**AIM:**

Implementation of Link state routing algorithm using NS2 Simulation Tool.

**THEORY:**

In **link state routing,** each router shares its knowledge of its neighborhood with every other router in the internet work. (i) **Knowledge about Neighborhood:** Instead of sending its entire routing table a router sends info about its neighborhood only. (ii) **To all Routers:** each router sends this information to every other router on the internet work not just to its neighbor .It does so by a process called **flooding. (iii)Information sharing when there is a change:** Each router sends out information about the neighbors when there is change.

**PROCEDURE:**

The Dijkstra algorithm follows four steps to discover what is called the **shortest path tree**(routing table) for each router: The algorithm begins to build the tree by identifying its roots. The root router’s trees the router itself. The algorithm then attaches all nodes that can be reached from the root. The algorithm compares the tree’s temporary arcs and identifies the arc with the lowest cumulative cost. This arc and the node to which it connects are now a permanent part of the shortest path tree. The algorithm examines the database and identifies every node that can be reached from its chosen node. These nodes and their arcs are added temporarily to the tree.

The last two steps are repeated until every node in the network has become a permanent part of the tree.

**ALGORITHM:**

1. Create a simulator object

2. Define different colors for different data flows

3. Open a nam trace file and define finish procedure then close the trace file, and execute nam on trace file.

4. Create n number of nodes using for loop

5. Create duplex links between the nodes

6. Setup UDP Connection between n(0) and n(5)

7. Setup another UDP connection between n(1) and n(5)

8. Apply CBR Traffic over both UDP connections

9. Choose Link state routing protocol to transmit data from sender to receiver.

10. Schedule events and run the program.

**PROGRAM:**

**OUTPUT:**