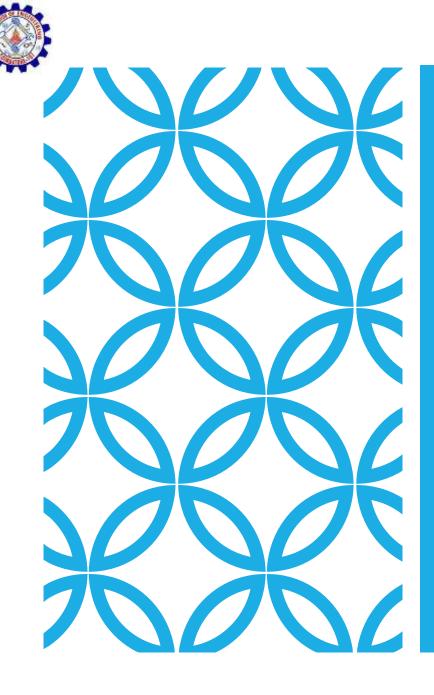


#### THE SCOPE OF TOOLS AND TECHNIQUES

K.M.Eazhil Assistant Professor Department of Mechanical Engineering SNS College of Engineering Coimbatore







#### **GANTT CHART**

	Task Name Duration Start End		'14 17 Feb '14						24	24 Feb '14					3	3 Mar '14					10 N							
	rask Name	ouration	Start	End	W	/ T	F	S S	M	Т	W	T I	FS	S	M	T	W	TI	F	SS	5 1	MT	r v	N T	F	S	S	М
1	Construction of a House	20 days?	2/13/2014	3/12/2014		-	_		-	-		-		-	-	_	_	-		_							_	
2	🖂 1. Internal	18 days	2/13/2014	3/10/2014		-	-	-		-	-	-		-	-		-	-		-	-		-	-	1		-	
3	1.1 Electrical	12 days	2/13/2014	2/28/2014		-	_	-	-	-	-	-	-	-		-	-											
4	1.1.1 Rough-in electrical	4 days	2/13/2014	2/18/2014		8	-	-			ŧ.																	
5	1.1.2 Install and terminate	3 days	2/19/2014	2/24/2014						1		-			•													
6	1.1.3 HVAC equipment	5 days	2/24/2014	2/28/2014											-	_					-							
7	E 1.2 Plumbing	18 days	2/13/2014	3/10/2014		-	-	-	-	-	-	+	-	-	1	-	-	-		-	-	-	+	-	-	-	-	
8	1.2.1 Rough-in plumbing	3 days	2/13/2014	2/18/2014			-	-			-	+	-	-	-						-							
9	1.2.2 Set plumbing fixtur	4 days	3/3/2014	3/6/2014																	1							
10	1.2.3 Test and clean	2 days	3/7/2014	3/10/2014																	T				Ĭ.	-		
11	2. Foundation	10 days	2/13/2014	2/26/2014		-	-	-		-	-	-	-	-	-	-												
12	2.1 Excavate	6 days	2/13/2014	2/20/2014		-	-	-	-	-	-																	
13	2.1.1 Pour Concrete	3 days	2/13/2014	2/17/2014		-	-		1			-	-	_	-	-	-	-	-	-	_							
14	2.1.2 Cure & Strip Forms	3 days	2/18/2014	2/20/2014						-																		
15	2.2 Steel Erection	10 days	2/13/2014	2/26/2014		-	-		-	-	-		-	-	-	-												
16	2.2.1 Steel Columns	2 days	2/21/2014	2/24/2014								i	-		-													
17	2.2.2 Beams	4 days	2/21/2014	2/26/2014								1	-	-		-												
		100			1																							



# **Gantt Chart**



Teek Norse	Q12019			Q3 2019		
Task Name	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul 19
Planning						
Research						
Design						
Implementation						
Follow up						





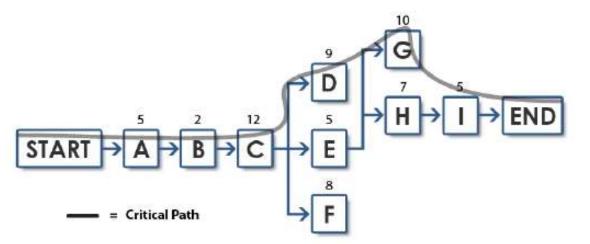
# THE ACTIVITY NETWORK DIAGRAM

>An Activity Network Diagram is a diagram of project activities that shows the sequential relationships of activities using arrows and nodes.

>An <u>activity network diagram</u> 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.

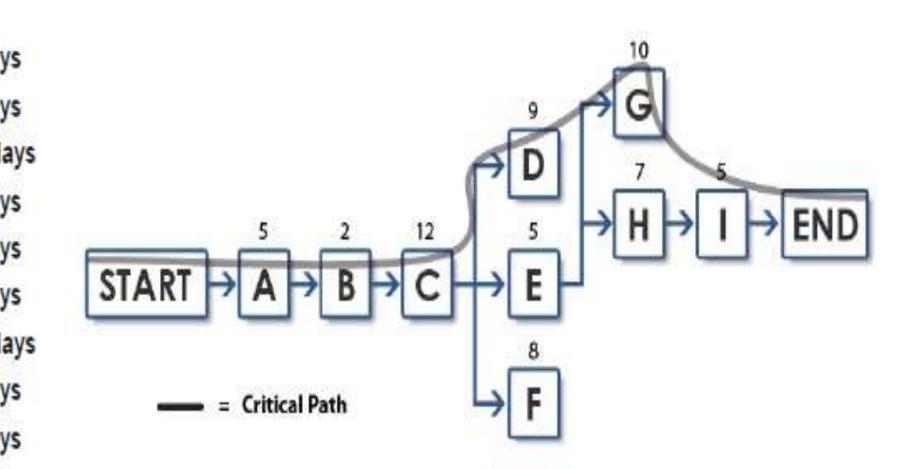
A. Excavate	B. Foundation	C. Frame
D. Electrical	E. Roof	F. Masonry
G. Interior	H. Exterior	I. Landscape



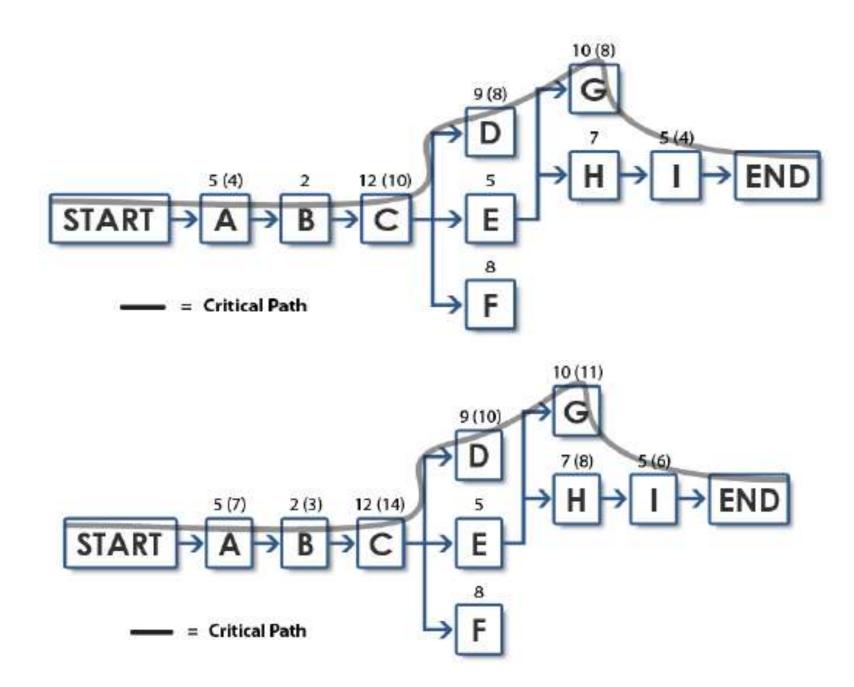




A. Excavate 5 days **B.** Foundation 2 days C. Frame 12 days D. Electrical 9 days E. Roof 5 days F. Masonry 8 days G. Interior 10 days H. Exterior 7 days I. Landscape 5 days











#### **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.

Expected Time =	Optimistic + [4 (Most Likely)] + Pessimistic 6	=
Expected Time =	$\frac{43 + 200 + 59}{6}$	= 50.3 days

#### **Control Bands**

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

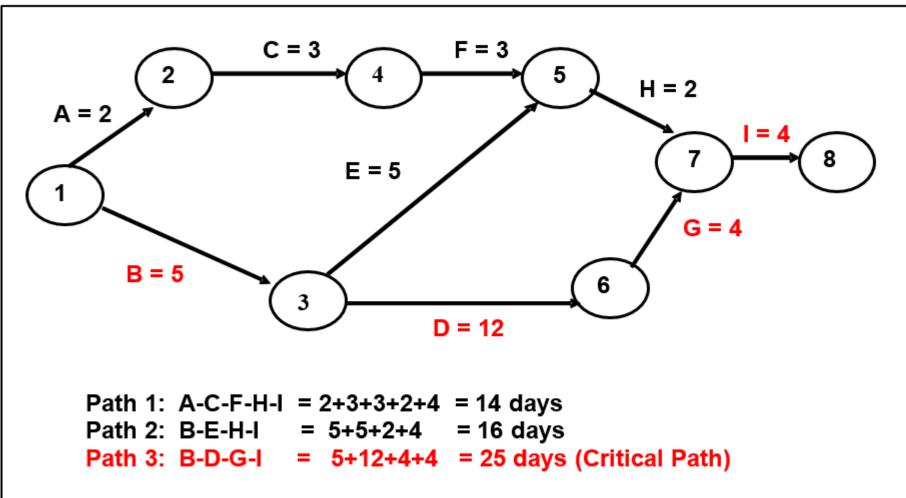
Limits of expected variation =	Optimistic - Pessimistic 6	=
Limits of expected variation =	<u>59 - 43</u> 6	=
Limits of expected variation =	$\frac{16}{6}$	= 2.7

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



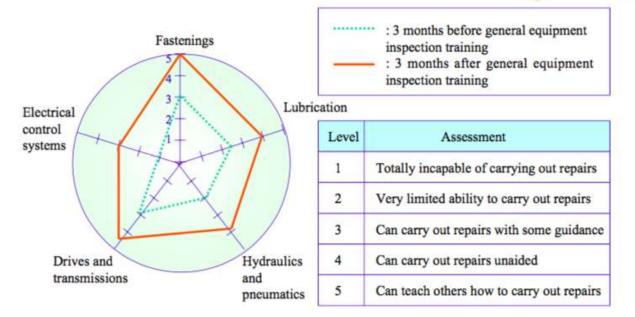




#### RADAR CHART

A radar chart is a graph in which each data series has it's 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.

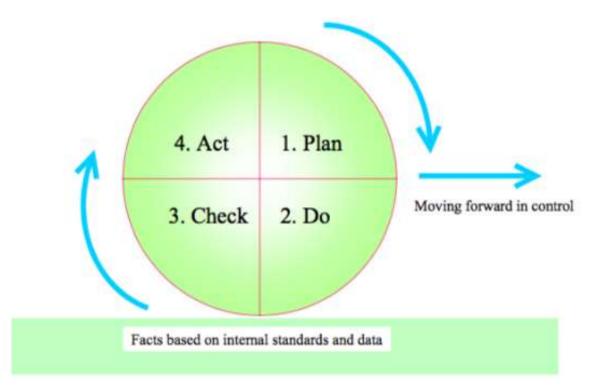






# PDCA CYCLE

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









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





## REFERENCES

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





### THANK YOU

VII SEM- LEAN SIX SIGMA- UNIT- 2-THE SCOPE OF TOOLS AND TECHNIQUES/K.M.EAZHIL 13/12