MS Project Professional 2021

Tutorial #1– The Overview

CS 587 – Software Project Management Dr. Atef Bader Illinois Institute of Technology



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MS Project Professional 2021 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 will be your project plan

MS Project 2021 Supported OS

Windows users:

• Supported OS: Windows 10, Windows 8, Windows 2008R2 with .Net 3.5 or greater

MAC users:

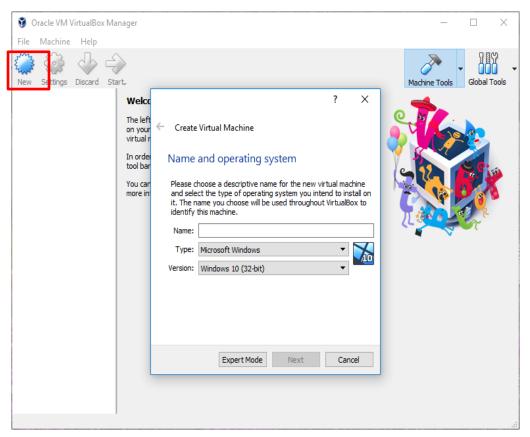
- Either install Windows on a virtual machine (VirtualBox, Parallels desktop or VMware)
- Or use Apple's Boot Camp (http://www.apple.com/support/bootcamp/)

Linux users:

- Either install Windows on a preferred virtual machine
- Or install Windows OS on a separate partition to use the software

VirtualBox for MAC and Linux users

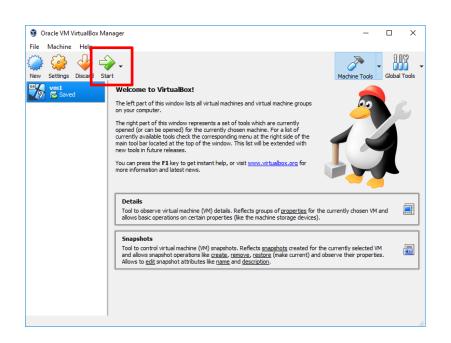
- You can download Virtual-Box from https://www.virtualbox.org/
- The image of Windows OS can be downloaded from the following URL https://iit.onthehub.com/WebStore/ProductsByMajorVersionList.aspx?cmi cs=1&cmi mnuMain=2b44b80c-dfc9-e111-971c-f04da23e67f6

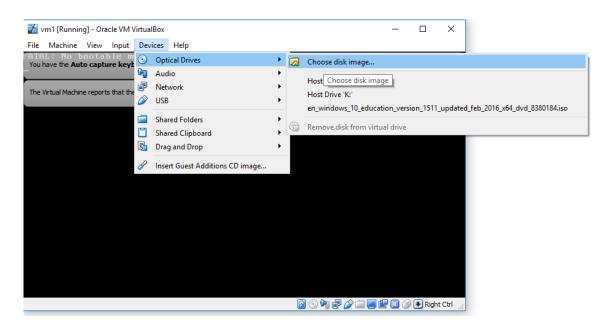


- Install VirtualBox by using the setup file
- Run VirtualBox
- Click "New" to create new virtual machine
- Specify Name and OS Version
- Specify Memory size
- Select "create a virtual disk now"
- Select Hard disk file type (VDI)
- Select storage on physical disk



VirtualBox for MAC and Linux users





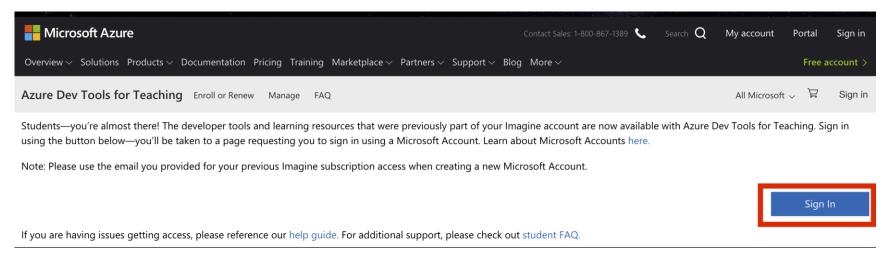
- Click "Start" to run the virtual machine
- The image of Windows OS can be mounted from Devices>>Optical Devices>> Choose disk image
- Restart virtual machine from *Machine>>Reset*
- Installation will start after the reset

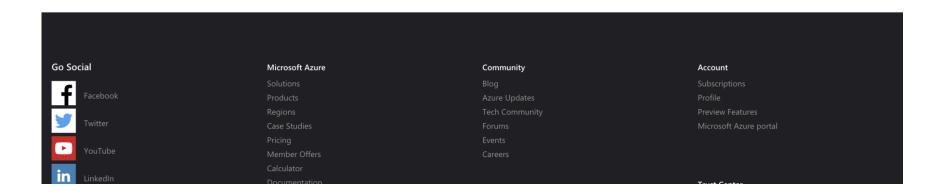
Download the software

- Download the project professional 2021 using following URL.
- URL: https://azureforeducation.microsoft.com/devtools
- Login is usually the university email address, e.g., <u>abc@hawk.iit.edu</u>. For first time login, sign up with different email ID and activate your student account (hawk) once logged in.
- After you log in, look for Project Professional 2021 in Learning Resources tab under Software, and download
- Copy and save the Product Key
- Follow the steps on the website for downloading the software

Step 1: Log in to Azure.

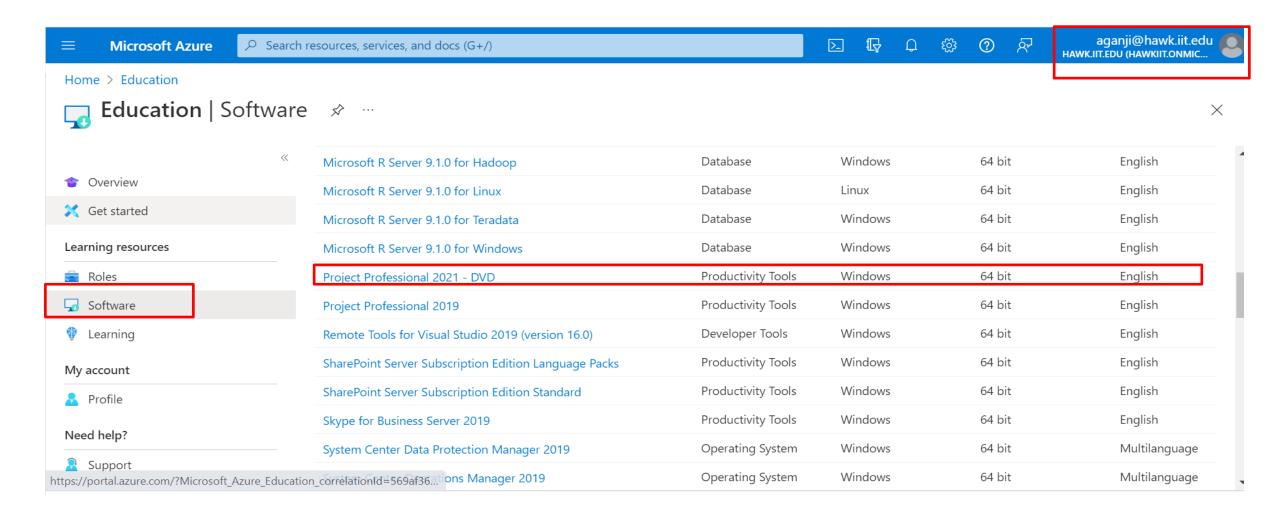
• Using the link: https://azureforeducation.microsoft.com/devtools



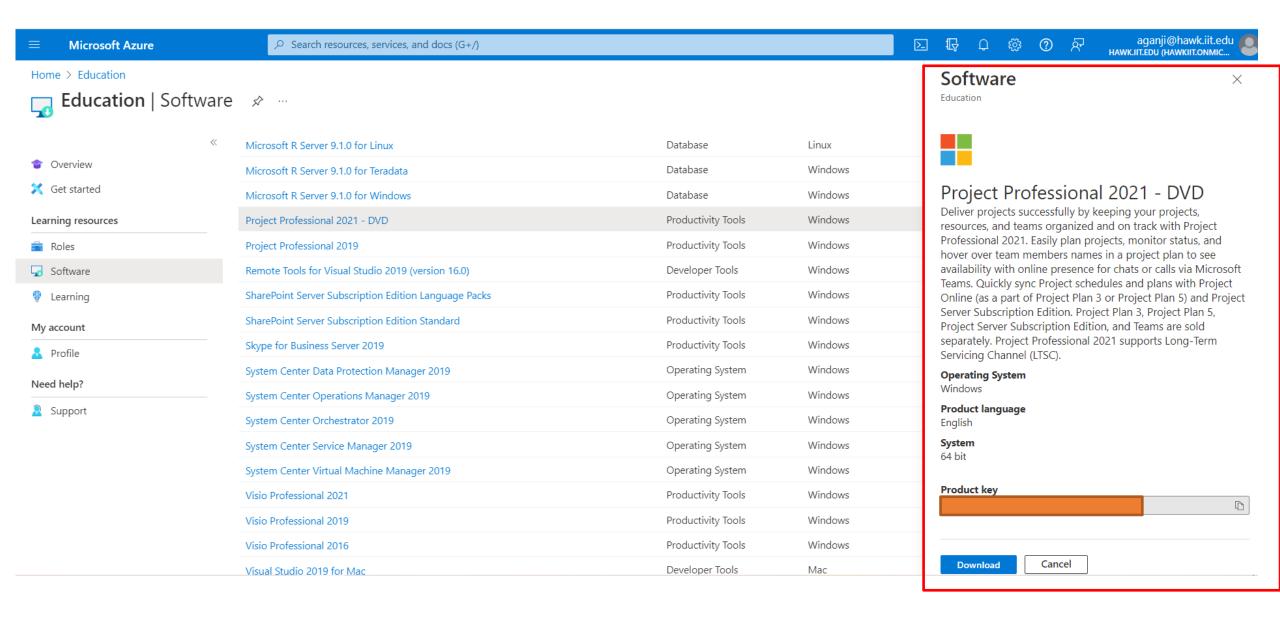


Step 2: Find the software

• Find the software and download it. Make sure to download the 2021 version.



Step 3: Copy and save the key, then download it.

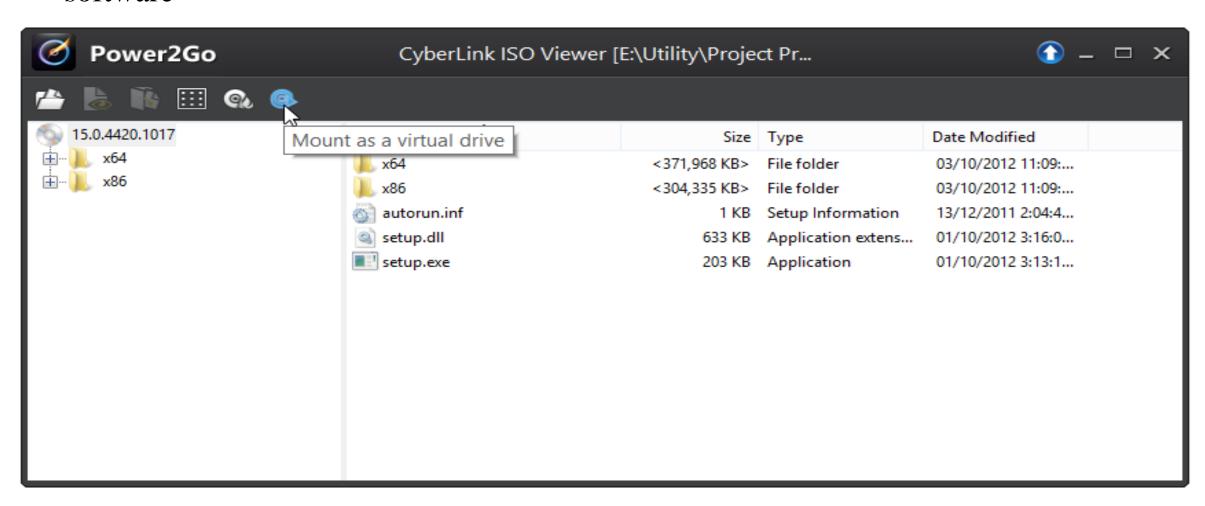


Mount ISO file on Virtual Drive

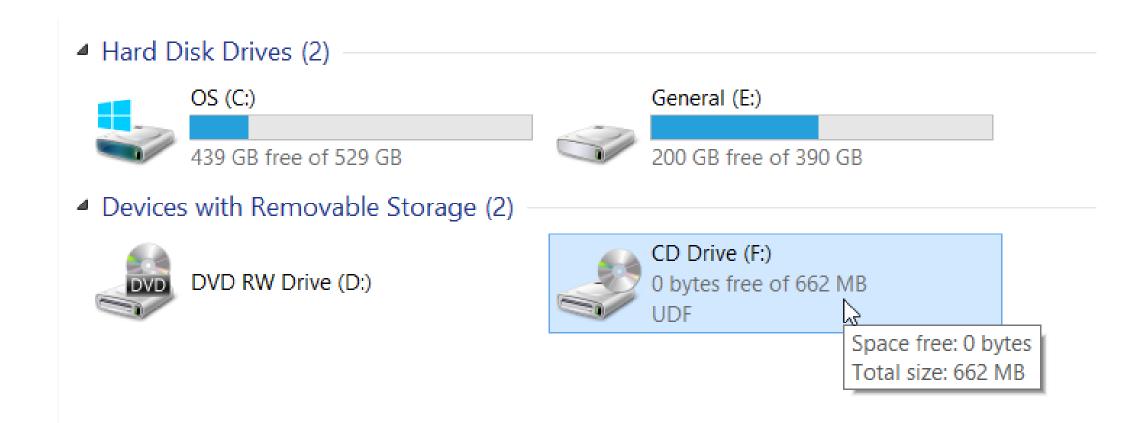
(Only for Non-Windows Users)

- Locate the folder named "Project Professional 2021 (x86 and x64) DVD (English)"
- Inside this folder, you will see the ISO(disc image) file named: "enus_16.0.10730.*** ProjectPro2021rC2R_retail_ship_combo_en-us_dvd"
- Double click this ISO file to open it on any disc burning software, such as Windows Disc Image, Power 2Go 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



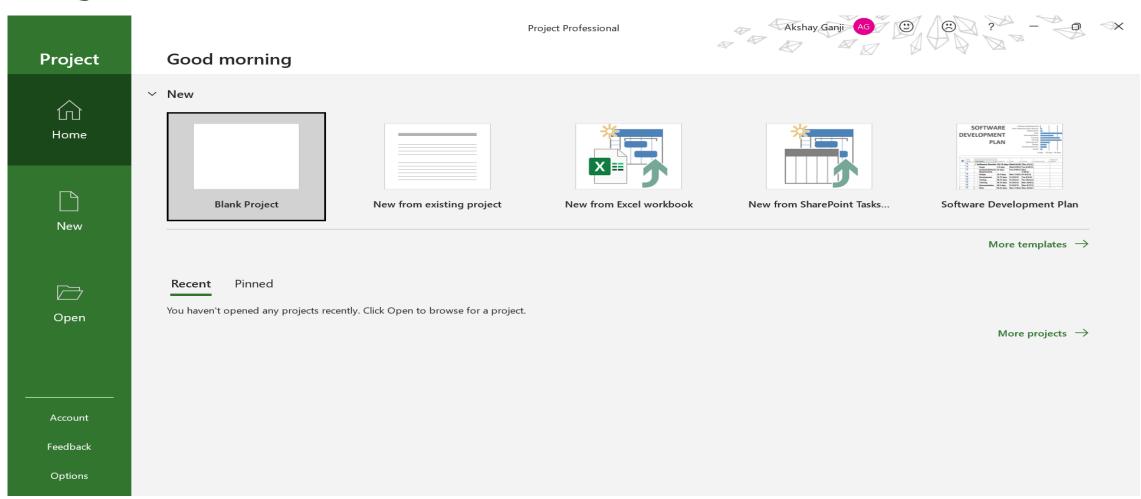
- After you have mounted the disc image, go to My Computer to locate the virtual drive, double click on it to run the setup
- Here CD Drive(F:) is the virtual drive, double click on it to start the installation



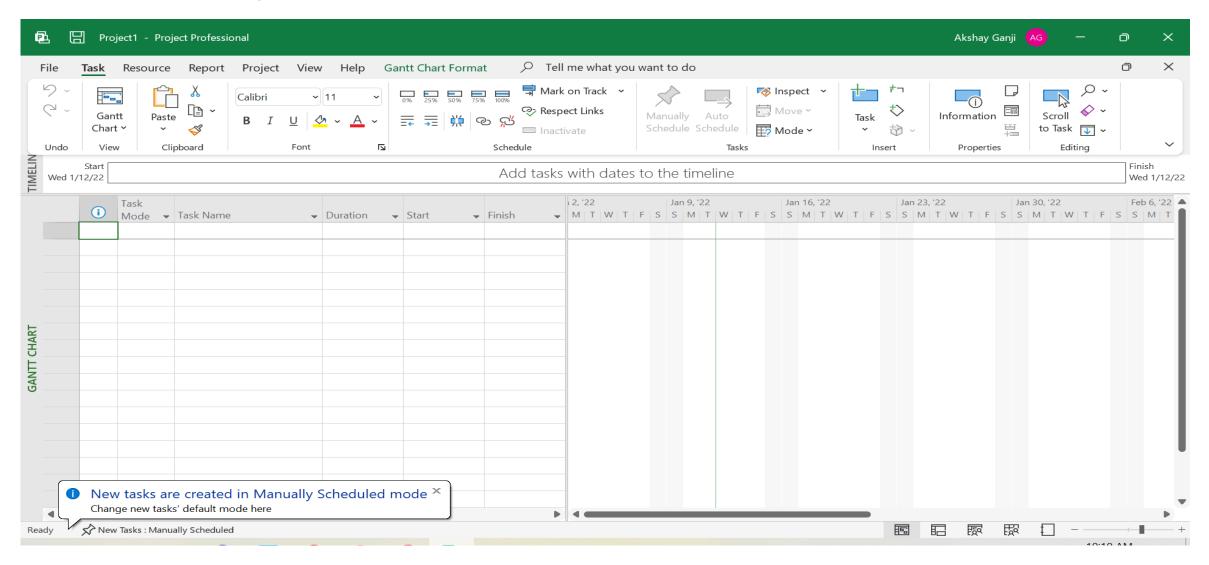
Step 4: Installation

- Run the setup from the virtual drive as shown in the previous slide, this will start the Microsoft Project Professional 2021 installation
- Agree to license and install the software
- After installation, you may need to restart the computer
- You should now be able to access Project Professional under Microsoft Office products containing Office, Excel, etc.
- When you open MS Project 2021 for the first time, register the product using the Product key copied from Azure for Education

Project 2021 After installation



Blank Project

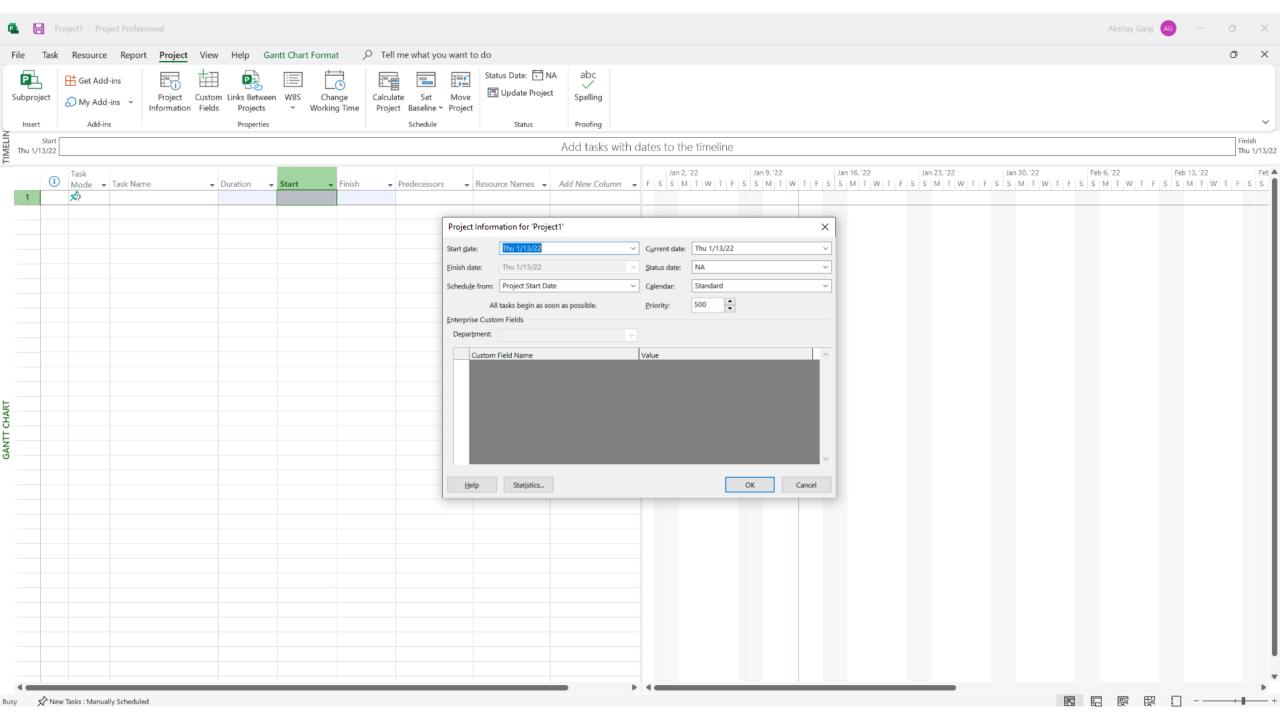


Project Management

- 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?

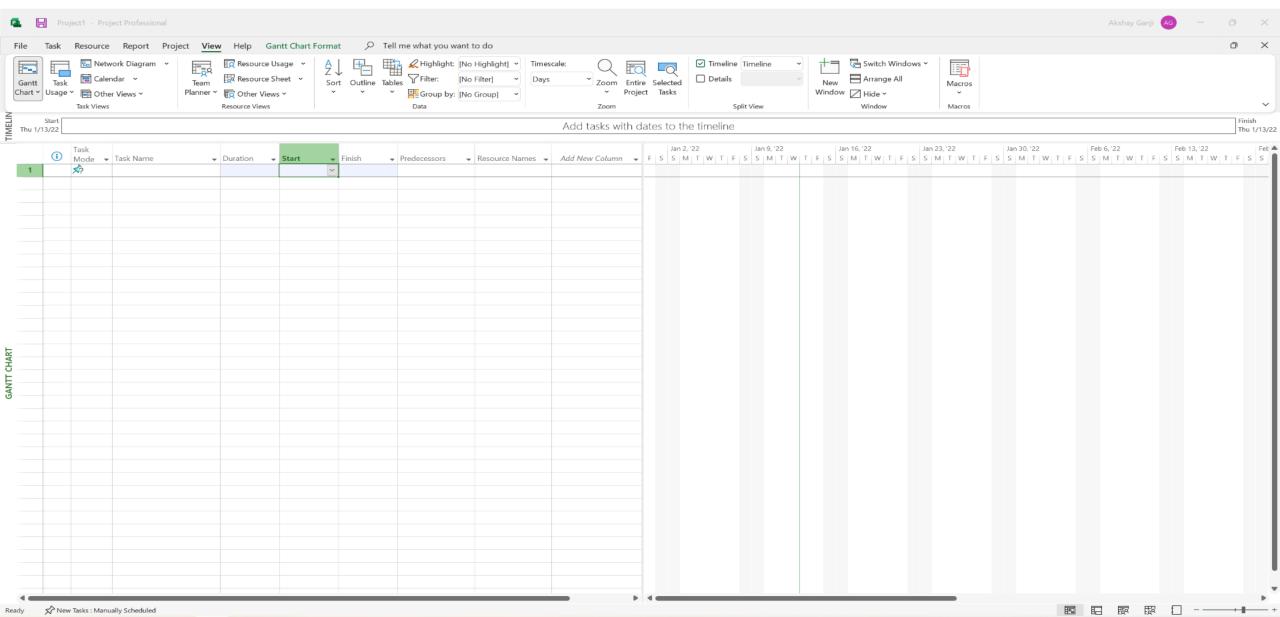
- Steps to create a project:
- Go to file, select new, click "Blank Project"
- Enter your project's start or finish date, but not both
- It's recommended that you enter only your project's start date and let Microsoft Project calculate the finish date after you have entered and scheduled tasks



Project View

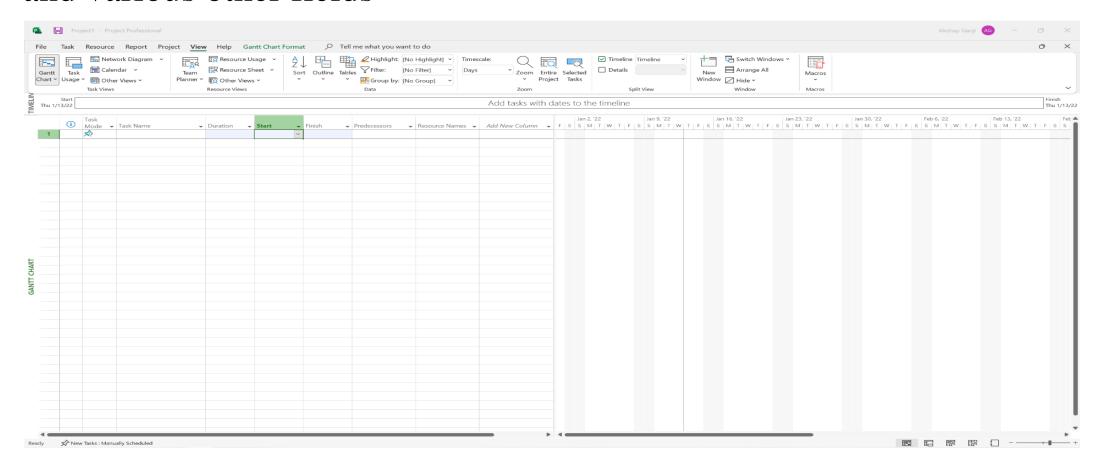
- Views allow you to examine your project from different angles based on what information you want displayed at any given time
- Project Views are categorized into two types:
 - Task Views
 - Resource Views

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



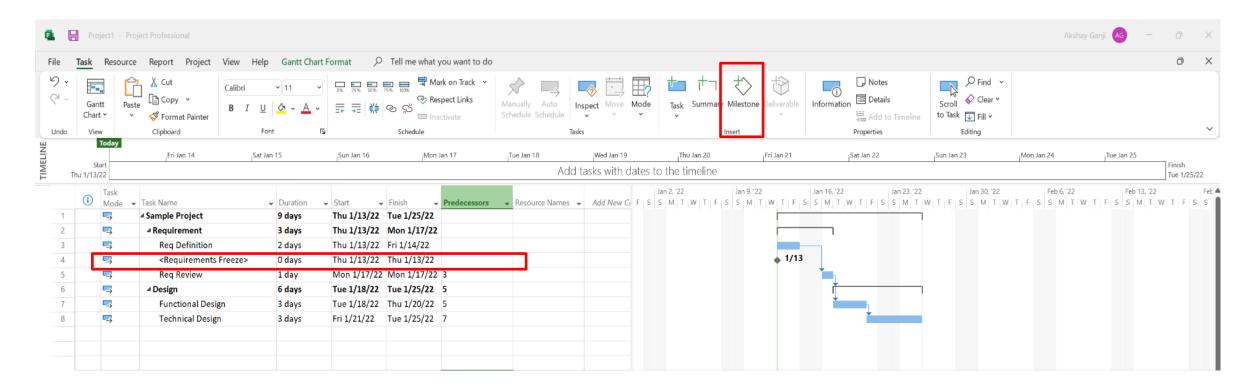
Gantt Chart

- 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 the corresponding activity number
- The software would calculate start and end date based on the fed information

		Today	Fri Jan 14	Sat Jan 15	,Su	n Jan 16	Mon Jan 17	Tue Jan 18	Wed Jan 19	Thu Jan 20	Fri Jan 21	Sat Jan 22	Sun Jan 23	Mon Jan 24
Т	Start Thu 1/13/22													
	(i)	Task Mode ▼	Task Name	Duration	Start •	Finish 🔻	Predecessors	▼ Resource Names ▼	Add New Column 🔻			an 16, '22 Jan 23		Feb 6, '22 N T F S S M T
1		=	△ Sample Project	9 days	Thu 1/13/22									
2		<u> </u>	⊿ Requirement	3 days	Thu 1/13/22	Mon 1/17/22						\neg		
3		<u> </u>	Req Definition	2 days	Thu 1/13/22	Fri 1/14/22						7		
4		<u> </u>	Milestone Example	0 days	Thu 1/13/22	Thu 1/13/22		RE			♠ 1/13			
5		<u> </u>	Req Review	1 day	Mon 1/17/22	Mon 1/17/22	3					1		
6		<u> </u>	⊿ Design	6 days	Tue 1/18/22	Tue 1/25/22	5					Ť		
7		<u> </u>	Functional Design	3 days	Tue 1/18/22	Thu 1/20/22	5					*		
8		<u> </u>	Technical Design	3 days	Fri 1/21/22	Tue 1/25/22	7					*		

Entering Milestones

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

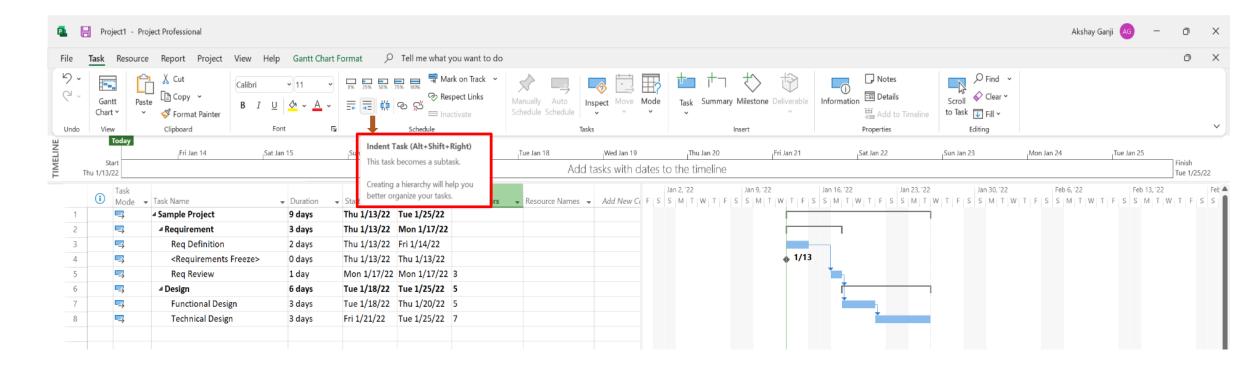


Organize Tasks into Phases

- 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

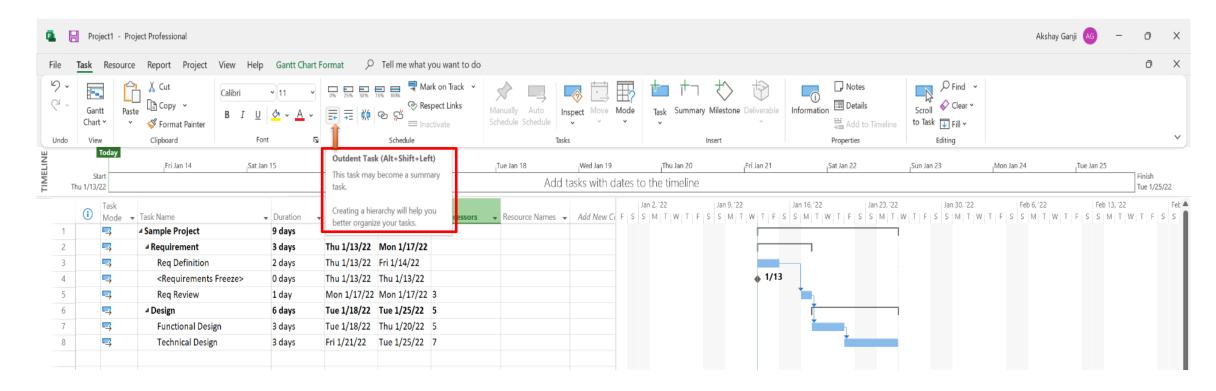
Organize task into phases

- 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 outdent to a higher level



Creation of Links between Tasks

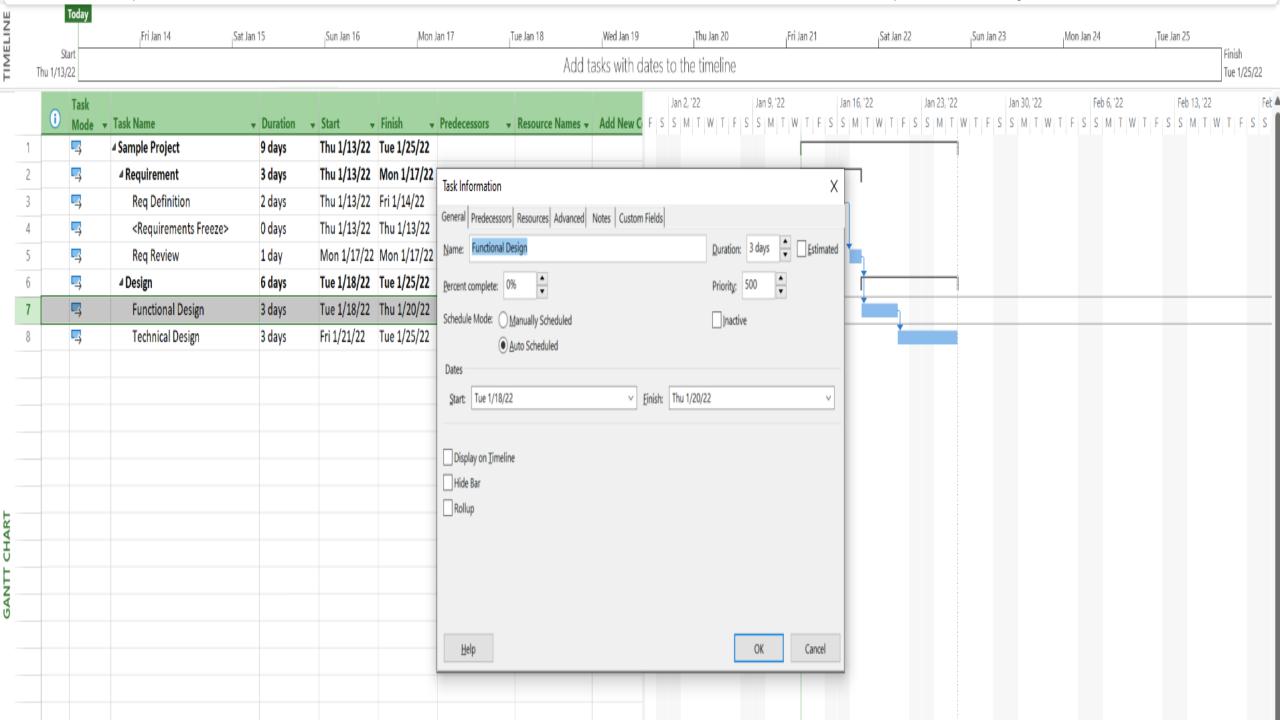
- Tasks are usually scheduled to start as soon as possible
- The duration of any task can be seen in the form of gray bars of varying length on the Gantt Chart in the timeline section
- A task that needs to be completed before are called predecessor task and the linked tasks are its successors
- By linking 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)



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

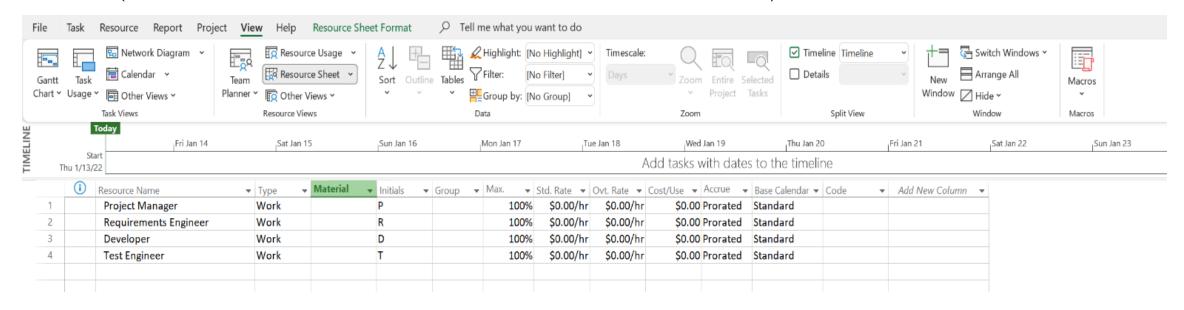
- Resources are of two types: Work resources and material resources
- -Work resources complete tasks by expending time on them; they are usually people and equipment that have been assigned to work on the project
- -Material resources are supplies and stocks that are needed to complete a project
- When a set of resources is available for working, they are listed with details in 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

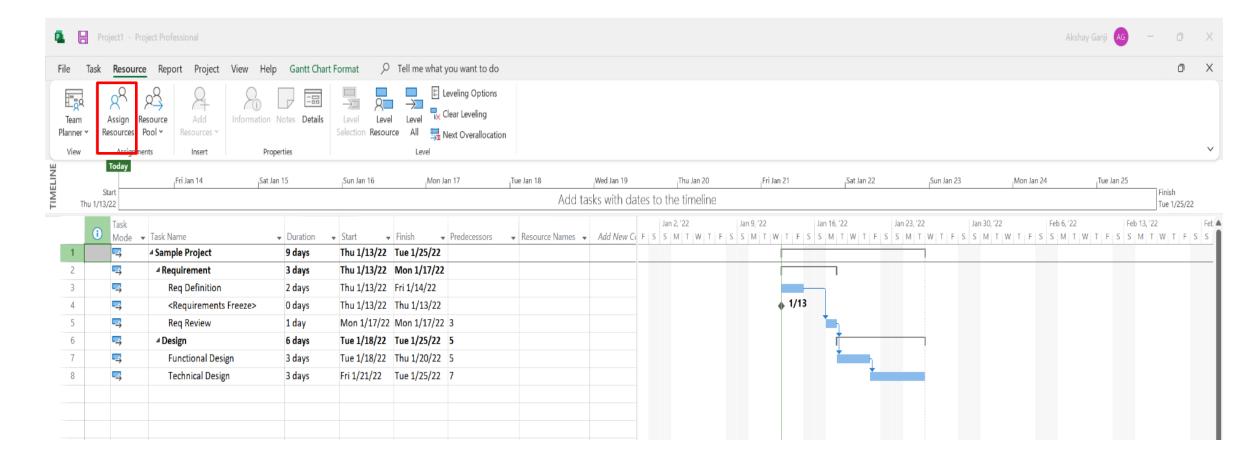
Steps to Enter Resource Information in Project

- 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)

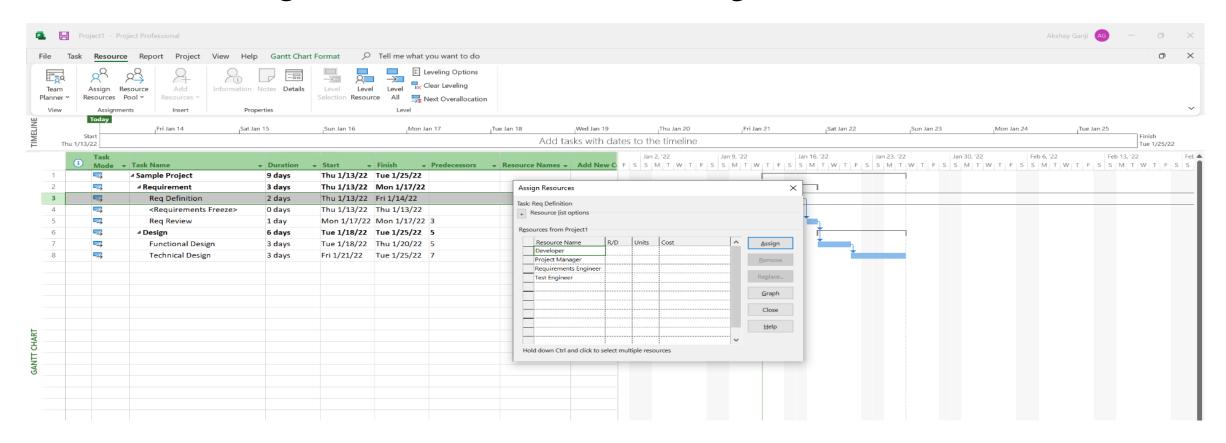


Steps to Enter Resource Information in Project

- 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

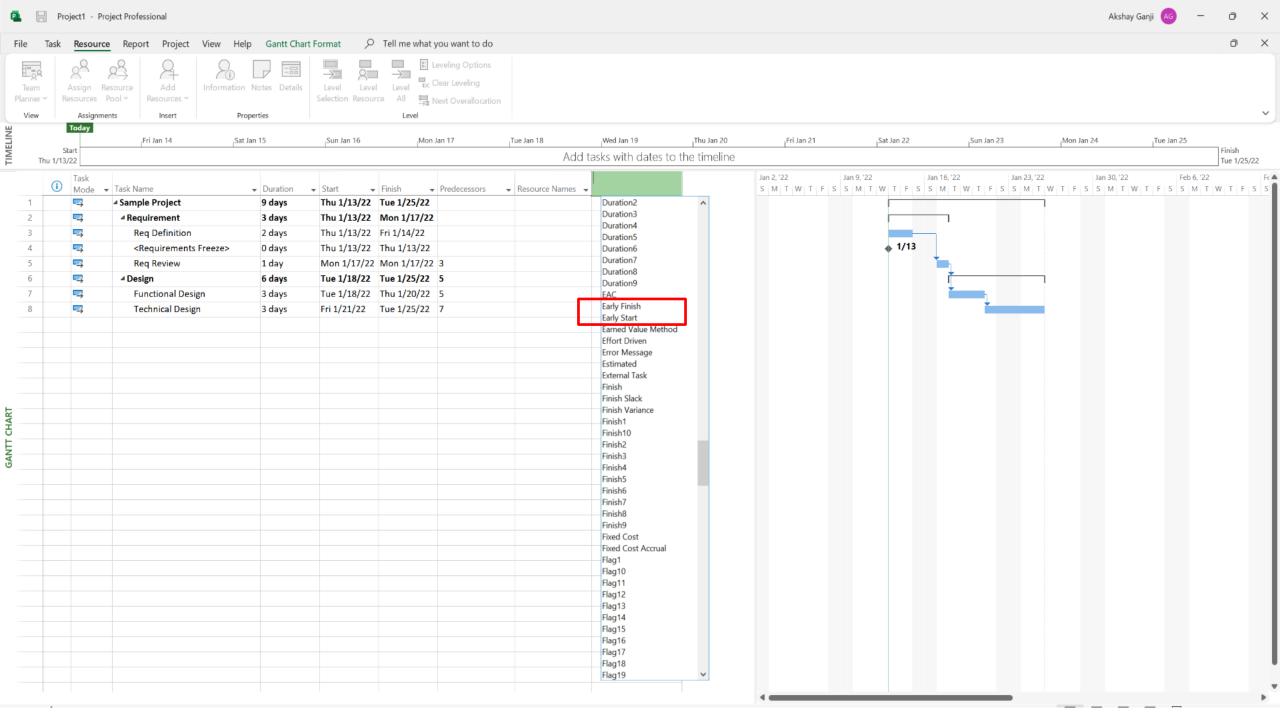


Critical Path

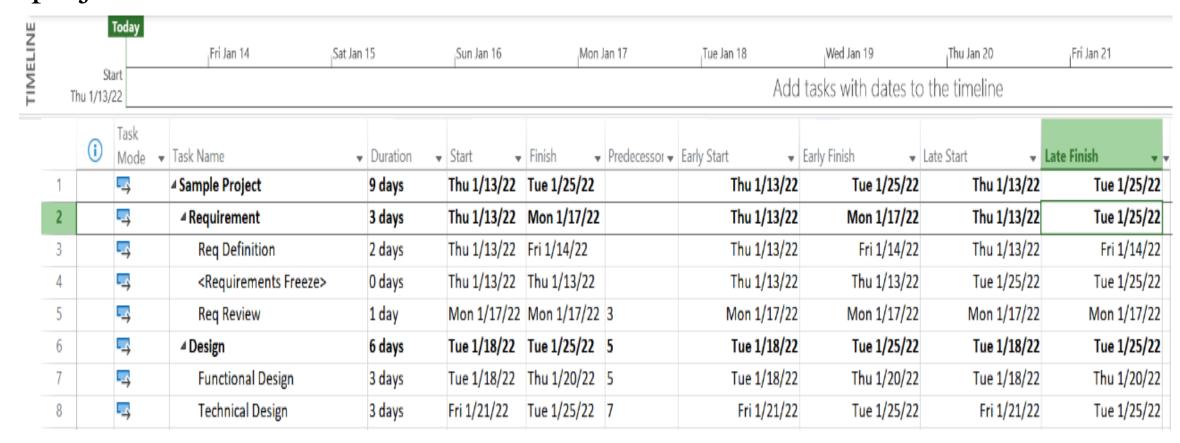
- The critical path is the series of tasks (or even a single task) that dictates the calculated finish date of the project, i.e., when the last task in the critical path is completed, the project is completed
- When you first create a task, its early start and early finish dates are the same as the scheduled 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

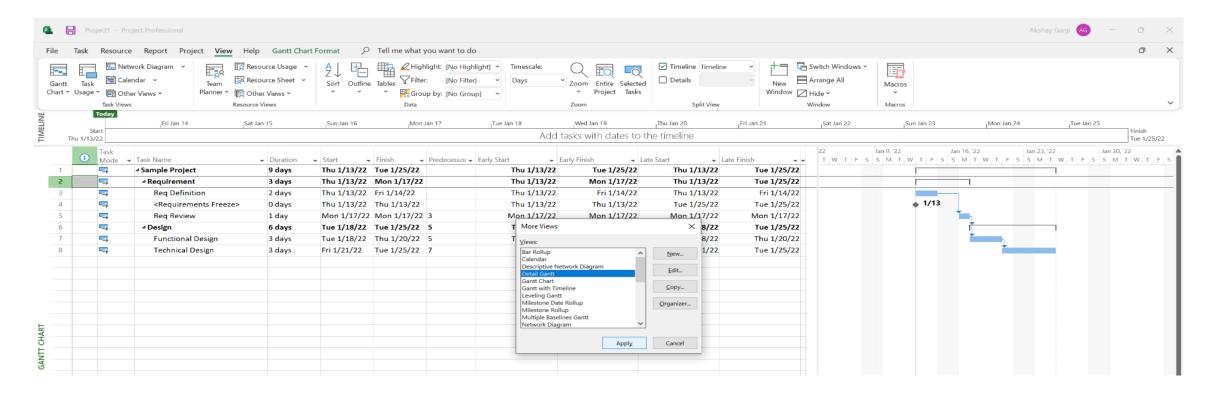
- For finding Critical Path, list all the activities and enter early start, late start, early finish and late finish information of all the activities
- You can do this by right click, select "Insert Column", then select "Early Start(ES)", "Early Finish(EF)", "Late Start(LS)", "Late Finish(LF)", respectively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



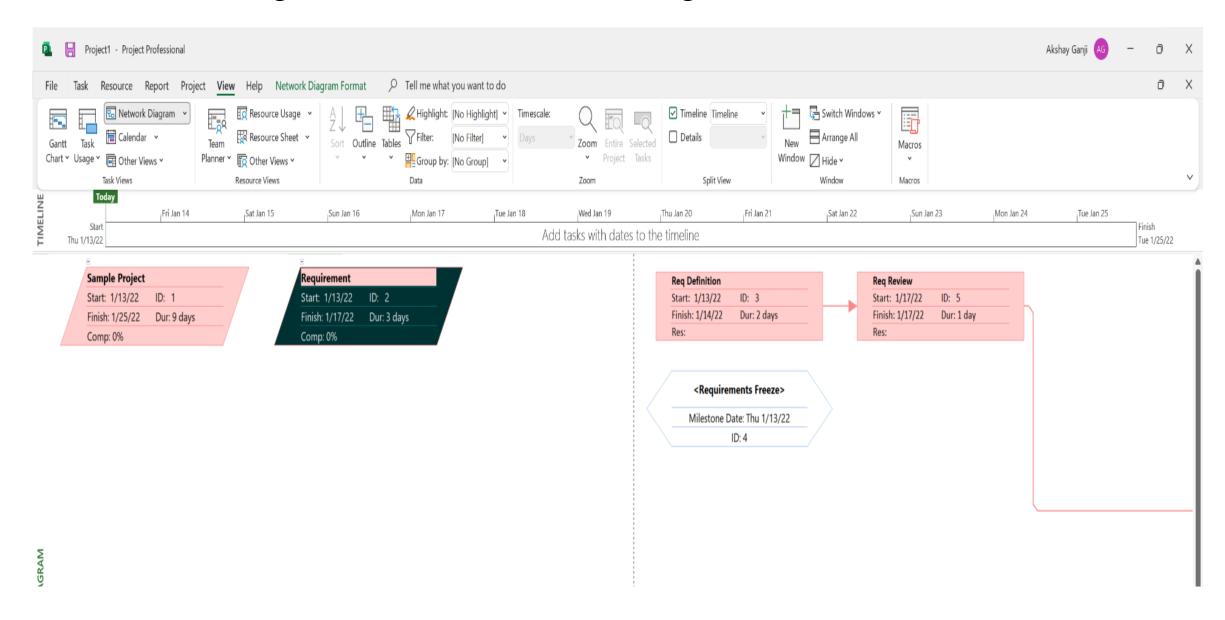
• The screen shot below shows the ES, EF, LS, LF dates included in the project



- 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



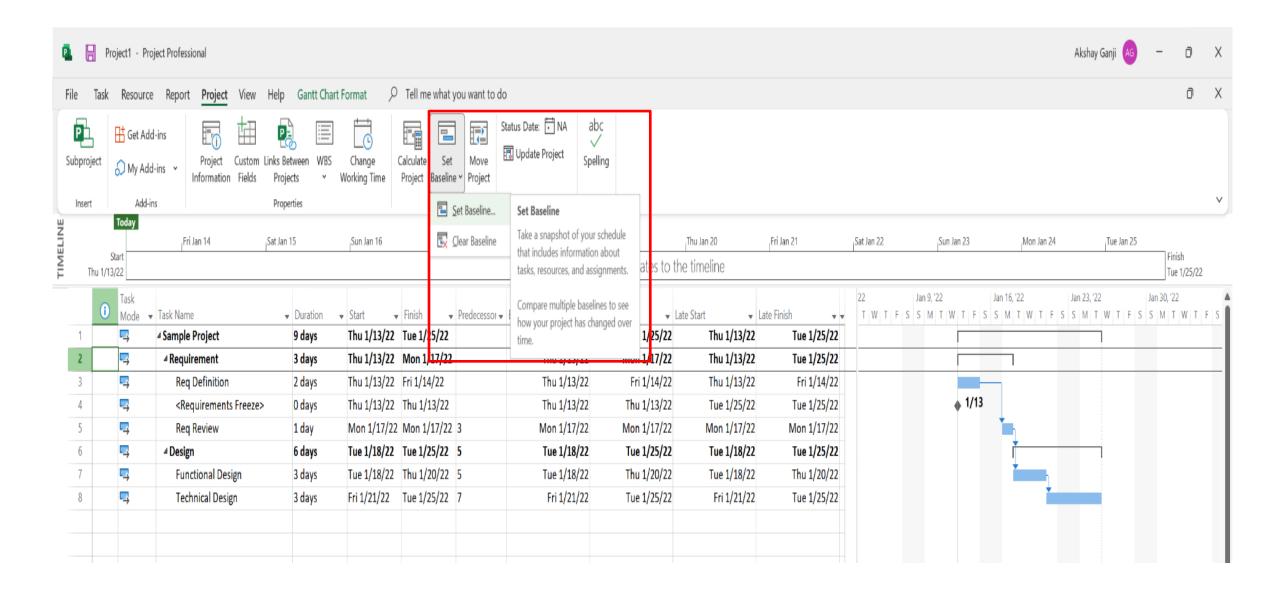
• In Network Diagram click on Network Diagram



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



Questions?