

ENAE 483/788D LECTURE #04 (SYSTEMS ENGINEERING) – FALL, 2024

The following tasks describe a project which you need to analyze and manage. Task durations are given in weeks; assume the project starts at Week 1.

Task	Precedent Tasks	Duration (weeks)
Alpha	-	1
Bravo	Alpha	3
Charlie	Alpha	1
Delta	Alpha	4
Echo	Alpha	3
Foxtrot	Alpha	2
Golf	Alpha	5
Hotel	Bravo, Charlie, Delta	6
India	Charlie, Delta, Echo	2
Juliet	Delta, Echo, Foxtrot	3
Kilo	Echo, Foxtrot, Golf	4
Lima	Foxtrot, Golf	3
Mike	Bravo, Hotel	4
November	Hotel, India	2
Oscar	India, Juliet	1
Papa	Juliet, Kilo	5
Quebec	Kilo, Lima	3
Romeo	Golf, Lima	4
Sierra	Mike, November	3
Tango	Mike, November, Oscar	2
Uniform	November, Oscar, Papa	4
Victor	Oscar, Papa, Quebec	1
Whisky	Papa, Quebec, Romeo	5
Xray	Sierra, Tango, Uniform	1
Yankee	Uniform, Victor, Whisky	3
Zulu	Uniform, Xray, Yankee	2

- (1) Draw a Gantt chart for this program. You can use project management software if you have it (several are available for free online) or draw it manually.
See attached figure.
- (2) Draw a PERT chart for this program. Again, use whatever software or manual techniques you choose.
See attached figure.
- (3) What is the minimum time (in weeks) it will take to complete the project?
25 weeks
- (4) What is the critical path?
Alpha-Golf-Kilo-Papa-Whisky-Yankee-Zulu, shown by red zero slack time on the PERT chart, and red boxes on the Gantt chart.
- (5) How much slack time does task Lima have?
2 weeks

