MS Project Professional 2016

Tutorial #1– The Overview

CS 587 – Software Project Management
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MS Project Professional 2016 Overview

- MS Project Professional is a very powerful and common tool to create a project plan
- It helps you to efficiently organize your resources, deadlines and other important aspects such as compensation details, project constraints etc…
- The more information you provide, the more accurate is your project plan

MS Project 2016 Supported OS

Windows users:

- Supported OS: Windows 10,Windows 8, Windows 2008R2 with .Net 3.5 or greater
- You can get these OS from IIT MSDNAA website for free (see next slide for link)

MAC users:

- Either, install Windows on a virtual machine (Parallels desktop or VMware)
- Or, use Apple's Boot Camp (http://www.apple.com/support/bootcamp/)

Linux users:

- Either, install Windows on a virtual machine
- Or, install Windows OS on a separate partition

Alternative:

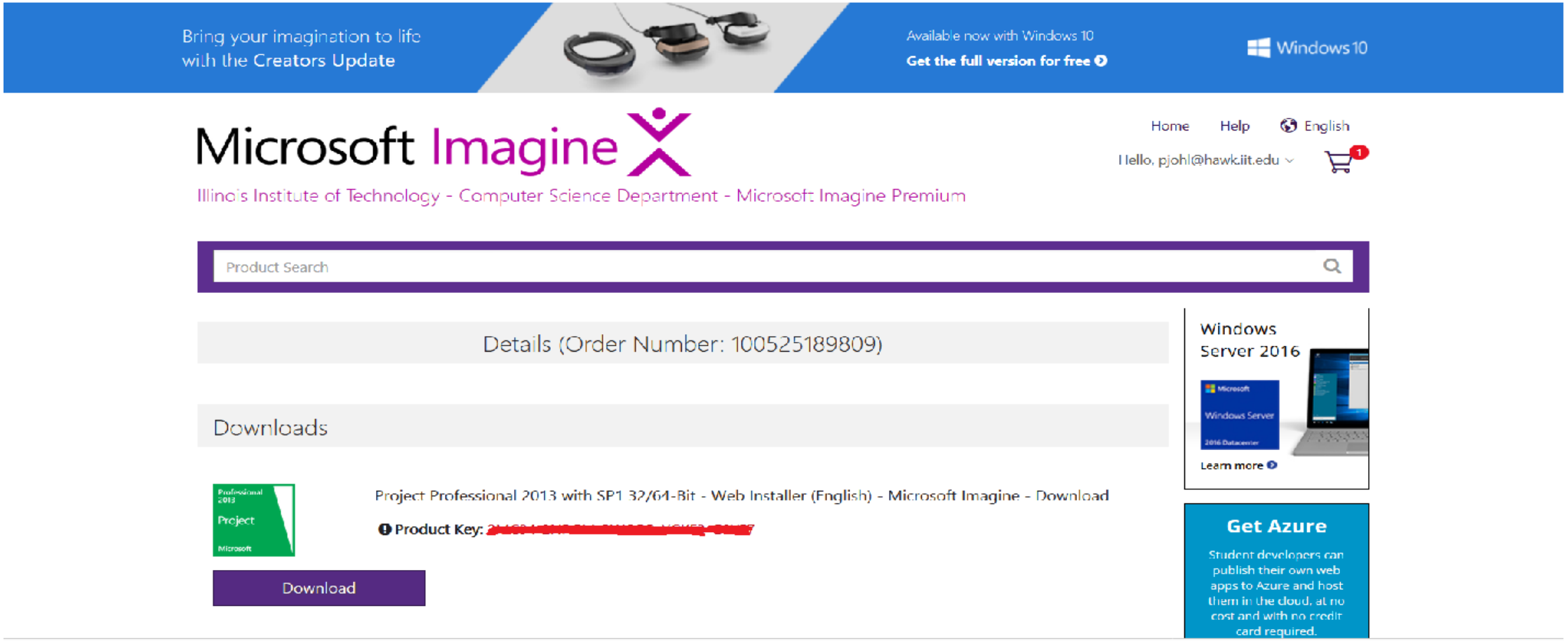
- MS Project 2010 is already installed on IIT lab machines Downside:
- If you are a remote student, this may not work for you!
- May lose your precious work, if you forget to save it on USB, or email to yourself!

Download the software

- All CS students can download the MS Project 2016 software from MSDNAA for free
- URL:
- http://e5.onthehub.com/WebStore/ProductsByMajorVersionList.aspx?ws=e9832e65-c19b-e011-969d-0030487d8897&vsro=8
- All IIT students can get discounted Parallels Desktop from
- https://iit.onthehub.com/WebStore/ProductsByMajorVersionList.aspx?cmi_mnuMain_child=78d793bc-b838-dd11-abb7-0030485a6b08&cmi_mnuMain=d43f9694-dfc9-e111-971c-f04da23e67f6&vsro=8
- Login is usually email address, e.g. abc@hawk.iit.edu
- Password is usually emailed or contact cs_msdn@cs.iit.edu
- After you log in, look for Project Professional 2016, add it to the cart and check out
- **Copy and save the Product Key**
- Follow the steps on the website for downloading the software

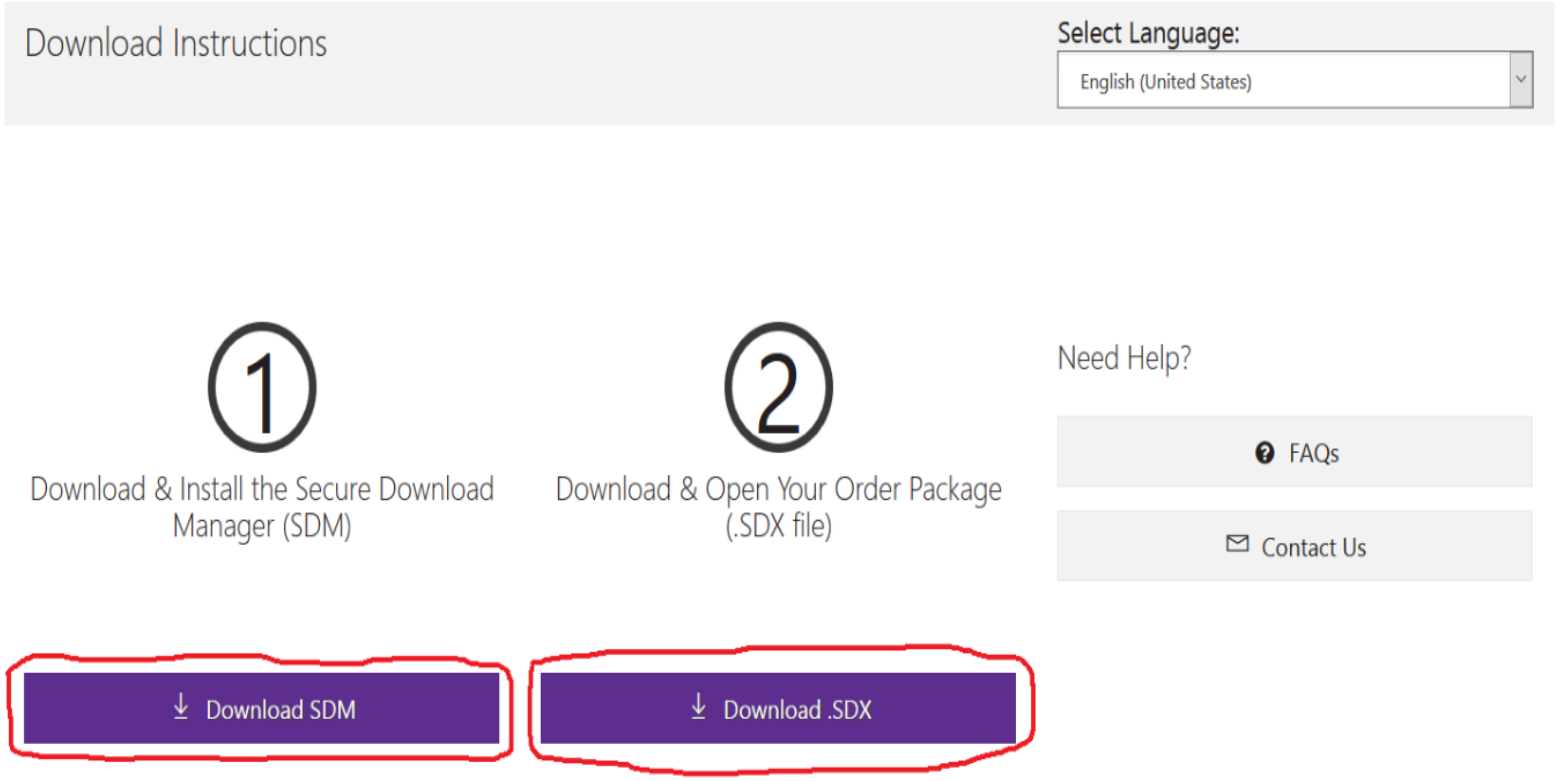
Step 1: Download the software

- Click on ‘Start Download’ to start the downloading



Step 2: Download the software

- Download SDM if you have never installed it before.
- Then, download the .SDX



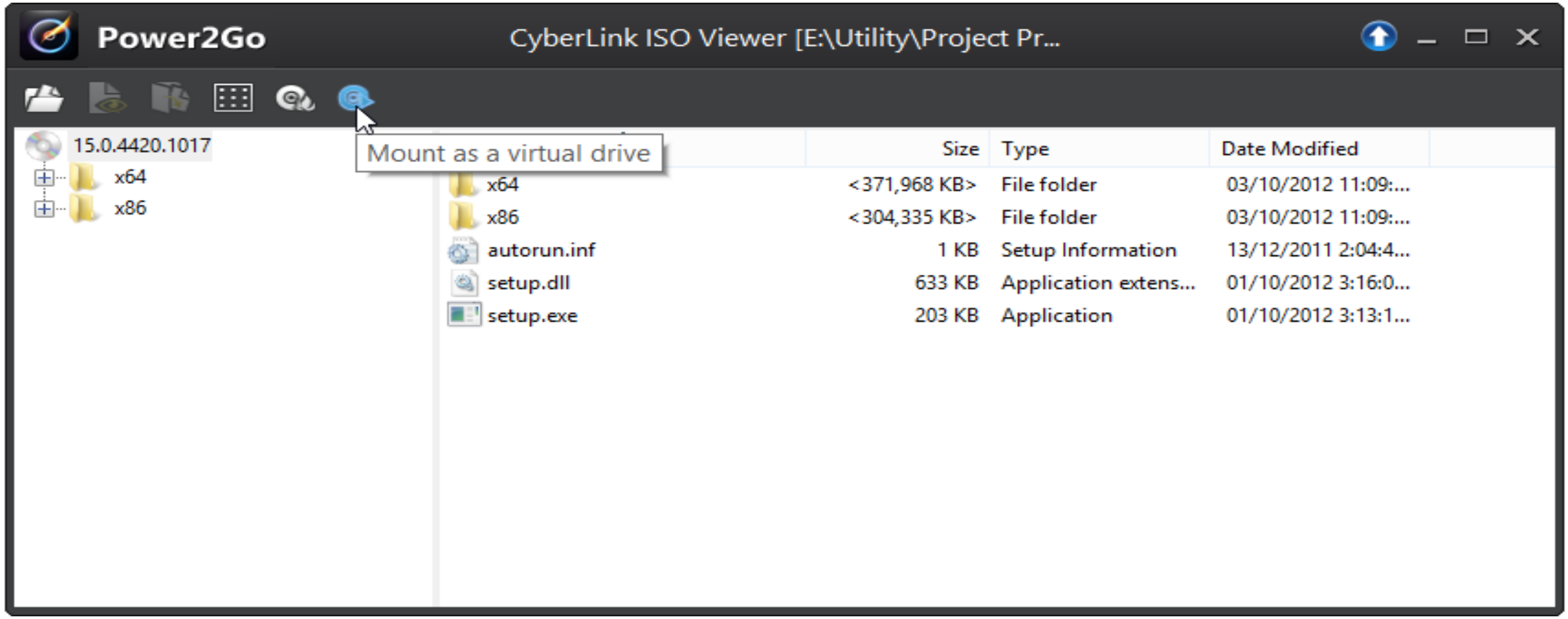
Step 3: Download the software

- Downloading will start
- Be patient! Downloading can take more than an hour, depending on network speed
- Note the location where the file is being downloaded!

Step 4: Mount ISO file on Virtual Drive

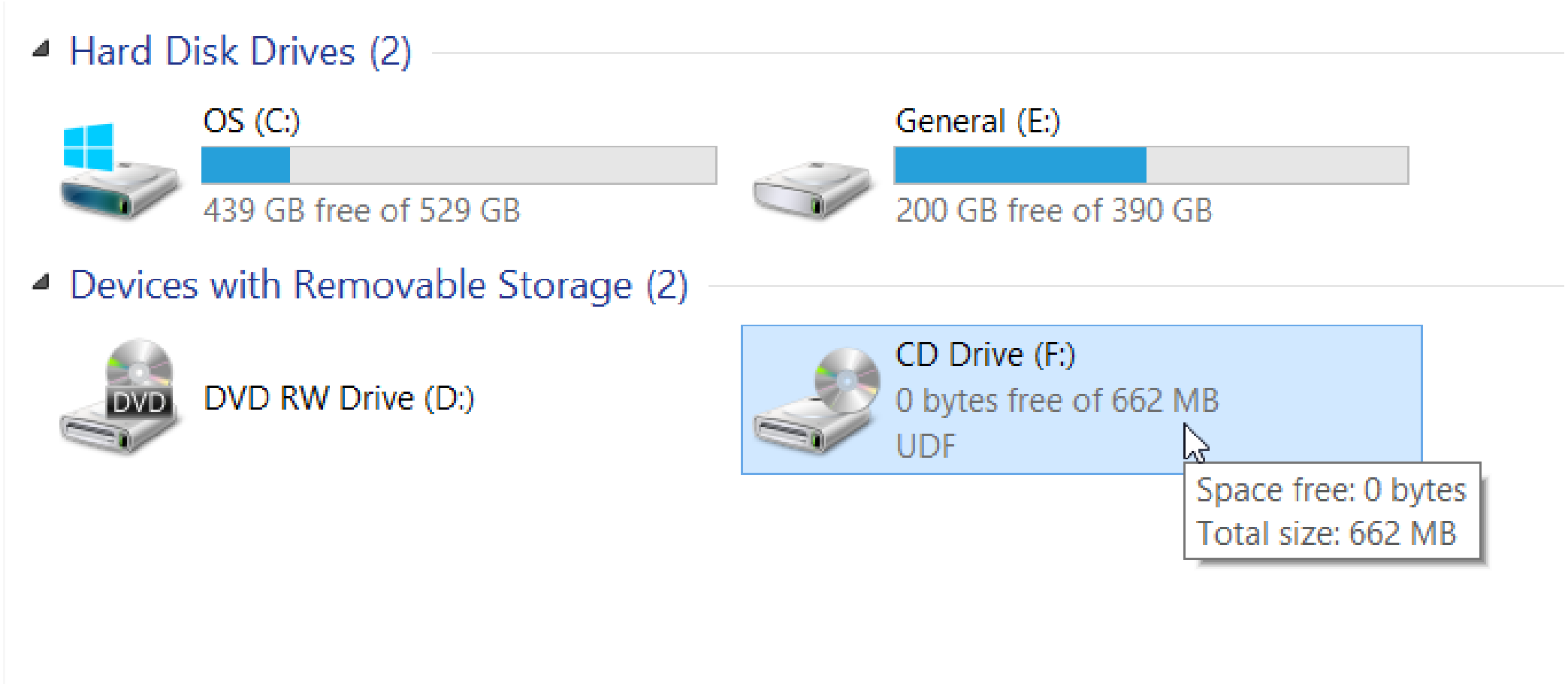
- Locate the folder named “Project Professional 2016 (x86 and x64) - DVD (English)”
- Inside this folder, you will see the ISO(disc image) file named: “en_project_professional_2016_x86_x64_dvd_1134695”
- Double click this ISO file to open it on any disc burning software, such as Windows Disc Image,Power2Go or Roxio etc.
- Most of the disc burning software have an option to load the disc image (ISO file) on to a virtual drive and run the software from it, hence you may not be required to burn the DVD to install this software.
- The screenshot in the next slide shows you the option to mount the image on a virtual drive in Power2Go application(disc burning software)

- The following screenshot is from Power2Go disc burning software.
- There should be an option to mount the ISO file as a virtual drive in your disc burning software



- After you have mounted the disc image, go to My Computer to locate the virtual drive, double click on it to run the setup

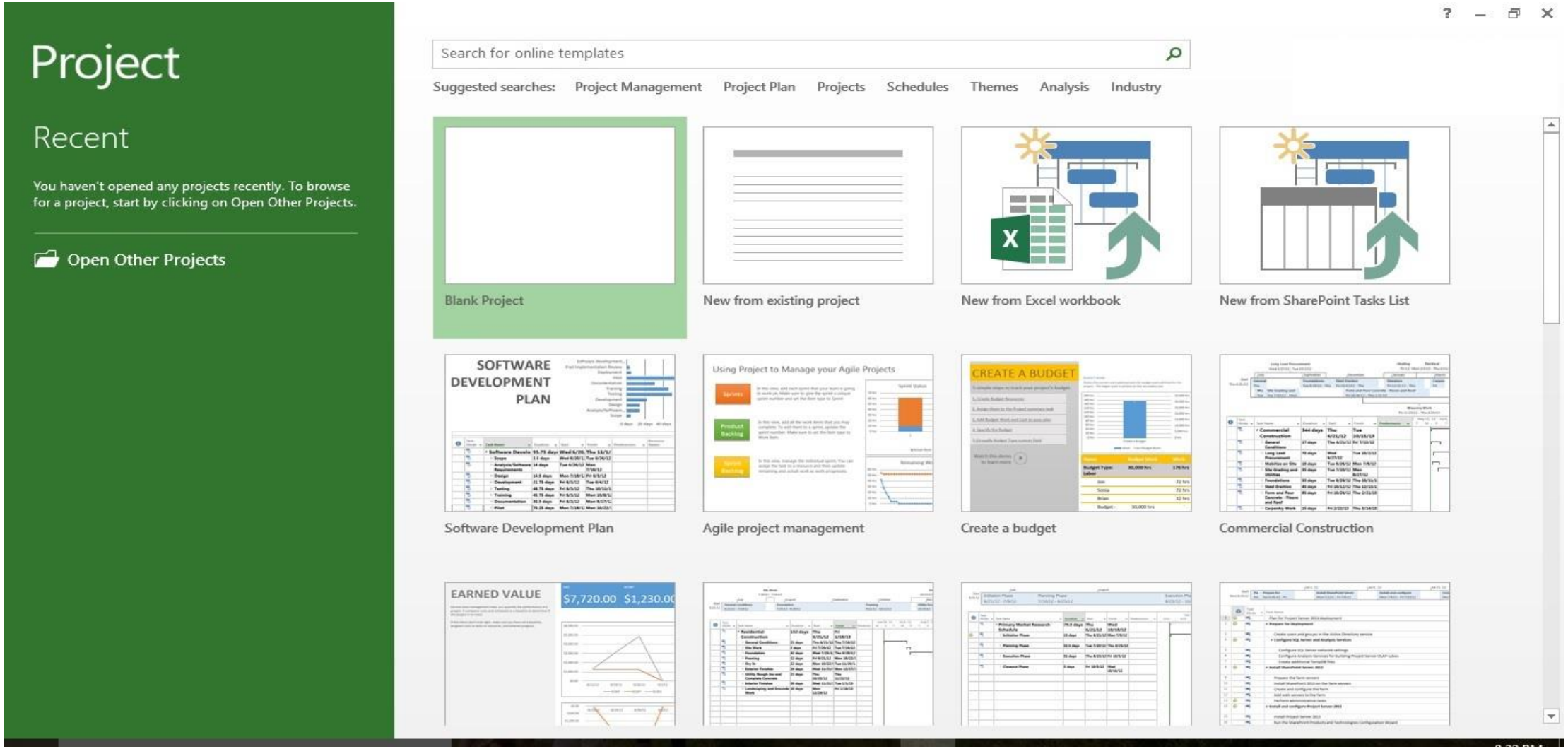
- Here CD Drive(F:) is the virtual drive, double click on it to start the installation



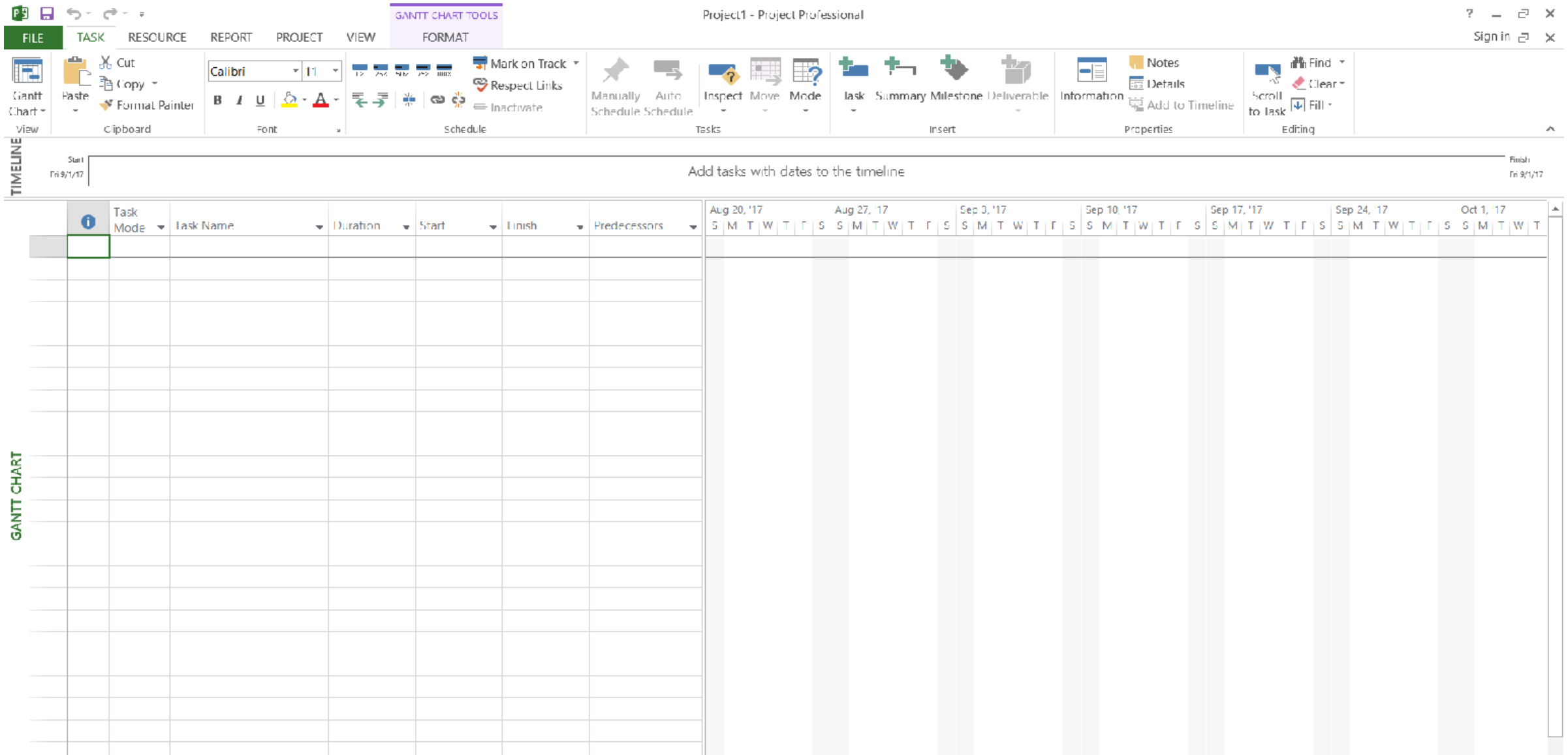
Step 5: Installation

- Run the setup from the virtual drive as shown in the previous slide, this will start the Microsoft Project Professional 2016 installation
- Agree to license and install the software
- After installation, you may need to restart the computer
- You should now be able to access it under Microsoft Office products containing office, excel, etc.
- When you open MS Project 2016 for the first time, register the product **using the Product key**

Project 2016 After installation



Blank Project

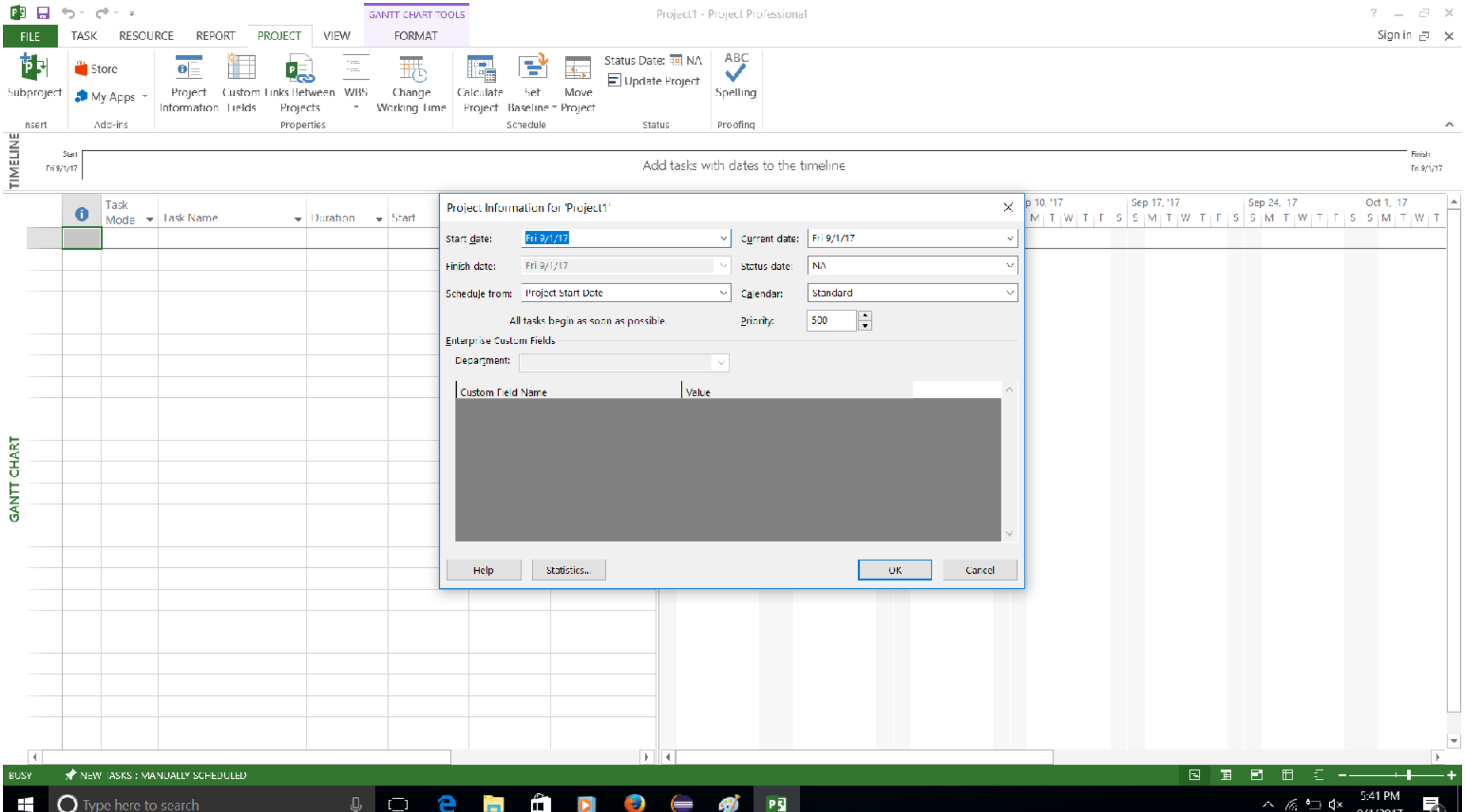


Project Management

- Project management is the process of planning, organizing, and managing tasks and resources to accomplish a defined objective
- These objectives are met with constraints such as resources, time and cost
- Projects share common activities, including breaking the project into easily manageable tasks, scheduling the tasks, communicating with the team, and tracking the tasks as work progresses

How to Create a New Project ?

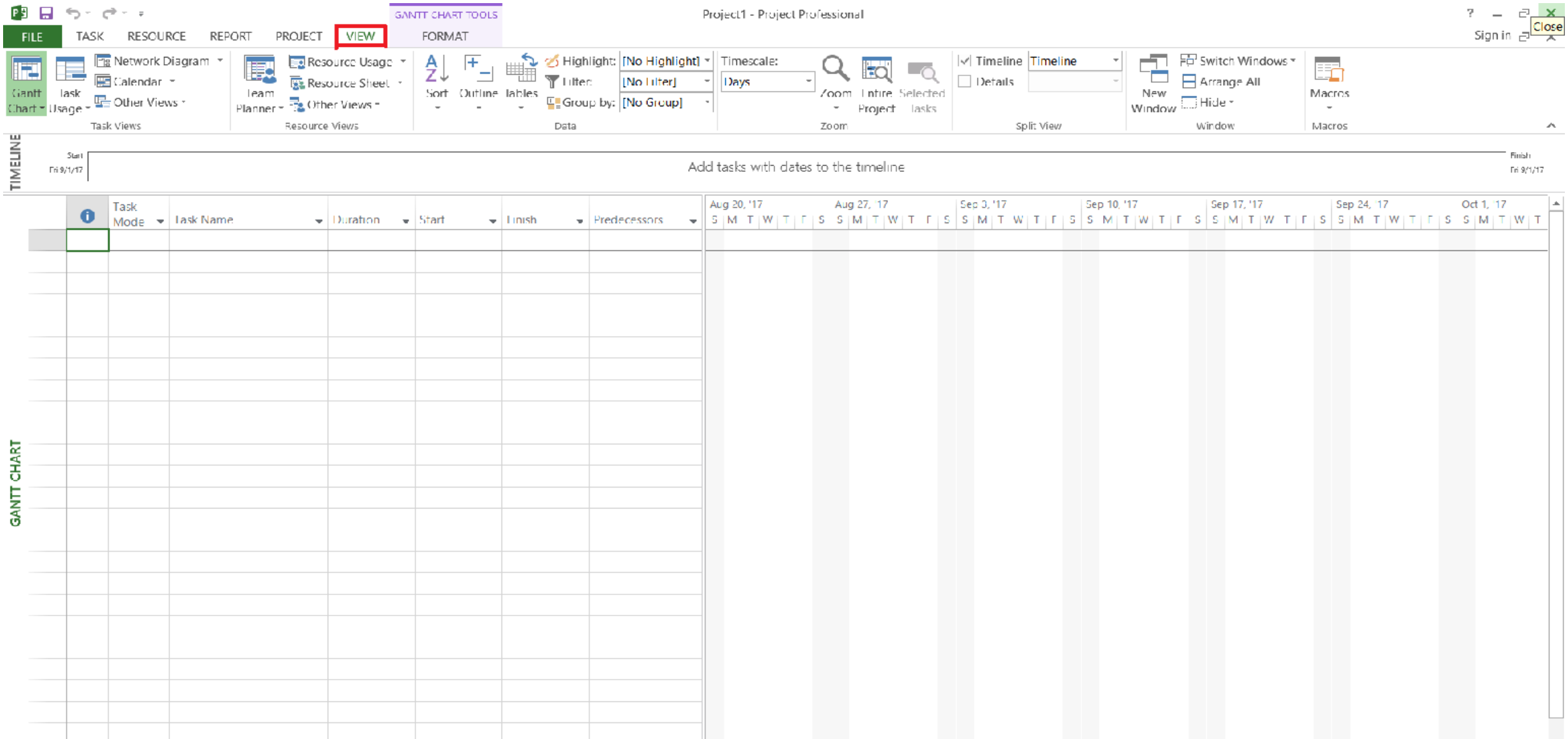
- Steps to create a project:
- Go to file, select new, click “Blank Project”
- Enter your project's start or finish date, **but not both**
- It's recommended that you enter only your project's start date and let Microsoft Project calculate the finish date after you have entered and scheduled tasks


GANTT CHART TOOLS
Project1 - Project Professional
FILE
TASK
RESOURCE
REPORT
PROJECT
VIEW
FORMAT
Sign in
Subproject
Insert
Store
My Apps
Add-ins
Project Information
Custom Fields
Links Between Projects
WBS
Change Working Time
Properties
Calculate Project
Set Baseline
Move Project
Status Date: NA
Update Project
Schedule
ABC
Spelling
Proofing
TIMELINE
Start
Fri 9/1/17
Add tasks with dates to the timeline
Finish
Fri 9/1/17
GANTT CHART
Task Mode
Task Name
Duration
Start
Project Information for 'Project1'
Start date:
Fri 9/1/17
Current date:
Fri 9/1/17
Finish date:
Fri 9/1/17
Status date:
NA
Schedule from:
Project Start Date
Calendar:
Standard
All tasks begin as soon as possible.
Priority:
500
Enterprise Custom Fields
Department:
Custom Field Name
Value
Help
Statistics...
OK
Cancel
Sep 10, '17
Sep 17, '17
Sep 24, '17
Oct 1, '17
BUSY
NEW TASKS : MANUALLY SCHEDULED
Type here to search
5:41 PM

Project View

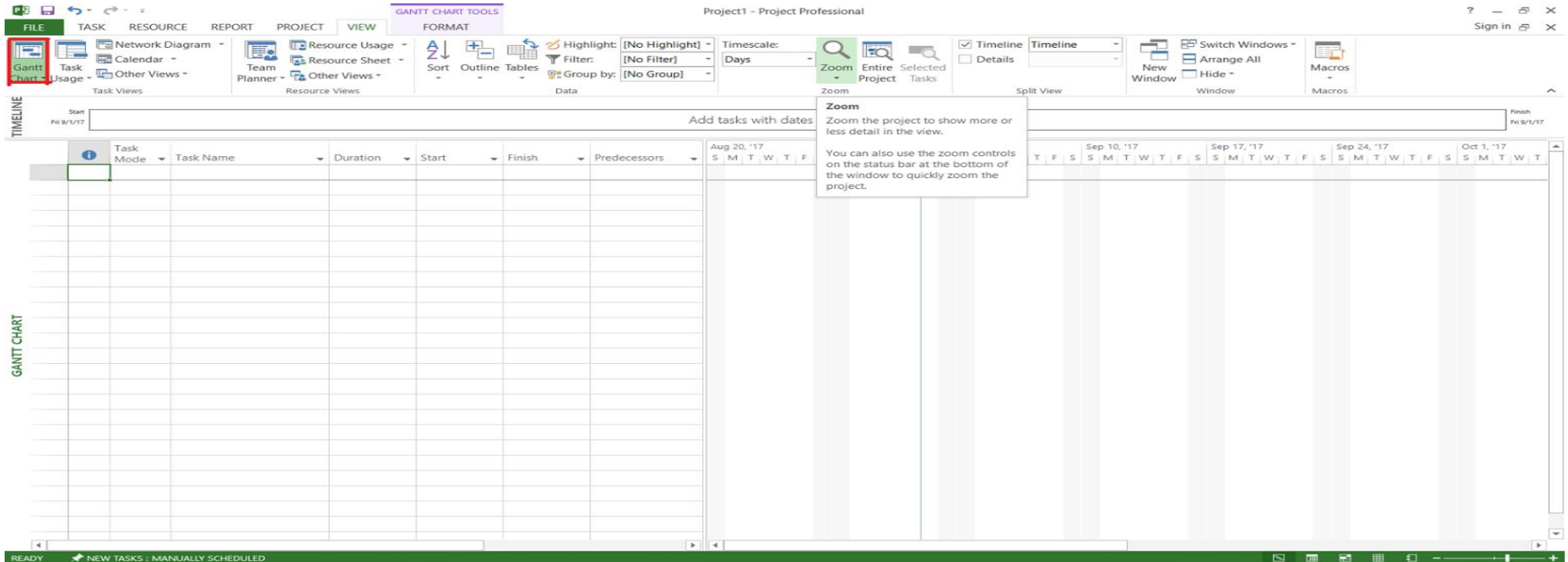
- Views allow you to examine your project from different angles based on what information you want displayed at any given time
- Project Views are categorized into two types:
    - Task Views
    - Resource Views

Project View



Gantt Chart

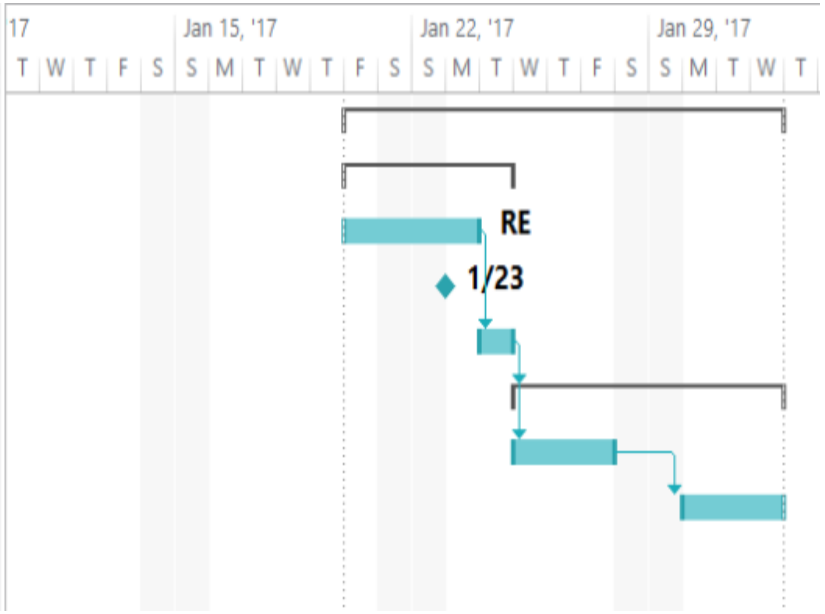
- Select Gantt Chart view from the view menu (default view)
- You'll have a spreadsheet where you can now enter information of all the activities i.e. task name, duration, start date, end date, predecessors and various other fields



Gantt Chart

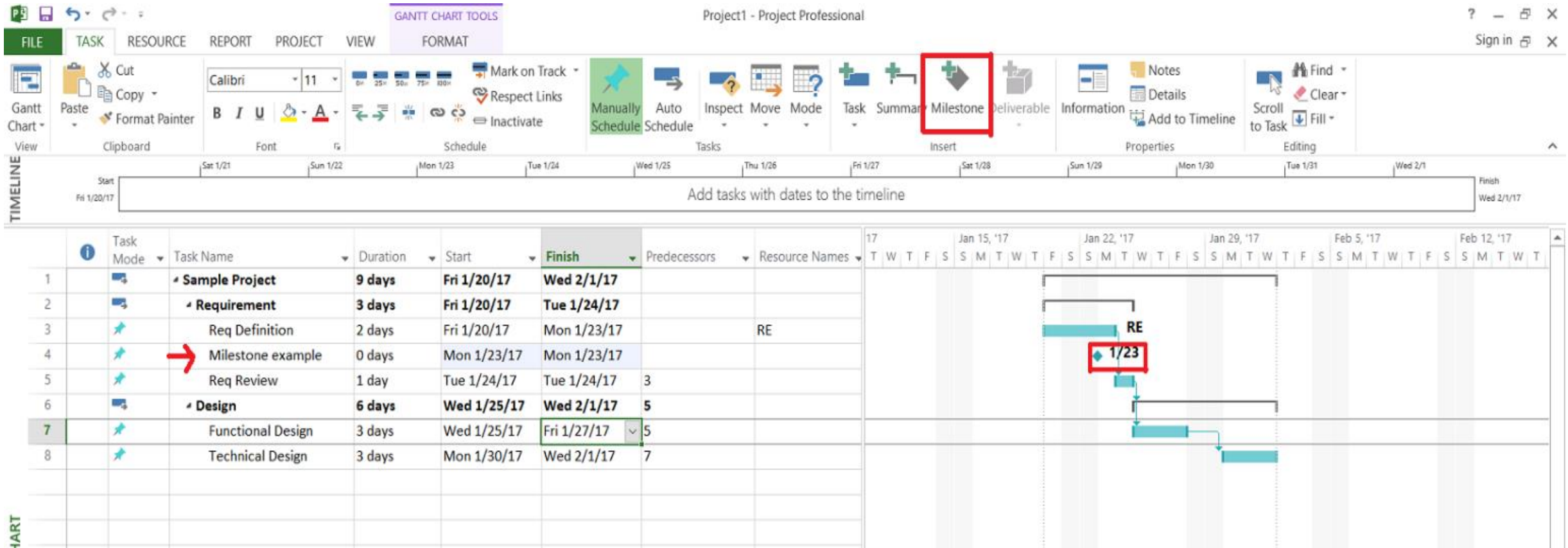
- If you want to specify the time dependence of a task, you may specify the predecessor of a task by clicking tab “Predecessors”
- For predecessor activity you need to write it’s activity number
- The software itself will calculate start and end date

	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		**Sample Project**	**9 days**	**Fri 1/20/17**	**Wed 2/1/17**		
2		**Requirement**	**3 days**	**Fri 1/20/17**	**Tue 1/24/17**		
3		Req Definition	2 days	Fri 1/20/17	Mon 1/23/17		RE
4		Milestone example	0 days	Mon 1/23/17	Mon 1/23/17		
5		Req Review	1 day	Tue 1/24/17	Tue 1/24/17	3	
6		**Design**	**6 days**	**Wed 1/25/17**	**Wed 2/1/17**	**5**	
7		Functional Design	3 days	Wed 1/25/17	Fri 1/27/17	5	
8		Technical Design	3 days	Mon 1/30/17	Wed 2/1/17	7	



Entering Milestones

- To enter a milestone, enter the task name and set its duration to zero
- Project represents it as a diamond shape instead of a bar in the Gantt Chart

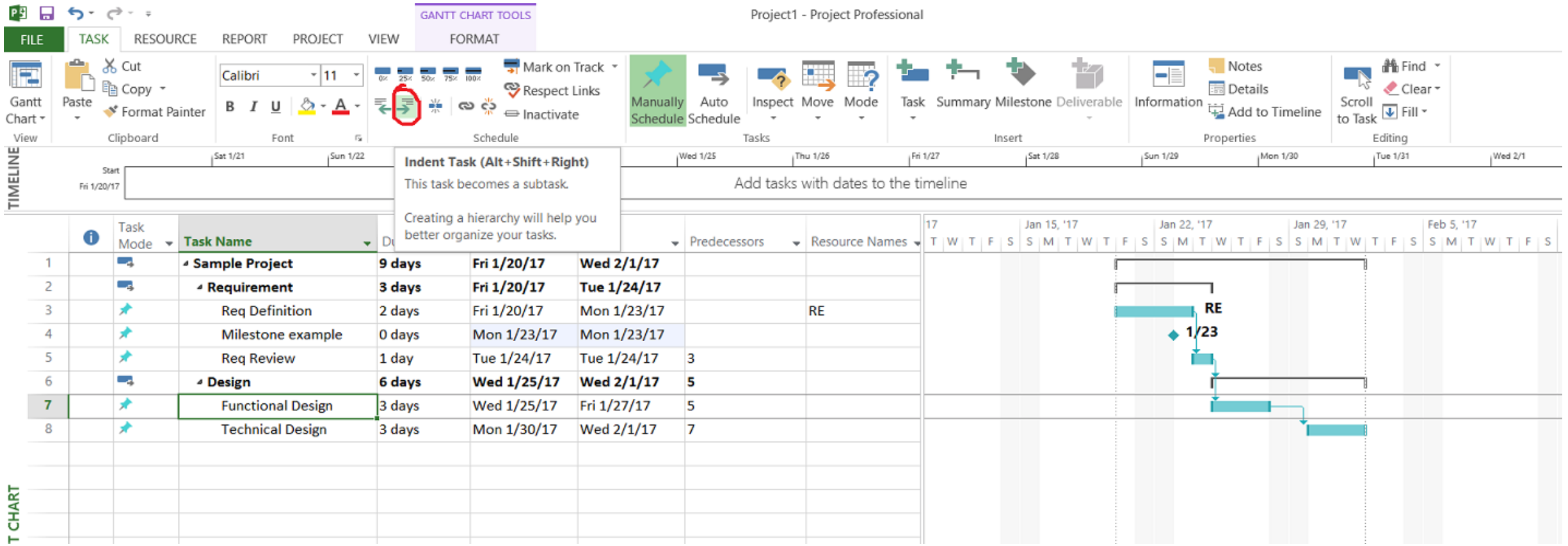


Organize Tasks into Phases

- Outlining helps organize your tasks into more manageable chunks
- You can indent related tasks under a more general task, creating a hierarchy
- The general tasks are called summary tasks; the indented tasks below the summary task are called subtasks
- A summary task's start and finish dates are determined by the start and finish dates of its earliest and latest subtasks

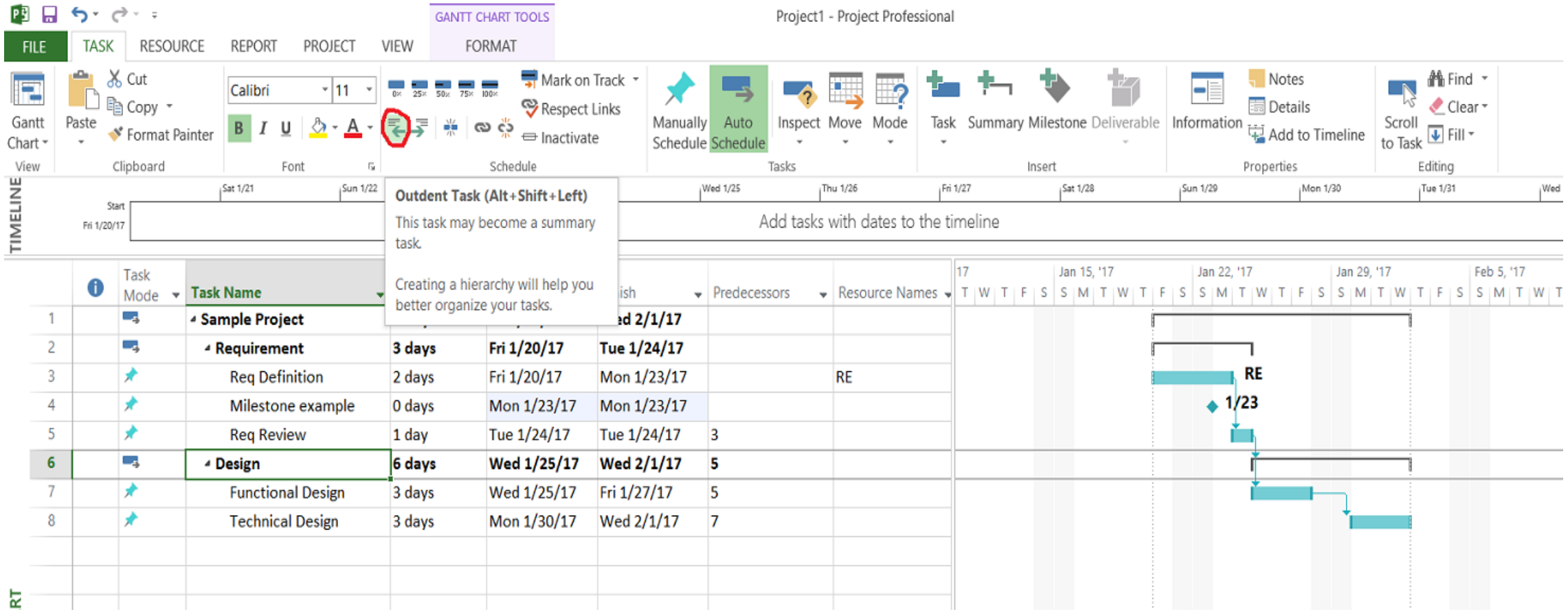
Organize task into phases

- Create a summary task as normal task first.
- Click “Indent Task” icon in the menu.
- Repeat previous step to input all subtasks.



Organize task into phases

- If you want to set some subtask as normal task, just place the cursor on the subtask, then click the icon labeled as “Outdent Task”. This subtask then will be outdented to a higher level



Creation of Links between Tasks

- Tasks are usually scheduled to start as soon as possible
- The duration of any task can be seen in the form of gray bars of varying length on the Gantt Chart in the timeline section
- A task that needs to be completed before are called predecessor task and the linked tasks are its successors
- By linking tasks, Project adjusts the schedule whenever there are changes that affect duration of other tasks
- Tasks can be linked in four ways:

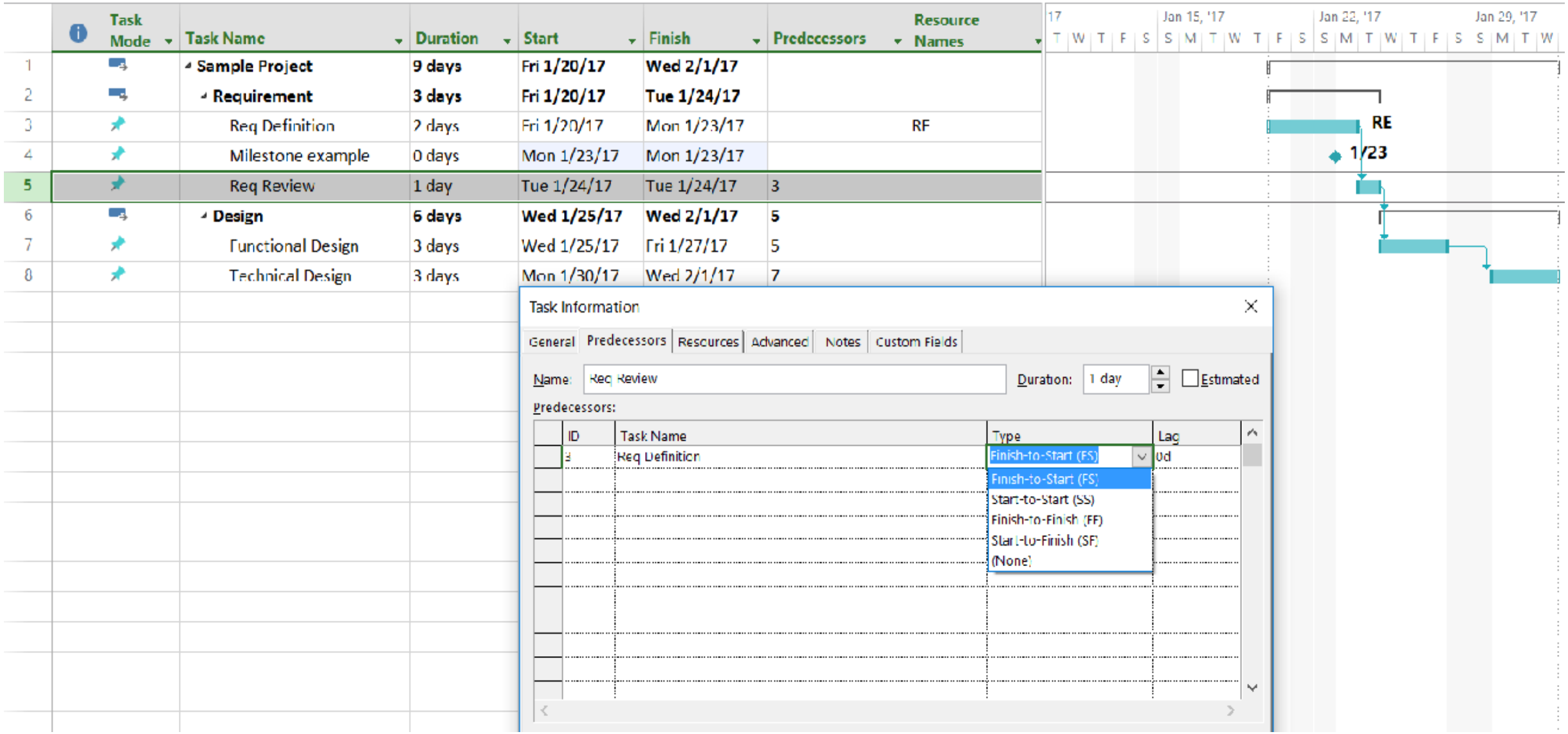
  start to start, start to finish, finish to start, finish to finish

Task Dependency

- Finish to start (FS)
  - -A FS B = B doesn't start before A is finished
- Finish to finish (FF)
  - –A FF B = B doesn't finish before A is finished
- Start to start (SS)
  - –A SS B = B doesn't start before A starts
- Start to finish (SF)
  - –A SF B = B doesn't finish before A starts

Creation of links between the tasks – Using Predecessors

- A network of tasks in a project must be connecting activities from the start to the end
- To establish these relationship we need to use the field “Predecessors” of each task, where we can designate which activity will be preceding the one we are updating
- In this example below, it is indicated that “Requirement Review” can start once “**Requirement Definition**” is completed (**Finish to Start** relationship)


Task Mode
Task Name
Duration
Start
Finish
Predecessors
Resource Names
1 Sample Project 9 days Fri 1/20/17 Wed 2/1/17
2 Requirement 3 days Fri 1/20/17 Tue 1/24/17
3 Req Definition 2 days Fri 1/20/17 Mon 1/23/17 RF
4 Milestone example 0 days Mon 1/23/17 Mon 1/23/17
5 Req Review 1 day Tue 1/24/17 Tue 1/24/17 3
6 Design 6 days Wed 1/25/17 Wed 2/1/17 5
7 Functional Design 3 days Wed 1/25/17 Fri 1/27/17 5
8 Technical Design 3 days Mon 1/30/17 Wed 2/1/17 7
Jan 15, '17
Jan 22, '17
Jan 29, '17
RE
1/23
Task Information
General
Predecessors
Resources
Advanced
Notes
Custom Fields
Name: Req Review
Duration: 1 day
Estimated
Predecessors:
ID
Task Name
Type
Lag
Req Definition
Finish-to-Start (FS)
0d
Finish-to-Start (FS)
Start-to-Start (SS)
Finish-to-Finish (FF)
Start-to-Finish (SF)
(None)

Assigning Resources to Tasks

- Once you determine that you need to include resources into your project you will need to answer the following questions:
  - –What kind of resources do you need?
  - –How many of each resource do you need?
  - –Where will you get these resources?
  - –How do you determine what your project is going to cost?

Resource Types

- Resources are of two types: Work resources and material resources

  –**Work** resources complete tasks by expending time on them; they are usually people and equipment that have been assigned to work on the project

  –**Material** resources are supplies and stocks that are needed to complete a project

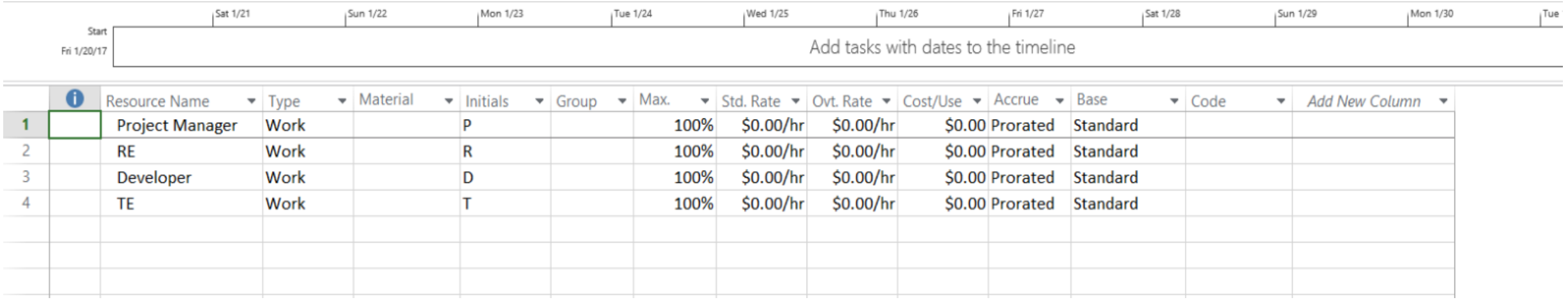
- When a set of resources is available for working they are called the resource pool. After you determine the number of resources that you need, you need to establish the time and availability of each resource.
- For work resources, the amount of time that they can work for, be it in hours, days or months, or years and the amount (units of measurement) of material resources need to be specifically defined.

Assigning Resources to Tasks

- The next step is to assign these resources to their respective tasks
- When you allocate a resource's time to work on a task you are assigning resources
- Once this is done, Project can recalculate the schedule to accommodate the working times of the assigned resources
- It goes one step ahead and tells you when you have **over allocated** a resource, i.e. when you have assigned a resource to multiple tasks in the same time period or when a resource is assigned to do more work than it can complete in a certain time

Steps to Enter Resource Information in Project

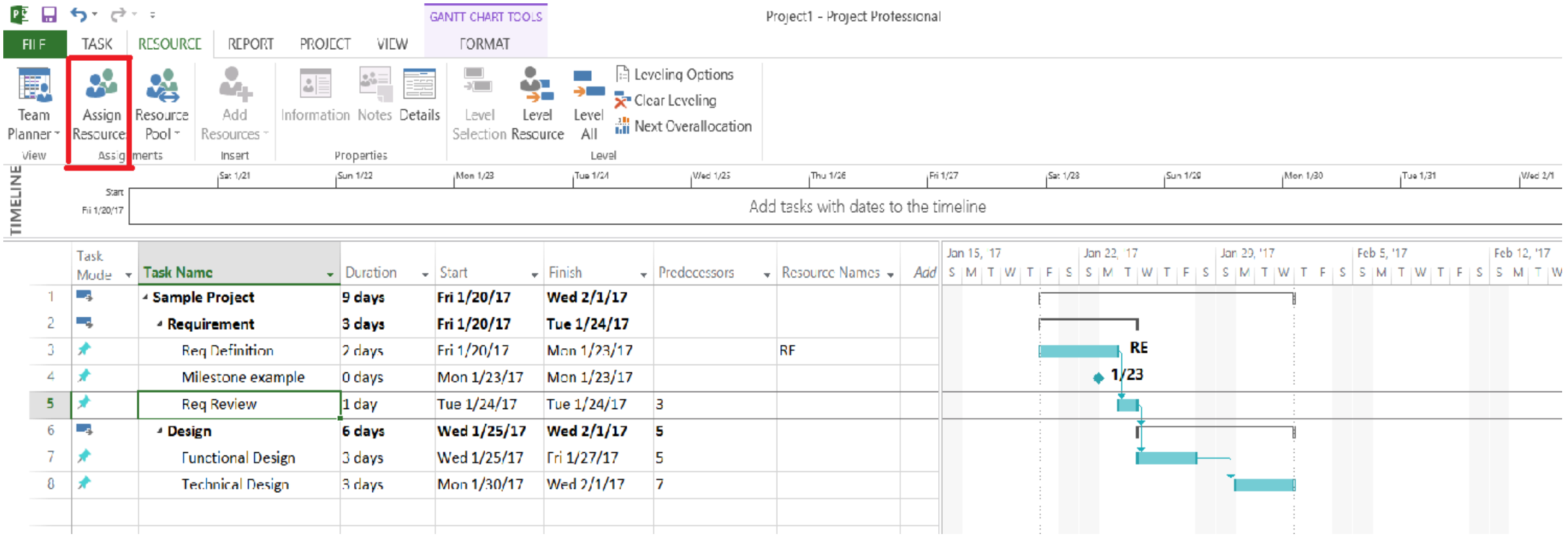
- On the View menu, click Resource Sheet
- In the Resource Name field, type a resource name
- You can enter different information like resource name, type of work, initials, std Rate, etc.
- Below is an example of some Human resources added to the Resource Sheet (We could also add other material resources)



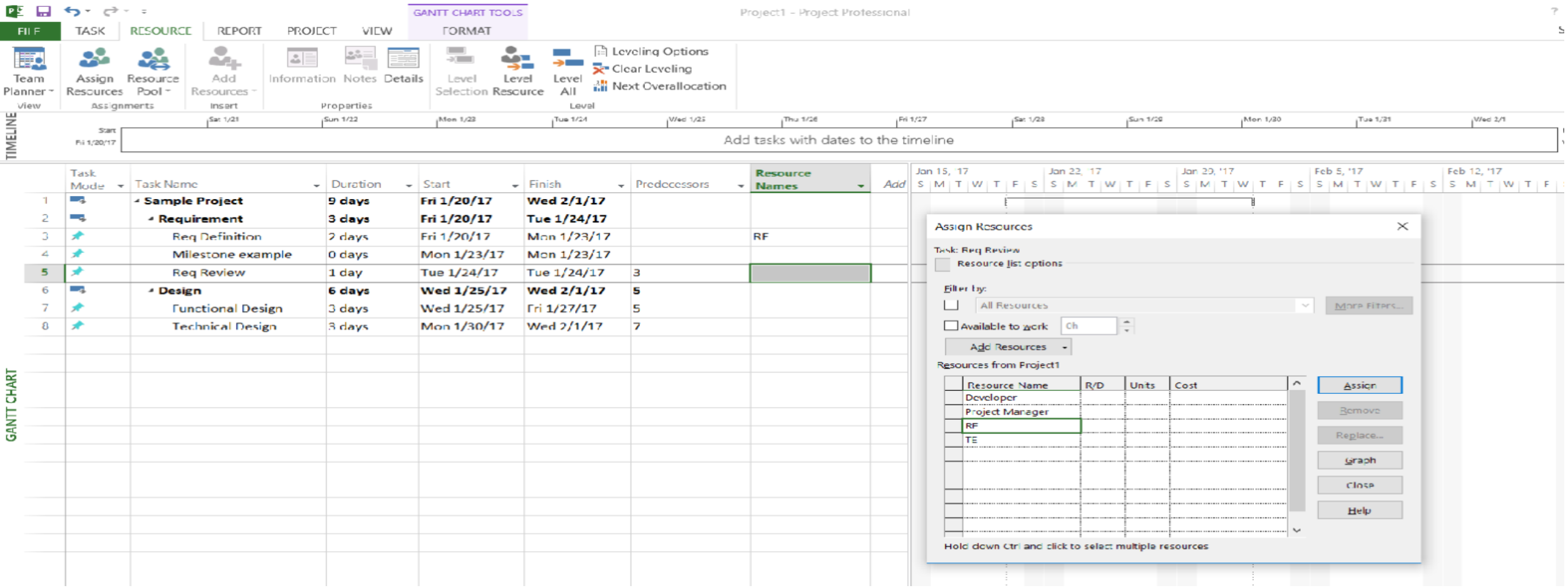
	Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt. Rate	Cost/Use	Accrue	Base	Code	Add New Column
1	Project Manager	Work		P		100%	$0.00/hr	$0.00/hr	$0.00	Prorated	Standard		
2	RE	Work		R		100%	$0.00/hr	$0.00/hr	$0.00	Prorated	Standard		
3	Developer	Work		D		100%	$0.00/hr	$0.00/hr	$0.00	Prorated	Standard		
4	TE	Work		T		100%	$0.00/hr	$0.00/hr	$0.00	Prorated	Standard		

Steps to Enter Resource Information in Project

- Once the resources are created, you can assign the resource to tasks
- Go back to task sheet, click the “Resource” menu tab, then click “Assign Resources”



- Then the “Assign resources” window will appear
- Click the resource in the window, and then click the task in the spreadsheet
- Then click “Assign” so that the resource is assigned to the task

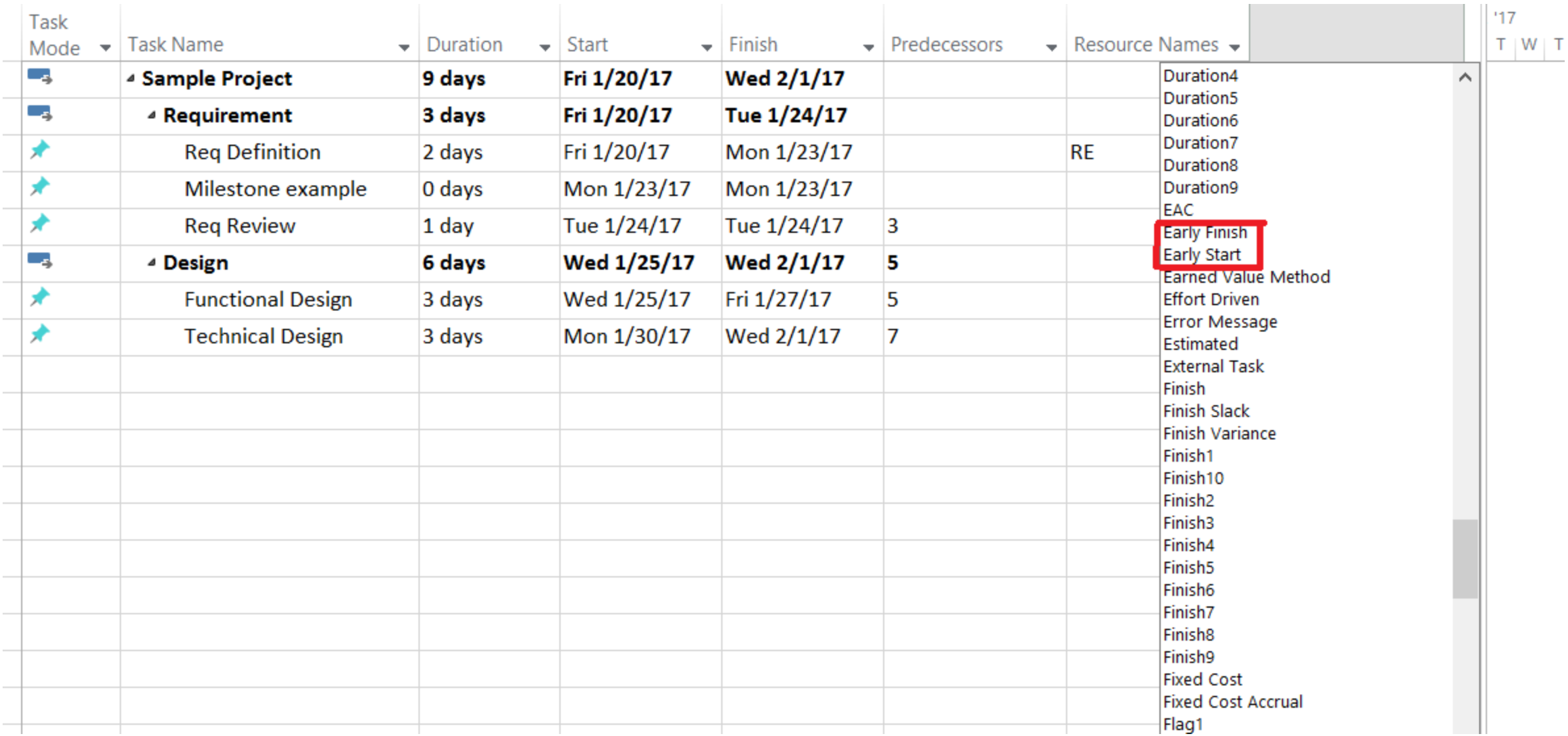


Critical Path

- The critical path is the series of tasks (or even a single task) that dictates the calculated finish date of the project, i.e. when the last task in the critical path is completed, the project is completed
- When you first create a task, its early start and early finish dates are the same as the scheduled start and finish dates
- As you link the task to predecessor and successor tasks and apply any date constraints, the early start and early finish dates are calculated as the earliest possible dates this task could start and finish if all predecessors and successors also start and finish on their respective early start and early finish dates

Critical Path

- For finding Critical Path, list all the activities and enter early start, late start, early finish and late finish information of all the activities
- You can do this by right click, select “Insert Column”, then select “Early Start(ES)”, “Early Finish(EF)”, “Late Start(LS)”, “Late Finish(LF)”, respectively
- Project automatically calculates the actual ES, EF, LS and LF info based on the starting/ ending dates you have provided



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	Milestone example	0 days	Mon 1/23/17	Mon 1/23/17		
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	Design	**6 days**	**Wed 1/25/17**	**Wed 2/1/17**	**5**	
	Functional Design	3 days	Wed 1/25/17	Fri 1/27/17	5	
	Technical Design	3 days	Mon 1/30/17	Wed 2/1/17	7	

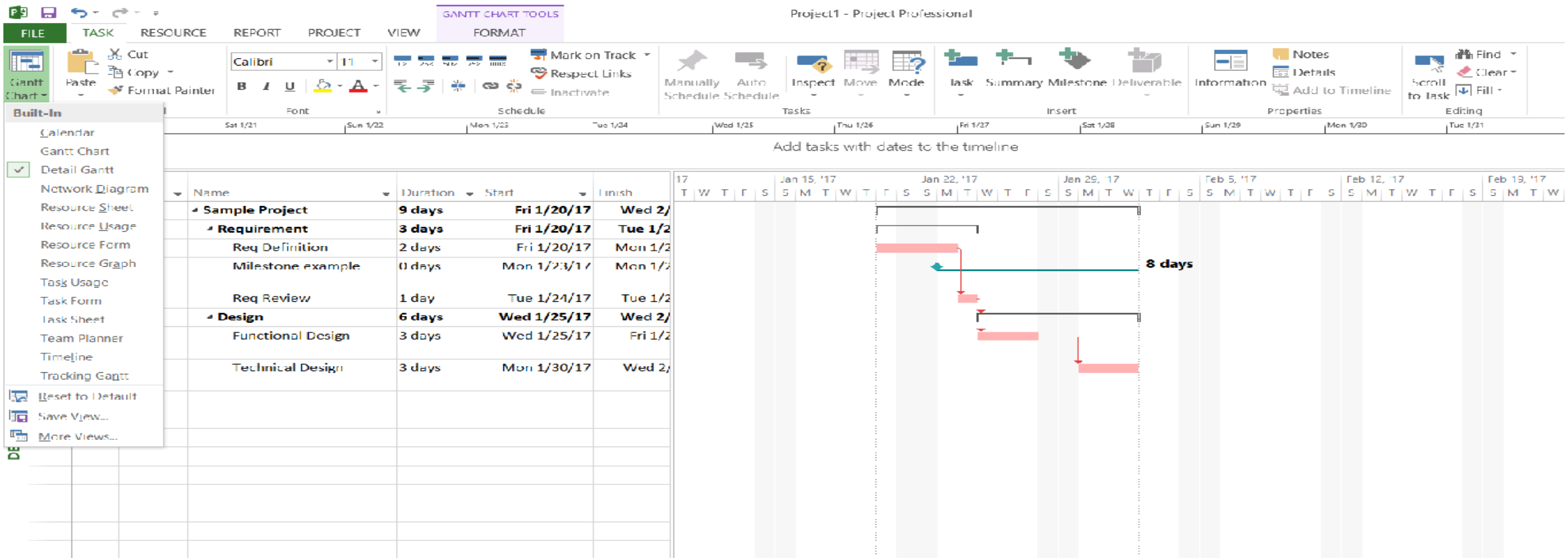
'17
T W T

Duration4
Duration5
Duration6
Duration7
Duration8
Duration9
EAC
Early Finish
Early Start
Earned Value Method
Effort Driven
Error Message
Estimated
External Task
Finish
Finish Slack
Finish Variance
Finish1
Finish10
Finish2
Finish3
Finish4
Finish5
Finish6
Finish7
Finish8
Finish9
Fixed Cost
Fixed Cost Accrual
Flag1

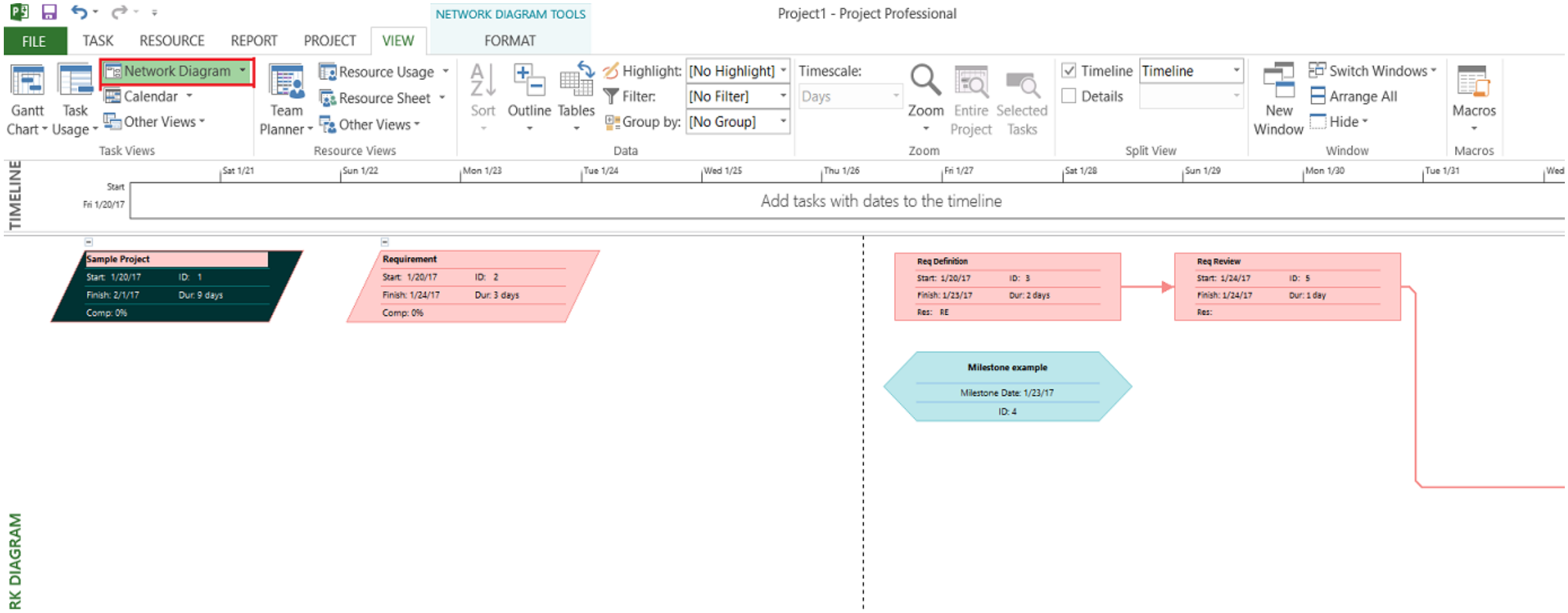
- The screen shot below shows the ES, EF, LS, LF dates included in the project

	Task Mode	Task Name	Durati	Start	Finish	Predeces	Early Start	Early Finish	Late Start	Late Finish
1		**Sample Project**	**9 days**	**Fri 1/20/17**	**Wed 2/1/17**		**Fri 1/20/17**	**Wed 2/1/17**	**Fri 1/20/17**	**Wed 2/1/17**
2		**Requirement**	**3 days**	**Fri 1/20/17**	**Tue 1/24/17**		**Fri 1/20/17**	**Tue 1/24/17**	**Fri 1/20/17**	**Tue 1/24/17**
3		Req Definition	2 days	Fri 1/20/17	Mon 1/23/17		Fri 1/20/17	Mon 1/23/17	Fri 1/20/17	Tue 1/24/17
4		Milestone example	0 days	Mon 1/23/17	Mon 1/23/17		Mon 1/23/17	Mon 1/23/17	Wed 2/1/17	Wed 2/1/17
5		Req Review	1 day	Tue 1/24/17	Tue 1/24/17	3	Tue 1/24/17	Tue 1/24/17	Tue 1/24/17	Wed 1/25/17
6		**Design**	**6 days**	**Wed 1/25/17**	**Wed 2/1/17**	**5**	**Wed 1/25/17**	**Wed 2/1/17**	**Wed 1/25/17**	**Wed 2/1/17**
7		Functional Design	3 days	Wed 1/25/17	Fri 1/27/17	5	Wed 1/25/17	Fri 1/27/17	Wed 1/25/17	Mon 1/30/17
8		Technical Design	3 days	Mon 1/30/17	Wed 2/1/17	7	Mon 1/30/17	Wed 2/1/17	Mon 1/30/17	Wed 2/1/17

- Critical path can be seen in multiple ways
- We can show critical path using Gantt chart, Detailed chart, Network Diagram ,etc.
- In Detailed Gantt click on Gantt Chart ->Detailed and it will show the critical path with slack time



- In Network Diagram click on Network Diagram



Baseline:

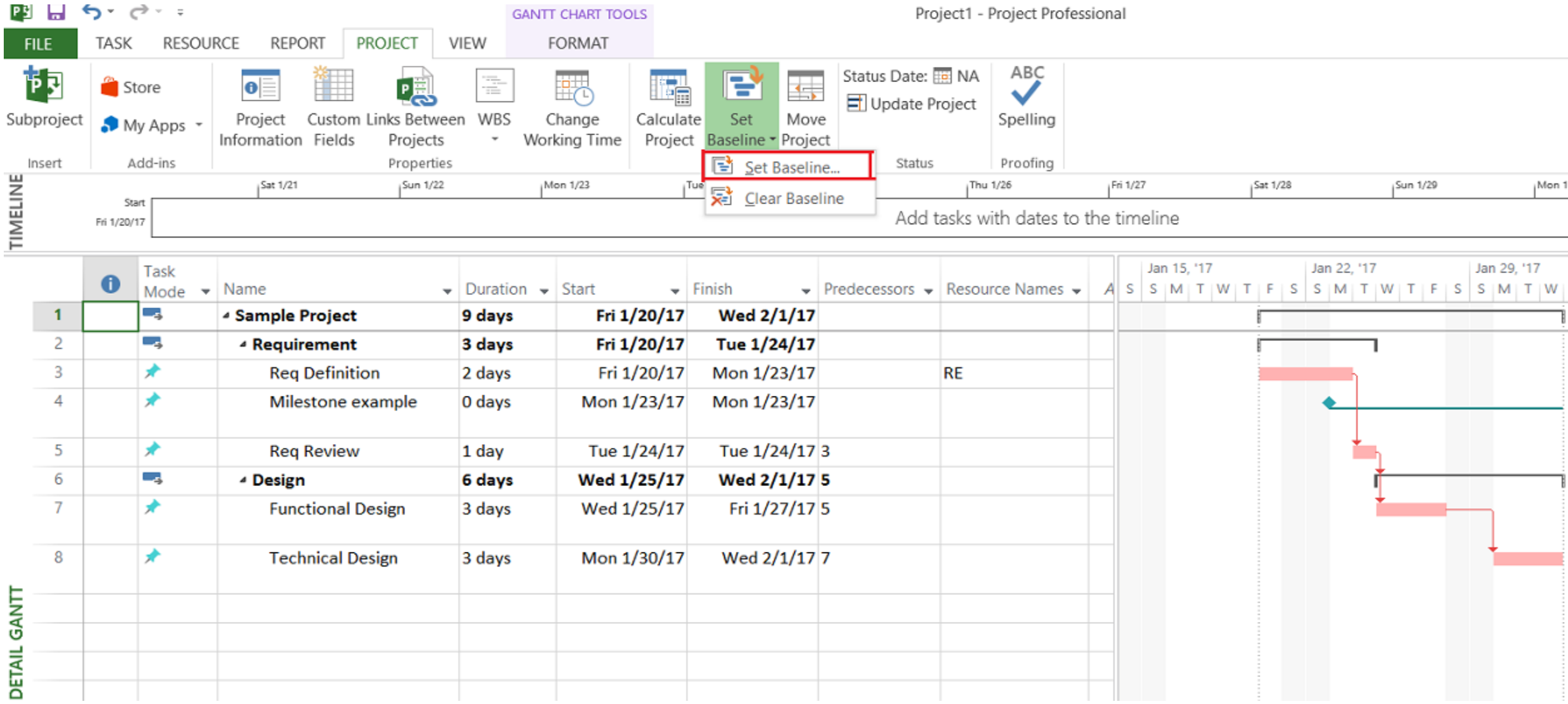
- A baseline is the set of original and finish dates, durations, work, and cost estimates that you save after you've completed and fine-tuned your project plan but before the project begins
- Typically, you set a baseline when your plan is complete and you are ready to start tracking progress on it
- Baseline could be set from Project Menu Tab-> Set Baseline
- By comparing baseline and scheduled information, you can track task start and finish dates

  – From the View menu -> Tables -> click Variance

  – To view variance information graphically, use the Tracking Gantt view

  – From the View menu -> Other Views -> More Views -> click Tracking Gantt

Baseline


GANTT CHART TOOLS
Project1 - Project Professional
FILE
TASK
RESOURCE
REPORT
PROJECT
VIEW
FORMAT
Subproject
Store
My Apps
Project Information
Custom Fields
Links Between Projects
WBS
Change Working Time
Calculate Project
Set Baseline
Move Project
Status Date: NA
Update Project
Spelling
Insert
Add-ins
Properties
Status
Proofing
Set Baseline...
Clear Baseline
TIMELINE
Start
Fri 1/20/17
Add tasks with dates to the timeline
Task Mode
Name
Duration
Start
Finish
Predecessors
Resource Names
1 Sample Project 9 days Fri 1/20/17 Wed 2/1/17
2 Requirement 3 days Fri 1/20/17 Tue 1/24/17
3 Req Definition 2 days Fri 1/20/17 Mon 1/23/17 RE
4 Milestone example 0 days Mon 1/23/17 Mon 1/23/17
5 Req Review 1 day Tue 1/24/17 Tue 1/24/17 3
6 Design 6 days Wed 1/25/17 Wed 2/1/17 5
7 Functional Design 3 days Wed 1/25/17 Fri 1/27/17 5
8 Technical Design 3 days Mon 1/30/17 Wed 2/1/17 7
Jan 15, '17
Jan 22, '17
Jan 29, '17
DETAIL GANTT

Questions?