# Construction Management & Documentation
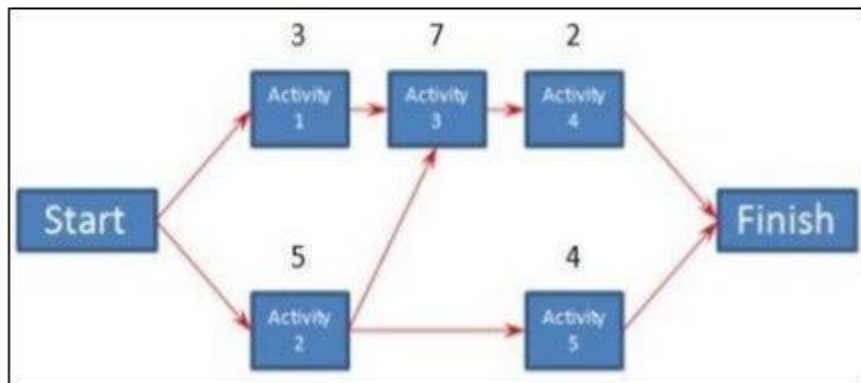
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# Elements of Network

The network is a graphic plan showing jobs or activities that must be completed to achieve completion of a project.
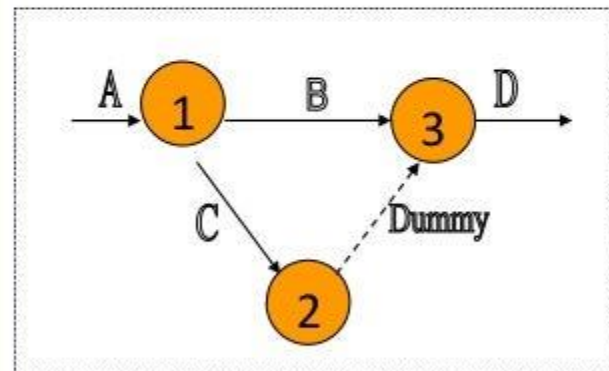
OR

A network is also defined as an arrow diagram obtained by connecting all the activities of the project in logical sequence.



**Activity:** Jobs that required to be performed in executing a project.

**Event:** is a Point in time representing start and completion of one or more activities.

**Dummy Activity:** It is a zero time activity and consumes no resources. Introduced when two or more activities start and end at the same nodes

# Network Method

## CPM –Critical Path Method

Network are generally used for planning, scheduling and controlling of repetitive type of the projects where one can make fairly accurate assessment of the time for completion of each activity.

## PERT-Program Evaluation and Review Technique

Network are generally used in research and development type of project which are non- repetitive in nature.

Also employed for the projects where it is difficult to allot definite time for performing each and every activity for want of information regarding past experience of handling similar projects

# Development of Network

**Steps to be followed for developing a network:**

a) Note down all the activities which are required to be performed for completing the project

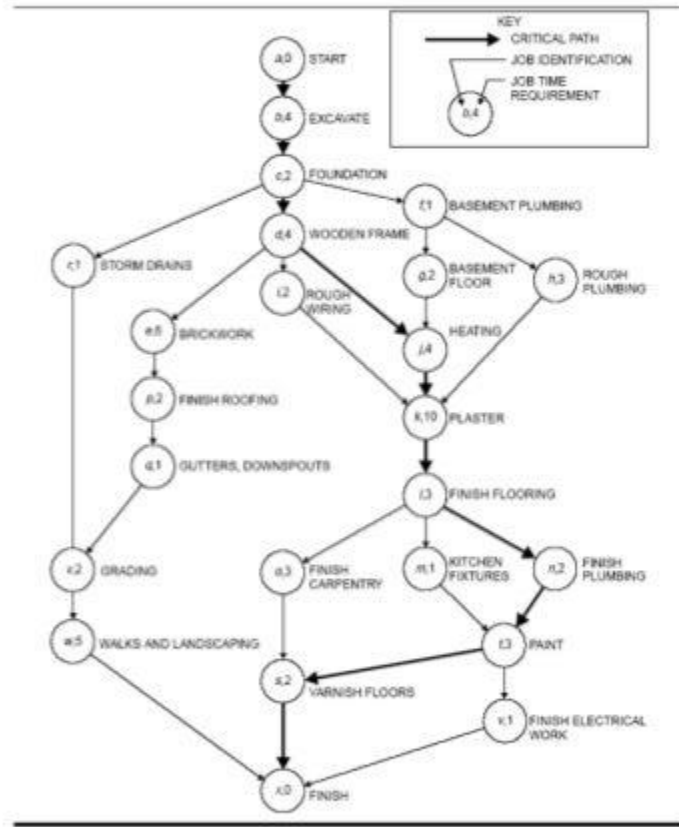b) Arrange the activities in their correct **logical sequence**.

**Logical sequence means:**

Which activity must be completed before particular activity can be started?

Which activity can be started concurrently with other activity?

Which activity must immediately follow this activity?

a) Consider possibilities of sub-dividing different activities in phases or sections to introduce the concept of performing jobs simultaneously or concurrently. This helps in reducing overall time of completion of the project.



Network Diagram

# Identify the Critical path

**The critical path** is path along the network which requires the longest time for the project from start to its completion and thus decides the time of completion of the project.

**Event slack/Float** is the free time available up to which occurrence of an event can be delayed without causing any delay in the completion date of the project

Zero slack → event is on schedule.

Positive slack → event is ahead of schedule

Negative slack → event is behind schedule.