

2. Bridge City Developers is coordinating the construction of an office complex. As part of the planning process, the company generated the following activity list. Draw a project network that can be used to assist in the scheduling of the project activities.

Activity	A	B	C	D	E	F	G	H	I	J
Immediate Predecessor	—	—	—	A, B	A, B	D	E	C	C	F, G, H, I

SELF test

3. Construct a project network for the following project. The project is completed when activities F and G are both complete.

Activity	A	B	C	D	E	F	G
Immediate Predecessor	—	—	A	A	C, B	C, B	D, E

4. Assume that the project in Problem 3 has the following activity times (in months).

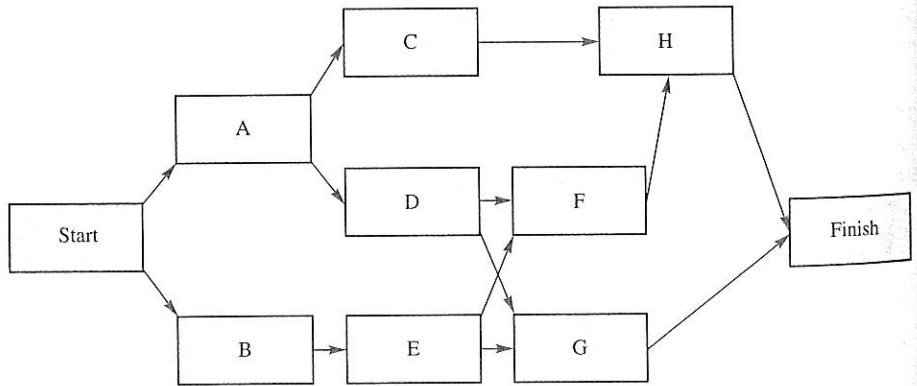
Activity	A	B	C	D	E	F	G
Time	4	6	2	6	3	3	5

- Find the critical path.
 - The project must be completed in 1½ years. Do you anticipate difficulty in meeting the deadline? Explain.
5. Management Decision Systems (MDS) is a consulting company that specializes in the development of decision support systems. MDS obtained a contract to develop a computer system to assist the management of a large company in formulating its capital expenditure plan. The project leader developed the following list of activities and immediate predecessors. Construct a project network for this problem.

Activity	A	B	C	D	E	F	G	H	I	J
Immediate Predecessor	—	—	—	B	A	B	C, D	B, E	F, G	H

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6. Consider the following project network and activity times (in weeks).



Activity	A	B	C	D	E	F	G	H
Time	5	3	7	6	7	3	10	8

- a. Identify the critical path.
 - b. How much time will be needed to complete this project?
 - c. Can activity D be delayed without delaying the entire project? If so, by how many weeks?
 - d. Can activity C be delayed without delaying the entire project? If so, by how many weeks?
 - e. What is the schedule for activity E?
7. A project involving the installation of a computer system comprises eight activities. The following table lists immediate predecessors and activity times (in weeks).

Activity	Immediate Predecessor	Time
A	—	3
B	—	6
C	A	2
D	B, C	5
E	D	4
F	E	3
G	B, C	9
H	F, G	3

- a. Draw a project network.
 - b. What are the critical activities?
 - c. What is the expected project completion time?
8. Colonial State College is considering building a new multipurpose athletic complex on campus. The complex would provide a new gymnasium for intercollegiate basketball games, expanded office space, classrooms, and intramural facilities. The following activities would have to be undertaken before construction can begin.

Activity	Description	Immediate Predecessor	Time (weeks)
A	Survey building site	—	6
B	Develop initial design	—	8
C	Obtain board approval	A, B	12
D	Select architect	C	4
E	Establish budget	C	6
F	Finalize design	D, E	15
G	Obtain financing	E	12
H	Hire contractor	F, G	8

- a. Draw a project network.
- b. Identify the critical path.
- c. Develop the activity schedule for the project.
- d. Does it appear reasonable that construction of the athletic complex could begin one year after the decision to begin the project with the site survey and initial design plans? What is the expected completion time for the project?