LAB Manual

Introduction to Software Project Management (CPIS-334)

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LAB-1: Introduction to MS Project

Statement Purpose:

The main purpose of conducting this LAB is to give an idea about the working of MS Project.

Activity Outcomes:

Students will get familiar with HOW TO:

1. start MS Project
2. create a Project Plan from a template
3. switch to a different view
4. view a report
5. create a visual report

Instructor Note:

What is a Project?

Project is a temporary effort undertaken to create a unique product or a new service. It might take one week or many years but must have some finish date

MUST REMEMBER:

- Project Manager must have complete knowledge of Product (product specs) to be devloped before defining the scope (Cost, Time, Resources) of the project.
- A good Project Manager is one who completes the project in-time, within budget and as per customer satisfaction

Why to use MS Project?

MS project helps to track the information about Project goals, cost, deadlines, and resources

Activity 1: How to start MS Project (Standard Version)?

1. On the Windows task bar, click the **Start** button
2. On the **start** menu, point to **All programs**, click **Microsoft Office** and then click **Microsoft Office Project 2007**

Activity 2: How to create a Project Plan from a Template?

1. On the **File** menu, Click **New**
2. In the **New Project** task Pane, under **Template**, Click on **Computer**
3. In the Templates dialog box, click the **Project Templates** Tab
4. Click the template you want, and then click **Ok**

Activity 3: How to switch to a different view?

A view is a working place in MS Project where you can enter, edit, display and analyze information of the project plan

1. On the **View** menu, click the name of view you want
2. If the view is not listed, click **More Views**, in the more views dialog box, click the name of view you want, and click Apply

SOME OF THE IMPORTANT VIEWS IN MS PROJECT:

- **Gantt Chart View** is a default view which gives information about tasks, duration of each task, starting and finishing dates and resources allocated to that specific task.
- **Resource Sheet view** elaborates all available recourses allocated to a project in a sheet format. It doesn't tell which tasks are assigned to which resource.
- **Resource Usage view** groups the tasks against each resource.
- **Task Usage view** shows details about each task that which task is assigned to whom and working schedule of each resource.
- **Calendar view**: Tasks bars appear on the days they are scheduled to start.

- **Network Diagram view** shows relationship among tasks and also the dependencies

Activity 4: How to view a report in the Print Preview Window?

1. On the **Report** menu, click **Reports**
2. Click a report category, or to see all reports, click **Custom**, and then click **Select**
3. Select the report you want, and then click **Select** or **Preview**

Activity 5: How to create a visual report in MS Project?

1. On the **Report** menu, Click **Visual Reports**
2. Click a Visual Report tab, and then click the visual report you want
3. Click **View**

Lab Sheet

- Students are instructed to perform all the activities mentioned above to have basic knowledge of MS Project.

NOTE:

Make a Group of maximum 3 students for Project and give names in next LAB

LAB-2 & 3: Creating Tasks List

Statement Purpose:

The main purpose of conducting this LAB is to give an idea about the working of MS Project specially related with Tasks creation in a project.

Activity Outcomes:

Students will get familiar with HOW TO:

1. create a new project plan & its start date
2. set working & non-working time
3. enter properties about a project plan
4. enter new tasks in the project, set duration for each task & to create a milestone task
5. organizing tasks into phases
6. link adjacent and non-adjacent tasks
7. enter a task note

8. enter a task hyper link
9. check a Project plan’s duration and other statistics
10. display project’s entire duration in Gantt Chart View

Instructor Note:

Project Plan: **A project plan is a model which is constructed based on some of the following aspects of real project.**

- **Time**
- **Cost**
- **Resources**

While starting a new project, Project Manager must have answers to the following important questions in his/her mind to produce deliverable of the project:

1. What tasks must be performed?
2. What will be the order / sequence of the execution of these tasks?
3. When should each task be performed? (schedule)
4. Who will complete a specific task? (resource assignment)
5. How much will it cost? (Cost Calculation/budget)

6. What if some task will not be completed as scheduled? (Tracking & Managing tasks)
7. What is the best way to communicate the project details to those who have interest in the project? (Views, Reports & Graphs)

Activity 1: How to create a new project plan and set its start date?

1. On the **File** menu, click **New**.
2. In the **New Project** task pane, click **Blank Project**
3. On the **Project** menu, Click **Project Information**
4. In the **Start Date** box, type or select project start date you want
5. Click **Ok**
6. On standard toolbar, click **save** button.
7. **Save As** dialog box will appear, give relevant name to your project
8. Click **Save** to save the project

Activity 2: How to set working & non-working time?

The primary means by which each task and resource can be scheduled to work in the project. The project calendar defines the general working & non-working time for tasks.

1. On the **Tools** menu, click **Change Working Time**.
2. In the **For Calendar** box, select the base calendar you want to edit (normally it is **Standard**)
3. In the **Name** field on **Exception** tab, enter a descriptive name for the non-working time, such as **Holiday**

4. In the **Start** and **Finish** fields, type or select the start and finish dates for the non-working time span.
5. Active "**Work Weeks**" tab and then click **Details** button to change the default non-working days and timing
6. Click **OK**

Activity 3: How to set properties about a Project Plan?

1. On the **File** menu, Click the **Properties**
2. In the properties dialog box, click the **Summary** tab, and then enter the information you want like:
   - Title of the Project
   - Manager of the Project
   - Company Information
   - Any other useful information in comments

Activity 4: How to enter tasks, task duration & milestone in a Project?

- Tasks are the most basic building blocks of any project.
- Tasks represent the work to be done to accomplish the goals of the project.
- Tasks describe project work in terms of sequence, duration and resource requirement

Defining the right tasks to create the right deliverables (product) is must. Tasks listed in a project should describe all of the work required to complete the project successfully.

1. In a task view, such as Gantt Chart view, In the first cell directly below the **Task Name** column heading, type task name "Feasibility Study" and then press "ENTER"
2. Enter some of the relevant tasks
3. Each task will be assigned a unique ID
4. This ID does not reflect the sequence of the execution of the task
5. In a task view, such as Gantt Chart view, click a cell in duration column
6. Type the task duration and press "ENTER"
   (default working Hours are 8 hrs/day, 5 days a week & 20 days per month)

Duration of the task can be calculated based on historical information from previous similar projects, interviewing people who have worked on similar tasks, expert judgment of those who have completed similar projects

7. In a task entry table, enter a name for mile stone and in the duration field enter **0day** and then press "ENTER"
   Milestones are significant (important) events that are either reached in the project or imposed on the project. Because the milestone normally does not include any work, so presented as task with ZERO duration

Activity 5: How to organize tasks into phases?

- Organize groups of closely related tasks
- Duration, start date or other calculated values of a summery task cannot be changed

1. Select the names of tasks to become subtasks of a summary task
2. On the project menu point to **outline** and then click **indent**

LAB-3

Activity 6: How to link adjacent and non-adjacent tasks?

For Adjacent (□□□□) Tasks:

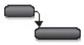
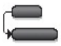
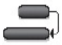
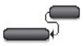
1. Select the adjacent tasks
2. On the **Edit** menu, click **Link Tasks**

For non-adjacent Tasks:

1. Select the first task which will be the predecessor (to be followed by, □□□□□) task
2. While holding down the “Ctrl” key, select the second task, it will be the successor (following, □□□□□) task
3. On the **Edit** menu, click **Link Tasks**

4 Possible relationships (links) among different tasks are:

- **Finish-to-Start (FS) – Default, commonly used**
- **Start-to-Start (SS) (having same start dates)**
- **Finish-to-Finish (FF) (having same finish dates)**
- **Start-to-Finish (SF) (rarely used)**

This task relationship	Means	Looks like this in the Gantt chart	Example
Finish-to-start (FS)	The finish date of the predecessor task determines the start date of the successor task.		**Start of software development can only be started after design phase**
Start-to-start (SS)	The start date of the predecessor task determines the start date of the successor task.		**Design of the Software and hiring human resources**
Finish-to-finish (FF)	The finish date of the predecessor task determines the finish date of the successor task.		Tasks that require specific equipment must end when the equipment rental ends.
Start-to-finish (SF)	The start date of the predecessor task determines the finish date of the successor task.		**In Water-Fall life cycle, if design phase started, it determines the end of system analyziz.** (This type of relationship is rarely used.)

Example of (SF): Start date of Implementation of a system determines the finish date of documentation.

Activity 7: How to enter task note?

1. Select the name of a task
2. On the **Project** menu, click **Task Notes**
3. In the notes box, type the notes and click **Ok**

Activity 8: How to enter a task hyperlink?

Hyperlink allows to connect a special task to additional information that resides outside of the project plan such as another file, a page on the Internet or Intranet

1. Select the name of a task
2. On **Insert** menu, click **Hyperlink**
3. In the text to display box, enter the note to display when someone

hover over the hyperlink

4. In the **Address Box**, type the destination hyperlink and then click **OK**

Activity 9: How to check Project Plan's duration & other statistics?

1. On the **Project** menu, click **Project Information**
2. In the Project Information dialog box, click **Statistics**

Activity 10: How to display the project's entire duration in Gantt Chart view?

1. On the **View** menu, click **Zoom**
2. Click **Entire Project** and then click **Ok**

Lab Sheet

- Students are instructed to perform all the activities mentioned above to have basic knowledge of MS Project.

LAB-4: Setting-up Resources

Statement Purpose:

The main purpose of conducting this LAB is to give an idea about the working of MS Project specially related to Resources.

Activity Outcomes:

Students will get familiar with HOW TO:

1. setup work (people and equipment) resources
2. setup material resources
3. setup cost resources
4. enter work (people & material) resource pay rates
5. to make a onetime adjustment to an individual resource's working time
6. to edit regular work week for an individual resource
7. to document resources with resource notes

Instructor Note:

Resources: Ms Project works with three (3) types of resources: work, material and cost. Work Resources are the People and equipment that do the work of the project

Individual People can be identified by their Name (like Mr. Ahmad) or designation (like Manager) and group of people resources can be defined by their common skills like programmers.

Activity 1: How to setup work (People and Equipment) resources?

There are two types of work resources in MS Project. One is people and the other one is equipment.

People resources might be flexible in tasks they can perform (more than one jobs), however, equipment resources tend to be more specialized. So be careful in assigning both the resources

1. On the **View** menu, Click **Resource Sheet**
2. In the **Resource Name** field, enter the resource’s name
3. In the **Type** field, click **Work**
4. In the **Max. Units** field, type or click the maximum capacity of this resource to accomplish any work in terms of %
5. Enter any other useful information related to your project
6. Repeat step 2 through 5 for each resource.

Most people resources have a working day of not more than 8 - 12 hours, however, the equipment resource might work round the clock. So be careful while setting their Max. Units.

Activity 2: How to setup material resources?

Material resources are consumable items that you use up as the project proceeds. For example on a software development project printer papers, writeable CDs etc are material resources and on a construction project, material resources might include nails, bricks, concrete etc.

1. On the **View** menu, Click **Resource Sheet**
2. In the **Resource Name** field, enter the material resource’s name
3. In the **Type** field, click **Material**
4. In the **Material Label** field, enter the unit of measure you want to use. For example you might measure in rims (packet of papers) or CD Box (CDs) etc.

5. In the **Std. Rate** field, enter the cost per unit of measure for this material resource
6. Enter any other useful information related to your project
7. Repeat step 2 through 6 for each resource

Activity 3: How to setup cost resources?

A Cost Resource represents a financial cost associated with a task in a project. Such as travelling, entertainment, training etc.

1. On the **View** menu, click **Resource Sheet**
2. In the **Resource Name** field, enter the cost resource’s name
3. In the **Type** field, click **Cost**

Activity 4: How to enter work (People) resource pay rates?

1. On the **View** menu, click **Resource Sheet**
2. In the **Std. Rate** field, enter the resource’s pay rate per standard pay period (such as hourly, weekly or monthly)
3. If the resource should accumulate overtime pay, enter his/her overtime pay rate in the **Ovt. Rate** field
4. If the resource accumulates per-use cost, enter that amount in the **Cost/Use** field
5. In the **Accrue At** field, enter the method by which resource accrues cost
6. Repeat step 2 through 5 for each resource

Activity 5: How to make one-time adjustment to an individual resource’s working time?

1. On the **Tools** menu, click **Change Working Time**
2. In the **For Calendar** box, click the name of resource whose working time is required to be changed
3. In the **Name** field on **Exceptions** tab, enter a descriptive name for non-working time such as **Vacation**
4. In the **Start** and **Finish** fields, type or select the start and finish dates for the non-working time span.
5. Click **OK**

Activity 6: How to edit the regular work week for an individual resource?

1. On the **Tools** menu, click **Change Working Time**
2. In the For Calendar box, click the name of the resource whose working time has to be changed
3. Click the **Work Weeks** tab in the **Change Working Time** dialog box
4. Click [**Default**] or enter a new name and period, and then click **Details**
5. Select the working time options you want for the work week and then click **Ok**

Activity 7: How to document resources with resource notes?

1. Switch to a resource view like **Resource Sheet** view
2. Click the name of resource for which you want to make a note
3. On the **Project** menu, click **Resource Notes**
4. Type the note you want associated with this resource and then

click **OK**

Lab Sheet

- Students are instructed to perform all the activities mentioned above to understand how to setup resources against a Project Plan.

LAB-5: Assigning Resources to Tasks

Statement Purpose:

The main purpose of conducting this LAB is to give an idea about the working of MS Project specially related to assigning Resources to Tasks

Activity Outcomes:

Students will get familiar with HOW TO:

1. assign resources to tasks
2. to control how MS Project schedules the work on a task after assigning an additional resource
3. to assign material resources to tasks
4. to assign cost resources to tasks

Instructor Note:

- **The main purpose of assigning resource to a task is to complete an assignment**

Activity 1: How to assign Resources to tasks?

1. In a task view, such a Gantt Chart view, on the **Tools** menu, click **Assign Resource**
2. Click the name of the task to which you want to assign the resource
3. In the **Resource Name** column of the **Assign Resource** Dialog Box, Click a resource and then click **Assign**

OR You can choose Resource Assignment Button from Toolbar. To assign more non-adjacent resources use "Ctrl" Key

Activity 2: How MS Project schedules the work on a task after assigning an additional resource?

MS Project uses Effort-driven Scheduling by default. If an additional resource is added to a task, the duration to complete the task is decreased and similarly vice versa.

1. Assign an additional resource to task
2. Click the **Smart Tag Action** button, and choose the action as per requirement of the project.

Activity 3: How to assign Material Resources to tasks?

1. On the Standard toolbar, click **Assign Resources**

2. In the Gantt Chart View, click the name of the task to which you want to assign a material resource
3. In the **Resource Name** column of the **Assign Resource** dialog box, click a resource and in the **Units** column, enter the Unit Value
4. Press **"ENTER"** or click **Assign**

Activity 4: How to assign Cost Resources to tasks?

Cost resources are used to represent a financial cost associated with a task in a project. Like material resources, cost resources do not work and have no affect on the scheduling of a task. It is just for accounting purpose.

1. On the Standard toolbar, click **Assign Resources**
2. In the Gantt Chart View, click the name of the task to which you want to assign a Cost resource
3. In the **Resource Name** column of the **Assign Resource** dialog box, click a resource and in the cost column enter the cost value
4. Press **"Enter"** or click **Assign**

Lab Sheet

- Students are instructed to perform all the activities mentioned above to understand how to assign resources against different tasks.

LAB-6: Formatting & Printing Project Plan

Statement Purpose:

The main purpose of conducting this LAB is to give an idea about the formatting and printing of a project Plan in MS Project

Activity Outcomes:

Students will get familiar with HOW TO:

1. to display the project summary tasks
2. to create a new view based on an existing view
3. to format Gantt Bars with the Gantt Chart Wizard
4. to draw a text box on a Gantt Chart
5. to format a category of text in a view
6. to format selected text in a view
7. to edit a report’s header or footer

Instructor Note:

Formatting plays an important role when a Project Manager forward the desired information to higher management in form of reports.

Activity 1: How to display the project summary task / Title?

1. On the **Tools** menu, Click **Options**
2. In the **Option** dialog box, click **View** tab
3. Under the **Outline options** for label, select the **Show Project Summary Task** check box and then click Ok

Activity 2: How to create a new view based on an existing view?

1. On the **View** menu, click **More Views**
2. In the more views dialog box, click the view's name and then Click **Copy**
3. In the view **Definition** dialog box, enter the name for new view
4. Click **OK**

Activity 3: How to format Gantt Bars with the Gantt Chart Wizard?

1. On the **Format** menu, click **Gantt Chart Wizard**
2. Follow the instructions as appear on the screen

Activity 4: How to draw a text box on Gantt Chart?

1. On the **View** menu, point to **Toolbars** and the select **Drawing**
2. On the **Drawing** toolbar, select the **Text Box** button and then drag a small box anywhere on chart portion of Gantt Chart view
3. In the box you just drew, type the desired text

Activity 5: How to format a category of text in a view?

1. On the **Format** menu, click **Text Styles**
2. In the **Item to Change** list, click the type of text you want to change
3. Select the font and other formatting options

Activity 6: How to format in a view?

1. Click the cell that contains text you want to format
2. On the **Format** menu, click **Font**
3. Click the font and other formatting options

Activity 7: How to edit a report's header and footer?

1. On the **Report** menu, click **Reports**
2. Click a report category, or to see all reports click **Custom** and then click **Select**
3. Select any report and then click **Preview**
4. On the **Print Preview** toolbar, click **Page Setup**

5. In the **Page Setup** dialog box, click the **Header** or **Footer** tab and change the options as desired

Lab Sheet

- Students are instructed to perform all the activities mentioned above to understand how to use formatting options in a Project Plan to make reports more effective.

NOTE:

QUIZ (EC): November 23, 2011

Make a Group of maximum 3 students for Project and give names ASAP

LAB-7: Tracking Progress on Tasks

Statement Purpose:

The main purpose of conducting this LAB is to give an idea how to track progress on different tasks in a planned project.

Activity Outcomes:

Students will get familiar with HOW TO:

1. set current values in a schedule as a baseline
2. display the Variance table in the Task Sheet view

3. record project progress as scheduled
4. record a task's completion percentage
5. enter actual work values for tasks
6. enter actual start and duration values for tasks

Instructor Note:

- **Tracking means recording project details such as who did what work, when the work was done and at what cost. These details are often called actuals.**

  Tracking actuals is very important to manage a project. Tracking of a project will help Manager to answer the following questions:

  - **Are tasks starting and finishing as planned? If not, what will be the impact on the project's finish date?**
  - **Are resources spending more or less time than planned to complete tasks?**
  - **Are there some tasks which are making the overall costs of the project higher than planned?**

Activity 1: How to set current values in a schedule as a baseline?

To judge project performance properly, you will need to compare it with original plan. This original plan is called the Baseline Plan or just a baseline. A baseline is collection of important values in a project plan such as the planned start dates, finish dates, and cost of the tasks, resources and assignments. Save baseline before making the actual values.

1. On the **Tools** menu, point to **Tracking** and then click **Set Baseline**
2. Click **OK**

Activity 2: How to display variance (difference) table in the Task Sheet view?

1. On the **View** menu, click **More Views**
2. In the **Views** Box, click **Task Sheet**, then click **Apply**
3. On the **View** menu, point to Table: Entry and click **Variance**

Activity 3: How to record project progress as scheduled (planned)?

The simplest approach to tracking progress is to report that actual work is proceeding (moving ahead) exactly as planned.

1. On the **Tools** menu, point to **Tracking**, and click **Update Project**
2. In the **Update Project dialog box**, make sure **Update Work as Complete Through** option is selected

3. In the adjacent date list type or select the date you want and then click **Ok**

Activity 4: How to record a Task's completion percentage?

1. On the **View** menu, point to **Toolbars** and then click **Tracking**
2. Select the name of Task for which you want to record a percent complete
3. Do one of the following:
    - To record a predefined percentage complete, click **0%, 25%, 50%, 75% or 100% complete** button
    - To record some other percentage complete, click the **Update Tasks** button and the value you want in the **Percent Complete** field.

Activity 5: How to enter actual work values for Tasks?

1. In a task view such as **Task Sheet** view, point to **Table: Entry** and then click **Work**
2. In the **Actual** field, enter the actual hours of work and then press **"ENTER"**

Activity 6: How to enter actual start and duration values for tasks?

1. Click the task for which you want to enter actual values
2. On the **Tools** menu, point to **Tracking**, and then click **Update Tasks**
3. In the **Start** field, in the **Actual box** on the left side of the **Update Tasks** dialog box, click or type the Start date you want

4. In the **Actual Dur** field, type or click the duration value
5. Click **Ok**

Lab Sheet

- Students are instructed to perform all the activities mentioned above to understand how to track progress on different tasks.

LAB 8-9: LAB Assignment using MS Project

- **Students will be asked to implement a project plan as per given specimen**
- **These LAB Assignment will help to judge the students capabilities about the use of MS Project**

LAB 10-11: Discussion and Supervision of Final Project Report under CPIS-334

Students will be assigned with a course project in which they will furnish a report by exercising their knowledge about Software Project Management.
The report about the project will include the following topics:

1. Purpose and Scope of the Project
Goals and Objectives .2
Summary of the Product/Service Description .3
Project Lifecycle .4
Primary Project Tools .5
Work Breakdown Structure .6
Staffing Procedure and Plan .7
(Major Project Milestones (Demonstrate using MS Project .8
(Detailed Project Schedule (MS Project .9
Quality Assurance Monitoring.10
11. Some Important reports for higher management (MS
(Project

Sample Projects:

a. **Software Houses Online Directory**

b. **Online booking system for a Travel Agency**
c. **Inventory System for a Super Store**
d. **Parcel Tracking System for a Cargo Service**
e. **Citizen Information System for Jeddah**
f. **Vehicle Information System passing through a Check point**
g. **Online Home Address search engine**
h. **Any project of your own choice**

NOTE

Projects; Car Rental System, Student Information System and Patient information System are not allowed.

LAB 12: Project Presentations &Oral Exam

- **Students will demonstrate their Project using MS Power Point and answer the questions related with their project to the invigilator /examiner**

Exam Schedule for Section BC

Quiz: DONE

LAB Assignment: December 04, 2011

Submission of Project Report (hard copy): December 14, 2011

Project Presentation: December 18, 2011

(Insha'Allah)