

## WEIGHTED GRAPHS

## Why

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

## Definition

Let (V,E) be an undirected graph. An unordered weight function  $w:E\to \mathbf{R}$  is a function mapping undirected edges to real numbers. A weighted undirected graph is an ordered pair ((V,E),w) where (V,E) is an undirected graph and w is an unordered weight function.

Let (V, F) be a directed graph. An ordered weight function or just weight function  $\omega : F \to \mathbf{R}$  is a function mapping directed edges to real numbers. A weighted directed graph is an ordered pair  $((V, F), \omega)$  where (V, E) is an undirected graph and  $\omega$  is an ordered weight function.

