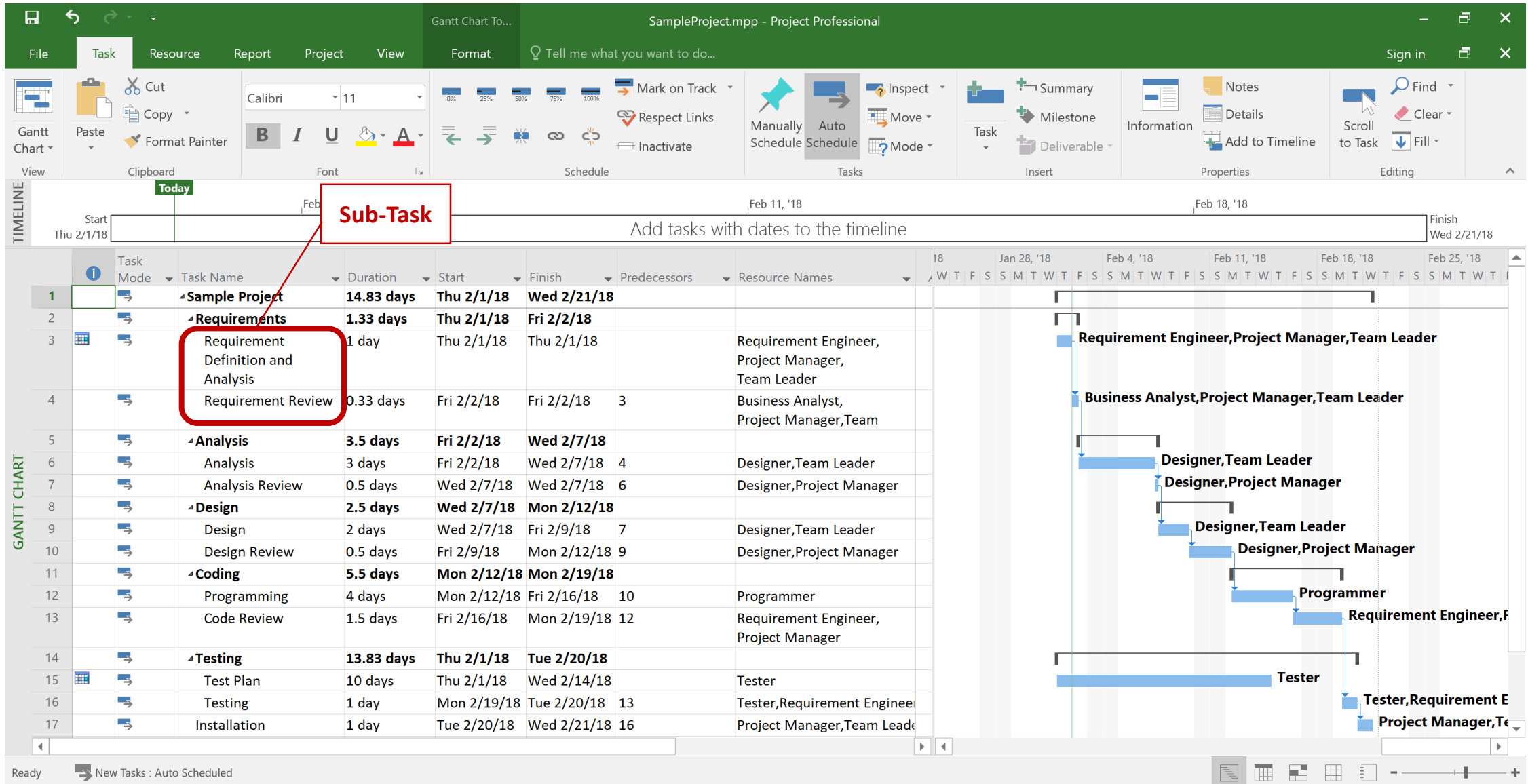
The screenshot displays the Microsoft Project interface. The 'Task' ribbon is active, showing various task management tools. A red box highlights the 'Indent Task' icon (a right-pointing arrow) in the 'Schedule' group. Below the ribbon, a timeline view shows dates from February 1, 2018, to February 11, 2018. The task list table below the timeline contains the following data:

	Task	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Add New Column
1		Sample Project	14.83 days	Thu 2/1/18	Wed 2/21/18			
2		Requirements	1.33 days	Thu 2/1/18	Fri 2/2/18			
3		Requirement Definition	1 day	Thu 2/1/18	Thu 2/1/18		Requirement Engineer, Project Manager	
4		Requirement Review	0.33 days	Fri 2/2/18	Fri 2/2/18	3	Business Analyst, Project Manager	
5		Analysis	3.5 days	Fri 2/2/18	Wed 2/7/18			
6		Analysis	3 days	Fri 2/2/18	Wed 2/7/18	4	Designer, Team Leader	
7		Analysis Review	0.5 days	Wed 2/7/18	Wed 2/7/18	6	Designer, Project Manager	
8		Design	3.5 days	Wed 2/7/18	Mon 2/12/18			

➤ Now repeat these steps to create the Subgroup that will represent the Analysis, Design and Coding phases



- Now repeat these steps to create the Subgroup that will represent the Analysis, Design and Coding phases



Step 4: Add Resources

- Go to the view “Resource Sheet”
- Add the necessary resources to the “Resources Sheet”, we are going to use only the Name, Initials and Standard rate in \$/hr The resources are going to be taken from the table showed at the beginning of the example, more specifically from the column “Human Resource”
- Now, with the Resources already registered in the project file, go back to the View “Gantt Chart”


Timeline interface showing dates from Fri 9/8 to Mon 10/2. A task bar spans from Start Fri 9/8/17 to Finish Mon 10/2/17. The text "Add tasks with dates to the timeline" is displayed within the task bar.

[illegible]

Adding Multiple Resources of Same Type

- Go to the view “Resource Sheet”
- Add the resources, differentiating them by numbering it.
- You can change the initials to reflect different resources of same type.
- In our example. we add two more testers as follows:

i	Resource Name ▼	Type ▼	Material ▼	Initials ▼	Group ▼	Max. ▼	Std. Rate ▼	Ovt. Rate ▼	Cost/Use ▼	Accrue ▼
	Requirement Engineer	Work		R		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated
	Team Leader	Work		T		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated
	Project Manager	Work		P		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated
	Designer	Work		D		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated
	Programmer	Work		P		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated
	Tester	Work		T		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated
	Business Analyst	Work		B		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated
	Tester1	Work		T1		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated
	Tester2	Work		T2		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated



Multiple Testers

Step 5: Assign Resources

- Go to “Resource” tab
- Then click “Assign resources” icon. A “Assign Resources” window appears
- Click the resource to be assigned in the window, and then click the task in the spreadsheet behind
- Then click the button “assign”
- Repeat step 3 till all resources are assigned to the tasks

Method 1: Drop down list

The screenshot displays the Microsoft Project Professional interface. The 'Gantt Chart' view is active, showing a project timeline from Thursday, February 1, 2018, to Wednesday, February 21, 2018. The 'Task' tab is selected in the ribbon, and the 'Assign Resources' dropdown menu is open for the 'Sample Project' task. The dropdown menu lists various resources, including 'Requirement Engineer', 'Project Manager', 'Team Leader', 'Business Analyst', 'Designer', 'Programmer', 'Tester', and 'Requirement Engineer, Project Manager, Team Leader'. A red box highlights the 'Assign Resources' dropdown menu, and a red arrow points to it from the text 'Assign Resources'.

Task List:

Task ID	Task Name	Duration	Start	Finish	Predecessors
1	Sample Project	14.83 days	Thu 2/1/18	Wed 2/21/18	
2	Requirements	1.33 days	Thu 2/1/18	Fri 2/2/18	
3	Requirement Definition and Analysis	1 day	Thu 2/1/18	Thu 2/1/18	
4	Requirement Review	0.33 days	Fri 2/2/18	Fri 2/2/18	3
5	Analysis	3.5 days	Fri 2/2/18	Wed 2/7/18	
6	Analysis	3 days	Fri 2/2/18	Wed 2/7/18	4
7	Analysis Review	0.5 days	Wed 2/7/18	Wed 2/7/18	6
8	Design	2.5 days	Wed 2/7/18	Mon 2/12/18	
9	Design	2 days	Wed 2/7/18	Fri 2/9/18	7
10	Design Review	0.5 days	Fri 2/9/18	Mon 2/12/18	9
11	Coding	5.5 days	Mon 2/12/18	Mon 2/19/18	
12	Programming	4 days	Mon 2/12/18	Fri 2/16/18	10
13	Code Review	1.5 days	Fri 2/16/18	Mon 2/19/18	12
14	Testing	13.83 days	Thu 2/1/18	Tue 2/20/18	
15	Test Plan	10 days	Thu 2/1/18	Wed 2/14/18	
16	Testing	1 day	Mon 2/19/18	Tue 2/20/18	13
17	Installation	1 day	Tue 2/20/18	Wed 2/21/18	16

Resource List:

- (Select All)
- (blank)
- Business Analyst
- Designer
- Programmer
- Project Manager
- Requirement Engineer
- Team Leader
- Tester

Assign Resources

Method 2: Choosing “Assign Resources” option

FileTaskResourceReportProjectViewFormatTell me what you want to do...Sign in

Team Planner

Assign Resources

Resource Pool

Assign Resources

Assign Resources

Assign Resources

Level Selection

Level Resource

Level All

Leveling Options

Clear Leveling

Next Overallocation

Today

Feb 4, '18

Feb 11, '18

Feb 18, '18

Start Thu 2/1/18

Finish Wed 2/21/18

Add tasks with dates to the timeline

1

Task Mode

Task Name

Duration

Start

Finish

Predecessors

Resource Names

2

Sample Project

14.83 days

Thu 2/1/18

Wed 2/21/18

3

Requirements

1.33 days

Thu 2/1/18

Fri 2/2/18

4

Requirement Definition and Analysis

1 day

Thu 2/1/18

Thu 2/1/18

Requirement Engineer, Project Manager, Team Leader

5

Requirement Review

0.33 days

Fri 2/2/18

Fri 2/2/18

3

Business Analyst, Project Manager, Team

6

Analysis

3.5 days

Fri 2/2/18

Wed 2/7/18

7

Analysis

3 days

Fri 2/2/18

Wed 2/7/18

4

Designer, Team Leader

8

Analysis Review

0.5 days

Wed 2/7/18

Wed 2/7/18

6

Designer, Project Manager

9

Design

2.5 days

Wed 2/7/18

Mon 2/12/18

10

Design

2 days

Wed 2/7/18

Fri 2/9/18

7

Designer, Team Leader

11

Design Review

0.5 days

Fri 2/9/18

Mon 2/12/18

9

Designer, Project Manager

12

Coding

5.5 days

Mon 2/12/18

Mon 2/19/18

13

Programming

4 days

Mon 2/12/18

Fri 2/16/18

10

Programmer

14

Code Review

1.5 days

Fri 2/16/18

Mon 2/19/18

12

Requirement Engineer, Project Manager

15

Testing

13.83 days

Thu 2/1/18

Tue 2/20/18

16

Test Plan

10 days

Thu 2/1/18

Wed 2/14/18

Tester

17

Testing

1 day

Mon 2/19/18

Tue 2/20/18

13

Tester, Requirement Engineer

18

Installation

1 day

Tue 2/20/18

Wed 2/21/18

16

Project Manager, Team Leader

Assign Resources

Task: Sample Project

Resource list options

Resources from SampleProject.mpp

Resource Name	R/D	Units	Cost
Business Analyst			
Designer			
Programmer			
Project Manager			
Requirement Engineer			
Team Leader			
Tester			
Tester1			
Tester2			

Assign

Remove

Replace...

Graph

Close

Help

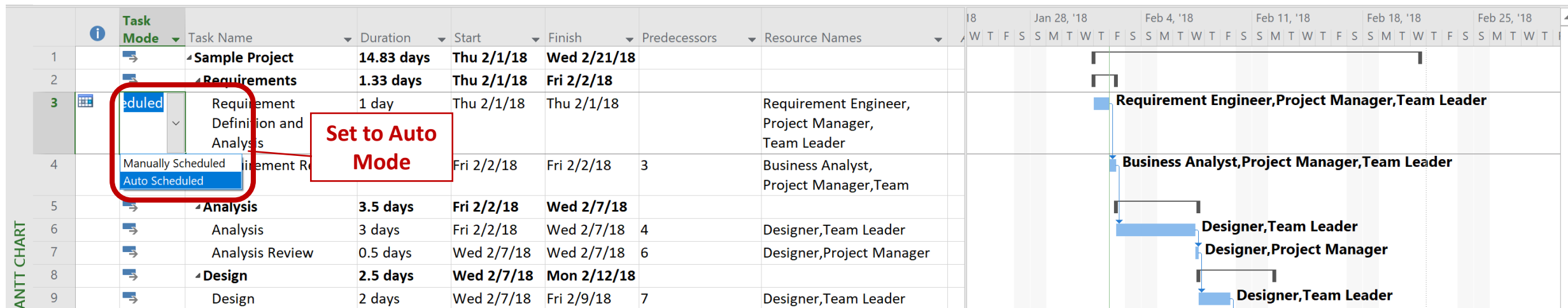
Hold down Ctrl and click to select multiple resources

Ready

New Tasks : Auto Scheduled

Detailed steps for assigning multiple resources

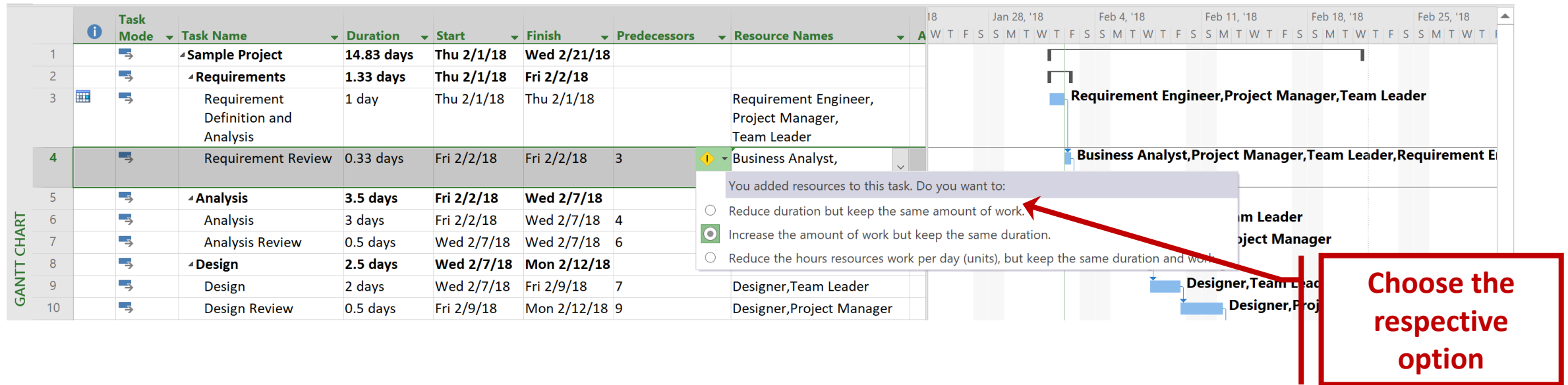
1. If you have assigned multiple resources to the task, first remove all the resources that you have assigned for the task. If you have not assigned resources yet, please move to Step 2 below.
2. Change the mode of the task to “Auto Scheduled” as shown below in screenshot.



3. Assign the resources that you want to the task. Once you assign resources, you will see a yellow color warning sign on the left. Note that you will get this warning sign only if you assign 2 or more resources to the task.

Detailed steps for assigning multiple resources

4. Click on the yellow warning sign and you will see three options. Select the option “Reduce duration but keep the amount of work” to handle this warning.
5. Note: If you fail to click on one of the options, the duration will still not change. In that case, repeat again from Step 1.

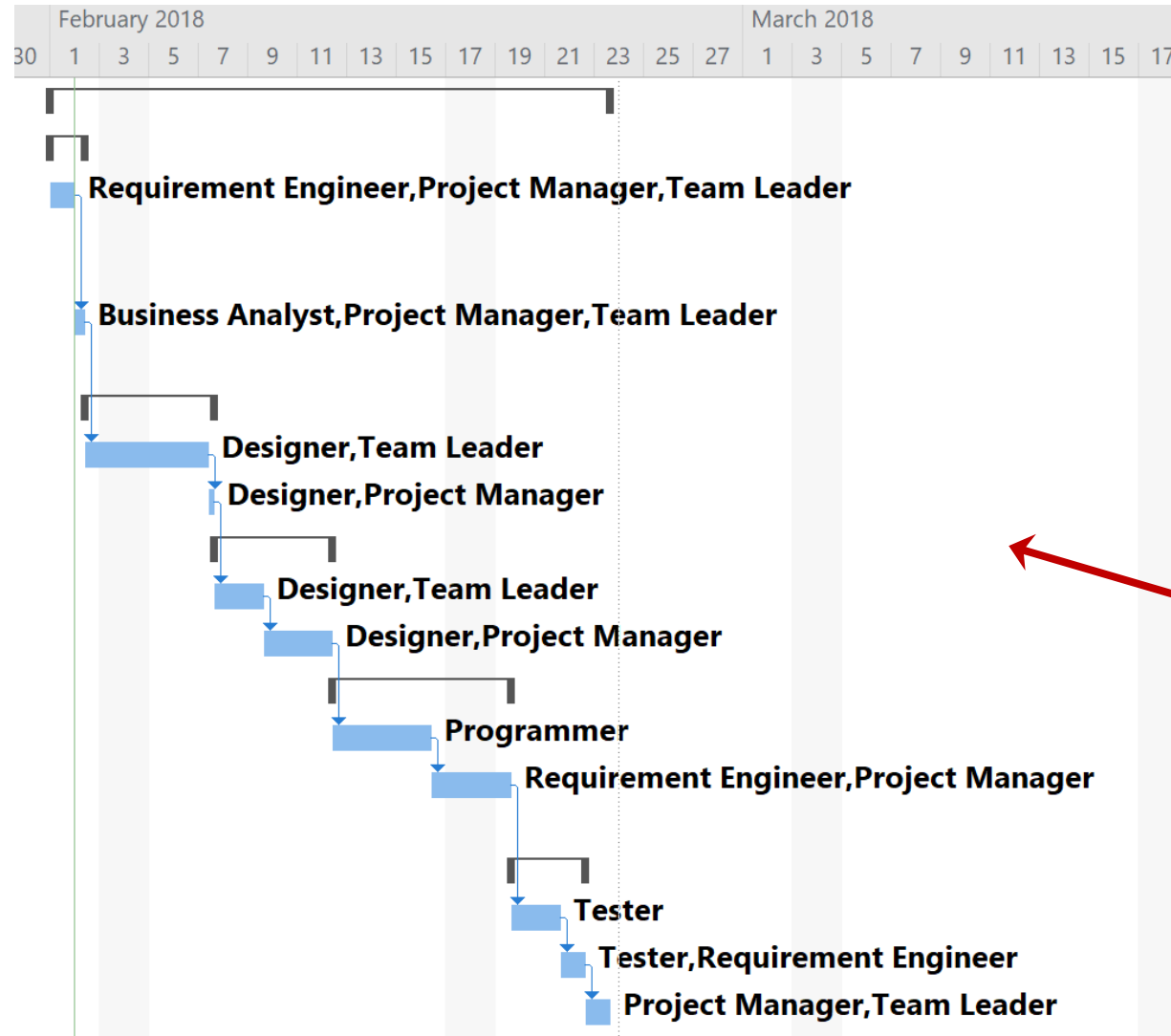


6. MS Project will automatically update the Duration according to the number of resources assigned to a task.
7. Check again to make sure that the duration has changed (if it was supposed to change).

Step 6: Examine the critical Path

- For the example, we are going to use the Detailed Gantt Chart to view the Critical Path, because this option also shows the **Slack Time** of the activities that don't belong to the critical path, therefore first we have to select the option “More Views”
- Then we have to select the Detail Gantt to obtain the view desired.
- The View should look like this (If the Gantt Chart doesn't appear check that you are in the right date on the Gantt Chart)

➤ Gantt Chart

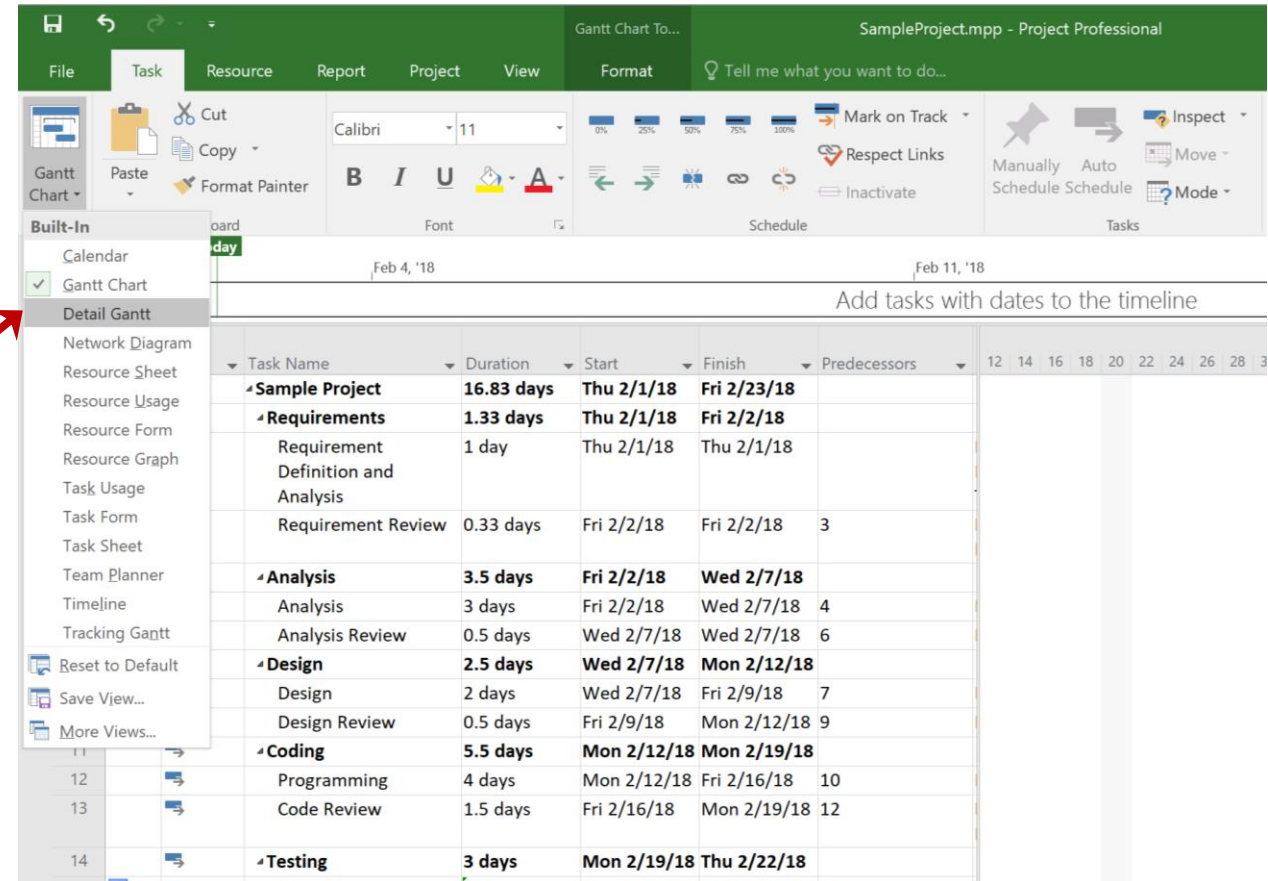


The Gantt Chart

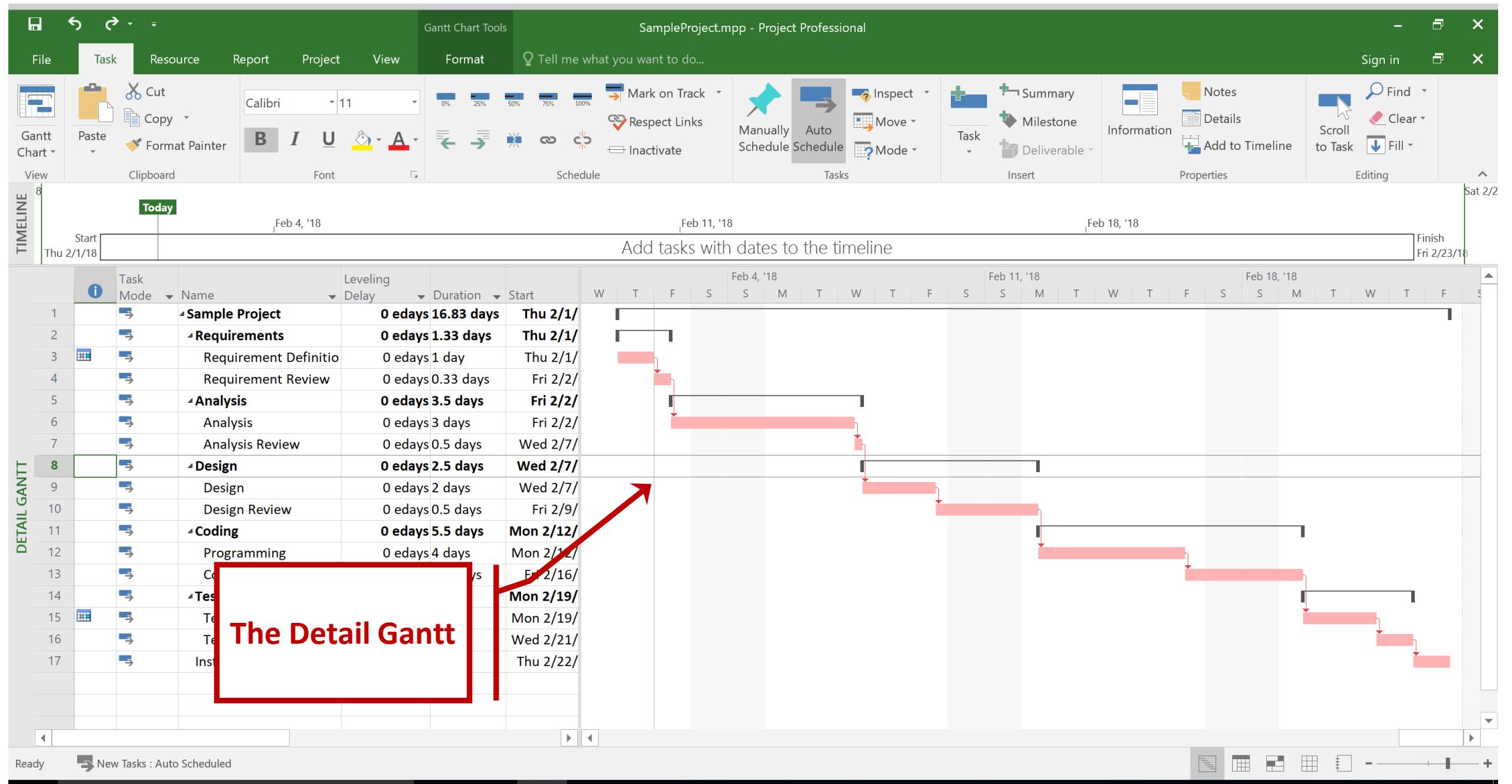
Viewing The Critical Path

- To see the critical path, click on Gantt Chart, and select “Detail Gantt”

Select “Detail Gantt” from Gantt Chart



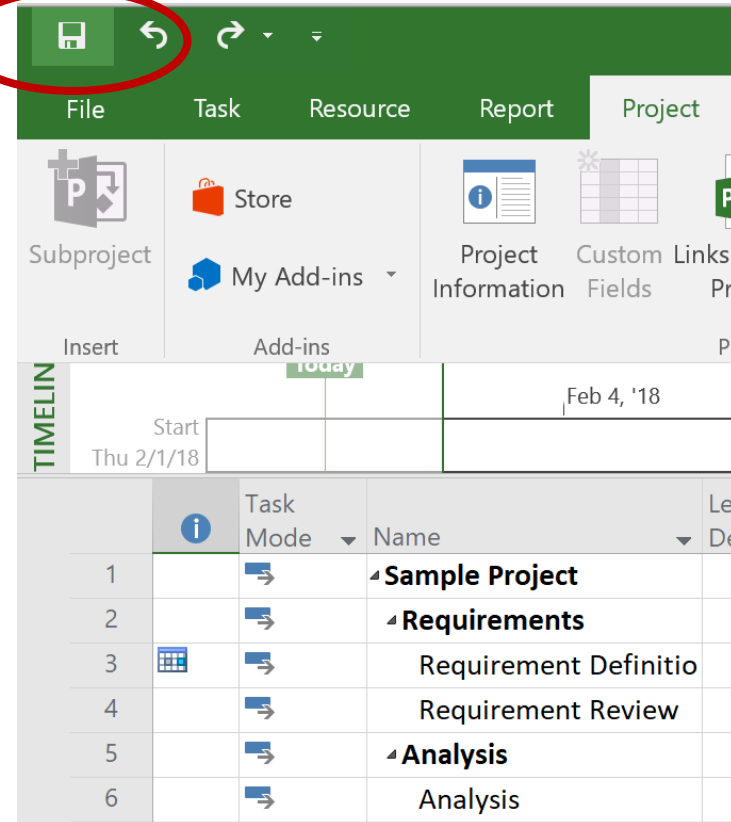
➤ Detail Gantt



Step 7: Save the Project

For this example we are saving the file at the end, but it is recommended that you save the file frequently while you are working to avoid losing data as a result of problems such as a Power Failure for instance

Save the Project



NOTE:

Microsoft Project Schedules

- Microsoft Project schedules each task according to the formula:

Effort = Amount of work/Productivity Rate

Duration = Effort/No. of resources

- Duration is the actual amount of time that passes before the task is done
- Amount of work is the total work required to be done
- Resource effort is the amount of effort of all the resources that are assigned to the task
- Effort of each resource is measured by productivity rate
- Productivity rate is the total amount of output in a given time period

Example

1. Let Work = 3000 SLOC

2. Effort will be calculated as:

$$\begin{aligned}\text{Work/Productivity Rate} &= \frac{3000}{100 \text{ SLOC/day}} \\ &= 30 \text{ days/1 Head Count}\end{aligned}$$

3. Duration will be calculated as:

$$\begin{aligned}\text{Effort/\# Head Count} &= 30\text{days/1 HC} \\ &\text{duration will be 30 days for 1 HC} \\ &\text{or, for 2 Head Counts it will be} \\ &= 30\text{days/2 HC} \\ &= 15 \text{ days.}\end{aligned}$$

Questions ?