SYSC 4106: Assignment 2   March 10, 2020

Name: Nem Zutkovic   **Student #:** 101085982
Name: Katherine Shaw   **Student #:** 101035008
Name: Abhi Santosh   **Student #:** 101055288

Question 1

Activities	Predecessors	Optimum	Normal	Pessimistic	Expected Time	Var-1	Var-2
a	None	5	6	9	6.33	2.37	0.44
b	None	4	4	6	4.33	0.59	0.11
c	None	7	9	15	9.67	9.47	1.78
d	a	6	6	6	6.00	0.00	0.00
e	b	4	5	7	5.17	1.33	0.25
f	b	12	16	17	15.50	3.70	0.69
g	c	8	12	20	12.67	21.30	4.00
h	c	7	9	16	9.83	11.98	2.25
i	d, e	10	14	18	14.00	9.47	1.78
j	f, g	6	12	20	12.33	28.99	5.44
k	h	7	9	14	9.50	7.25	1.36
						Σ = 96.45	Σ = 18.1
						SD = 9.82	**SD** = 4.25

A. See table.

B.
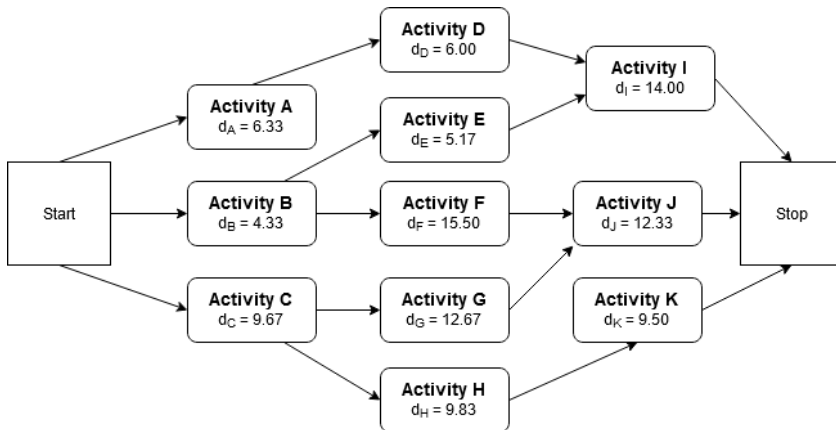
C. The Critical Path is Start -> C (10) -> G (13) -> J (13) -> Stop, and the Critical Time is 34.67 weeks.

D.

i) Variance-1: 96.45
   SD: 9.82
   Average: 1.65

ii)
$$Z = \frac{T - T_E}{SD} = \frac{40 - 34.67}{9.82} = 0.5428 = 0.54$$

$$P\,(0.54) = 70.54\%$$

Therefore, the probability that the critical path will be completed in 40 weeks or less with a 90% variance is 70.54%.

E.

i) Variance-1: 18.1
   SD: 4.25
   Average: 1.65

ii)
$$Z = \frac{T - T_E}{SD} = \frac{40 - 34.67}{4.25} = 1.2541 = 1.25$$

$$P\,(1.25) = 89.44\%$$

Therefore, the probability that the critical path will be completed in 40 weeks or less with a 99% variance is 89.44%.

F. First and foremost, E is more accurate than D because it uses a 99% variance whereas, D uses a 90% variance. There is also a higher likelihood that the project will be complete if done with a 99% variance level, compared to a 90% variance level. With that being said, completing the project in 40 weeks or less seems unlikely because even at 99% variance, the probability is only 89.44%.

Question 2

See next Page.

Assuming this is a brand-new team for a project, the project manager should begin by doing some team-building exercises. This will allow everyone the opportunity to get to know each other and start forming ground rules about behaviour [1]. Kicking things off with team-building exercises is also a great opportunity for team members to break the ice and start communicating. The project manager must foster and encourage communication between team members because it will be essential in the work that is to come. This is also important because conflicts are bound to arise between team members and the sooner the team can work through these conflicts, the sooner they start performing better as a team. Getting to know each other and working through conflicts until they are resolved are all normal stages in the development of a team. Something else that is important to point out with this scenario is that there is a wide diversity of roles within the team itself, even part-time specialists. The project manager should exercise the use of these specialists when problems particular to their area of expertise arise. It will be a much more complex undertaking for the project manager because of these specialists. With that being said, because this team is fairly large, the team of 15 to 20 people will most likely be broken down into three or four groups and have team leads. The team leads will be able to communicate directly to the project manager so that all or most information flows between three to four team leads and one project manager. It's also important for the project managers to involve the team in some of the decision-making processes for the project. Not only does this make the best use of expertise, but it also helps gain commitment from team members [1].

As the project manager, it is very important that they have strong communication and leadership skills. They are there to drive the team towards the successful completion of a project in a timely manner. Effective communication is also important because it will open the possibility for teammates to trust each other and the project manager more. If the channels of communication remain tight or closed, the team will be less effective. Another example of a behaviour that a project manager should have is "simply showing concern for what workers did increased productivity" [1]. What this means is that project managers should interest or involvement in what workers are doing or have done. Another important behaviour that the project manager should exhibit is to be resourceful. In this scenario, there are 15 to 20 people with various skillsets. The project manager must step up to the plate, and be able to properly allocate these resources in the areas where they will be most effective. There are many other qualities/behaviours that the project manager should possess in order to have a positive effect on the working style of the project team. Enabling others to act, and placing trust in them, is the root of collaboration because "trust begets trust" [2].

Bibliography

[1] Hughes, Bob, and Mike Cotterell. *Software Project Management*. 2nd ed., McGraw-Hill, 2006.

[2] Kouzes, James M., and Barry Z. Posner. *The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations*. John Wiley & Sons, 2012.