

ASSIGNMENT-3
CS 587: Software Project Management
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7. What is the earliest finish date for this project if it is scheduled to start on 10/31/16?

The earliest finish date for this project if it is scheduled to start on 10/31/2016 is 2/20/2017 (80.9 days).

8. Can this project be completed 2 months after it starts? Explain why yes or no.

It is not possible to complete the project within 2 months after the project starts with the available resources. All the three projects use shared resource and the duration of the project is 80.9 days. Therefore it is not possible to complete the project within 2 months.

10.

Project 1 starts on 9/26/16 and ends on 2/28/17

We are initially given a pool of resources to work on project 1 exclusively and we allocate them in such a way that duration comes to a minimum value without overloading the resources. The resource usage is checked before allocating so that there is no clash i.e. they should not be involved in other tasks.

Project 2 starts on 10/17/16 and ends on 4/18/17

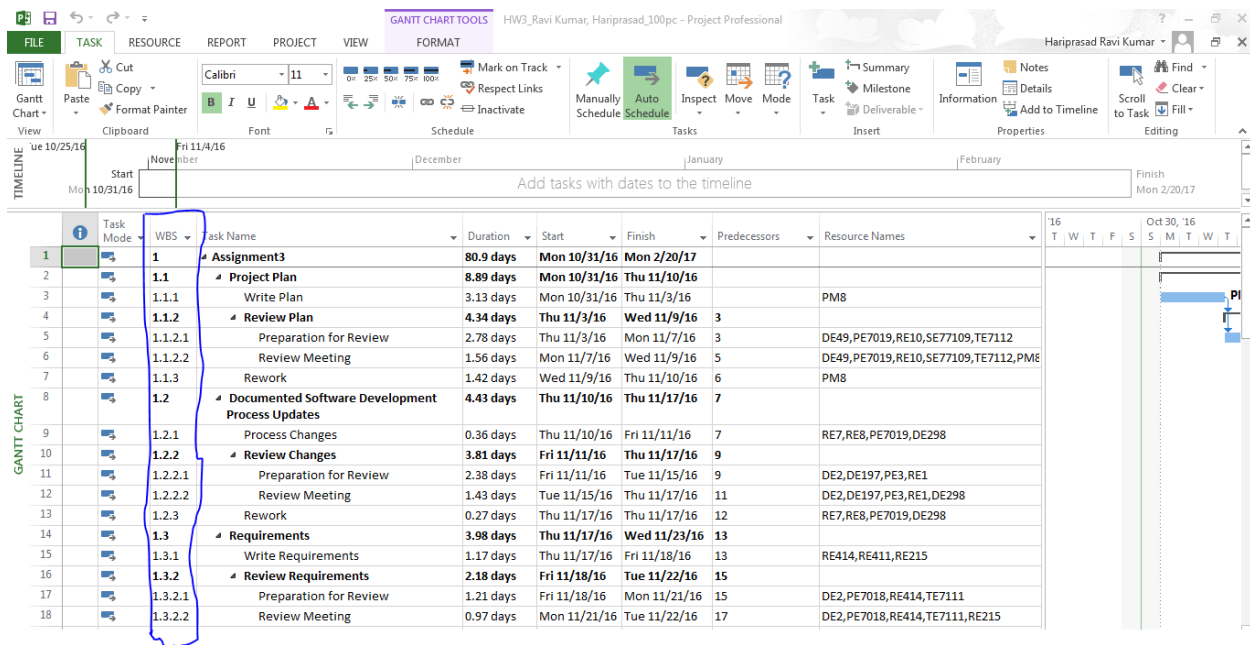
In this project we should share the resources from Project 1 and also use some of the additional resources who will work on Project 2. While allocating resources we sometimes need to advance the end date of the tasks as the resources are busy working on tasks in Project 1. Due to this the finish date for Project 2 gets extended.

Project 3 starts on 10/31/16 and ends on 2/20/17

In this project we should share resources from Project 1 and Project 2 and also the additional resources for Project 3. We need to check the availability of the resources before allocating them to Project 3. They will be busy in tasks of Project 1 and Project 2 and so the finish date may get extended for certain tasks and for the project.

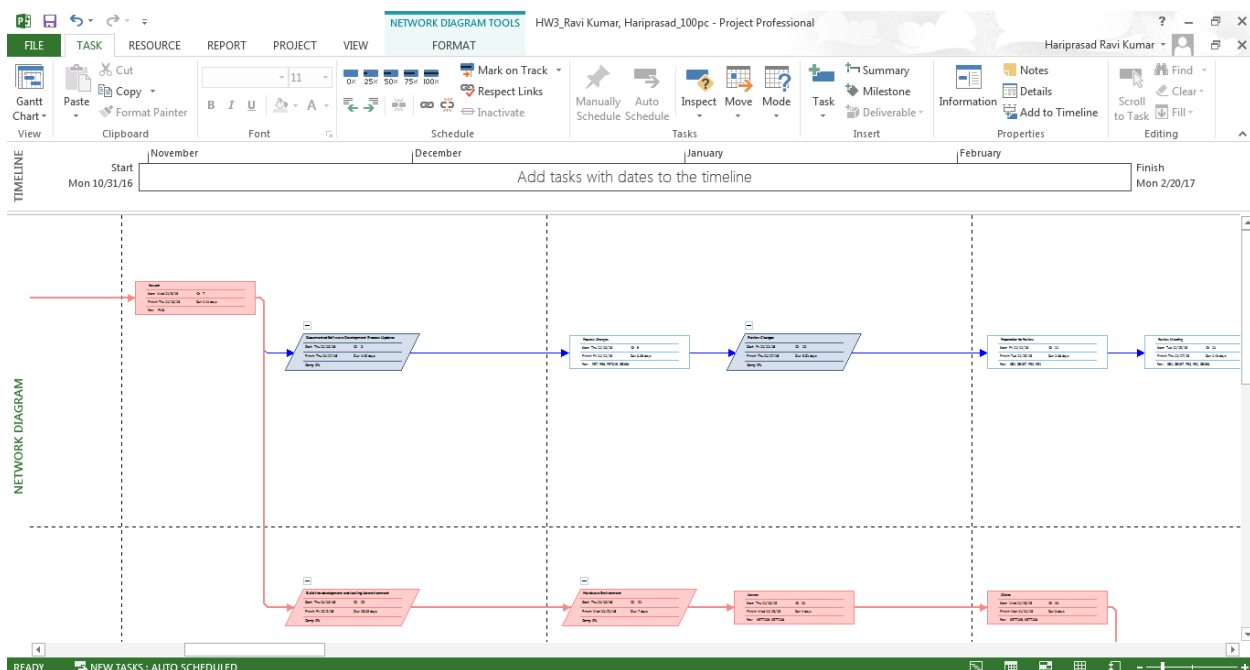
WBS:

Work Breakdown Structure gives a hierarchical distribution of the tasks in the Project. For Instance, Write Plan, Review Plan and Rework are subtasks of Project Plan. In turn Preparation for Review and Review Meeting are subtasks of Review Plan. This is indicated by the WBS column where the numbering is used to show hierarchy. The same applies to all the phases of the project.



Network Diagram:

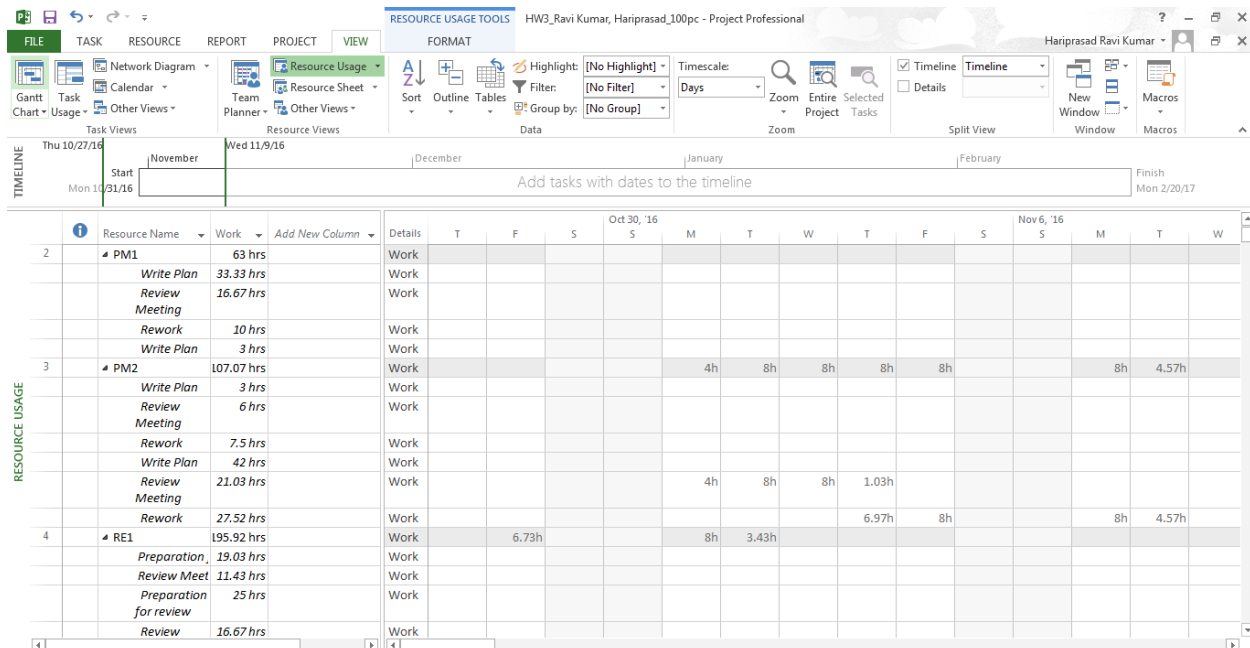
It is a pictorial representation of the phases of the project. The predecessors are used to build the diagram by establishing the dependencies and constraints. For instance, the coding phase cannot start without the completion of requirements and design and analysis phases but documentation can start soon after requirements phase is done. These need to be established to ensure correct flow and allocation of resources which will affect the finish date of the project.



Resource Pool Utilization:

Project 3 starts when the project1 and project 2 is still in progress. Resources allocation should be done effectively so as to use new resources allocated for project 3 while other resources are shared among all three projects. Resource sharing must be mutually exclusive and no resource can work on two projects simultaneously. Since all three projects share resources over allocation is possible. Over allocation of resources should be taken care of. Utilization of the resources allocated for new project should be maximum. In that way we can avoid overlapping of resources shared with other two projects.

It gives the information about which resource is occupied at which date. It gives the number of hours they have worked too so that we can make sure we don't allocate more than 8 hours per day and 40 hours per week for a resource. It shows in red if any resource is over allocated. For the three projects, all the resources are allocated tasks except for PM3. Some are involved in tasks of any of the projects based on availability. If there are clashes then the end tasks are extended.



Assumptions:

- 1) All the assumptions made are based on the Software Engineering Principles.
- 2) Project Plan is written by Project Manager, and Reviewed by Engineers from each Department. Review meeting is conducted in presence of Engineers from each department along with the Author who is the Project Manager.
- 3) All the phases (Write modules) have been carried out by specific field of Engineers. i.e Write Requirement Phase involves Requirement Engineers.
- 4) Write Code and Write Test Plan is performed by the Program Engineers and Test Engineers Respectively.
- 5) During testing phase, the Defects found by the Test Engineers will be fixed by the Program Engineers.
- 6) Preparation for Review and Review Meetings -> The Duration of the Task will not be reduced irrespective of the Number of Resources since they are Independent Tasks.
- 7) All the Task Dependencies and Constraints have been followed.