

Engineering Economics & Management

Project Management

30th March 16

Logic Network & Diagrams

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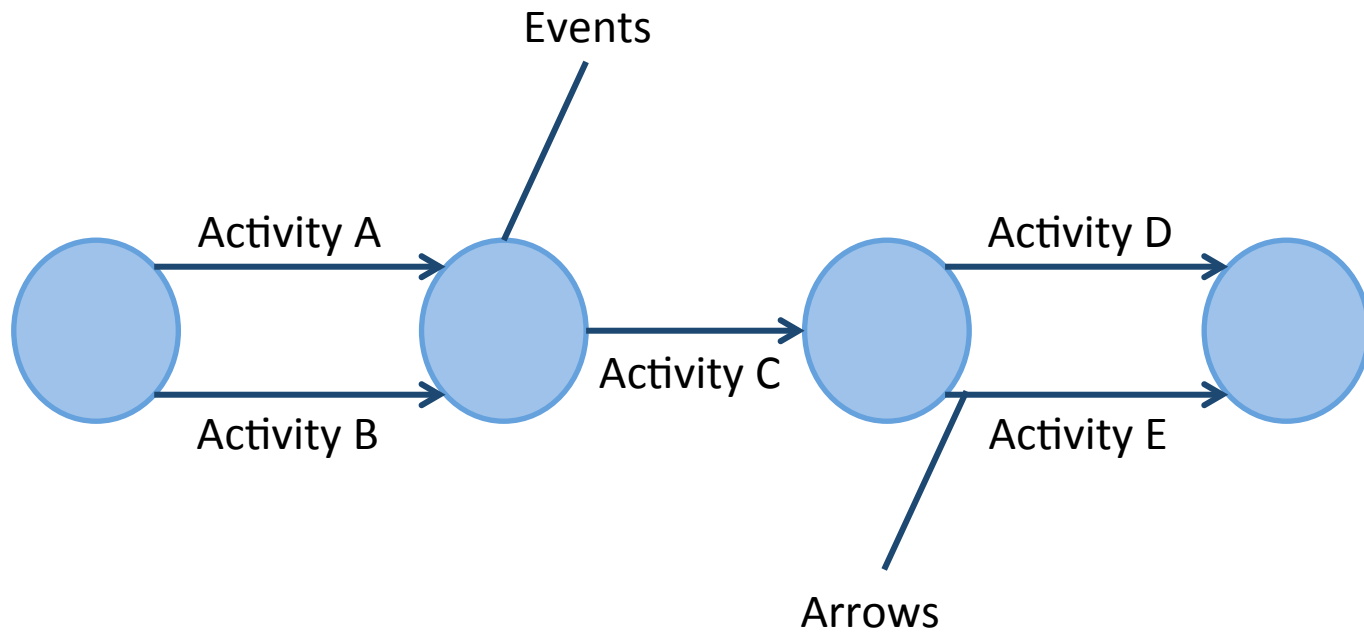
Logic Network

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- A diagram showing the relationship, in a logical and time wise fashion, of the identified tasks or activities of the project.
- There are two conventions of logic diagram
 - **Activity on arrow** → Activities (these have some time duration) are represented by arrows, connected by circles which are called events (these are just point in time)
 - **Activity on node** → The *activities* (these have some time duration) are represented by rectangles, connected by arrows that indicate the dependencies

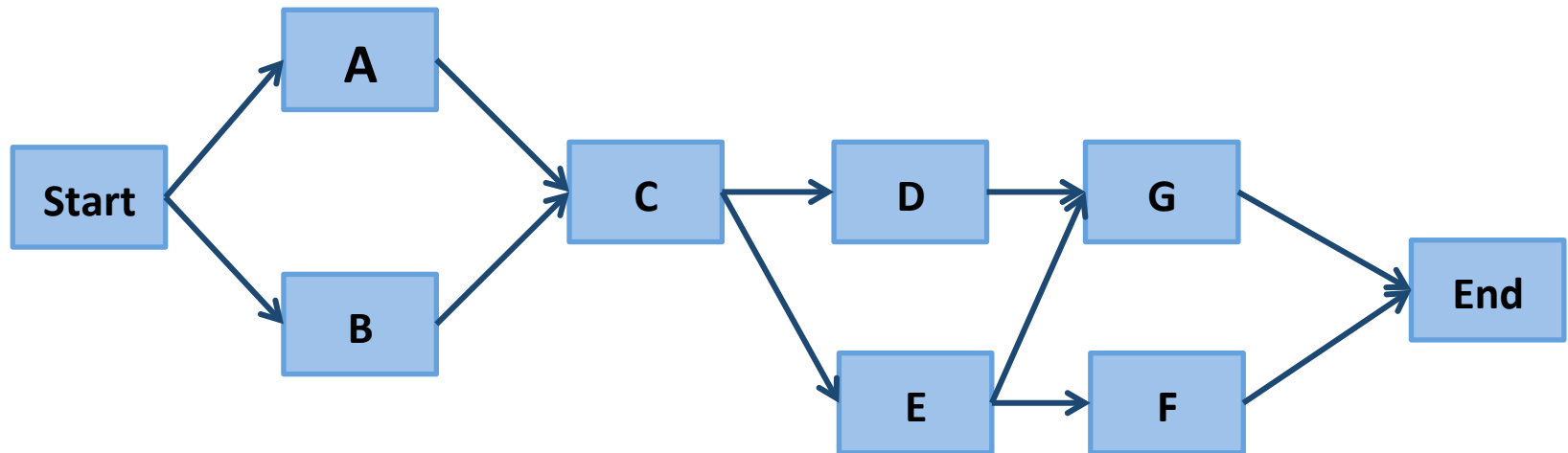
Activity on Arrow

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Activity on Node

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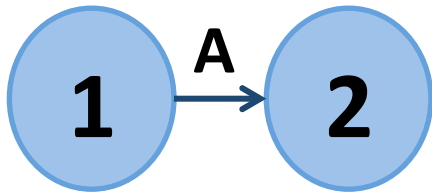
Example

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Activity	Follows
A	-
B	A
C	A
D	C
E	C
F	B
G	E,D
H	F,G

Example

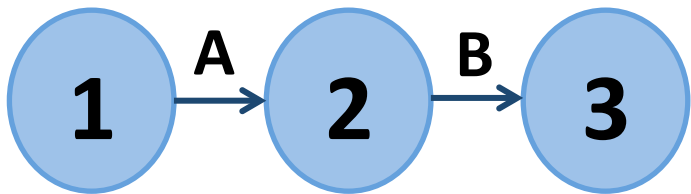
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Activity	Follows
A	-
B	A
C	A
D	C
E	C
F	B
G	E,D
H	F,G

Example

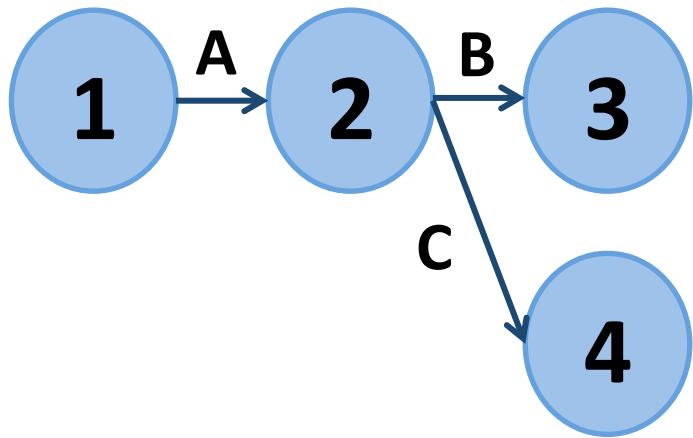
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Activity	Follows
A	-
B	A
C	A
D	C
E	C
F	B
G	E,D
H	F,G

Example

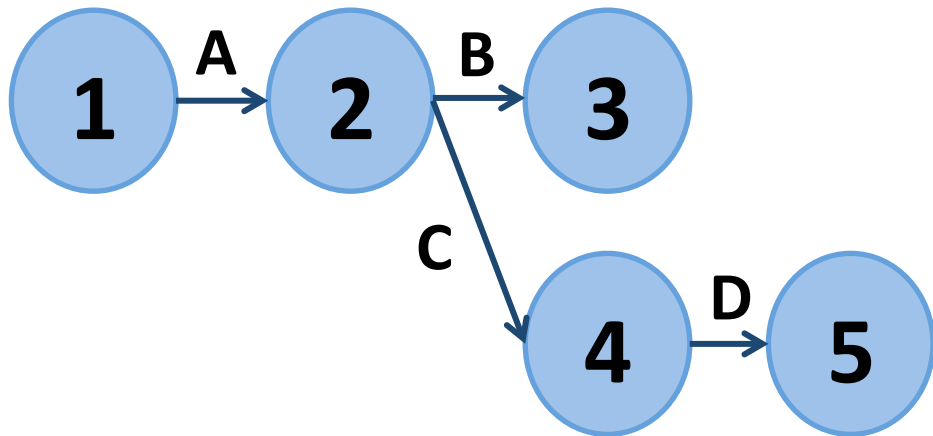
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Activity	Follows
A	-
B	A
C	A
D	C
E	C
F	B
G	E,D
H	F,G

Example

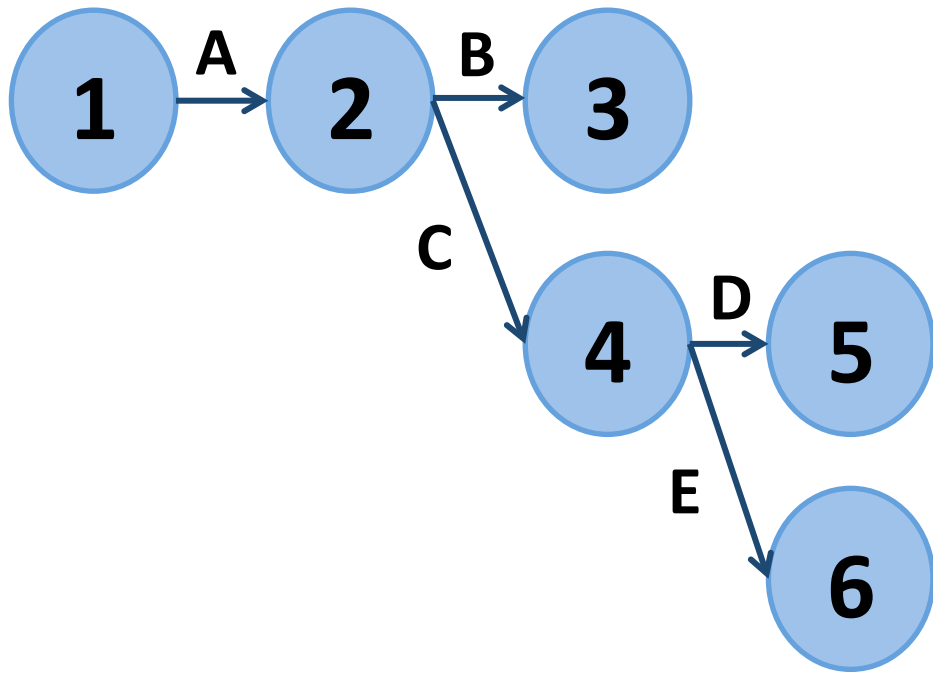
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Activity	Follows
A	-
B	A
C	A
D	C
E	C
F	B
G	E,D
H	F,G

Example

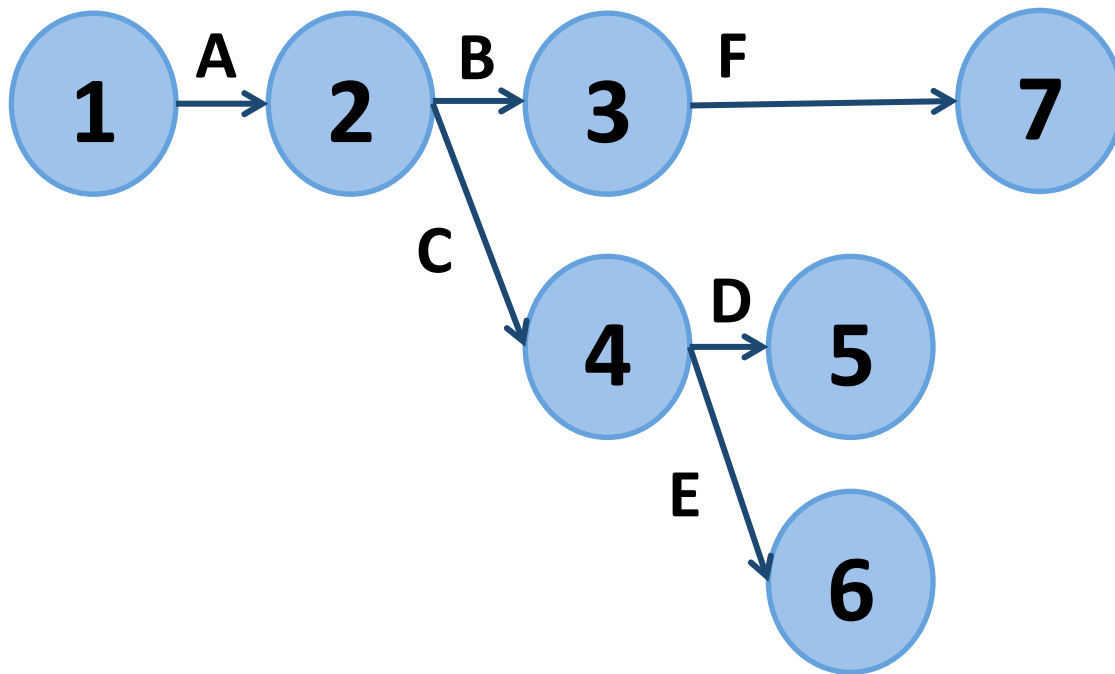
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Activity	Follows
A	-
B	A
C	A
D	C
E	C
F	B
G	E,D
H	F,G

Example

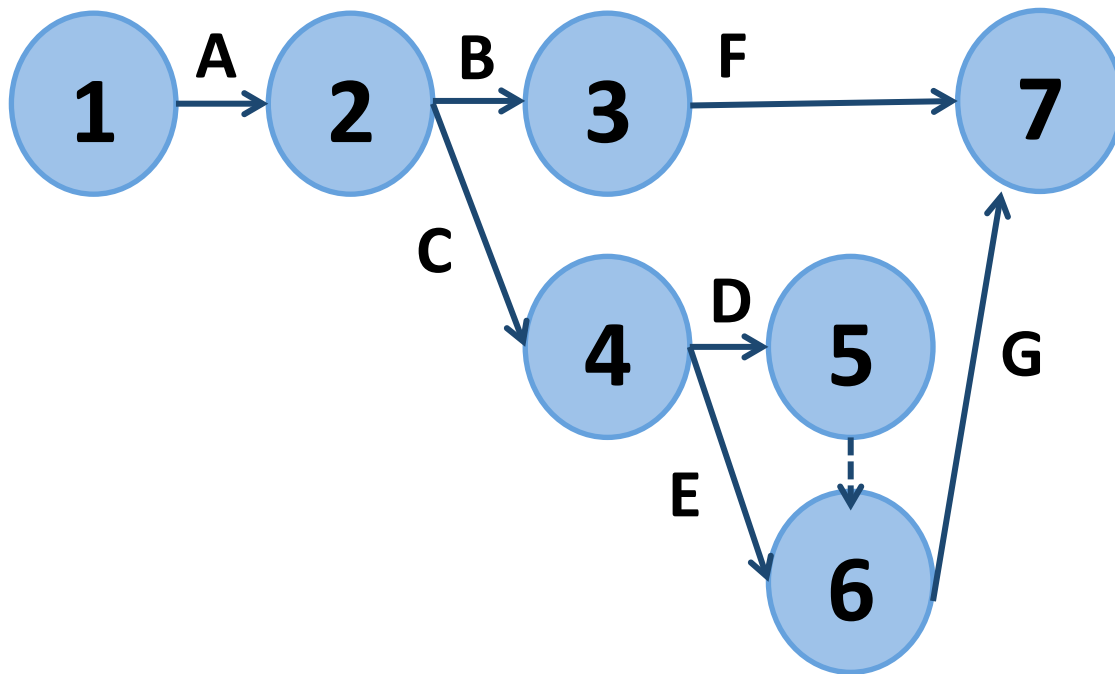
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Activity	Follows
A	-
B	A
C	A
D	C
E	C
F	B
G	E,D
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Example

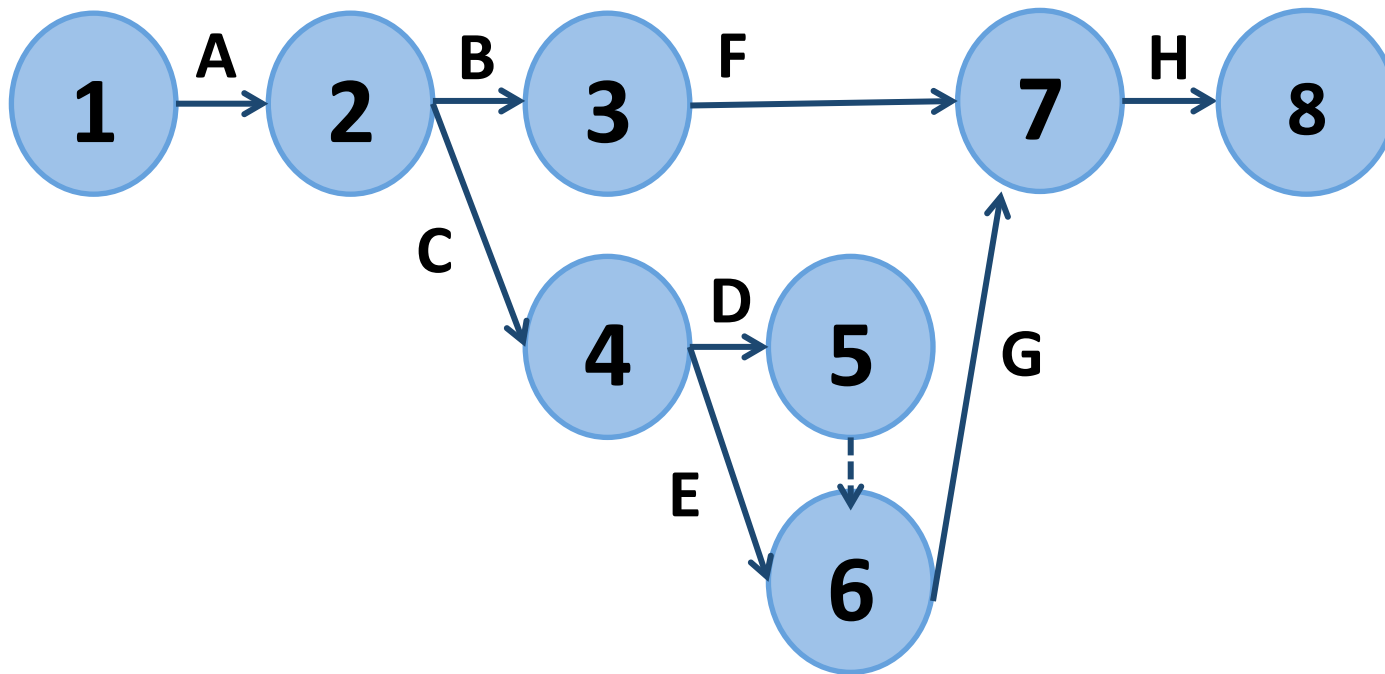
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Activity	Follows
A	-
B	A
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D	C
E	C
F	B
G	E,D
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Example

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Activity	Follows
A	-
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E	C
F	B
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Calculating Timings Activity on Arrow (Logic Diagram)

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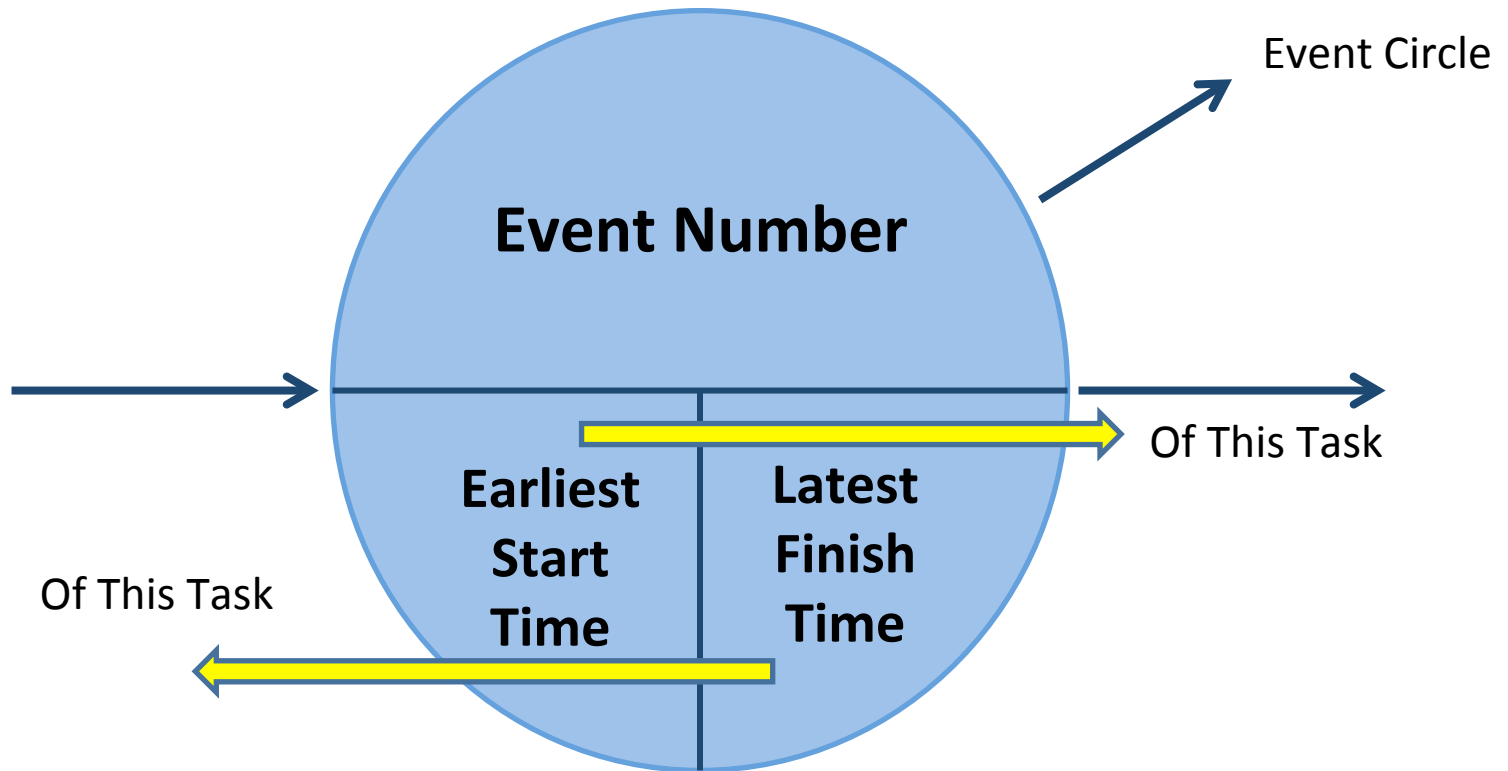
Dealing with Timings

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- To estimate duration of project we need to find duration of each activity
- Duration is single value or time for completion of project
- Timings are necessary before implementing a project to get an estimate

How Timings are represented?

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Example

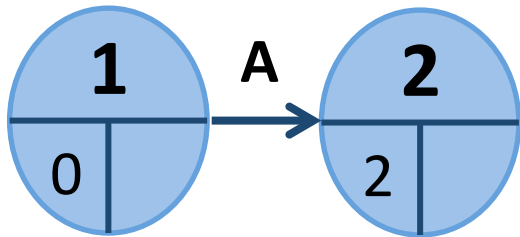
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Activity	Follows	Duration (Weeks)
A	-	2
B	A	4
C	A	3
D	C	1
E	C	4
F	B	4
G	E,D	5
H	F,G	4

For EST (Earliest Start Time) we always start from start and move to end
For LFT (Latest Finish Time) we always start from end to start)

Example

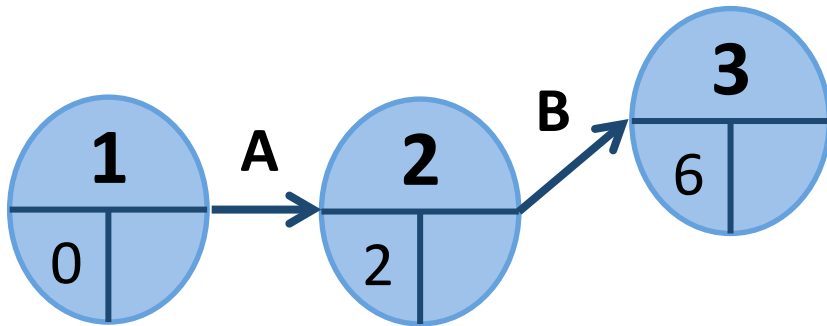
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A	F	D
A	-	2
B	A	4
C	A	3
D	C	1
E	C	4
F	B	4
G	E,D	5
H	F,G	4

Example

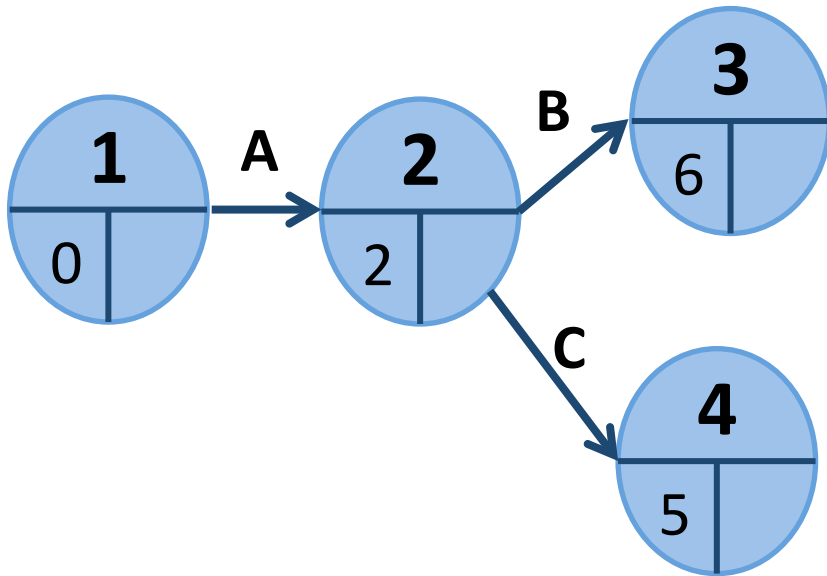
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Example

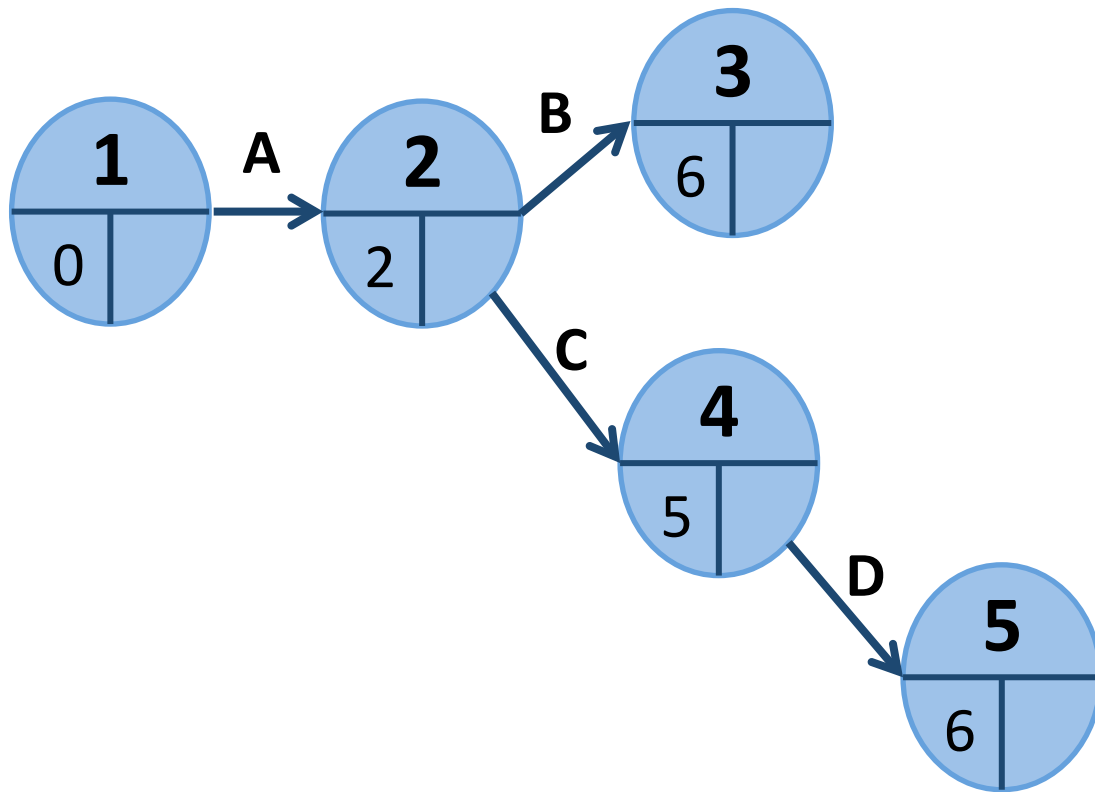
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Example

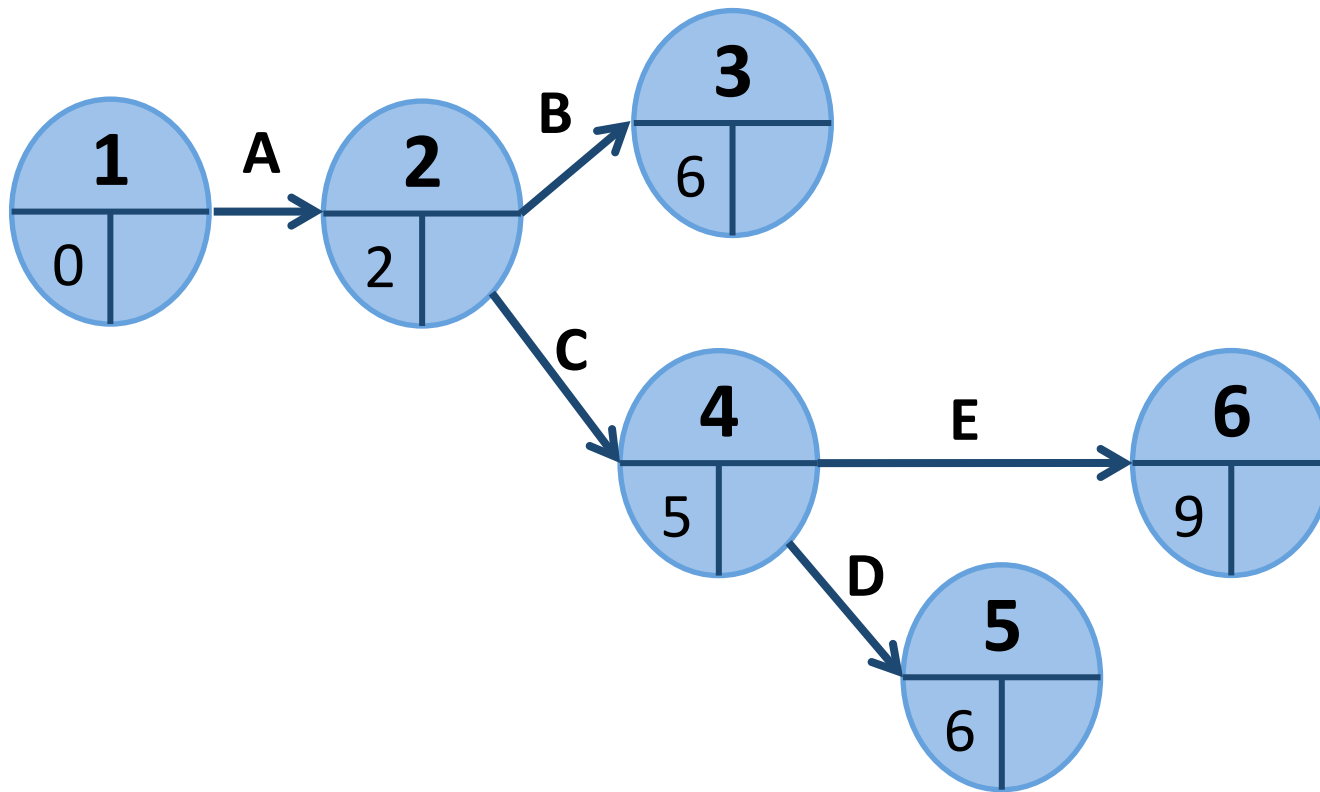
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Example

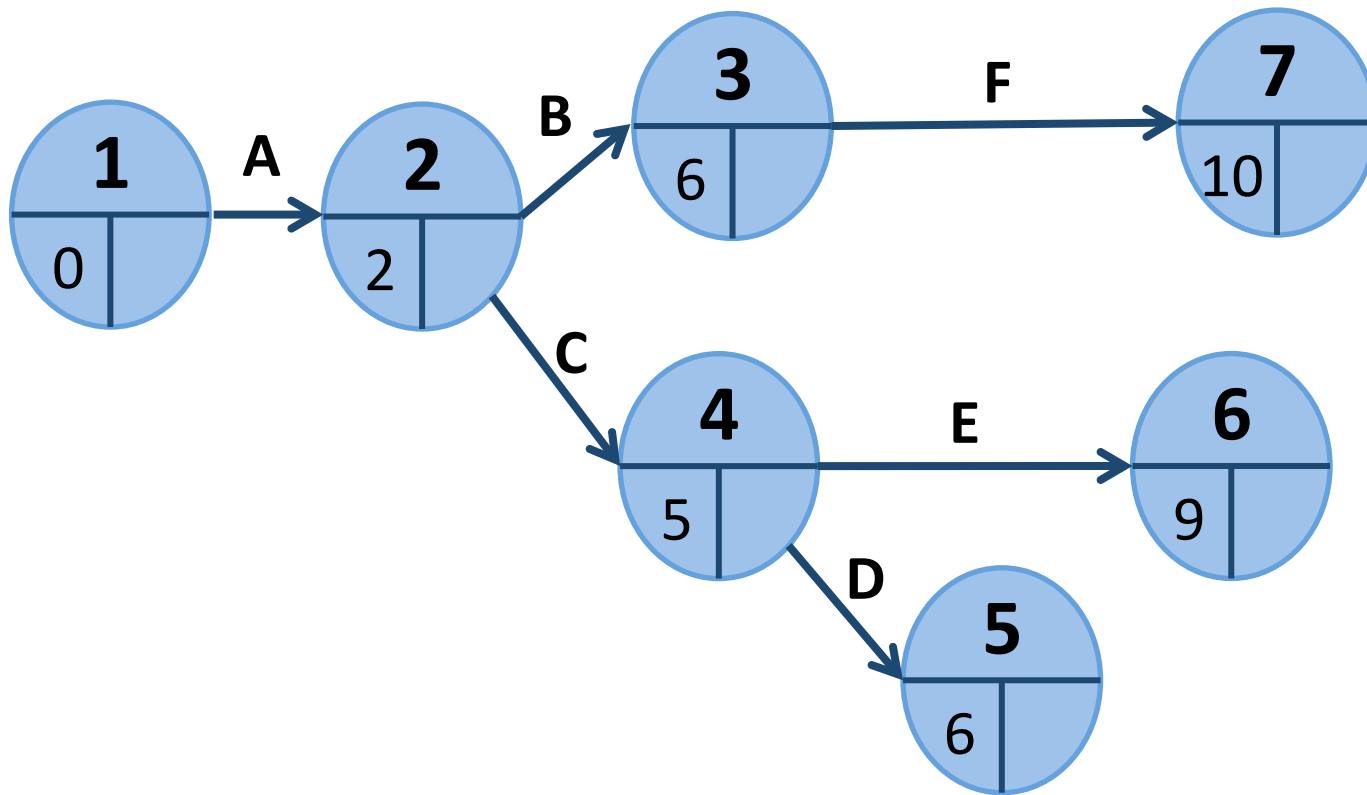
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Example

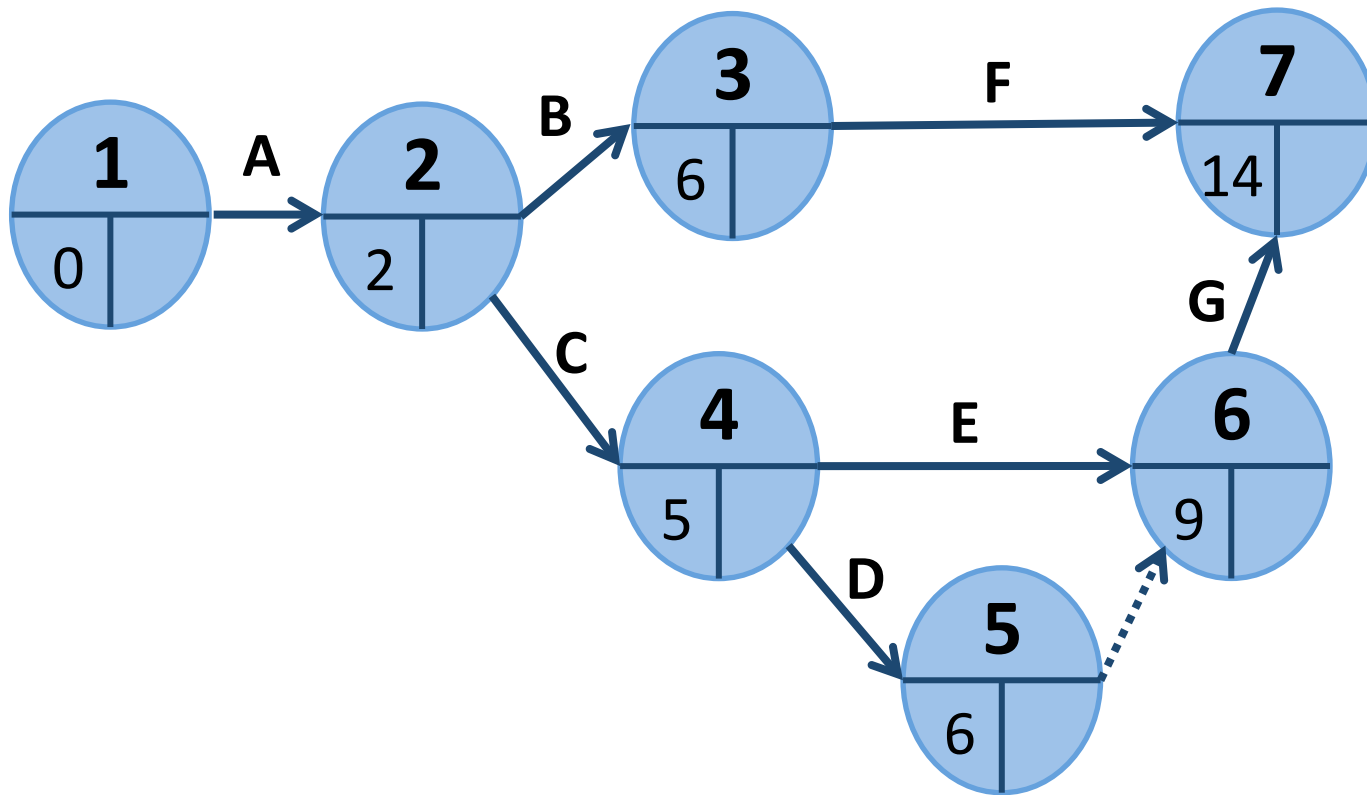
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Example

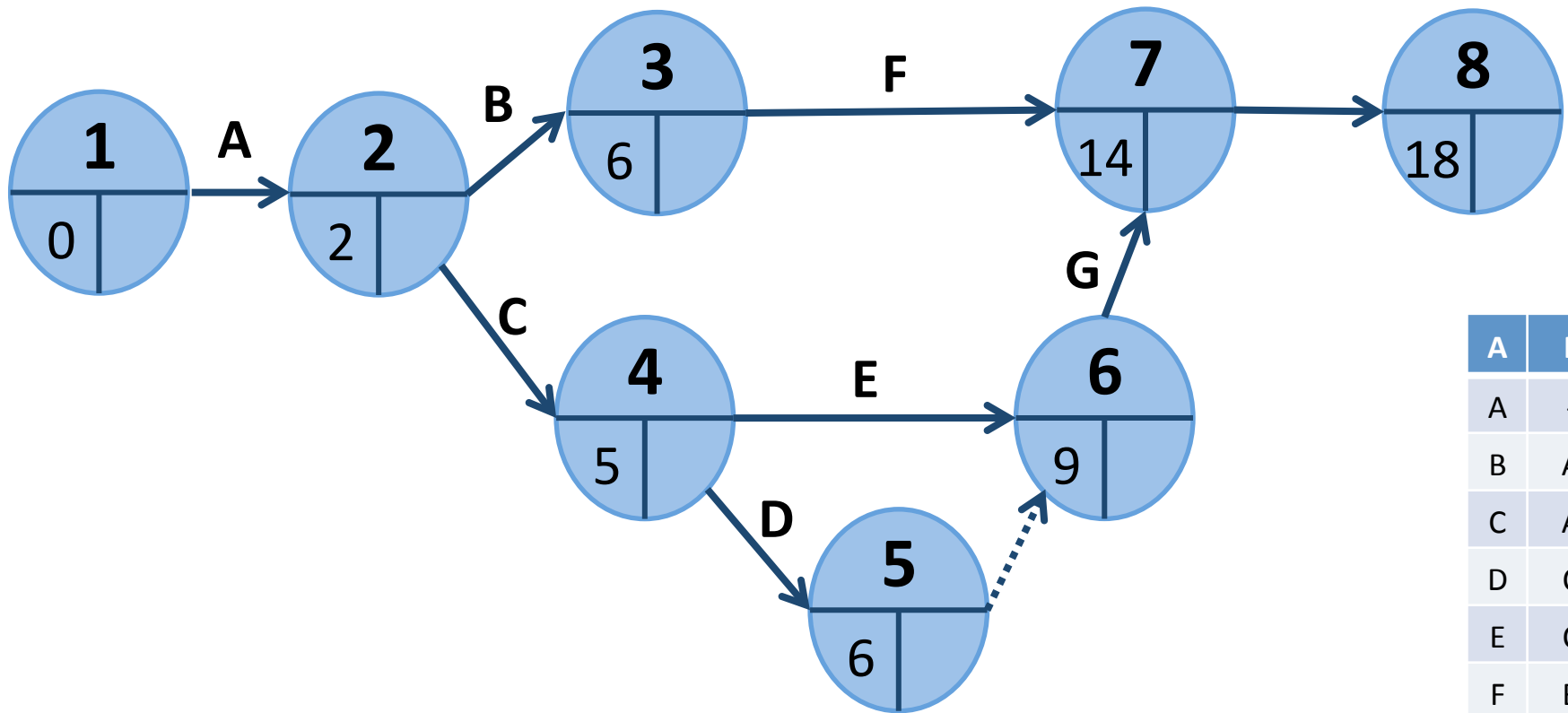
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Example

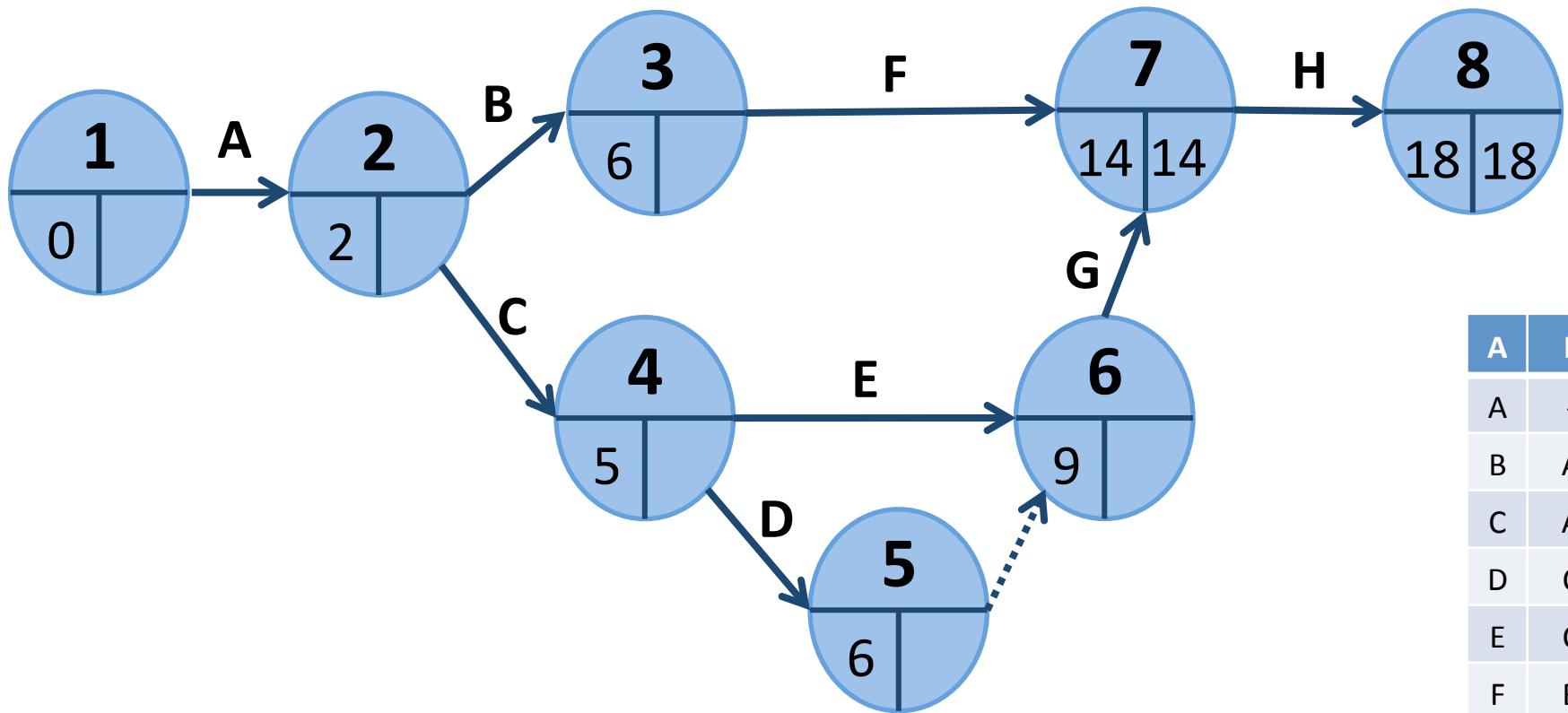
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A	-	2
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Example

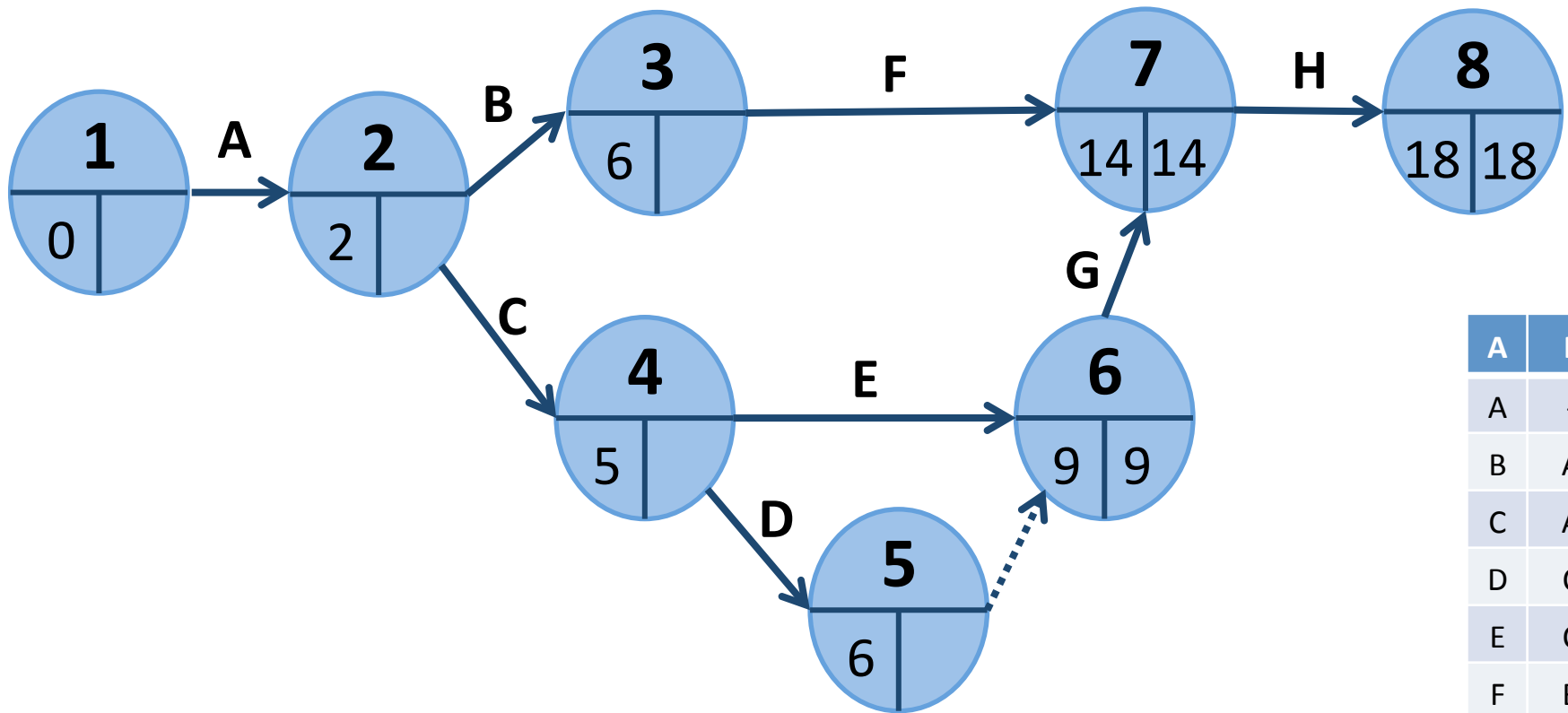
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A	-	2
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Example

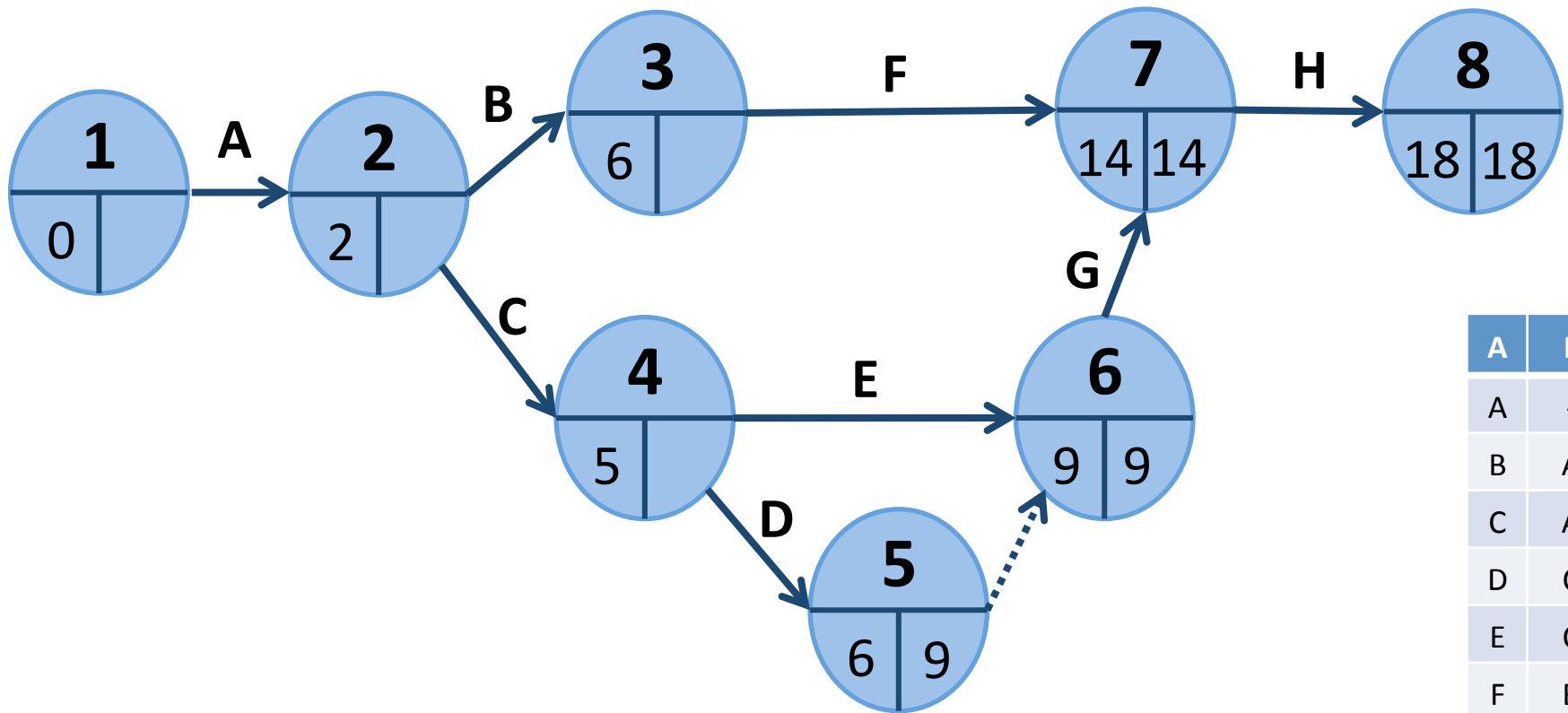
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A	-	2
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C	A	3
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Example

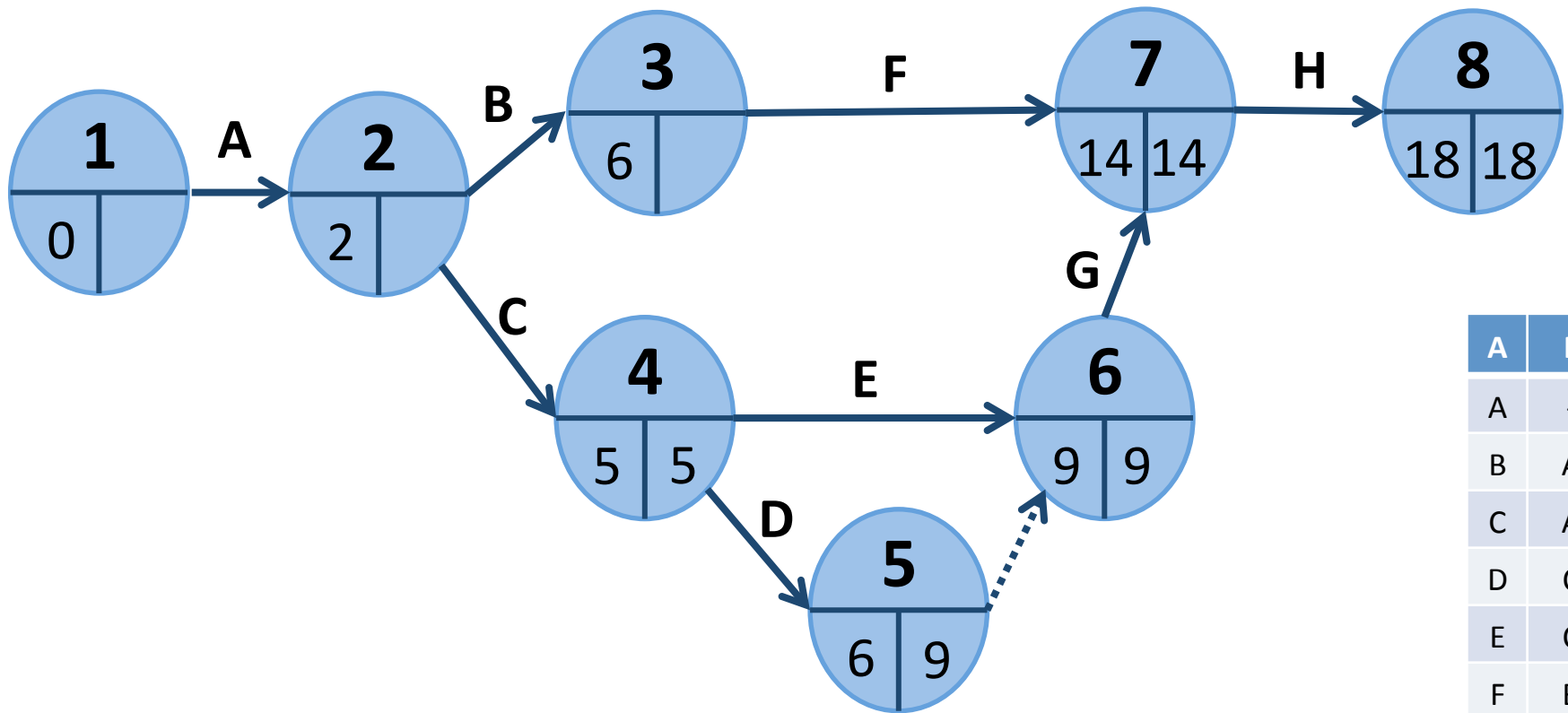
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A	-	2
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G	E,D	5
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Example

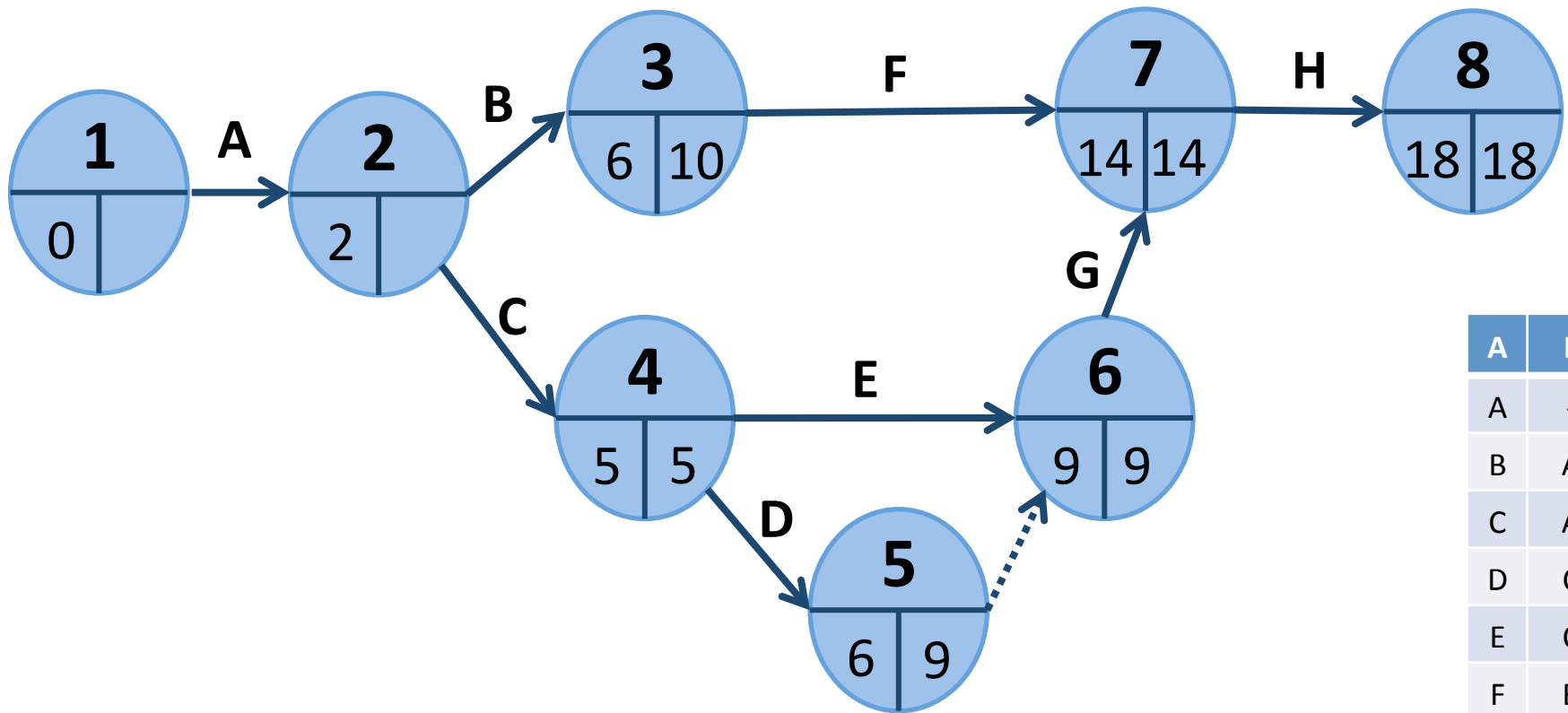
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A	F	D
A	-	2
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C	A	3
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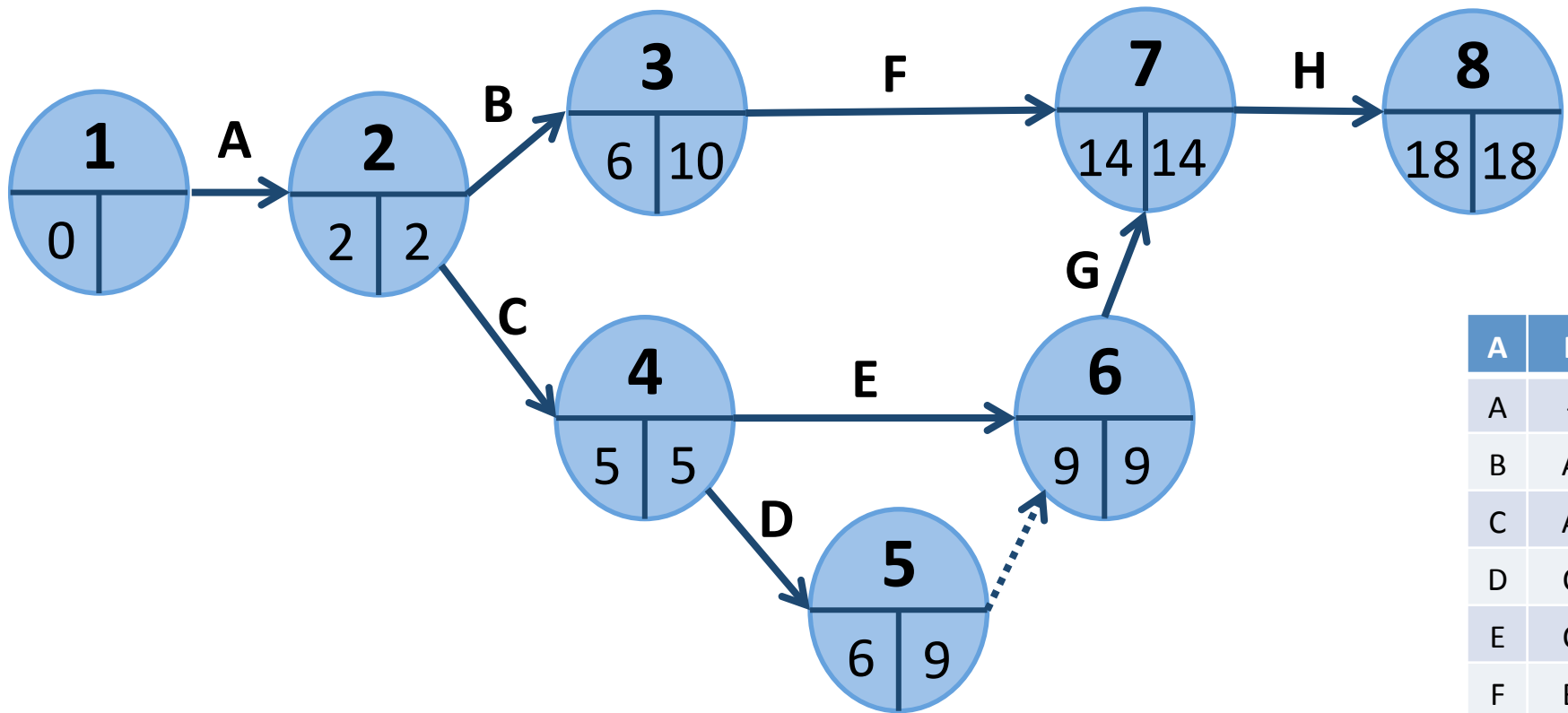
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A	-	2
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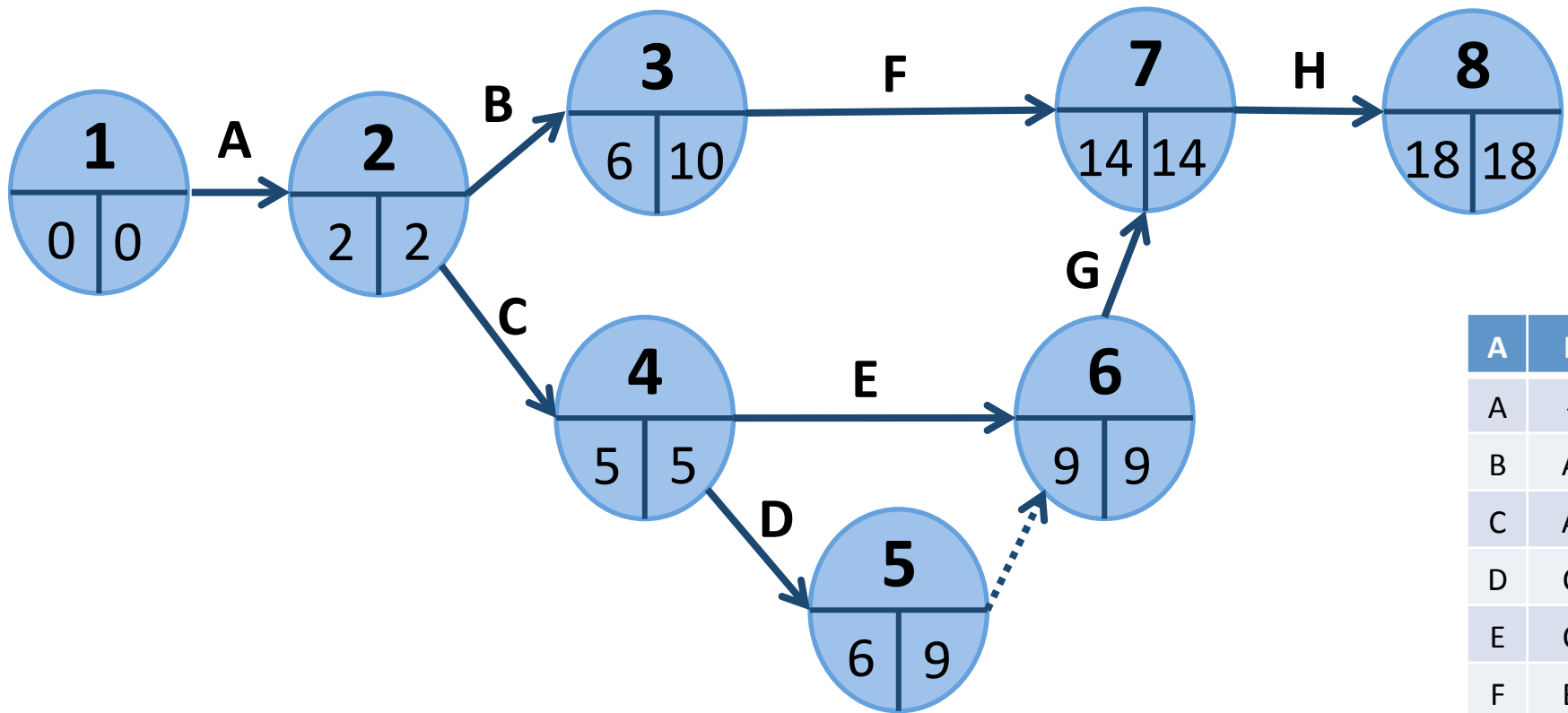
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A	-	2
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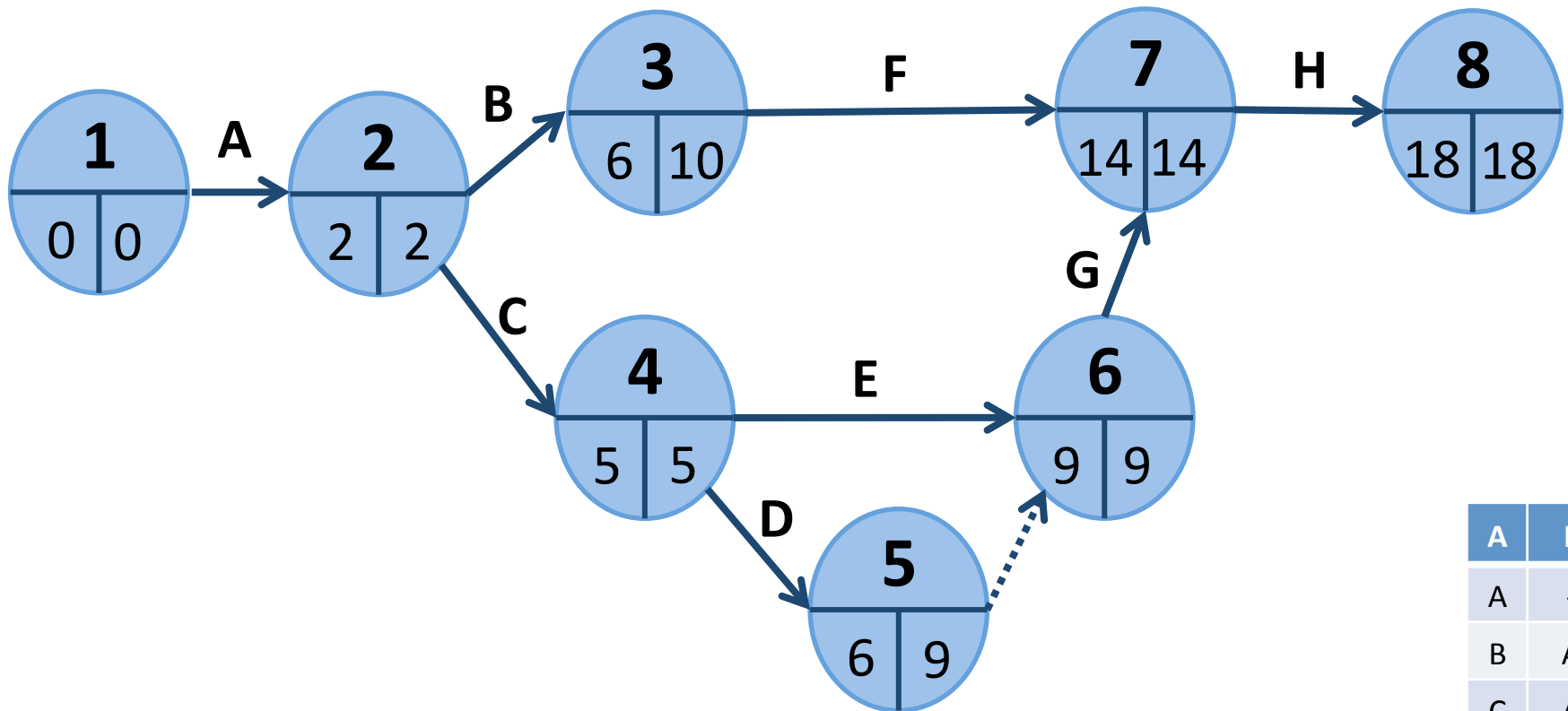
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A	-	2
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Example

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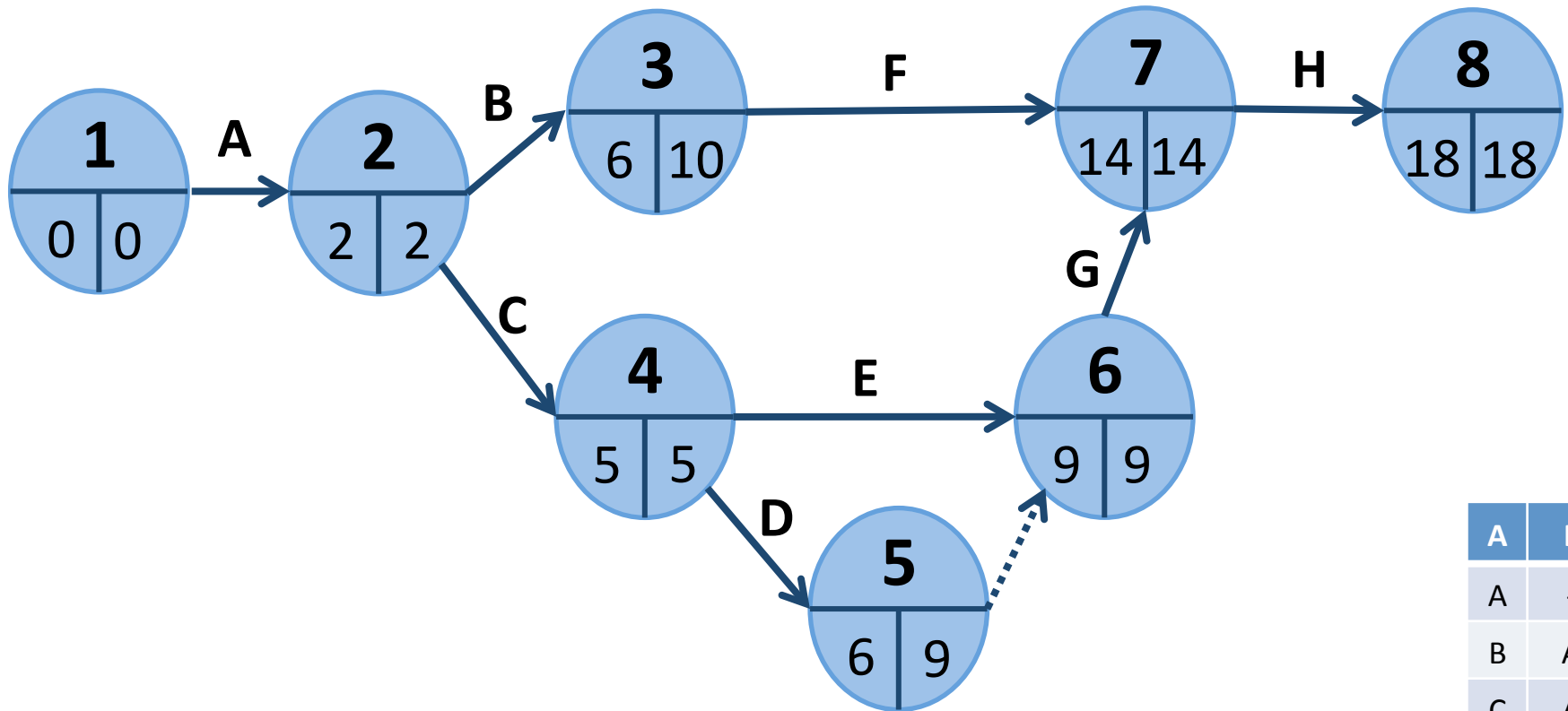


Paths A , B , F , H → 14 Weeks
 A , C , E , G , H → 18 Weeks
 A , C , D , G , H → 15 Weeks

A	F	D
A	-	2
B	A	4
C	A	3
D	C	1
E	C	4
F	B	4
G	E,D	5
H	F,G	4

Example

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A , B , F , H → 14 Weeks

A , C , E , G , H → 18 Weeks Critical Path (Longest Path)

A , C , D , G , H → 15 Weeks

A	F	D
A	-	2
B	A	4
C	A	3
D	C	1
E	C	4
F	B	4
G	E,D	5
H	F,G	4

Critical Path

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- Critical path is longest pathway
- All activities on critical path have no slack or free time
- EST and LFT are same on critical path

Thankyou

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