

Project:

The word project is basically derived from the Latin word *projectum* which means “before an action”. When English literature adopted this word, it was declared as plan of something, not to the act of actually carrying this plan out. It is a set of organized tasks to be executed over a period of time within certain constraints and cost. A project is a comprehensive task which can be assigned to a person or a team. There are different definitions regarding the project.

A project is an individual or collaborative enterprise that is carefully planned to achieve a particular aim.

Oxford Dictionary

A project is a “temporary endeavor undertaken to create a unique product, service or result”

Project Management Institute (PMI)

A Guide to the Project Management Body of Knowledge

(PMBOK Guide Third Edition, 2004, Page. 4)

Project Management:

Project management is the application of knowledge, skills, tools and techniques to plan activities to meet project requirements. Project management consists of following phases:

- Initiating
- Planning/ Scheduling
- Executing
- Controlling
- Closing

In initiating phase of project management project selection is performed. This phase defines the scope of the project. Moreover, it identifies and document project constraints, requirements and stakeholders as well. **Planning** is the most important phase of project management. As an old proverb says, “Plan the work, work the plan.” Planning is an art of converting a set of objectives to reality by a series of steps executed in an organized way. *In this phase work breakdown structure of the project is created.* While in the **Scheduling phase** the planned activities are formalized, resources, time duration, and sequences of steps are assigned after consultation with group members. These two phases are started before the actual project starts.

However, in **Executing phase** scheduled activities or tasks are executed. Team performance is improved and approved changes are implemented. Furthermore, resource allocation is managed and project resources are also obtained. **Monitoring or Controlling phase** is taking place at the time of actual implementation of the project. In this phase revision of initial schedule to reschedule or re-plan is determined during implementation to compensate resources, application techniques, and cost. The status of all identified tasks is monitored as well. Moreover, changes to the project scope, schedule, and cost are managed and verified. In the final phase of project planning, i.e. **Closing phase** project activities,

all pre-defined requirements are closed out into a complete project. In addition, project history, document and record is retained.

There are some common tools and techniques are available for project management process by knowledge area. Some of them are listed here.

Category/Knowledge area	Tools and Technique	Super Tools
Scope Management	<ul style="list-style-type: none"> • Statement of work • Scope management plan • Scope verification techniques • Scope change control 	<ul style="list-style-type: none"> • Scope statement • Work breakdown structures • Requirement analysis
Time Management	<ul style="list-style-type: none"> • Project network diagram • Schedule performance measurements • Fast tracking • Critical path analysis 	<ul style="list-style-type: none"> • Gantt charts
Communication Management	<ul style="list-style-type: none"> • Communication management plans • Conflict management • Communications media selection • Virtual communications • Status reports • Template • Project websites 	<ul style="list-style-type: none"> • Kick-off meetings • Progress reports
Cost Management	<ul style="list-style-type: none"> • Project budget • Cost management plans • Project portfolio management 	
Human Resource Management	<ul style="list-style-type: none"> • Project organizational charts • Resource histograms • Team building exercise • Responsibility assignment matrices 	

Table: 1 (Information Technology Project Management by Kathy schwalbe)

So far we have discussed about project and project management steps. Here are some tools which are used for the project management tasks. We will use Microsoft Project professional. Before starting this tool, define some terms used in Microsoft project management.

Task: Every unit of work which consumes money, time, and effort is called task.

General Task: These tasks are the usual tasks that are independent and have no special characteristics related to their duration or time.

Milestone Task: These tasks have no duration. They serve as markers or reference nodes for significant accomplishments in a project.

Recurring Task: Recurring tasks, as the name suggests, occur repeatedly at regular intervals. A recurring task can be scheduled in a project plan cycle as daily, weekly, monthly, or yearly. This scheduling of task depends on the nature of seriousness of the task which determines how often the task needs to recur.

Schedule: A plan consisting of the start and end dates of each task.

Rescheduling: This implicates modifying the start or finish dates of a task.

Gantt chart: It is a pictorial view which depicts extension of tasks across days along with the corresponding resources.

WBS: It stands for a work breakdown structure. It is a hierarchical and incremental decomposition of the project into phases, deliverables and work packages.

Constraints: they are defined as a limitation of the projects that negatively affects the quality and schedule of the project.

Deadline: It is the strict finish date for a particular task.

Dependency: It is defined as the dependency between tasks when a particular task cannot begin until its preceding task is completed.

Split Task: A split in a task is defined as an abrupt and sudden interruption in the planned schedule.

Resource: Resources are means that help convert the input of a task into output for the task.

Baseline: They are indicators that helps to compare the actual start date with the planned start date of a project.

Cost: It is an important aspect of project scheduling which ensure the use of resources.

Project report: It is created to display project-related information in a tabular format, which is easily comprehensible.

Microsoft Project Professional:

To manage the projects in an efficient way, consider the project as an entity that can be decomposed into parts to analyze and resolve. As it is a common technique to break the problem into pieces, then analyze and solve each part individually because it is easy to focus on small problems. Microsoft project enables us to perform WBS (Work breakdown structure) on our projects. WBS technique helps us to divide the project into units which are called task. After performing WBS we have to identify that which

tasks will be the milestone, general or recurring tasks. Generally projects are divided into five phases which are:

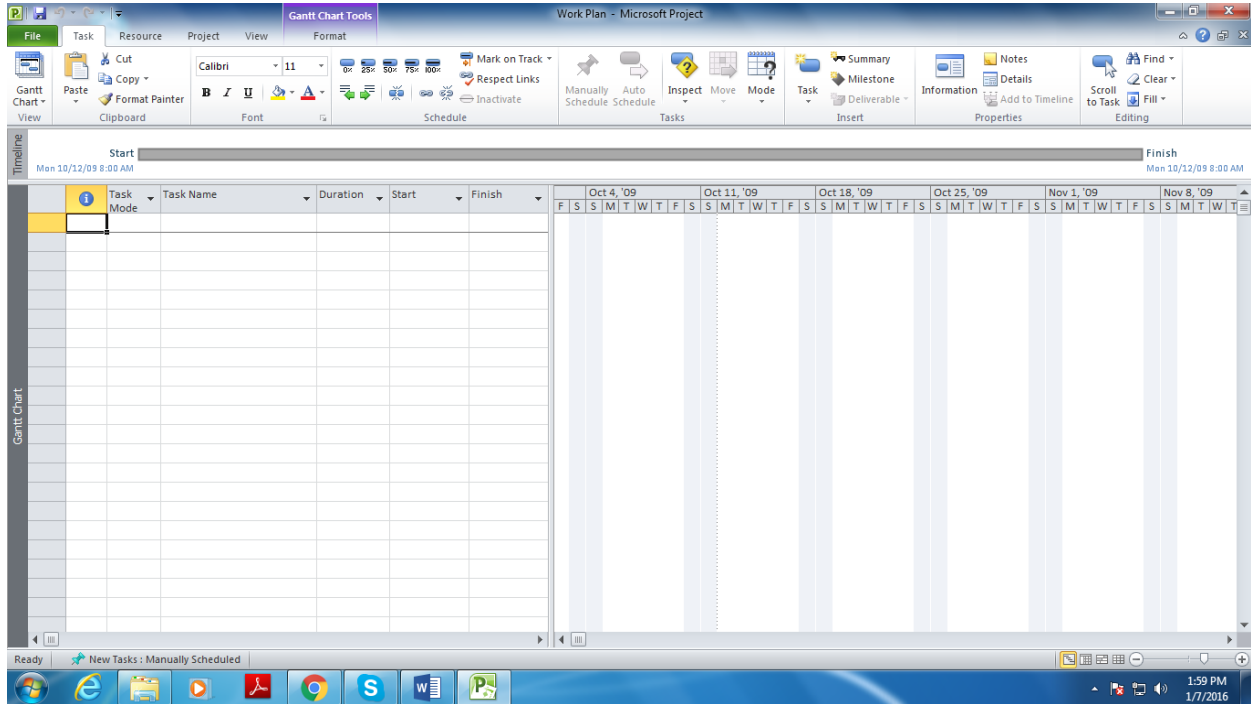
- Analysis
- Design
- Development
- Testing
- Implementation

Recall the case study of CarMatch, here we will make the work plan or schedule of the SRS document of CarMatch system. Here the milestone task will be requirement specification documents, i.e. SRS , while the other tasks are as follows:

- Scope of project
- Functional and non-functional requirements
- Use case diagram
- Usage scenarios
- Adopted methodology

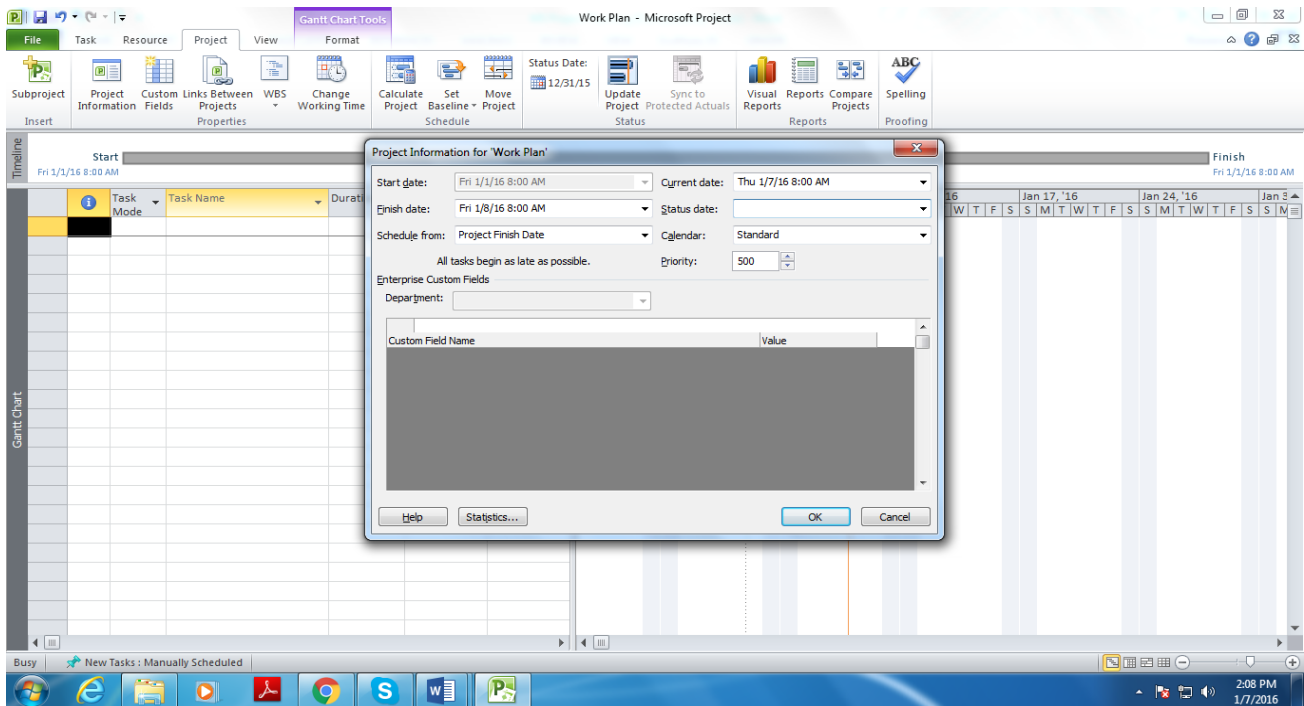
Step 1:

Open Microsoft project professional and create new project.



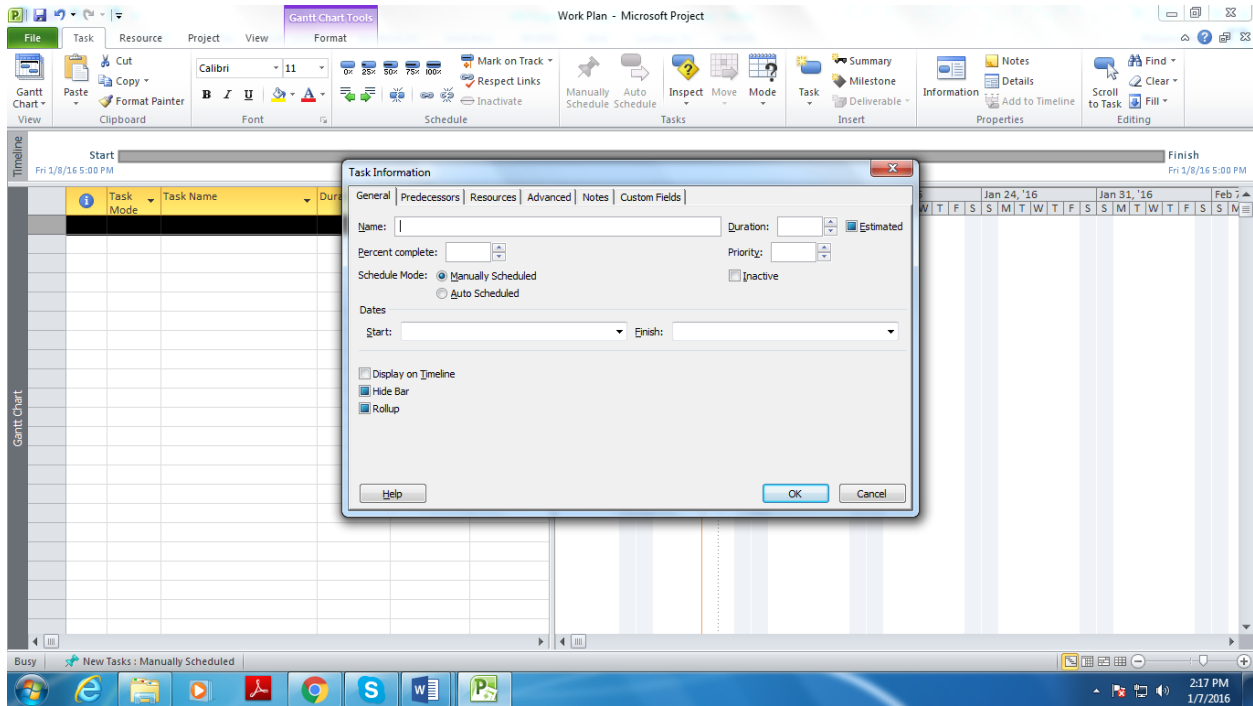
Step 2:

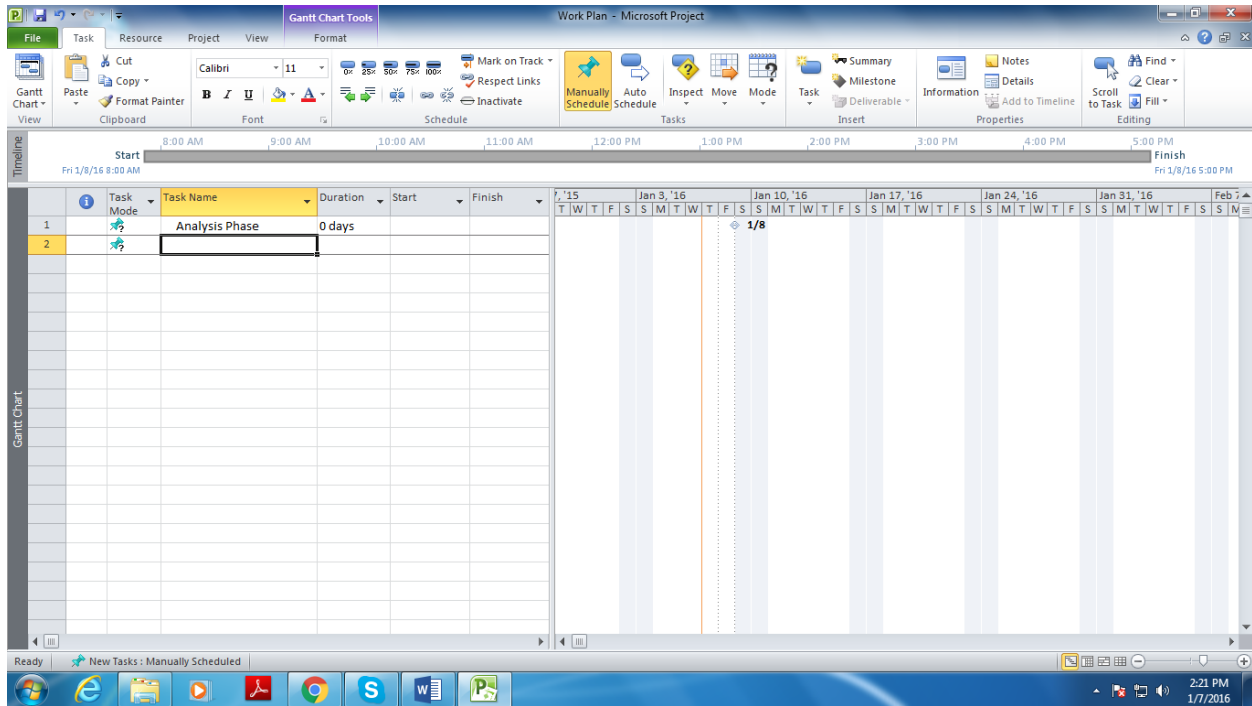
Go to the project tab, open project information. Here you can set project start date, finish date, and calendar type as well. Enter the information about project and then click 'OK' to save.



Step 3:

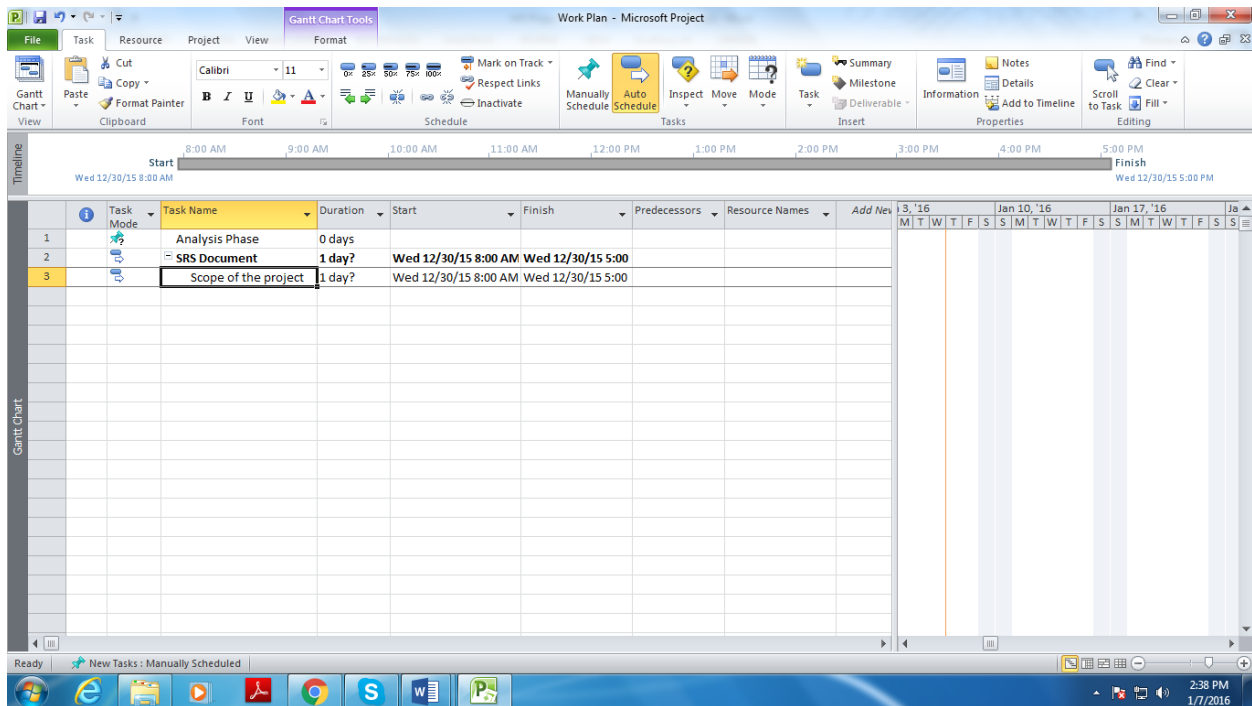
Now add tasks of your project, task can be milestone, general or recurring. Adding task, click on Task tab and go to information menu to add information about task. Remember here, if you want to add milestone task then write zero in duration. By default the time period will be in days but you can change it into hours and minutes also. In our case, milestone will be the analysis phase in which the SRS document will be completed.





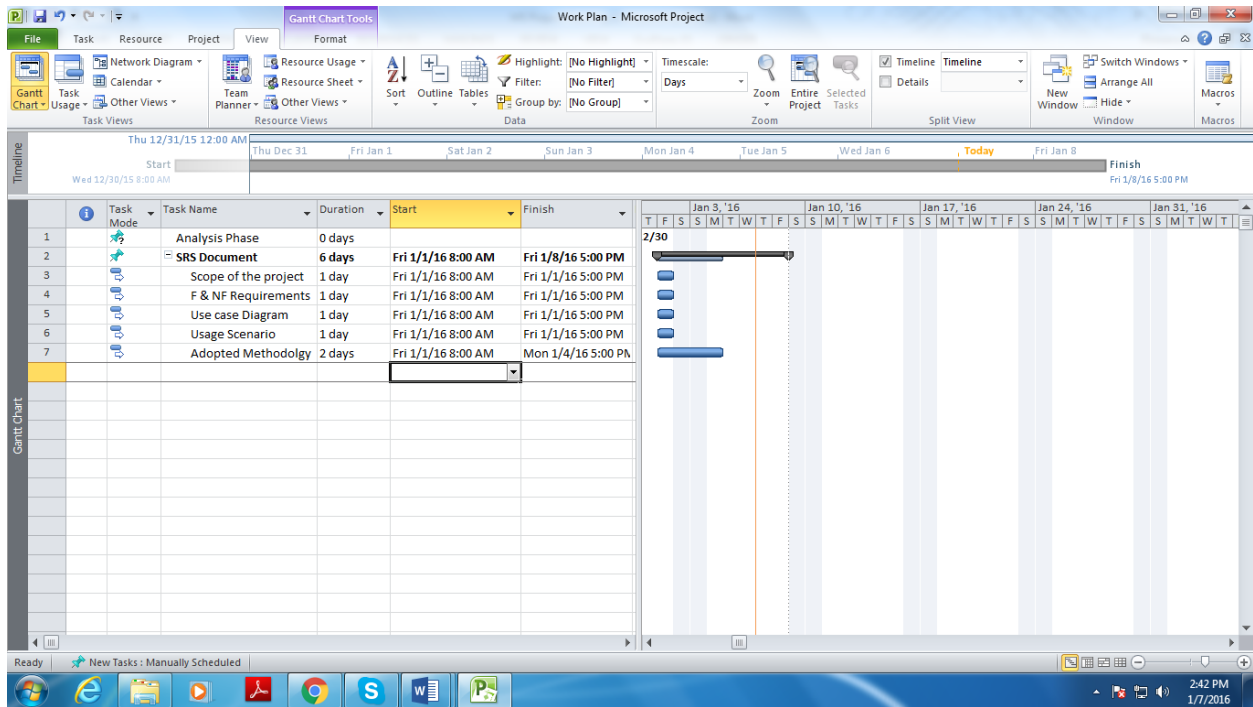
Step 4:

Add the SRS document under Analysis Phase and make it as major task. Then add sub tasks under SRS Document which can be scope of the project, functional and non-functional requirements etc, and set them as scheduled task. Moreover, indent arrows to make the tasks as sub-task or summery task.

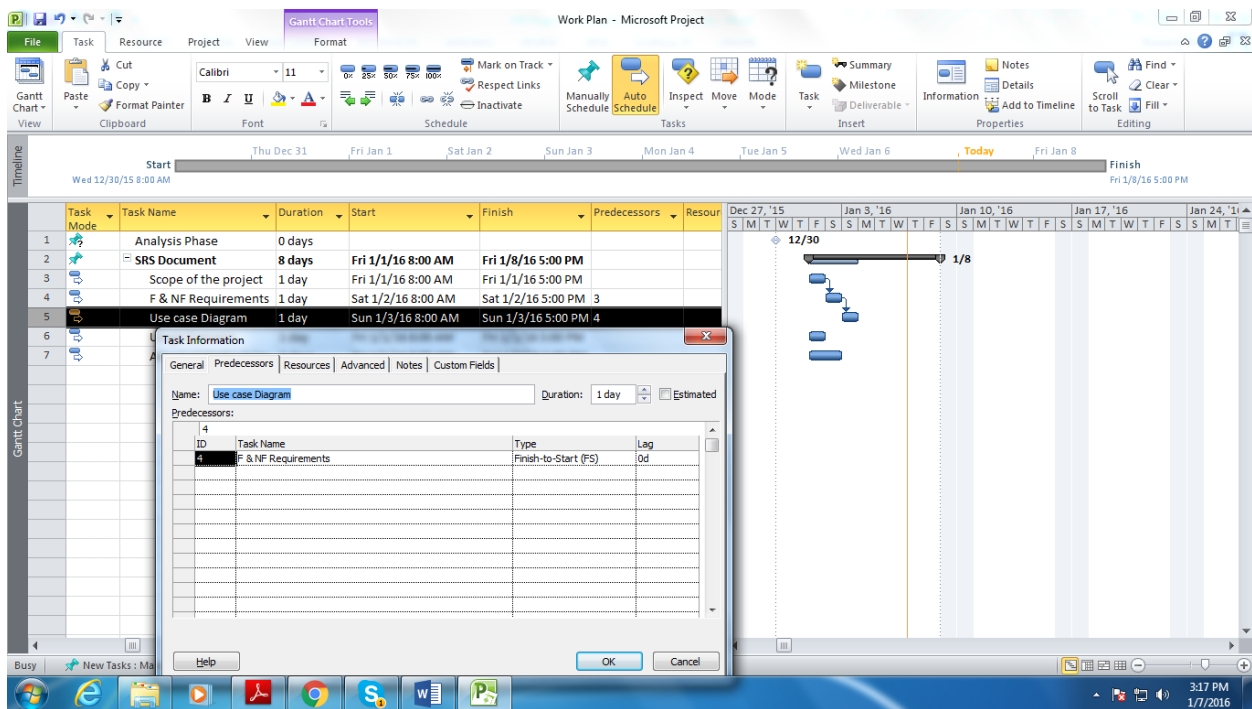
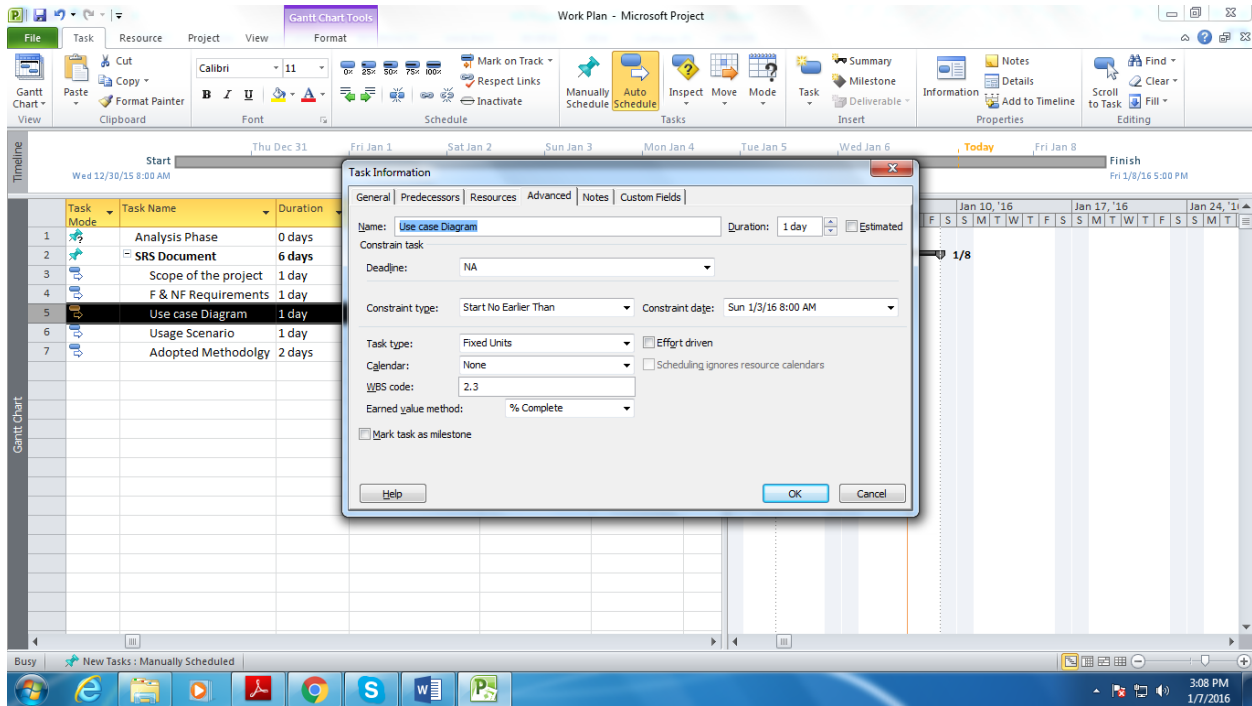


Step 5:

Add remaining sub tasks of SRS document. Go to the View tab and click on Gantt Chart View, here you can see the Gantt chart of the all the task

**Step 6:**

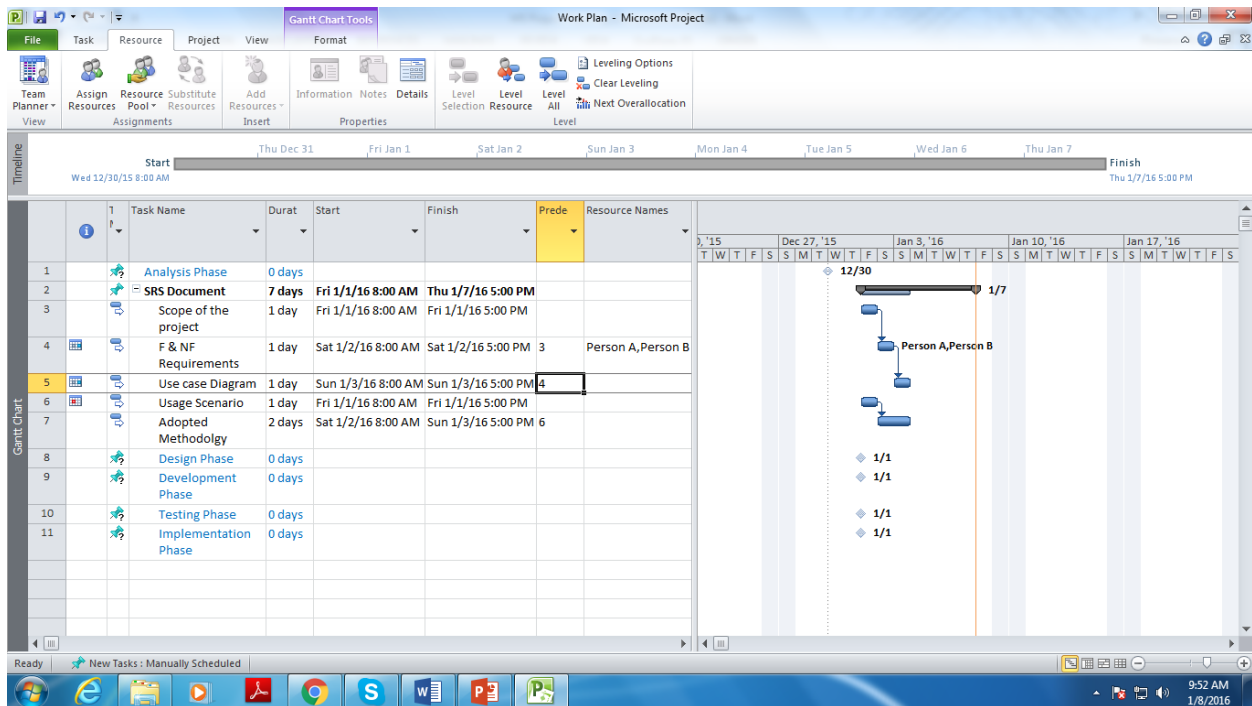
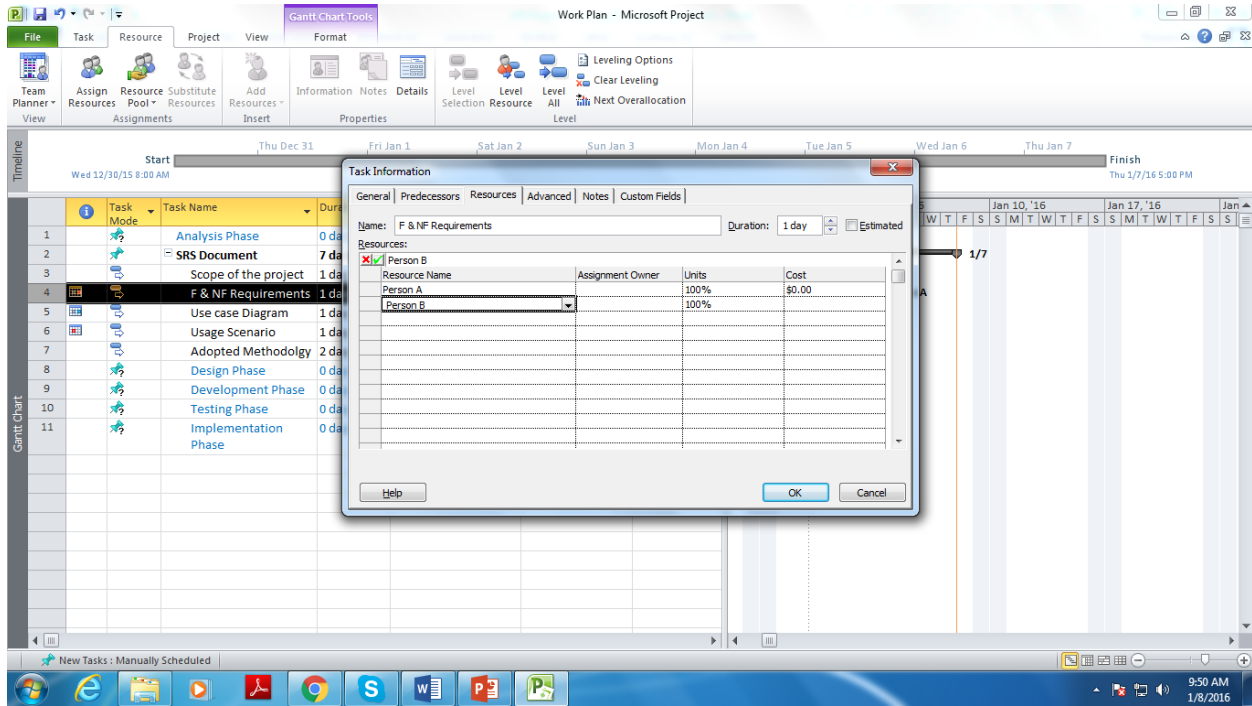
As we know that use case can be drawn only after the identification of functional and non-functional requirements. So we can say that use case diagram task can start after completion of F & NF requirement task. We use “Start not Earlier Than” relationship i.e. use case diagram task cannot start before completion of F & NF requirements task. For this, click on the use case diagram task, it will open a dialogue box, select the advanced tab and choose constraints type Start not earlier than. Similarly go to the Predecessor tab and set the task, this will link the tasks.



Step 7:

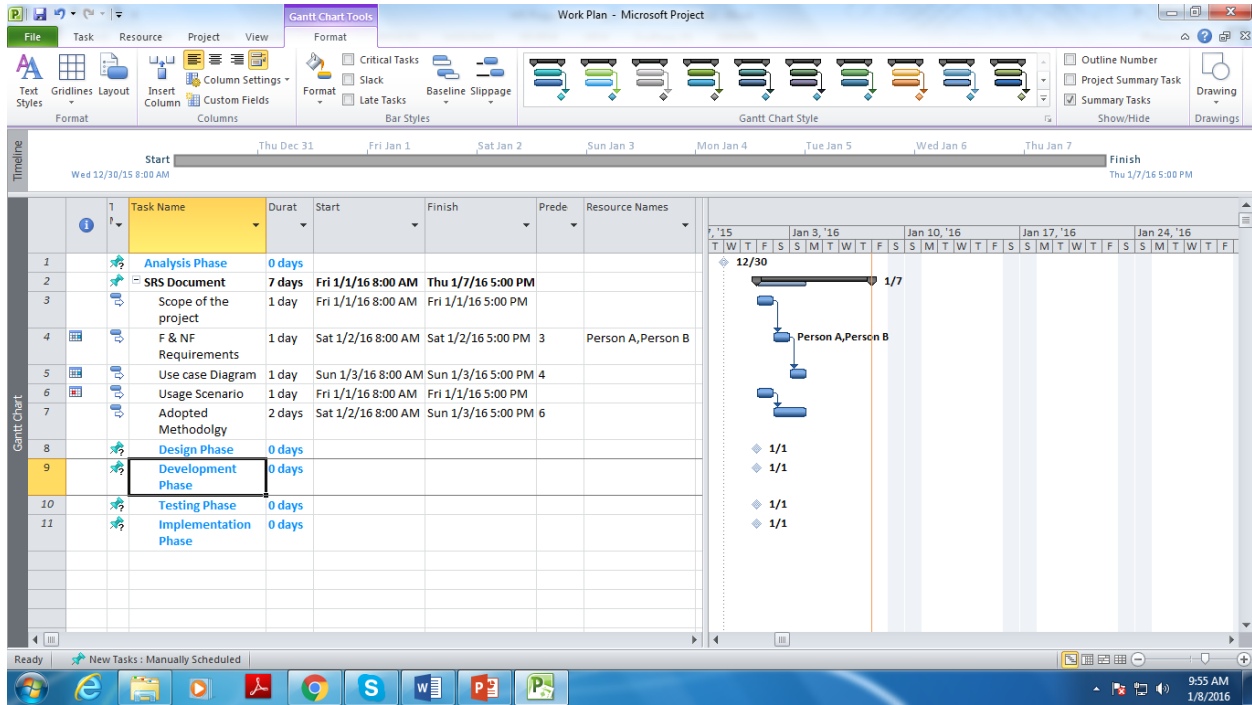
You can assign resources, if a task requires more than one person to be done. For example, in this case we take team A and team B to collect and identify functional and non-functional requirements. For

assigning resources to a task, Open the task information and go to the Resource tab, here type resources name, if resources are already add then select and click on OK.



Step 8:

Similarly you can add other milestones in the working plan as well. So far we have drawn the Gantt chart of Analysis phase by adding tasks, later we will add the tasks of other milestones as well. Moreover, you can do formatting of text by going to Format tab and then go to the Text styles.



References:

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