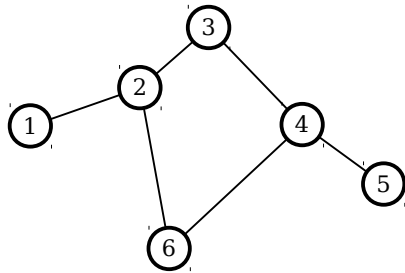


Graph Theory - Representations



○ := node, vertex

— := edge, link, connection

n := number of nodes in the graph.

m := number of edges in the graph.

Edge list:

$$E = \{(1,2), (2,3), (2,6), (3,4), (4,5), (4,6)\}$$

Adjacency matrix:

$$A = \begin{array}{c} \begin{array}{cccccc} 1 & 2 & 3 & 4 & 5 & 6 \end{array} \\ \begin{bmatrix} 0 & 1 & 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 1 & 1 \\ 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 1 & 0 & 1 & 0 & 0 \end{bmatrix} \end{array} \begin{array}{l} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \end{array}$$

$$A_{u,v} = \begin{cases} 1 & \text{if node } u \text{ and node } v \text{ are connected} \\ 0 & \text{otherwise} \end{cases}$$