Chapter 3 – Pre Planning

Note: Unless stated otherwise, automatic scheduling for the task mode is considered through- out this chapter.

Learning Objectives

- Pre planning for building task
- Preparing WBS in MS Project
- Understanding task types
- Changing task type default behavior
- Setting scheduling options
- Understanding constraints
- Understanding task dependencies

Prepare Work breakdown structure

1. Enter major deliverable in Task name column (See figure 3.1)
2. Go to Project >WBS.>Define Code
3. Show WBS code
4. You can renumber the code and also create a numbering format as per requirements

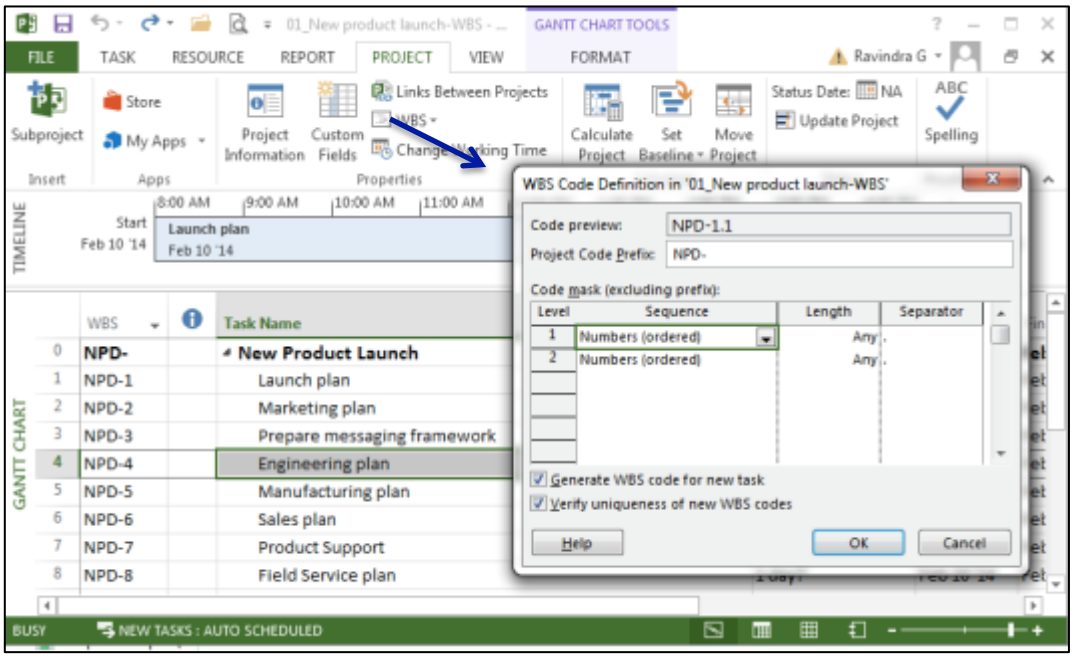

Fig.3.1: Preparing WBS

Task types

1. **Fixed Unit tasks**

    a. By default, using automatic scheduling, Project creates Fixed Unit tasks that are not affected by effort supplied by resources. That is, any changes you make do not affect the amount of any resource assigned to a task.

    b. This task type ensures that resource allocations remain constant on the task. So, if you assign two resources — one at 100% and one at 50% — to a task and you remove the resource you assigned at only 50%, Project will not change the other resource's 150% allocation to compensate.

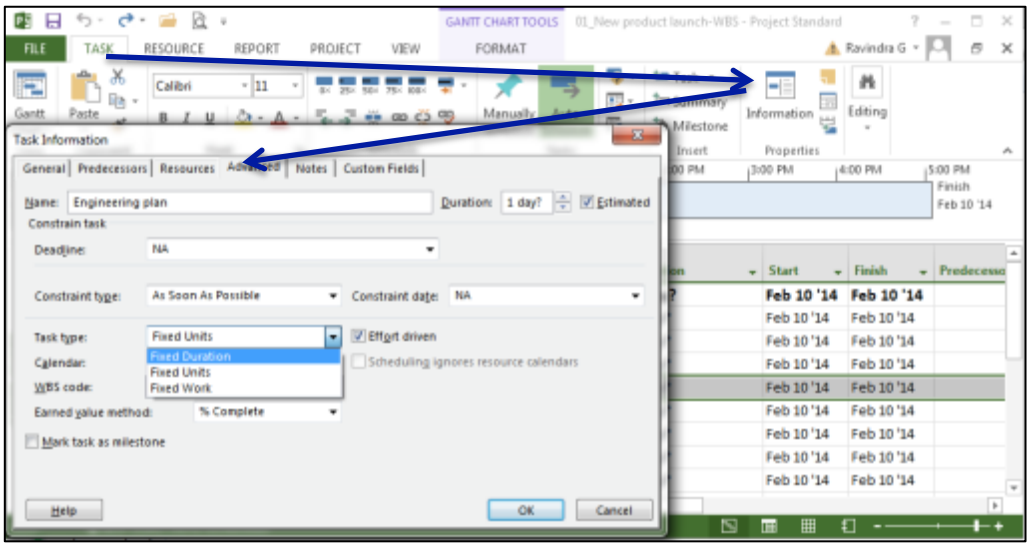

Fig.3.2: Task Types (Task Information Dialogue Box)

2. **Fixed Work tasks**
    a. When you create a Fixed Work task, you set the duration of the task, and Project assigns a percent- age of effort that is sufficient to complete the task in the time that is allotted for each resource for that task
    b. In other words the amount of work that's required remains constant. The task's duration changes based on the number of resources that are assigned to the task
    c. For example, if you assigned three people to work on a one-day task, Project would say that each person should spend 33 percent of his or her time on the task to complete it in one day. Fixed Work tasks are always effort driven
    d. Similarly, a task may take 48 hours to complete (its Fixed Work value). With one resource assigned working eight hours a day, the task will require six days to complete. With two resources assigned working eight hours a day, the task will require three days to complete
3. **Fixed Duration tasks**
    a. You also can use the Fixed Duration task type in Project. The number of resources does not affect the timing of this type of task.
    b. No matter how many people are on the committee — give the task a fixed duration.
    c. You can't shorten the task's duration by adding resources to it.
4. **Effort-driven tasks**

    Almost every task is affected by the effort supplied by resources. Here's a simple example: Suppose you have to plant a tree. One person needs two hours to plant a tree. If you add another person (another resource), then it's reasonable to assume that together they need only one hour to complete the task. That is, two resources, each putting in an hour of effort, complete the two hours of work in only one hour. With resource-driven scheduling, when you add resources, the task duration becomes shorter; if you take away resources, the task takes longer to complete. And, on the flip side, the resource assignments to a task don't change when the work increases or decreases.

Changing Task Type Default Behavior

In earlier editions of Project, the default task type was Fixed Unit, effort-driven. In Project 2010, the default task type is not effort-driven. If you prefer the behavior of earlier versions of Project, you can change the default settings. Here's how:

1. Click the File button.
2. From the Back Stage view, click Options.
3. In the Project Options dialog box, click Schedule on the left.
4. In the Scheduling Options for This Project list box, select All New Projects. (figure 3.3)

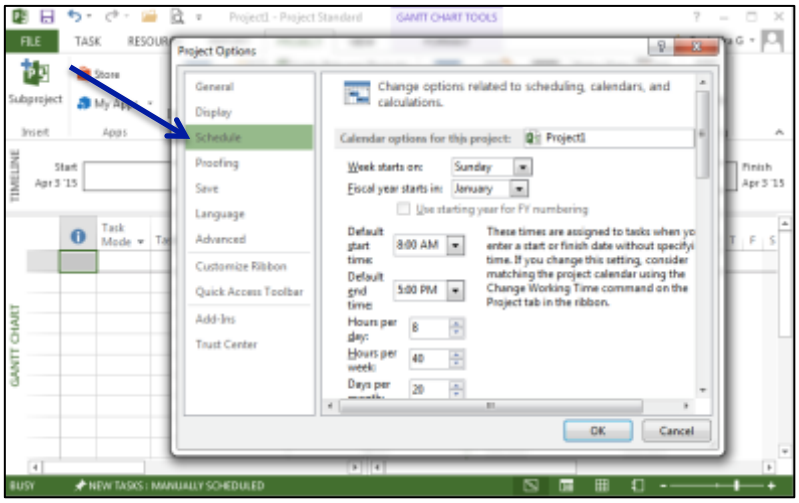

Fig.3.3: Task Default Behavior setting in Backstage view –Schedule Options

Tip - If you enter predominantly Fixed Work tasks or Fixed Duration tasks, click the Default Task Type list-box arrow and select the appropriate task type.

5. Click New Tasks Are Effort-Driven.
6. Click OK.

Repeat these steps for the current project; that is, in Step 4, select the current project instead of All New Projects.

Setting scheduling options

You can change the default task type and other default scheduling settings for your project.

1. Click the File tab (Refer figure 3.3)
2. In the Back Stage view that appears, click Options.
3. On the left side of the Project Options dialog box,
4. click Schedule to change the default settings for entering tasks
5. In the section Scheduling Options in This Project section of the Project Options dialog box,
6. Determine default information such as the default unit of time for new task durations (the default is days), the work time (hours), and whether Project schedules new tasks to start on the project start date or on the current date.
7. If, for example, you don't want to use estimated durations for new tasks, remove the check mark from the New Scheduled Tasks have Estimated Durations check box.
8. Or, if you're working on a five-year project in which most tasks take months — not days — change the default setting for the Duration Is Entered In field.
9. If you prefer that new tasks begin no earlier than the current date, you can open the New Tasks Created list box and select Scheduled on Current Date.

Understanding constraints

1. By default, Project sets all automatically scheduled tasks to start with an As Soon As Possible constraint. You can set other constraints as follows: (Fig.3.4)

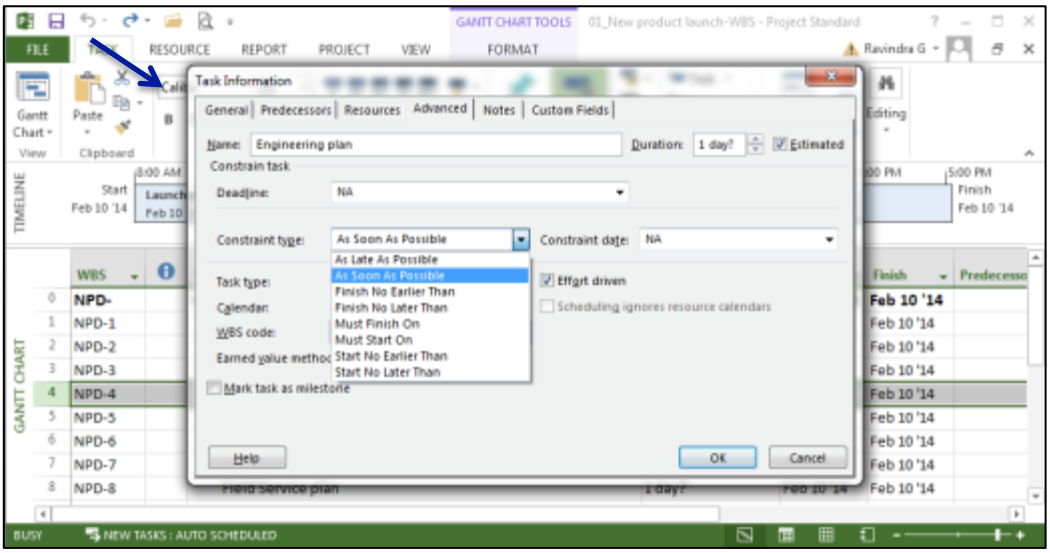

Fig.3.4: Schedule Constraints

2. As Late As Possible: This constraint forces a task to start on a date such that its end occurs no later than the end of the project.
3. Finish No Earlier Than/Finish No Later Than: This constraint sets the completion of a task to fall no sooner than or later than a specific date.
4. Must Finish On/Must Start On: This constraint forces a task to finish or start on a specific date.
5. Start No Earlier Than/Start No Later Than: This constraint sets the start of a task to fall no sooner or later than a specific date.
6. Only the Must Finish On/Must Start On settings constrain a task to start or end on a particular date. All the other settings constrain the task to occur within a specified time frame.

Assigning Task Timing –

To assign duration to a task, you can use one of the following three methods:

1. Enter duration in the Duration column of the Gantt table.
2. Use the Task Information dialog (See figure above) box to enter and view information about all aspects of a task, including its timing, constraints, dependencies, resources, and priority in the overall project.
3. Use your mouse to drag a task bar to the required length.

Start and finish versus duration

1. You can use the Start and Finish fields in the Task Information dialog box to set a start date and finish date for the task rather than enter duration.
2. If you use the Start and Finish dates, Project uses only working days in that date range.
3. If you enter duration, Project calculates the beginning and end of the task, taking into consideration weekends and holidays.
4. These two methods can have different results and most often. Using durations produces better results that using Start and Finish dates.

Using your mouse and the task bar

Finally, follow these steps to adjust a task's duration using your mouse and the task bar:

1. Place your mouse pointer on the right edge of a task bar until the pointer becomes a vertical line with an arrow extending to the right of it.
2. Click and drag the bar to the right. Project displays the proposed new task duration and finish date.
3. Release the mouse button when the duration you want appears in the information box.

Creating milestones

Managers often use milestones to mark key moments in a project, such as the completion of a phase or the approval of a product or activity. In Project, milestones are tasks that usually have zero duration. The symbol for a milestone on the Gantt Chart is a diamond shape. (See figure above)

Establishing Dependencies among Task

To assign a calendar to a task, double-click the task name to open the Task Information dialog box for that task. Click the Advanced tab and open the Calendar list box to assign a special calendar for the task

Assign a calendar to a task from the Advanced tab of the Task Information dialog box.

Timing for summary tasks

How do you assign durations for summary tasks? You don't have to assign duration to a summary task and, if you want your summary task to represent the total timing of its subtasks, then don't enter duration for a summary task. For example, if three subtasks occur right after the other and each is three days long, the summary task above them takes nine working days from beginning to end.

Tip - You can use manually scheduled or automatically scheduled tasks and you don't need to enter durations for the tasks.

Project tracks the information you assign to a summary task along with its calculations for the associated detail tasks.

Using Recurring Tasks

Projects often have tasks that occur on a regular basis. Weekly staff meetings, quarterly reports, or monthly budget reviews are examples of these recurring tasks. This feature enables you to create the meeting task once and assign a frequency and timing to it. Follow these steps to create a recurring task: (Fig. 3.5-3.6-3.7)

1. Because Project inserts tasks above the selected task, select the task that you want to appear below the recurring task.
2. Click the Task tab and, in the Insert group, click the bottom of the Task button; from the menu that appears, choose Recurring Task button to open the Recurring Task Information dialog box
3. Type a name for the recurring task.
4. Set the task duration in the Duration field.
5. Set the occurrence of the task by selecting one of the Recurrence Pattern option buttons: Daily, Weekly, Monthly, or Yearly.
6. Select the appropriate settings for the recurrence frequency. For a Weekly setting, place a check mark next to the day(s) of the week on which you want the task to occur.
7. Set the Range of recurrence — the period during which the task should recur — by entering Start and End After or End By dates.
8. Click OK to create the task. Project creates the appropriate number of tasks and displays them as subtasks under a summary task with the name that you supplied in Step 2

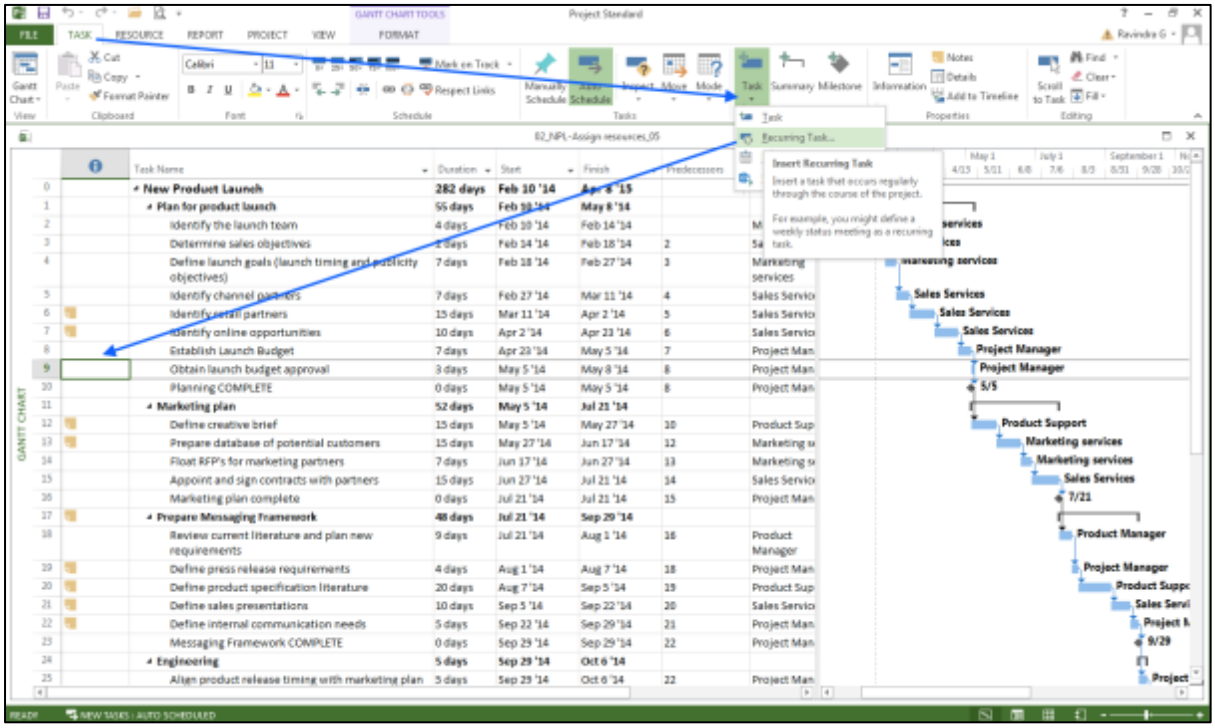

Fig.3.5 Inserting Recurring Task

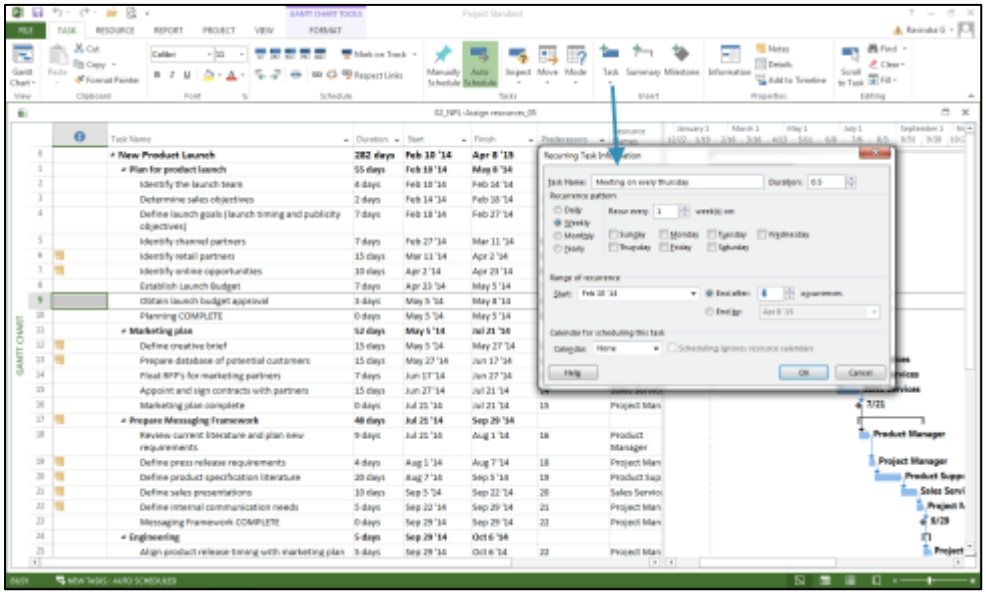

Fig.3.6 Recurring Task Dialogue Box

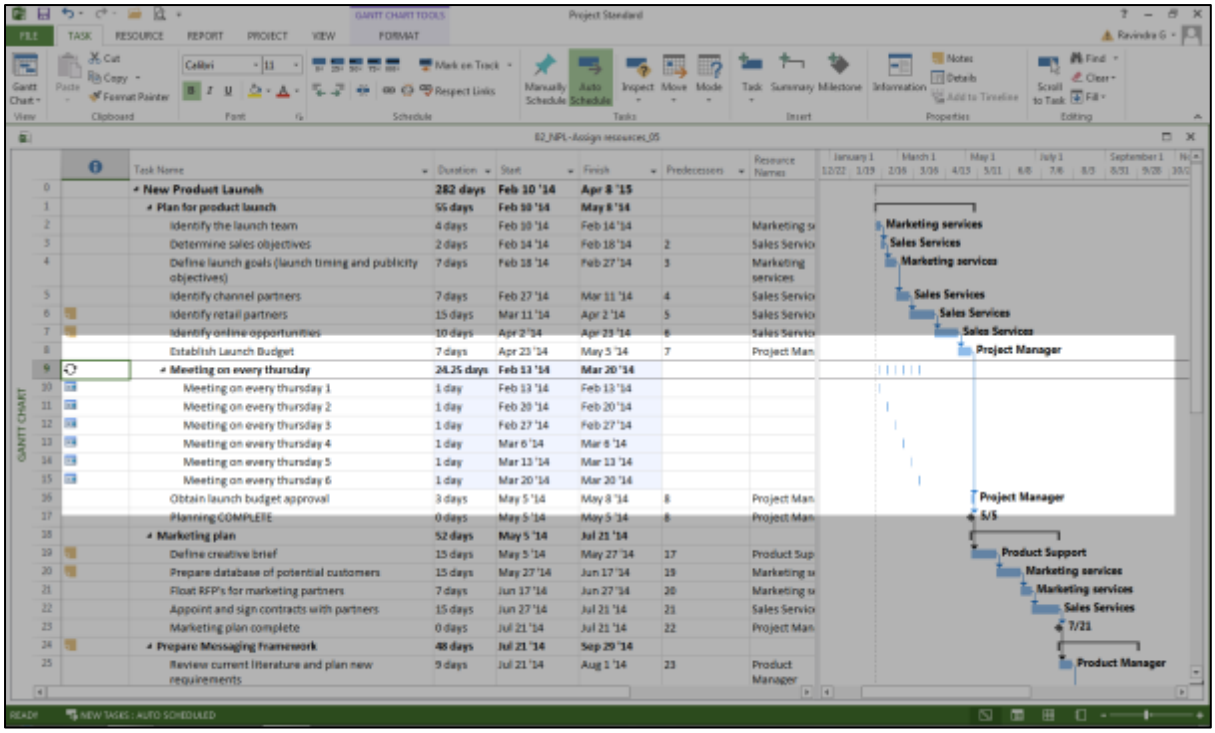

Fig.3.7: Recurring Task in a Gantt View

Entering Task Notes

You can attach notes to individual tasks to remind you of certain parameters or details for the task. You can use the Notes field to document company regulations that are relevant to that type of procedure. When you add a note to a task, you can display the note on-screen and include the note in a printed report.

To enter a note for a task while viewing the Gantt Chart, follow these steps:

1. Double-click a task to open the Task Information dialog box.
2. Click the Notes tab
3. Type your note in the area provided.
4. Click OK to attach the note to your task. A Note icon now appears in the Indicators column of the Gantt table
5. Move the mouse pointer over this icon to display the note.

Understanding dependencies

Dependency types:

Four basic dependencies define the relationship between the start and finish of tasks: start-to-finish, finish-to-start, start-to-start, and finish-to-finish. (Fig.3.8)

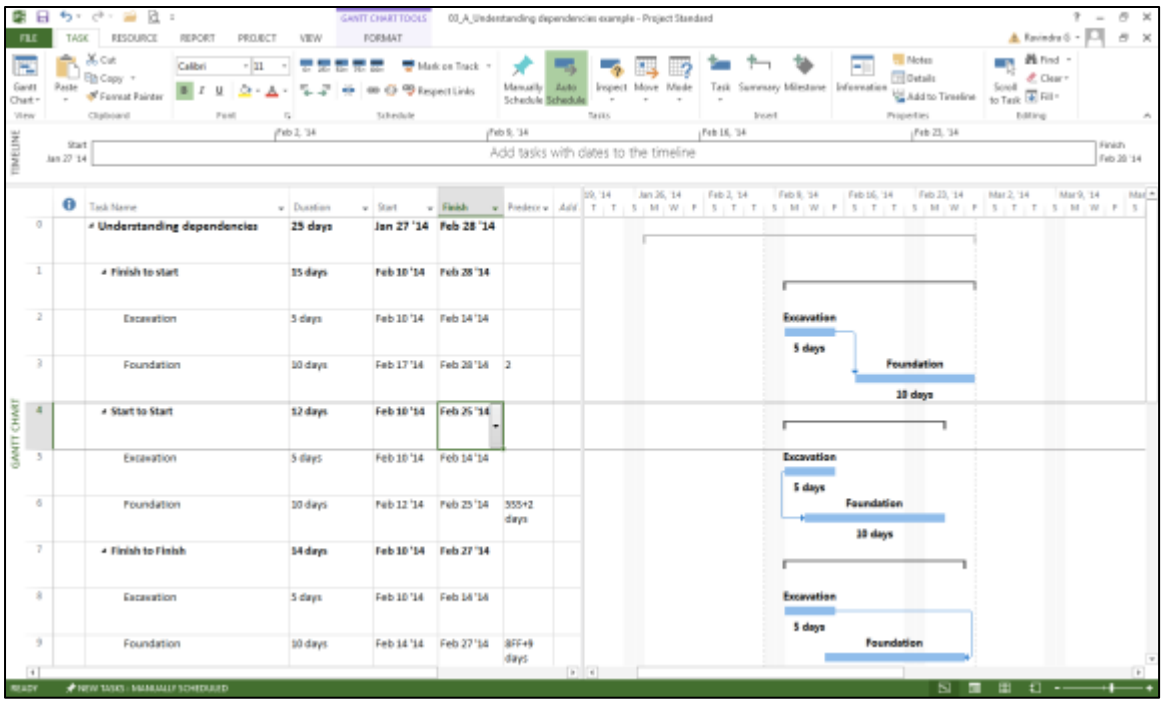

Fig.3.8: Understanding Dependencies

Finish-to-Start (FS)

In the finish-to-start relationship, the successor task can't start until the predecessor task finishes. Examples of this relationship are as follows:

Start-to-Finish (SF)

With the start-to-finish relationship, the successor task cannot finish until the predecessor task starts. The following are some examples:

Start-to-Start (SS)

In a start-to-start relationship, the successor can't start until the predecessor starts.

Finish-to-Finish (FF)

In the finish-to-finish dependency, the successor task can't finish until the predecessor task finishes.

Entering dependencies

1. Select two tasks and click the Link Tasks button in the Schedule group of the Task tab on the Ribbon. The first task you select becomes the predecessor in the relationship.
2. Open the successor task's Task Information dialog box and enter predecessor-task information on the Predecessors tab.
3. Click the Gantt bar of a predecessor and drag it to the Gantt bar of a successor task.

Viewing Dependencies

After you've established several dependencies in a project, you can study them in several ways.

1. Open each task's Task Information dialog box and look at the relationships listed on the Predecessor tab.
2. View the lines drawn between tasks to see dependencies. You can scroll to the right in the Gantt table.
3. You can use the Task Inspector pane to explore the relationships among your tasks.
    a. To display the Task Inspector pane, click the Task tab (Fig.3.9)
    b. In the Tasks group, click the Inspect button.
    c. Project displays information for the currently selected task.
    d. Click any task in the project schedule to see its information.

The information that appears in the Task Inspector pane changes, depending on whether the task is scheduled manually or automatically and depending on whether you've set a baseline for your project and recorded actual information.

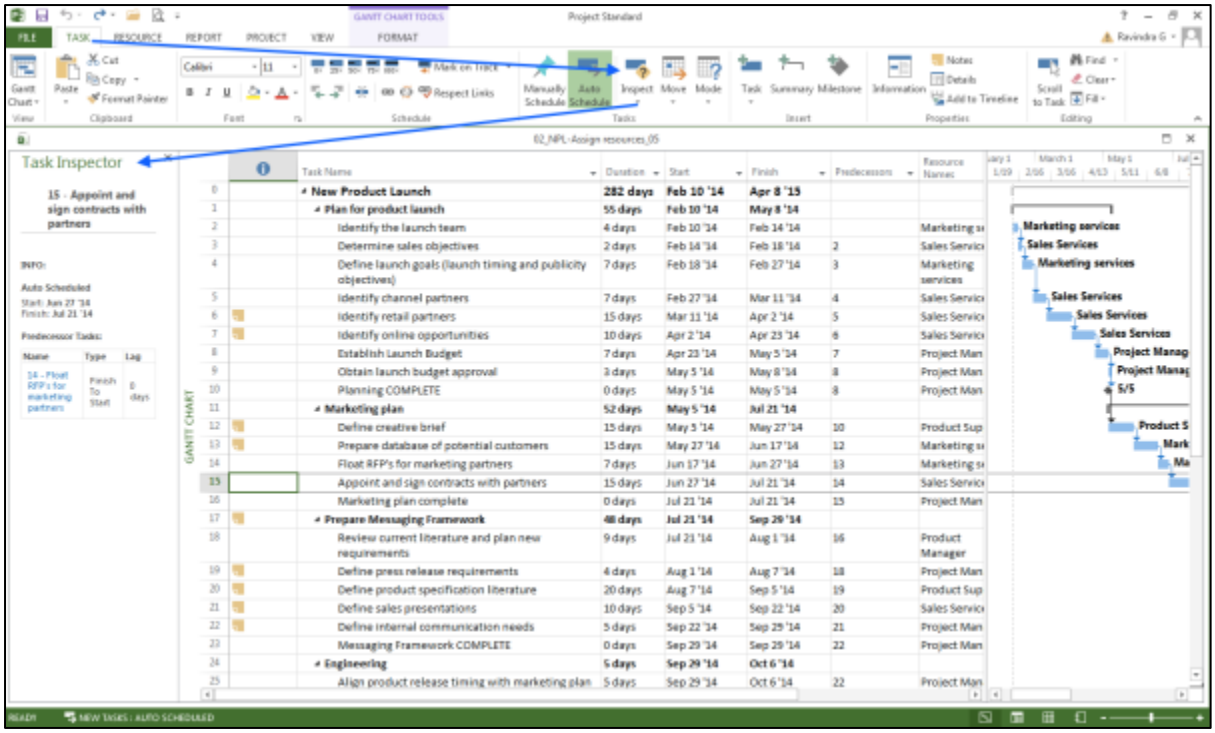

Fig.3.9: Task Inspector Pane

Deleting Dependencies

You can delete dependencies in several ways:

1. Open the Task Information dialog box for the successor task, select the Predecessors tab, click the task name for the link that you want to break, and press Delete.
2. Display the Predecessors column in the Gantt table, click the Predecessors cell for the successor task, and either press Delete to delete all relationships or edit the predecessor information in the cell.
3. Select the tasks that are involved in the dependency you want to delete, click the Task tab, and then (in the Schedule group) click the Unlink Tasks button.
4. Double-click the dependency line, and click the Delete button in the Task Dependency dialog box.