

Practice 4.3: Scheduling

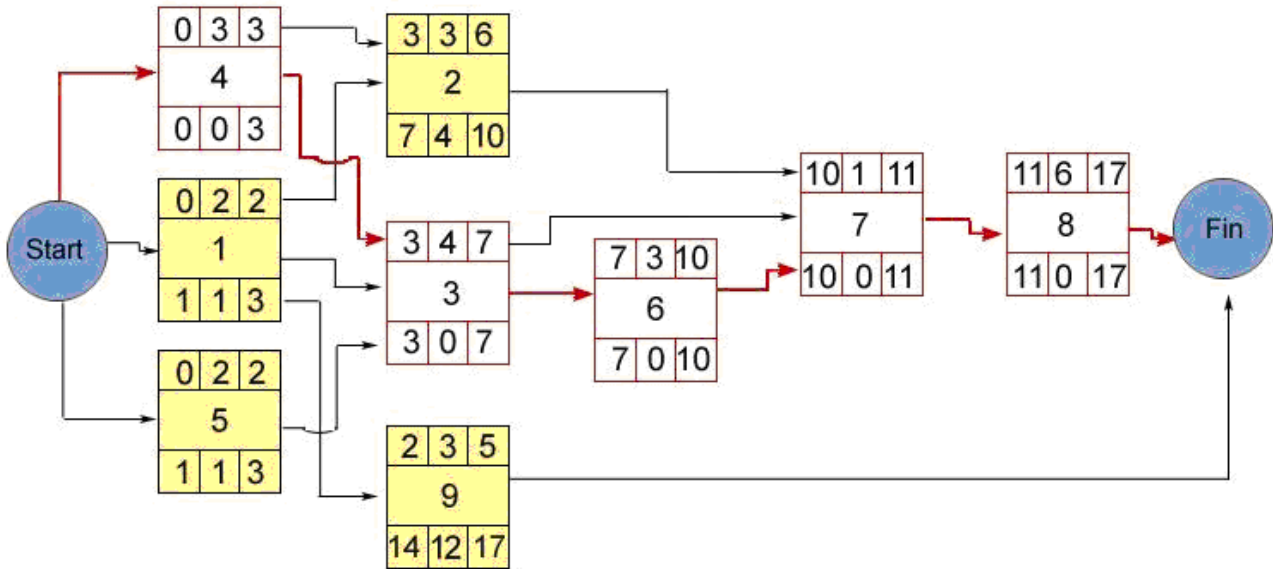
Combinatorial Optimization

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Presenting a cost and schedule baseline

The following are the list of activities, the AON diagram and a table of estimated costs. Your assignment is to present a cost baseline budget that represents the agreed price for this project, plus the rate at which the budget will be spent over time.

Activity Number	Activity	Duration			
		Optimistic	Most Likely	Pessimistic	Expected
1	Identify Scope of Site Reviews	1	1	7	2.0
2	Environmental Review of Sites	3	3	3	3.0
3	Perform Site Surveys	3	3	9	4.0
4	Identify Vendors to Perform Surveys	1	3	5	3.0
5	Identify Rail Sites	1	2	3	2.0
6	Architecture Review	1	2	9	3.0
7	Review Surveys	1	1	1	1.0
8	Agree on Design Scope	4	6	8	6.0
9	Identify Vendors to Perform Design Contract	2	2	8	3.0



Activity Number	Activity	Duration			
		Optimistic	Most Likely	Pessimistic	Expected
1	Identify Scope of Site Reviews	\$1,000	\$1,000	\$1,000	\$1,000
2	Environmental Review of Sites	\$3,000	\$5,000	\$8,000	\$5,167
3	Perform Site Surveys	\$5,000	\$10,000	\$25,000	\$11,667
4	Identify Vendors to Perform Surveys	\$5,000	\$5,000	\$10,000	\$5,833
5	Identify Rail Sites	\$1,000	\$1,000	\$1,000	\$1,000
6	Architecture Review	\$1,000	\$1,000	\$1,000	\$1,000
7	Review Surveys	\$500	\$500	\$1,000	\$583
8	Agree on Design Scope	\$10,000	\$13,000	\$30,000	\$15,333
9	Identify Vendors to Perform Design Contract	\$5,000	\$5,000	\$10,000	\$5,833

In a table, we place the cost of each activity based on expected costs and durations:

Activity	Expected	Week 1	2	3	4	5	6	7	8
1	1000	500	500						
2	5166.67			1722.33	1722.33	1722.33			
3	11666.67			2936.75	2936.75	2936.75	2936.75		
4	8833.33	1944.33	1944.33	1944.33					
5	1000	500	500						
6	1000							333.33	333.33
7	583								
8	15333								
9	5833		1944.33	1944.33	1944.33				
	Weekly	2944.33	4888.67	8527.75	6583.42	4.639.08	2916.75	333.33	333.33
	Total	2944.33	7833	16360.75	22944.17	27583.25	30500	30833.33	31166.67

Activity	Expected	Week 9	10	11	12	13	14	15	16
1	1000								
2	5166.67								
3	11666.67								
4	8833.33								
5	1000								
6	1000	333.33							
7	583		583						
8	15333			2555.5	2555.5	2555.5	2555.5	2555.5	2555.5
9	5833								
	Weekly	333.33	583	2555.5	2555.5	2555.5	2555.5	2555.5	2555.5
	Total	31500	32083	34638.5	37194	39749.5	42305	44860.5	47416

Then we draw the cost function:

