Software Engineering Lab (CS3074) SPRING 2021-22

Lab Sheet-4 (Software Project Management-2)

Q.1 The following table indicates the various tasks involved in completing a software project, the corresponding activities, and the estimated effort for each task in person-months. The precedence relation Ti ≤ {Tj, Tk} implies that the task Ti must complete before either task Tj or Tk can start. The following precedence relation is known to hold among different tasks: T1 ≤ T2 ≤ {T3, T4, T5, T6 } ≤ T7.

Task No.	Task /Activity	Effort in PM	Dependent on Tasks
T1	Requirements specification	1	-
T2	Design	2	T1
T3	Code actuator interface module	2	T2
T4	Code sensor interface module	5	T2
T5	Code user interface part	3	T2
T6	Code control processing part	1	T2
T7	Integrate and test	6	T3, T4, T5, T6
T8	Write user manual	3	-

(a) Draw the Activity network representation of the tasks.
(b) Determine ES, EF and LS, LF for every task using CPM.
(c) Show the critical path using CPM.

Q2. Develop the Gantt chart representations for the project described in the Q1.

Q3. Draw the network diagram, find out the critical path and critical activities, and calculate the project duration for the given problems using PERT. Find the probability of completing the project in 57 days.

		Estimated Duration (days)		
Predecessor	Successor	(a)	(m)	(b)
A	-	6	10	12
B	-	7	10	12
C	A	20	22	25
D	B	14	15	17
E	A	10	12	15
F	C, D	10	12	14
G	B	12	14	18
H	E	16	18	21
I	C, D, G	12	14	17
J	E	1	2	3
K	F, H, I	7	9	11
L	C, D, G	17	19	22
M	J	7	8	10