# Dijkstra's algorithm

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Given the weitghed map, from the starting point A, the algorithm can see the initial distance to B, C, D and E. In this initial step, the distance to B is 2, to C is 1, to D is 7 and to E is 9. Current table looks as follows:

| | |
|---|---|
| A | 0 |
| B | 2 |
| C | 1 |
| D | 7 |
| E | 9 |
| F | ∞ |
| G | ∞ |
| H | ∞ |

As C is the closest node to A, it is the next node to be visited. There, nodes F and G are discovered, and the table has to be updated:

| | |
|---|---|
| A | 0 |
| B | 2 |
| C | 1 |
| D | 7 |
| E | 9 |
| F | 7 |
| G | 13 |
| H | ∞ |

The next visited node is B, no new nodes are discovered, but the distance to E is updated:

| | |
|---|---|
| A | 0 |
| B | 2 |
| C | 1 |
| D | 7 |
| E | 3 |

| | |
|---|---|
| F | 7 |
| G | 13 |
| H | ∞ |

Following, node E is visited, node H is discovered and distance to D and G is updated:

| | |
|---|---|
| A | 0 |
| B | 2 |
| C | 1 |
| D | 6 |
| E | 3 |
| F | 7 |
| G | 11 |
| H | 10 |

Then, node D is visited, and the distance to G is updated:

| | |
|---|---|
| A | 0 |
| B | 2 |
| C | 1 |
| D | 6 |
| E | 3 |
| F | 7 |
| G | 8 |
| H | 10 |

Following the visit of D, node F is visited, but the table remains unchanged:

| | |
|---|---|
| A | 0 |
| B | 2 |
| C | 1 |
| D | 6 |
| E | 3 |
| F | 7 |
| G | 8 |
| H | 10 |

Finally, node G is visited, and the distance to H is updated:

| | |
|---|---|
| A | 0 |
| B | 2 |

| | |
|---|---|
| C | 1 |
| D | 6 |
| E | 3 |
| F | 7 |
| G | 8 |
| H | 9 |