Exercises

Exercice 1:

1.- Consider the project given by the following table of prerequisites:

Activity	A	B	C	D	E	F	G	H	I
Needed time (days)	3	6	8	7	5	11	3	3	2
Prerequisites	$-$	$-$	A, B	C, E	B	E	D	F, G	B

a) Compute the minimum number of days needed to complete the project.
b) Obtain the critical path and its weight explaining its meaning.
c) Compute the maximum delay allowed for task E without affecting the duration of the entire project.

Exercises

2.- Consider the project given by the following table of prerequisites:

Activity	a_1	a_2	a_3	a_4	a_5	a_6	a_7	a_8	a_9	a_{10}	a_{11}
Needed time	3	4	1	2	1	2	4	1	3	3	2
Prerequisites	-	a_1,a_5	a_1,a_4	-	a_1,a_3,a_4	a_2,a_5	a_4,a_5	a_6,a_7	a_5,a_7	a_2,a_6,a_8	a_8,a_9

1. Draw the graph that represents the project (including the fictitious vertices representing the start and the end of th graph).
2. Obtain the weighting matrix of the graph.
3. Apply the numbering algorithm of vertices and argue if the graph has circuits or not.
4. Compute the minimum number of days needed to complete the project.
5. Obtain the critical path and its weight explaining its meaning.
6. Identify longest paths and their weights from the initial vertex to the rest.
7. Compute the maximum delay allowed for task a_7 without affecting the duration of the entire project.