CISC4002 Software Project Management - Course Project
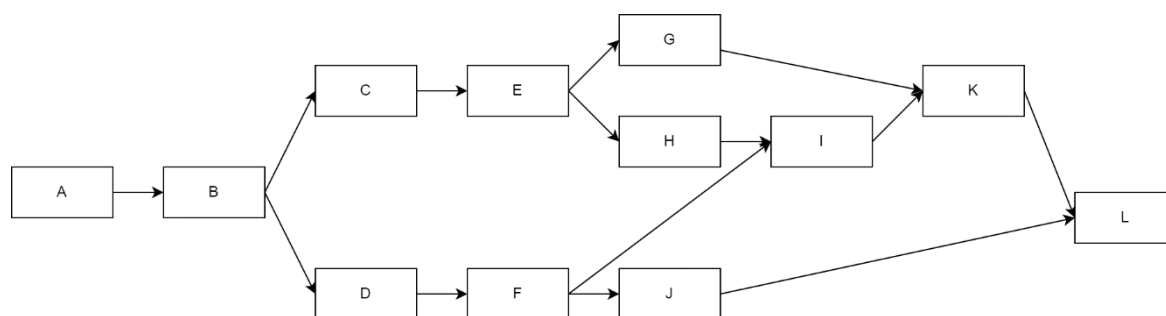
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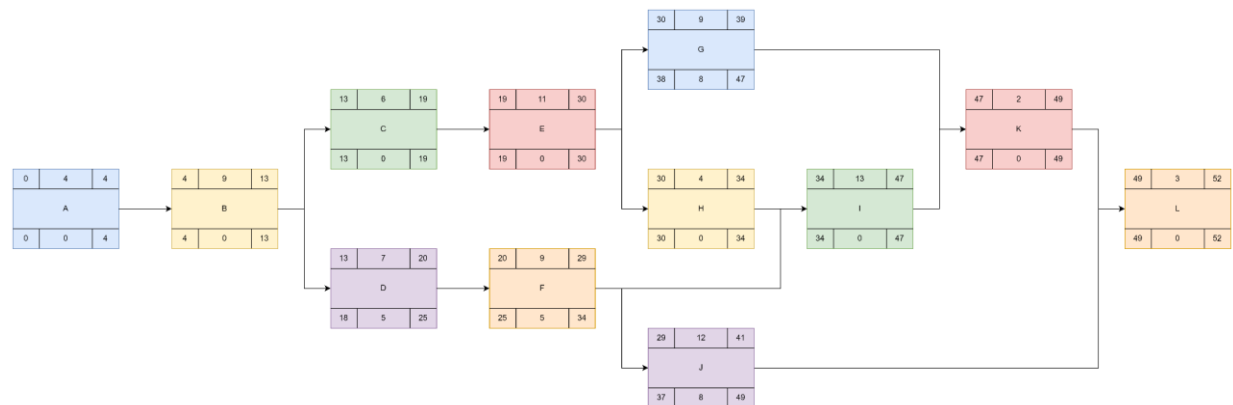## Question 1

Question 2

$$Expected\ Time\ = \frac{1}{6}[Optimistic\ Time + 4 \times Most\ Likely\ Time + Pessimistic\ Time]$$

$$Std.Deviation\ = \frac{1}{6}[Pessimistic\ Time\ (b) - Optimistic\ Time\ (a)]$$

$$Total\ Std.Dev. = \sqrt{sd_1^2 + sd_2^2 + \ldots + sd_n^2} = \sqrt{\sum_{i=1}^{n} sd_i^2},\ where\ sd_i \in Critical\ Path$$

TASK	Most Likely Time	Optimistic Time	Pessimistic Time	Expected Time	Standard Deviation
	m	a	b	Exp Dur	Std Dev
A	4	3	5	4	0.333333
B	8	8	14	9	1
C	6	4	8	6	0.666667
D	7	4	10	7	1
E	10	9	17	11	1.333333
F	9	8	10	9	0.333333
G	9	7	11	9	0.666667
H	4	2	6	4	0.666667
I	12	12	18	13	1
J	12	11	13	12	0.333333
K	2	2	2	2	0
L	3	2	4	3	0.333333
Total Standard Deviation					2.1108

Question 3

TASKS	Earliest Start	Duration	Earliest Finish	Latest Start	Float	Latest Finish
	ES	DUR	EF	LS	FLT	LF
A	0	4	4	0	0	4
B	4	9	13	4	0	13
C	13	6	19	13	0	19
D	13	7	20	18	5	25
E	19	11	30	19	0	30
F	20	9	29	25	5	34
G	30	9	39	38	8	47
H	30	4	34	30	0	34
I	34	13	47	34	0	47
J	29	12	41	37	8	49
K	47	2	49	47	0	49
L	49	3	52	49	0	52

Question 4

$$z = \frac{(Target\ Completion - \ Expected\ Completion)}{Std.\,Dev.} = \frac{(T - t_e)}{s} = \frac{(55 - 52)}{2.1108} = 1.3568$$

According to the Z-Score table, the rough probability of z-value 1.17 is 0.9115, which yields a probability of 91.15% of finishing the project on time.

Question 5

Number of specialists of each type needed on each day of the project.

Question 6

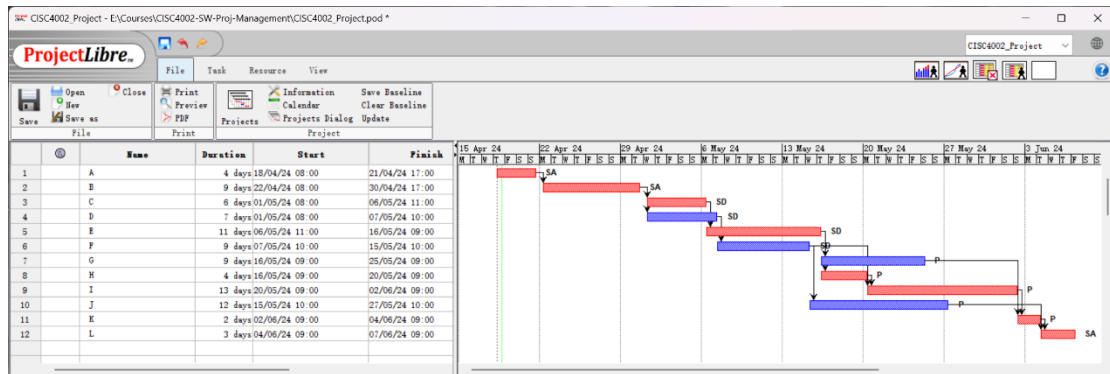Number of specialists of each type needed on each day of the project (constrained).

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Question 7

The delay caused by the constraint is 5 days.

Question 8

8.1 Gantt Chart

8.2 Resource Allocation Form

	ⓐ	Name	Duration	Start	Finish	Predecessors	Resource Names
1		A	4 days	18/04/24 08:00	21/04/24 17:00		SA
2		B	9 days	22/04/24 08:00	30/04/24 17:00	1	SA
3		C	6 days	01/05/24 08:00	06/05/24 11:00	2	SD
4		D	7 days	01/05/24 08:00	07/05/24 10:00	2	SD
5		E	11 days	06/05/24 11:00	16/05/24 09:00	3	SD
6		F	9 days	07/05/24 10:00	15/05/24 10:00	4	SD
7		G	9 days	16/05/24 09:00	25/05/24 09:00	5	P
8		H	4 days	16/05/24 09:00	20/05/24 09:00	5	P
9		I	13 days	20/05/24 09:00	02/06/24 09:00	6;8	P
10		J	12 days	15/05/24 10:00	27/05/24 10:00	6	P
11		K	2 days	02/06/24 09:00	04/06/24 09:00	7;9	P
12		L	3 days	04/06/24 09:00	07/06/24 09:00	10;11	SA

8.3 Time Schedule Configurations

Project Time Configuration

Resource Time Configuration

8.4 Work Hours Per Day Configuration

Duration Settings ☒

These settings only apply to durations

Hours per day : 8

Hours per week : 56

Days per month : 31

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