

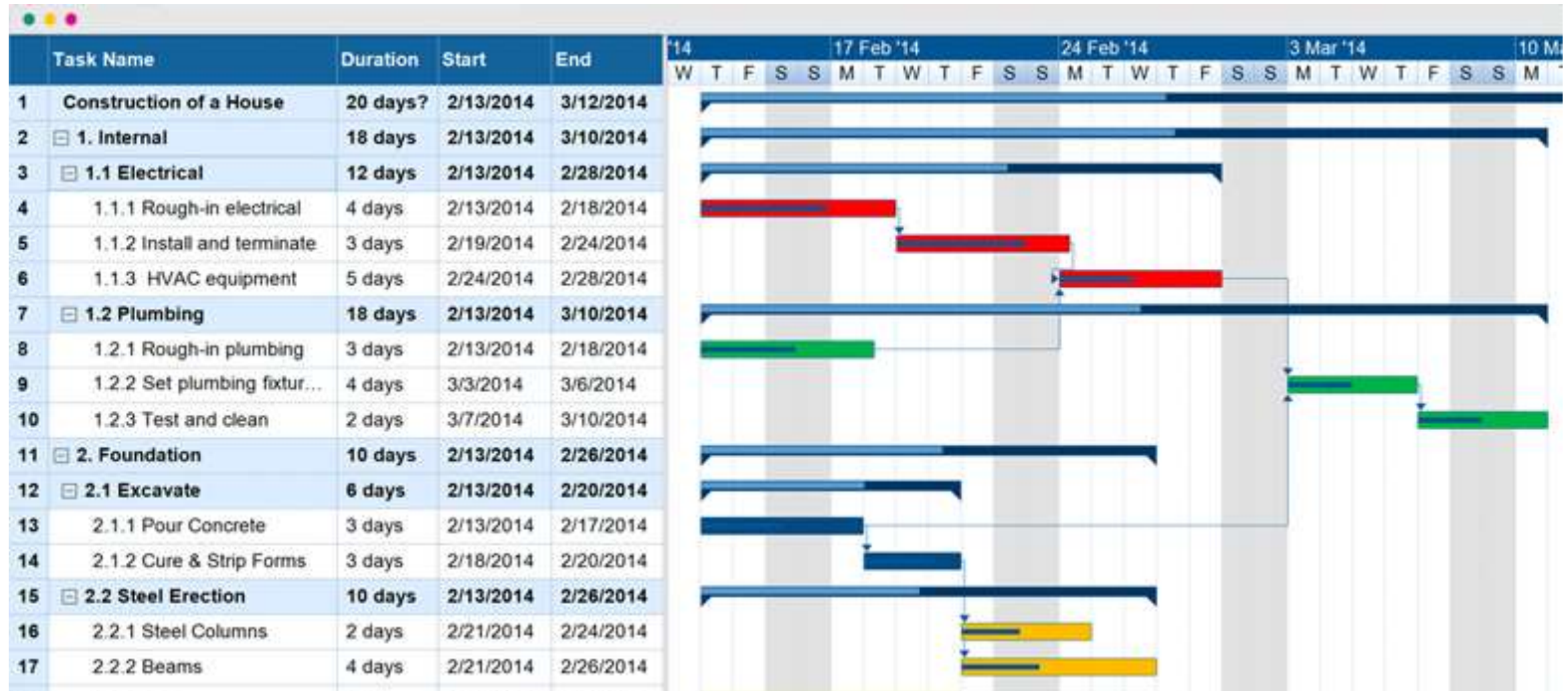


THE SCOPE OF TOOLS AND TECHNIQUES

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GANTT CHART





Gantt Chart

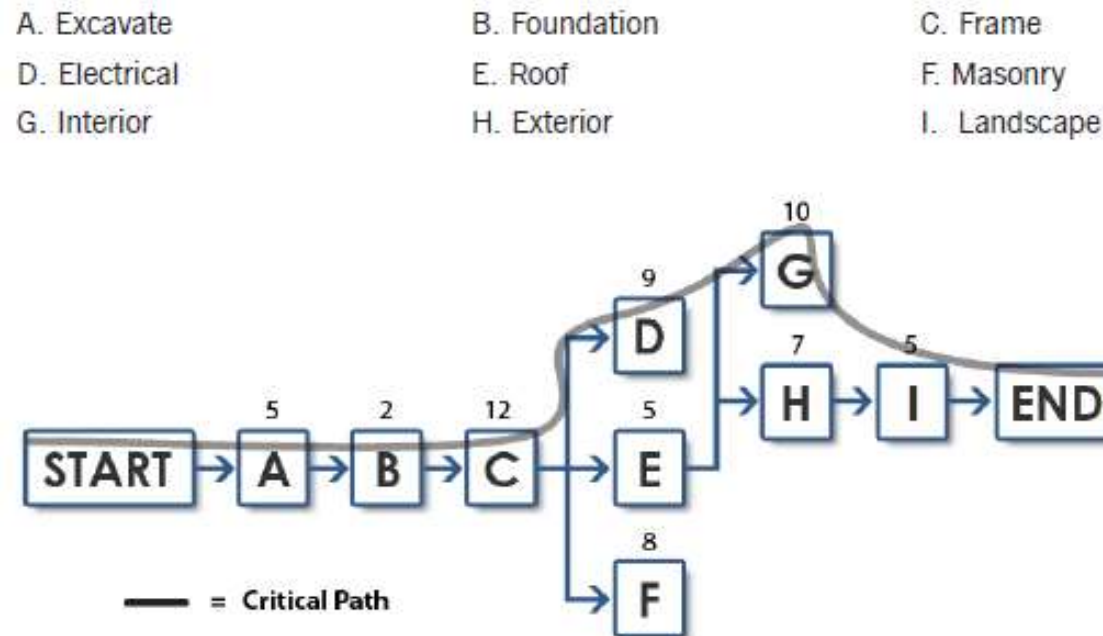
Task Name	Q1 2019			Q2 2019		Q3 2019
	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul 19
Planning						
Research						
Design						
Implementation						
Follow up						



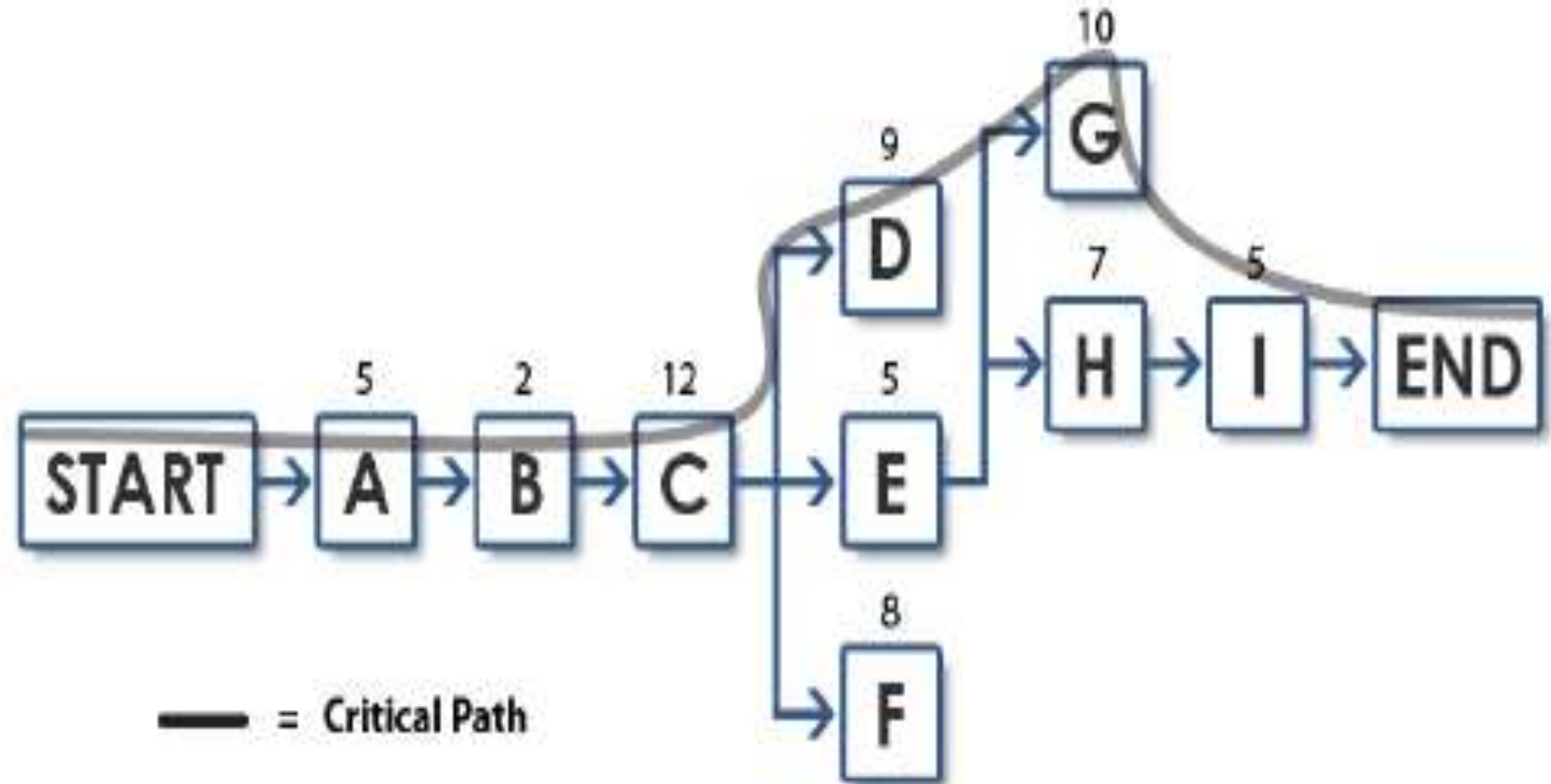
THE ACTIVITY NETWORK DIAGRAM

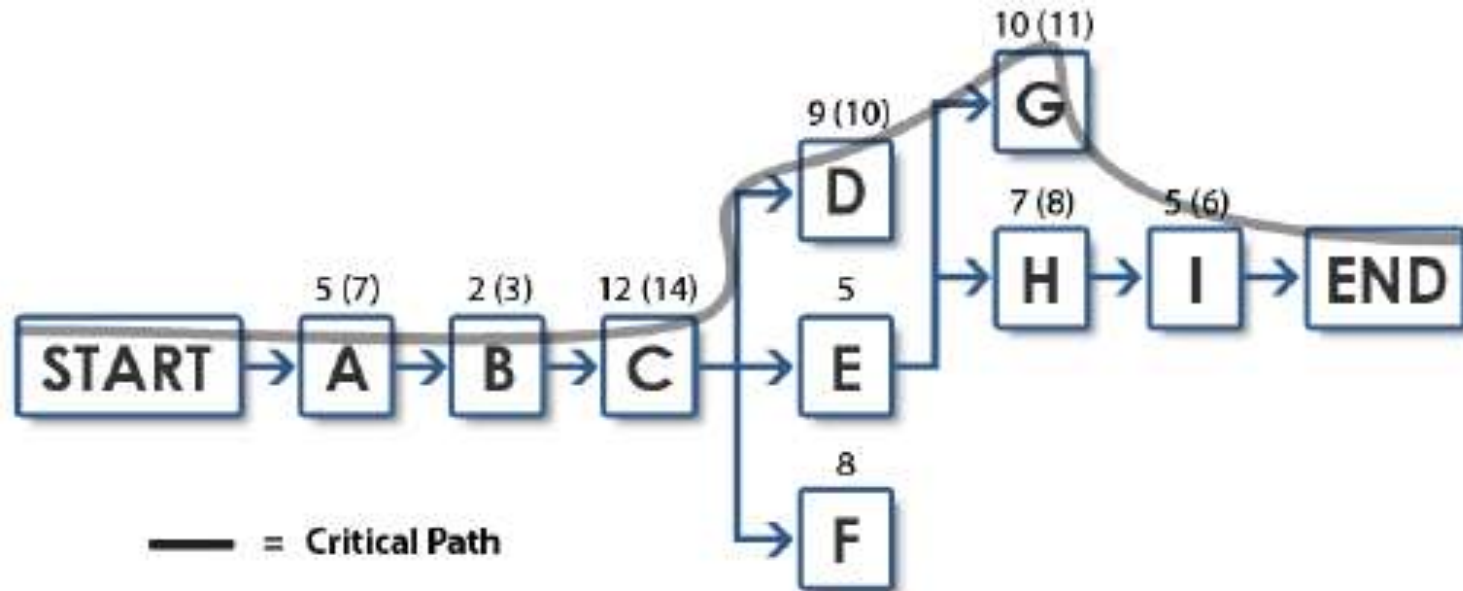
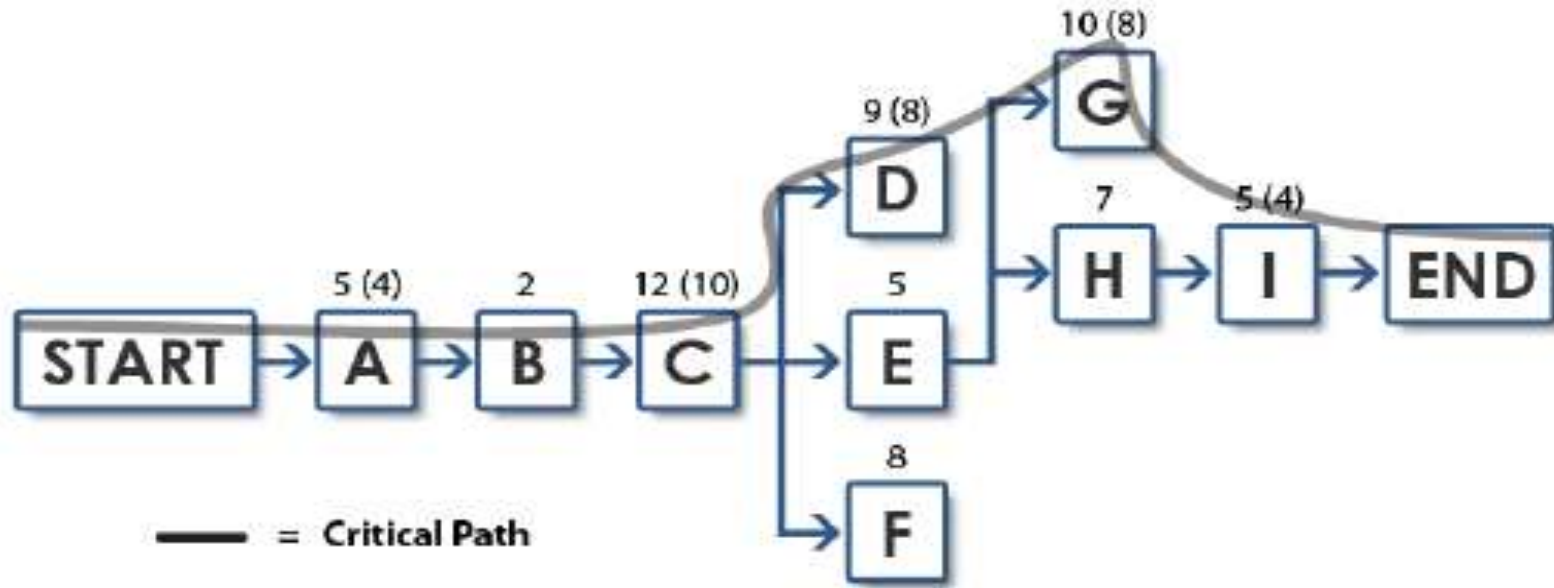
- An **Activity Network Diagram** is a diagram of project activities that shows the sequential relationships of activities using arrows and nodes.
- An activity network diagram tool is used extensively in and is necessary for the identification of a project's critical path (which is used to determine the expected completion time of the project).

Example: Suppose the team is tasked with improving the process of building a house. The team lists the major steps involved – everything from the excavation step through the landscaping step.



A. Excavate	5 days
B. Foundation	2 days
C. Frame	12 days
D. Electrical	9 days
E. Roof	5 days
F. Masonry	8 days
G. Interior	10 days
H. Exterior	7 days
I. Landscape	5 days







Expected Time

So what does all of this mean? It means the project most likely will take 50 days, but it could take 59 days, or it can be done as soon as 43 days.

$$\text{Expected Time} = \frac{\text{Optimistic} + [4 (\text{Most Likely})] + \text{Pessimistic}}{6} =$$

$$\text{Expected Time} = \frac{43 + 200 + 59}{6} = 50.3 \text{ days}$$

Control Bands

We could calculate control bands around the average. Here's how we do that:

$$\text{Limits of expected variation} = \frac{\text{Optimistic} - \text{Pessimistic}}{6} =$$

$$\text{Limits of expected variation} = \frac{59 - 43}{6} =$$

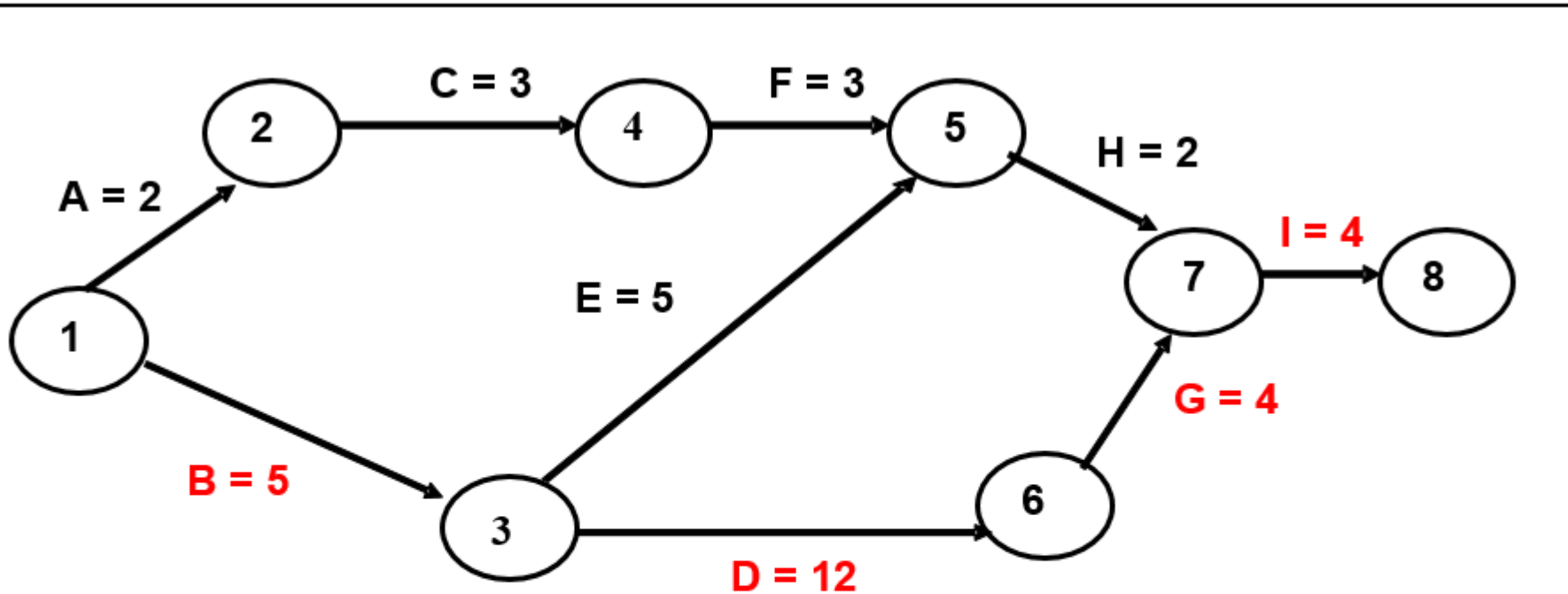
$$\text{Limits of expected variation} = \frac{16}{6} = 2.7$$

For the critical path, we can expect the project to take from 47.6 days to 53.0 days

$50.3 + 2.7 = 53$ on the high side

$50.3 - 2.7 = 47.6$ on the low side.

ACTIVITY



Path 1: A-C-F-H-I = 2+3+3+2+4 = 14 days

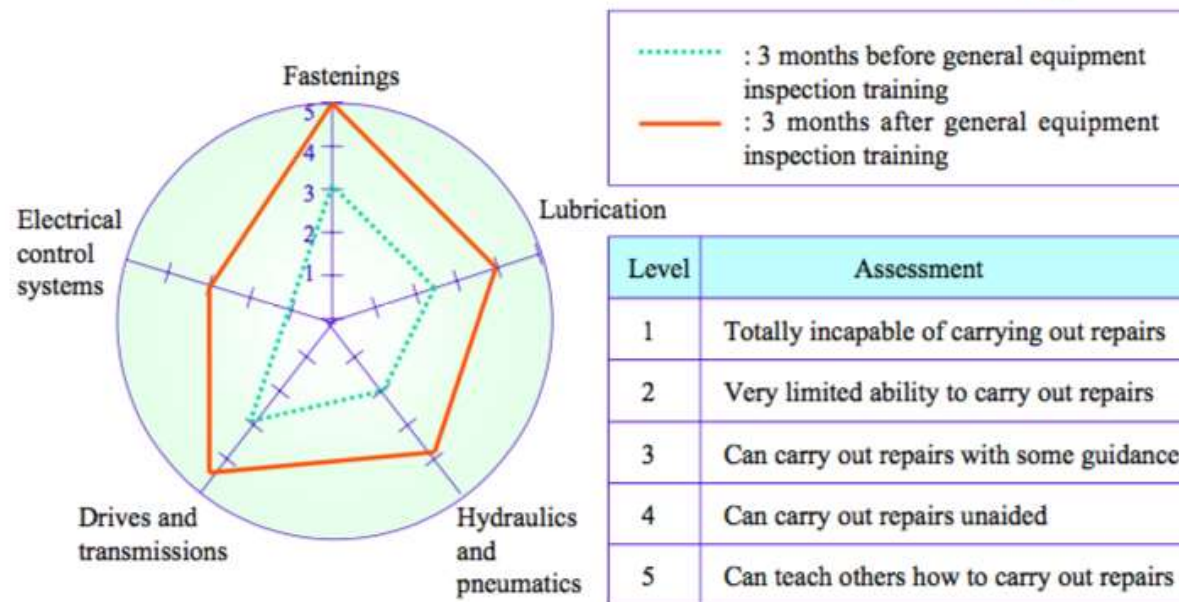
Path 2: B-E-H-I = 5+5+2+4 = 16 days

Path 3: B-D-G-I = 5+12+4+4 = 25 days (Critical Path)

RADAR CHART

A radar chart is a graph in which each data series has its own axis and 'radiates' out from a central point.

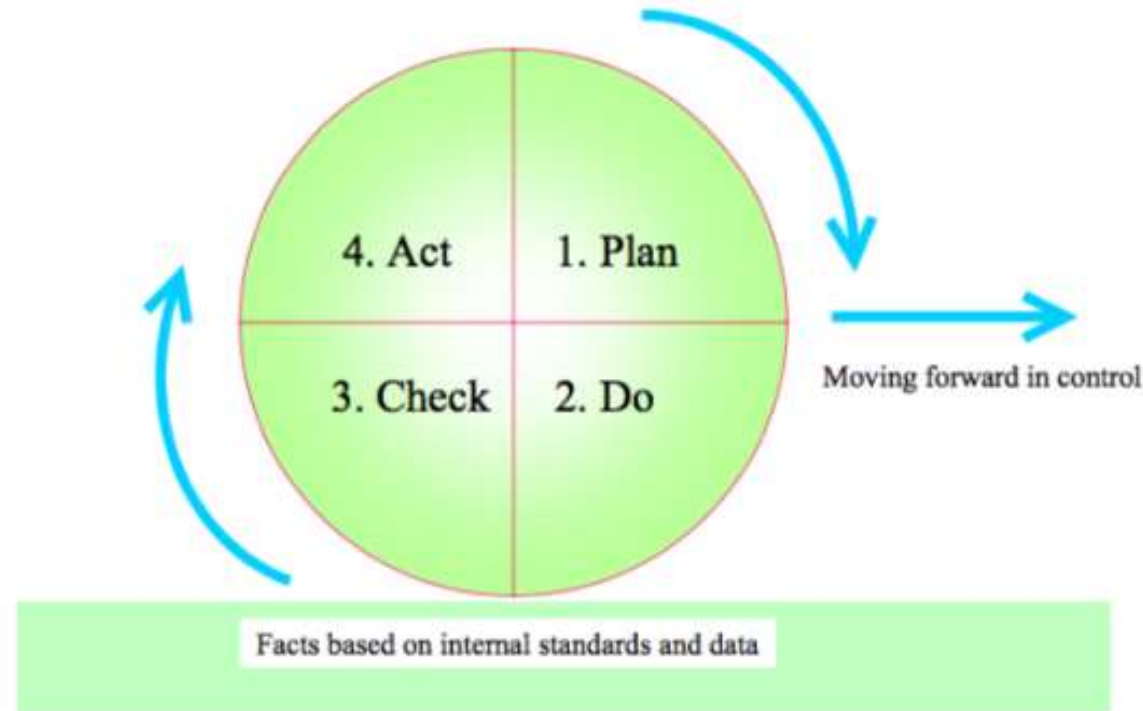
A radar chart is particularly useful when there are multiple characteristics that need to be compromised to a point (a 'sweet spot') that is most pleasing to most of the customers in a particular niche.





PDCA CYCLE

Plan → Do → Check (inspect/diagnose) → Act (repair/improve). This is called the 'PDCA cycle' or the 'control cycle'



MILESTONE

Staircase Arrow Milestone

Milestone Tracking is with **milestones**.

To decide on a milestone

Does this task impact c

Is this a task or a deliv

Will this point in the p

Does this task need to

If this task doesn't get done, can we still complete the project?



ing specifically

ns:



REFERENCES

1. <https://www.gantt.com/creating-gantt-charts>
2. <https://www.sixsigmadaily.com/the-activity-network-diagram/>
3. <https://leanmanufacturing.online/focused-improvement/>
4. **What is Lean Six Sigma** By Michael L. George, David T. Rowlands, Bill Kastle



THANK YOU