FA19 - BSSE - 0014

Activity	Symbol	Predecessor	t_o	t_m	t_p	t_e	σ^2
Requirement	A	—	1	5	7	5	1
Prototype	B	—	6	7	9	7	0.25
UML	C	A	3	4	5	4	0.11
Architecture	D	C	1	1	3	1	0.11
Code	E	B,C	7	8	15	9	1.78
DB	F	D,E	1	2	5	2	0.44
API	G	F	1	1	2	1	0.03
UI	H	G	3	6	8	6	0.69
Testing	I	E,F,H	2	4	3	4	0.03
Deploy	J	I, H	1	1	2	1	0.03

$\therefore t_e = \dfrac{t_o + 4t_m + t_p}{6}$

$\because \sigma^2 = \dfrac{(t_p - t_o)^2}{6}$

And we will use t_e as duration for critical path analysis

FA19-BSSE-0014

Symbols	Predecessor	duration	ES	EF	LS	LF	Slack
A	—	5	0	5	0	5	0
B	—	7	0	7	2	9	2
C	A	4	5	9	5	9	0
D	C	1	9	10	18	19	9
E	B, C	9	9	18	9	18	0
F	D, E	2	18	20	18	20	0
G	F	1	20	21	20	21	0
H	G	6	21	27	21	27	0
I	E, F, H	4	27	31	27	31	0
J	I, H	1	31	32	31	32	0

Critical Path A, C, E, F, G, H, I, J = 32 days

Project Length Variance (σ) $\sqrt{16 + 18 + 110 + 111 + 112 + 113 + 114 + 115}$ = 2.02731393

Standard Normal Variance (D) $(40 - 32)/2.0272$ = 3.946208989

Probability $(p(z > D))$ 0.9996 × 100 = 99.96

Logarithm value at 3.9   99996