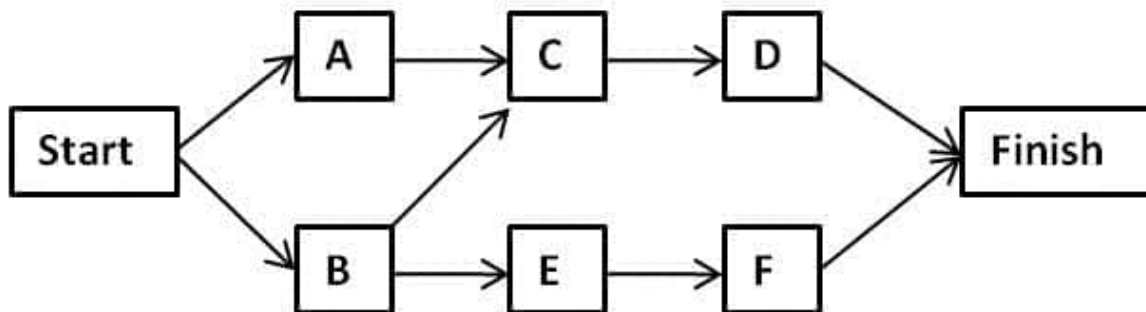


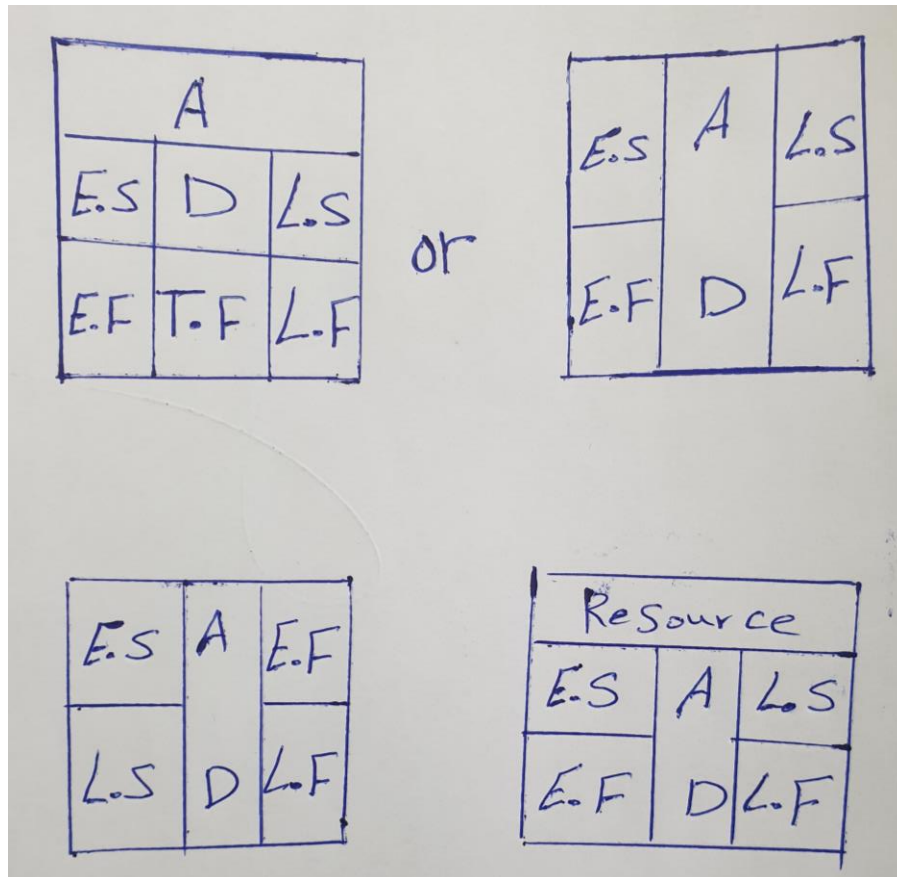
Activity on Node (AON) Network Planning Technique

Activity-on-node is a project management term that refers to a precedence diagramming method which uses boxes to denote schedule activities. These various boxes or “nodes” are connected from beginning to end with arrows to depict a logical progression of the dependencies between the schedule activities. Each node is coded with a letter or number that correlates to an activity on the project schedule.

Typically, an activity-on-node diagram will be designed to show which activities must be completed in order for other activities to commence. This is referred to as “finish-to-start” precedence – meaning one activity must be finished before the next one can start.



Precedence Diagram Method (PDM)

Representation of activity in(AON) Network**A-O-N network diagram specification**

- There is no dummy activity
- All the information that wanted to any activity is written on the box (node) area.
- The time overlapping problem for activities is solved by this technique.
- The delay time for activities can be solved without needing to return to the plan details.

Dependency Relation

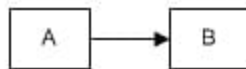
The Precedence Diagramming Method uses four relationships:

- 1- Finish to Start (FS)
- 2- Finish to Finish (FF)
- 3- Start to Start (SS)
- 4- Start to Finish (SF)

1- Finish to Start (FS)

Here, the next activity cannot start until the first is complete. This is the most common relationship in PDM

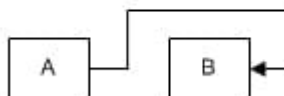
Finish To Start (FS)



2- Finish to Finish (FF)

Here, you cannot complete the next activity until the first is finished. Put simply, both activities should be finished simultaneously

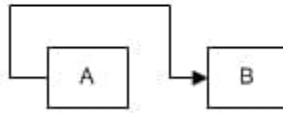
Finish To Finish (FF)



3- Start to Start (SS)

Here, the next activity cannot be started until the first starts. Both activities should start simultaneously.

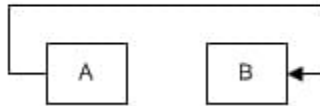
Start To Start (SS)



4- Start to Finish (SF)

Here, you cannot finish the next activity until the first start

Start To Finish (SF)



Benefits of Precedence Diagramming Method

This method offers many benefits to project management:

- 1- It helps you find relationships and dependencies among activities. This helps you in planning and avoiding risks. If any task is missing, you can easily identify it.
- 2- You can find critical activities and focus on them. Any delay in critical activities will delay your schedule.
- 3- A project schedule network diagram is a good communication tool. Stakeholders can visualize activities and understand the schedule. Without the Precedence Diagram, you cannot develop your project schedule.

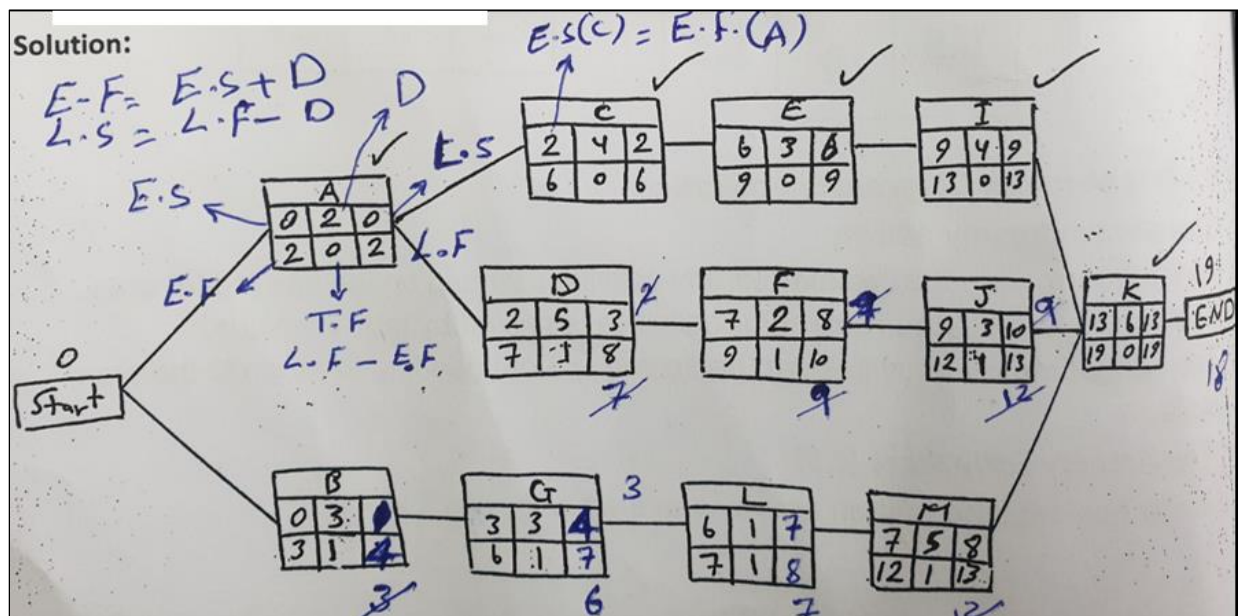
Example 1: Find

1- The total project duration

2- C.P

By using the following details to draw A-O-N network diagram

Activity	A	B	C	D	G	E	F	L	I	J	M	K
Duration, days	2	3	4	5	3	3	2	1	4	3	5	6
Following activity	C,D	G	E	F	L	I	J	M	K	K	K	---



The total duration = 19 Days

C.P= A,C,E,I,K

Example 2: Find

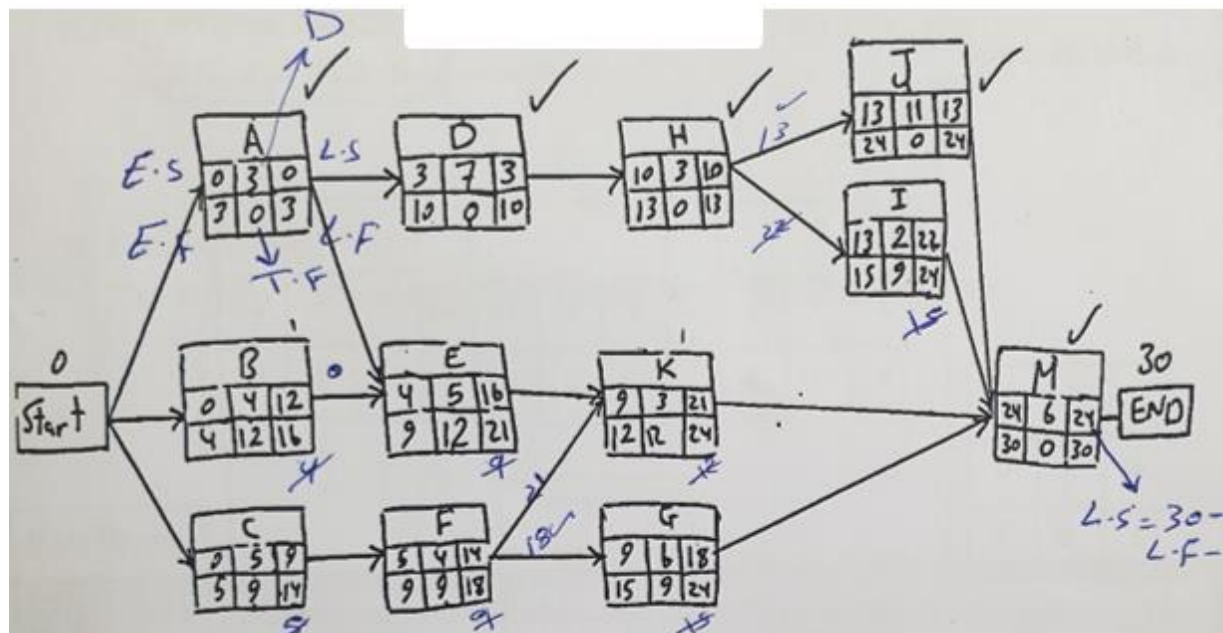
1- The total project duration and date of completion if start day is 1/3/2019

2- C.P

By using the following details to draw A-O-N network diagram

activity	A	B	C	D	E	F	H	K	G	I	J	M
Duration, days	3	4	5	7	5	4	3	3	6	2	11	6
Following activity	D,E	E	F	H	K	K,G	I,J	M	M	M	M	---

Solution:



The total project duration is 30 days

The date of completion is $(1/3/2019 + 30) = 1/4/2019$

C.P= A,D,H,J,M