PMGT 501 Student Chapter 7 Homework May 2, 2013

Deliverable: Assignment - Chapter 7 Exercises .On pages 246 - 247 of your textbook, locate the exercises section and complete Numbers 1 and 2. In a Word Document, respond to all questions and sub-questions pertaining to this exercise.

When you have completed this assignment, submit your response using the link above.

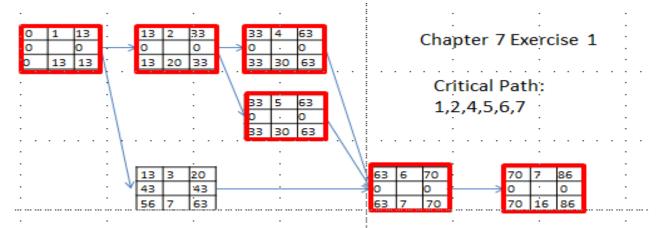
Assignments are late after midnight ET on Friday, May 3.

EXERCISES

1. Given the project information below, what is the probability of completing the National Holiday Toy project in 93 time units?

Act. ID	Description	Predecessor	Optm. (<i>s</i>)	Most likely (m)	Pess. (b)	Act time t	Variance $[(b - a)/6]^2$	Critical
1	Design package	None	6	12	24			
2	Design product	1	16	19	28			
3	Build package	1	4	7	10			
4	Secure patent	2	21	30	39			
5	Build product	2	17	29	47			
6	Paint	3, 4, 5	4	7	10			
7	Test market	6	13	16	19			

	Activity	Predecesso r	a	m	b	Acc time te=(a+4m+b)/ 6	Variance σ ^{2=((b-a)/6)^2}	Critica l
1	Design package	None	6	12	24	13	9	Y
2	design product	1	16	19	28	20	4	Y
3	Build package	1	4	7	10	7	1	Ν
4	Secure patent	2	21	30	39	30	9	Y
5	Build product	2	17	29	47	30	25	Y
6	Paint	3,4,5	4	7	10	7	1	Y
7	Test Market	6	13	16	19	16	1	Y



Two critical paths for this question: 1,2,4,6,7 and 1,2,5,6,7, however the longest path is the same (86) for both, so I calculated the probability just once instead of for each critical path.

$$\frac{T_{s-T_E}}{\sqrt{2}\sigma_{i_e}^2} = \frac{93-86}{\sqrt{9+4+9+25+1+1}} = \frac{+7}{\sqrt{49}} = \frac{+7}{7} = +1.0 \qquad P \approx .840$$

PMGT 501 Student Chapter 7 Homework May 2, 2013

Activity	Description	Predecessor	a opt	<i>m</i> ml	b pess	
1	Codify accounts	None	16	19	28	
2	File articles of unification	None	30	30	30	
3	Unify price and credit policy	None	60	72	90	
4	Unify personnel policies	None	18	27	30	
5	Unify data processing	1	17	29	47	
6	Train accounting staff	1	4	7	10	
7	Pilot run data processing	5	12	15	18	
8	Calculate P & L and balance sheet	6, 7	6	12	24	
9	Transfer real property	2	18	27	30	
10	Train salesforce	3	20	35	50	
11	Negotiate with unions	4	40	55	100	
12	Determine capital needs	8	11	20	29	
13	Explain personnel policies	11	14	23	26	
14	Secure line of credit	9, 12	13	16	19	
15	End	10, 12, 14	0	0	0	

2. The Global Tea and Organic Juice companies have merged. The following information has been collected for the "Consolidation Project."

1. Compute the expected time for each activity.

2. Compute the variance for each activity.

	Activity	Predecessor	а	m	b	Acc time te=(a+4m+b)/6	Variance σ ^{2={(b-a)/6)^2}	Critical
1	Codify Accounts		16	19	28	20	4	Yes
2	File articles of unification		30	30	30	30	0	No
3	Unify price and credit policy		60	72	90	73	25	No
4	Unify personnel policies		18	27	30	26	4	No
5	Unify data processing	1	17	29	47	30	25	Yes
6	Train accounting staff	1	4	7	10	7	1	No
7	Pilot run data processing	5	12	15	18	15	1	Yes
8	Calculate P & IL and BS	6,7	6	12	24	13	9	Yes
9	Transfer real property	2	18	27	30	26	4	No
10	Train salesforce	3	20	35	50	35	25	No
11	Negotiate with unions	4	40	55	100	60	100	No
12	Determine capital needs	8	11	20	29	20	9	Yes
13	Explain personnel policies	11	14	23	26	22	4	No
14	Secure line of credit	9,12	13	16	19	16	1	Yes
15	End	10,12,14	0	0	0	0	0	Yes

3. Compute the expected project duration. 114 Days

)							
Fask Name 👻	Duration 🚽	Start 🚽	Finish 🚽 Predecessors	🗸 Start Slack	🚽 Finish Slack	🚽 Critical	Apr 14, '13 May 12, '13 Jun 9, '13 Jul 7, '13 Aug 4, '13 Sep 1, '13 Sep 1
Exercise 2	114 days	Mon 4/29/13	Thu 10/3/13	0 days	0 days	Yes	\$\$
Codify Accounts	20 days	Mon 4/29/13	Fri 5/24/13	0 days	0 days	Yes	
File articles of unificat	30 days	Mon 4/29/13	Fri 6/7/13	42 days	42 days	No	
Unify price and credit	73 days	Mon 4/29/13	Wed 8/7/13	6 days	6 days	No	
Unify personnel polici	26 days	Mon 4/29/13	Mon 6/3/13	6 days	6 days	No	
Unify data processing	30 days	Mon 5/27/13	Fri 7/5/13 2	0 days	0 days	Yes	
Train accounting staff	7 days	Mon 5/27/13	Tue 6/4/13 2	38 days	38 days	No	
Pilot run data processi	15 days	Mon 7/8/13	Fri 7/26/13 6	0 days	0 days	Yes	
Calculate P & IL and BS	13 days	Mon 7/29/13	Wed 8/14/13 7,8	0 days	0 days	Yes	
Transfer real property	26 days	Mon 6/10/13	Mon 7/15/13 3	42 days	42 days	No	
Train salesforce	35 days	Thu 8/8/13	Wed 9/25/13 4	6 days	6 days	No	
Negotiate with unions	60 days	Tue 6/4/13	Mon 8/26/13 5	6 days	6 days	No	
Determine capital nee	20 days	Thu 8/15/13	Wed 9/11/13 9	0 days	0 days	Yes	
Explain personnel poli	22 days	Tue 8/27/13	Wed 9/25/13 12	6 days	6 days	No	
Secure line of credit	16 days	Thu 9/12/13	Thu 10/3/13 10,13	0 days	0 days	Yes	
End	0 days	Thu 10/3/13	Thu 10/3/13 11,13,15	0 days	0 days	Yes	**

4. What is the probability of completing the project by day 112? Within 116 days?

PMGT 501 Student Chapter 7 Homework May 2, 2013

$$\frac{T_{s-T_E}}{\sqrt{\Sigma\sigma_{t_e}^2}} = \frac{112 - 114}{\sqrt{4 + 25 + 1 + 9 + 9 + 1}} = \frac{-2}{\sqrt{49}} = \frac{-2}{7} = -.28$$

p \approx .392

$$\frac{T_{s-T_E}}{\sqrt{\Sigma\sigma_{t_e}^2}} = \frac{116 - 114}{\sqrt{4 + 25 + 1 + 9 + 9 + 1}} = \frac{+2}{\sqrt{49}} = \frac{+2}{7} = +.28 \qquad p \approx .608$$

5. What is the probability of completing "Negotiate with Unions" by day 90? **Critical path duration = 86 Days**

$$\frac{T_{s-T_E}}{\sqrt{2}\sigma_{t_e}^2} = \frac{90-86}{\sqrt{4+100}} = \frac{+4}{\sqrt{104}} = \frac{+4}{10} = +.40$$

$$p \approx .65$$