



Why

Often the edges of some graph are associated with a particular cost, perhaps the cost of traversing that edge.

Definition**Undirected form**

A *weighted undirected graph* is an ordered pair $((V, E), w)$ where (V, E) is an undirected graph and $w : E \rightarrow \mathbf{R}$ is an *unordered weight function*.

Directed form

A *weighted directed graph* is an ordered pair $((V, F), \omega)$ where (V, E) is a digraph and $\omega : F \rightarrow \mathbf{R}$ is an *ordered weight function* (or *weight function*).

