CRASHING

(a) Float:

The difference between the latest start time and earliest start time of an activity is called as float. Float is a measure of the amount of time by which the start of an activity can be delayed consistent with the completion of the project on time.

(b) Total Float:

Total float of an activity is defined as the difference between the maximum duration of time available for the completion and duration required to carry out that duration.

Resource leveling:

The aim is to reduce the peak resource requirements and smooth out period to period assignment within a constraint on the project duration.

Crashing:

Higher amounts of direct activity cost would be associated with smaller activity duration times, while longer duration time would involve comparatively lower direct cost. Such deliberate reduction of activity times by putting in extra effort is called Crashing.

Communicating the project schedule is a vital ingredient in successful project management. A good presentation will greatly ease the manager's problem of understanding the multitude of activities and their inter-relationships. Moreover, numerous individuals and parties are involved in any project, and they have to understand their assignments. Graphical presentations of project schedules are particularly useful since it is much easier to comprehend a graphical display of numerous pieces of information than to sift through a large table of numbers. Early computer scheduling systems were particularly poor in this regard since they produced pages and pages of numbers without aids to the manager for understanding them. It is extremely tedious to read a table of activity numbers, durations, schedule times, and floats and thereby gain an understanding and appreciation of a project schedule. In practice, producing diagrams
manually has been a common prescription to the lack of automated drafting facilities. Indeed, it has been common to use computer programs to perform critical path scheduling and then to produce bar charts of detailed activity schedules and resource assignments manually. With the availability of computer graphics, the cost and effort of producing graphical presentations has been significantly reduced and the production of presentation aids can be automated.

Network diagrams for projects have already been introduced. These diagrams provide a powerful visualization of the precedences and relationships among the various project activities. They are a basic means of communicating a project plan among the participating planners and project monitors. Project planning is often conducted by producing network representations of greater and greater refinement until the plan is satisfactory.

An Example Bar Chart for a Nine Activity Project

Bar charts are particularly helpful for communicating the current state and schedule of activities on a project. As such, they have found wide acceptance as a project representation tool in the field. For planning purposes, bar charts are not as useful since they do not indicate the precedence relationships among activities. Thus, a planner must remember or record separately that a change in one activity's schedule may require changes to successor activities. There have been various schemes for mechanically linking activity bars to represent precedences, but it is now easier to use computer based tools to represent such relationships.

1. Normal cost:

Normal cost is the lowest possible direct cost required to complete an activity.

2. Normal time:

Normal time is the maximum time required to complete an activity at normal cost.
3. **Crash time:**

Crash time is the minimum possible time in which an activity can be completed using additional resources.

4. **Crash cost:**

Crash cost is the direct cost i.e., anticipated in completing an activity within the crash time.

Define activity cost slope.

Activity cost slope is the rate of increase in the cost of activity per unit with a decrease in time. The cost slope indicates the additional cost incurred per unit of time saved in reducing the duration of an activity.

Activity Cost slope = crash cost – Normal cost .Normal time – Crash time