

## Dijkstra's Algorithm

**Formulate The Problem:** Dijkstra's Algorithm is an algorithm used to determine the shortest path between two nodes. In this algorithm we have a graph (G) which is a data structure for holding nodes or (V) vertices, and also has Edges (E). E's have a weight or cost associated with them (W). The source and destination are both nodes in the graph G. They are connected through a path of E's. V's have a value associated with them is the cost to get to that node from the source node. This means that  $V_{Source}$  has a value of 0, and all other V have a value of  $\infty$ . At the start of the Algorithm.

### Pseudo Code:

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**Algorithm 1** Dijkstra

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1: procedure DIJKSTRA( $G, V_{Source}, V_{Destination}$ )  
2:    $V_{All} \leftarrow \infty$   
3:    $V_{Source} \leftarrow 0$ 
```

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