



## Project Management Advanced Diploma



## Computers & PM – Josephine Coffey

## Computers & PM – Week 6

- **Preparing the Computer Schedule**
- Resource Management & Reporting

Computers & PM - Josephine Coffey

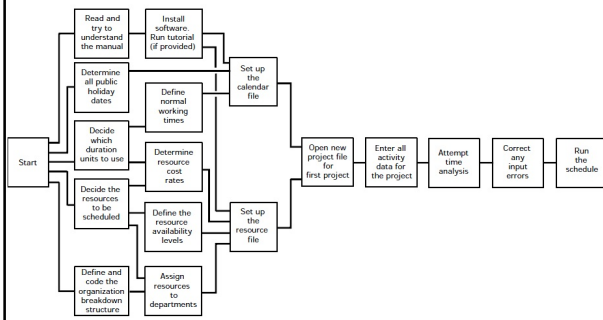
## Objectives

- Review steps to implement new PM software
- Understanding of data required to set-up a project schedule :
  - Project, Calendar, Resource & Activity
- Look at basic schedule time analysis

## Implementing new PM software

1. Install and Setup software
2. Prepare data
3. Open a new project file for first project
4. Enter all activity data for the project
5. Attempt time analysis
6. Correct errors
7. Run / execute the schedule

## Implementing new PM software



Lock's suggested procedure for implementing new PM software

## New software system setup

- Attend training
- Get user manual
- Buy books
- Use help text & on-line tutorials
- Use templates

## New software system setup

- Research scheduling techniques
- IT should attend technical support training
- Configure the application
- Develop project templates

## Prepare Data

- Prepare data:
  - *Project data*
  - *Calendar information*
  - *Resource data*
  - *Activity records*
  - *Activity sequencing*

### Project Data

- Main project details used to sets up the project file:
  - Project name
  - Project number
  - Project manager name
  - Project sponsor
  - May include stakeholders and/or work-stream leads etc

### Calendar Data

- Data used to generate a calendar or time line:
  - Working day and week
  - Holidays
  - Annual leave
  - Working hours

### Calendar Data

- Consider date format e.g. dd-mmm-yy instead of dd/mm/yy
- Project Start Date:
  - marks the beginning of the project
  - start date for the first task or activity is often used

### Resource Data

- Recommended Resource Data:
  - Resource Code – an identifier code
  - Resource Name – name as it will appear on reports
  - Normal availability - % and dates
- Contingency planning: apply % to account for slippage e.g. 75% availability

### Resource Data

- Additional Resource Data:
  - Calendar – any special calendar required
  - Cost Rate
  - ‘Threshold’ resource data incl. costs (Lock)
- Priority Rules understood
  - Time vs Resource limited
  - Priority to activities with least float

### Activity Data

#### Mandatory Activity Data

- Activity ID number
- Predecessor and successor task ids
- Any constraints or dependencies
- Estimated activity or task duration

### Activity Data

#### Optional Activity Data:

- Activity Description
- “Optimistic” and “Pessimistic” estimates
- Editing & sorting codes
- Resource Data
- Costs
- Special constraints
- Split-able activities
- Note: custom fields also available

### Open First Project File

- Set default/preferred view on start-up
  - Gantt Chart
  - Calendar
  - Etc.

## Enter Activity Data

- Tasks entered with resources, effort, and duration
- Activity Sequencing - process of identifying and documenting relationships between activities.
  - PDM (technique)
  - Start to Finish (SF), Finish to Start (FS), Finish to Finish (FF), Start to Start (SS)

## Enter Activity Data

- Target Dates - scheduled dates or milestones
- Constraints:
  - Early date
  - Late date
  - Fixed date

The following table lists the constraints provided in Project.

CONSTRAINT TYPE	CONSTRAINT NAME	DESCRIPTION
Flexible	As Late As Possible (ALAP)	Schedules the task as late as possible with the task ending before the project ends and without delaying subsequent tasks. This is the default constraint for tasks when you schedule from the project finish date. Do not enter a task start or finish date with this constraint.
Flexible	As Soon As Possible (ASAP)	Schedules the task to begin as early as possible. This is the default constraint for tasks when you schedule from the project start date. Do not enter a start or finish date with this constraint.
Semi-Flexible	Start No Earlier Than (SNET)	Schedules the task to start on or after a specified date. Use this constraint to ensure that a task does not start before a specified date.
Semi-Flexible	Finish No Earlier Than (FNET)	Schedules the task to finish on or after a specified date. Use this constraint to ensure that a task does not finish before a certain date.
Semi-Flexible	Start No Later Than (SNLT)	Schedules the task to start on or before a specified date. Use this constraint to ensure that a task does not start after a specified date.
Semi-Flexible	Finish No Later Than (FNLT)	Schedules the task to finish on or before a specified date. Use this constraint to ensure that a task does not finish after a certain date.
Inflexible	Must Finish On (MFO)	Schedules the task to finish on a specified date. Sets the early, scheduled, and late finish dates to the date that you type and anchors the task in the schedule.
Inflexible	Must Start On (MSO)	Schedules the task to start on a specified date. Sets the early, scheduled, and late start dates to the date that you type and anchors the task in the schedule.

## Time Analysis

- Software will perform passes through network to determine for each activity:
  - Earliest possible start & finish
  - Latest permissible start & finish
  - Float and critical path

ID	Task name	Duration	Early start	Early finish	Late start	Late finish	Free slack	Total slack
1	Project start	0 days	10 May '10	10 May '10	10 May '10	10 May '10	0 days	0 days
2	Dig trench and soakaway	2 days	10 May '10	11 May '10	02 Jun '10	03 Jun '10	0 days	17 days
3	Cut roof timbers	1 day	10 May '10	10 May '10	01 Jun '10	01 Jun '10	16 days	16 days
4	Make door frame	1 day	10 May '10	10 May '10	14 May '10	14 May '10	0 days	4 days
5	Dig foundations	4 days	10 May '10	13 May '10	10 May '10	13 May '10	0 days	0 days
6	Make doors	3 days	10 May '10	12 May '10	01 Jun '10	03 Jun '10	0 days	16 days
7	Position door frame	1 day	11 May '10	11 May '10	17 May '10	17 May '10	4 days	4 days
8	Concrete foundations	2 days	14 May '10	17 May '10	14 May '10	17 May '10	0 days	0 days
9	Prime doors	1 day	13 May '10	13 May '10	04 Jun '10	04 Jun '10	12 days	16 days
10	Build brick walls	10 days	18 May '10	31 May '10	18 May '10	31 May '10	0 days	0 days
11	Lay floor base	2 days	18 May '10	19 May '10	02 Jun '10	03 Jun '10	0 days	11 days

### Data Entry Errors

- Obvious errors can be detected using a report sorted by activity code and/or review network diagram
- Software's error diagnostics will report some errors e.g. typos, and dates outside range
- Two types of errors (Lock):
  - Identifiable – error reported by software
  - Unidentifiable – no error reported

### Data Entry Errors

- Identifiable Errors:
  - Invalid dates
  - Duplicate activity records (ids)
  - Dangles (no preceding or succeeding activities)
  - Loops (continuous loop)
  - No duration for activity with resource assigned

### Data Entry Errors

- Unidentifiable Errors:
  - Incorrect activity duration
  - Incorrect task name
  - Incorrect constraint
  - Costs missing
  - Wrong resource assigned
- Errors reduced with PM experience and systems programming.

### Steps to build first schedule

1. Install and Setup software
2. Prepare data
3. Open a new project file for first project
4. Enter all activity data for the project
5. Attempt time analysis
6. Correct errors
7. Run / execute the schedule

### Build the Project Schedule

- Prepare data:
  - *Project data*
  - *Calendar information*
  - *Resource data*
  - *Activity records*
  - *Activity sequencing*
- Enter data for the project
- Attempt time analysis
- Correct any input errors

### Summary

- Basic setup of computer schedules for projects
- Core data required – Project, Calendar, Resource & Activity
- Basic time analysis may be sufficient for low complexity projects
- Fix data entry errors