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Project (a)

Title:

Activity	Mean Duration	Variance
1-2	4.00	0.11
1-4	2.83	0.25
1-5	3.83	0.25
2-3	5.00	0.11
2-5	8.17	0.25
2-6	9.50	0.69
3-4	10.00	5.44
3-6	4.00	0.11
4-6	7.67	1.00
4-7	6.17	0.25
5-6	10.67	1.00
5-7	6.00	0.44
6-7	4.00	0.11

Title:

Node	Longest Path	Path Mean	Path Std. Dev.
2	1-2	4.00	0.33
3	1-2-3	9.00	0.47
4	1-2-3-4	19.00	2.38
5	1-2-5	12.17	0.60
6	1-2-3-4-6	26.67	2.58
7	1-2-3-4-6-7	30.67	2.60

Event	Latest occurrence time, LC	$P\{\text{occurrence time} \leq LC\}$
2	4	.5
3	9	.5
4	19	.5
5	16	1.0
6	26.67	.5
7	30.67	.5

LC is determined by carrying out CPM calculations using average duration time

Example of probability calculations:

For node 5:

$$P\{T \leq 16\} = P\left\{Z \leq \frac{16 - 12.17}{.6}\right\} = P\{Z \leq 6.38\} \approx 1$$

continued...

Project (b)

Title:

Activity	Mean Duration	Variance
1-2	2.83	0.25
1-3	6.83	0.25
1-4	7.17	0.25
1-6	2.00	0.11
2-3	4.00	0.11
2-5	8.00	0.11
3-4	15.00	2.78
3-7	13.00	0.11
4-5	12.17	0.69
4-7	10.00	0.44
5-6	8.33	0.44
5-7	4.33	1.00
6-7	6.00	0.11

Title:

Node	Longest Path	Path Mean	Path Std. Dev.
2	1-2	2.83	0.50
3	1-3	6.83	0.50
4	1-3-4	21.83	1.74
5	1-3-4-5	34.00	1.93
6	1-3-4-5-6	42.33	2.04
7	1-3-4-5-6-7	48.33	2.07

Event	Latest occurrence time, LC	$P\{\text{occurrence time} \leq LC\}$
2	2.83	.5
3	6.83	.5
4	21.83	.5
5	34.00	.5
6	42.33	.5
7	48.33	.5

All events happen to fall on the critical path (using average durations). This is the reason all probabilities = .5