Dijkstra’s Algorithm Example:
The following example shows how we can run Dijkstra’s algorithm over a graph. The start vertex is ST.

% → stands for infinity
- → stands for no predecessor
(1) → represents the order the vertices are being processed.
[x,y] → x represents the cost of reaching the node and y the predecessor.

\[
\begin{array}{c}
[0,-] 11 [\%,\%] 2 [\%,\%] \\
ST------>A------>C<--- \\
| | | | 7 \\
| | | 5 | \\
| | v | \\
------->B------>D--- \\
6 [\%,\%] 3 [\%,\%]
\end{array}
\]

\[
\begin{array}{c}
[0,-] 11 [11,ST] 2 [\%,\%] \\
(1)ST------>A------>C<--- \\
| | | | 7 \\
| | | 5 | After selecting 1st Node \\
| | v | \\
------->B------>D--- \\
6 [6,ST] 3 [\%,\%]
\end{array}
\]

\[
\begin{array}{c}
[0,-] 11 [10,B] 2 [\%,\%] \\
(1)ST------>A------>C<--- \\
| | | | 7 \\
| | | 5 | After selecting 2nd Node \\
| (2) v | \\
------->B------>D--- \\
6 [6,ST] 3 [9,B]
\end{array}
\]

\[
\begin{array}{c}
[0,-] 11 [10,B] 2 [16,D] \\
(1)ST------>A------>C<--- \\
| | | | 7 \\
| | | 5 | After selecting 3rd Node \\
| (2) | (3) v | \\
------->B------>D--- \\
6 [6,ST] 3 [9,B]
\end{array}
\]

\[
\begin{array}{c}
[0,-] 11 [10,B] 2 [12,A] \\
(1)ST------>A------>C<--- \\
| | | | 7 \\
| | | 5 | After selecting 4th Node \\
| (2) | (3) v | \\
------->B------>D--- \\
6 [6,ST] 3 [9,B]
\end{array}
\]

\[
\begin{array}{c}
[0,-] 11 [10,B] 2 [12,A] \\
(1)ST------>A------>C<--- \\
| | | | 7 \\
| | | 5 | After selecting 5th Node \\
| (2) | (3) v | \\
------->B------>D--- \\
6 [6,ST] 3 [9,B]
\end{array}
\]