Aim:

To Simulate Routing Protocols like Distance Vector and Link State using ns2

Algorithm :

1.Create 4 nodes and make the necessary out.nam,out.tr files

2. After creating 4 nodes set node 2 as tcp node and node 3 as sink node

3. Set FTP to tcp agent using attach agent

4. set rtproto to Ls for link state / DV for Distance Vector

5.Analyse the performance by using the tools in the network animator

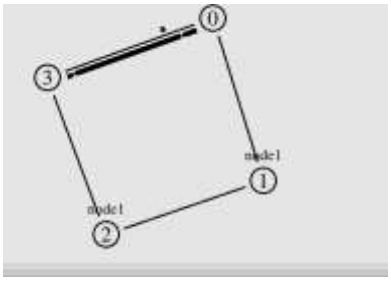
Code:

```
set ns [new Simulator]
$ns rtproto LS   //Change to DV for distance vector
set node1 [$ns node]
set node2 [$ns node]
set node3 [$ns node]
set node4 [$ns node]
set tf [open out.tr w]
$ns trace-all $tf
set nf [open out.nam w]
$ns namtrace-all $nf
proc finish {} {
global ns nf
$ns flush-trace
close $nf
exec nam out.nam &
exit 0}
$node1 label "node1"
$node2 label "node1"
$node3 label "node1"
$ns duplex-link $node1 $node2 1.0Mb 10ms DropTail
$ns duplex-link $node2 $node3 1.0Mb 10ms DropTail
$ns duplex-link $node3 $node4 1.0Mb 10ms DropTail
```

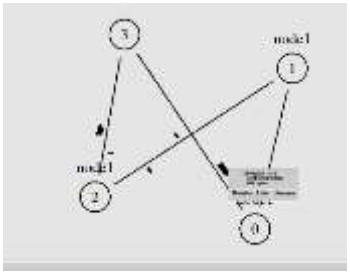
```
$ns duplex-link $node4 $node1 1.0Mb 10ms DropTail

set tcp0 [new Agent/TCP]

$ns attach-agent $node1 $tcp0

set sink0 [new Agent/TCPSink]

$ns attach-agent $node4 $sink0

$ns connect $tcp0 $sink0

set traffic [new Application/FTP]

$traffic attach-agent $tcp0

$ns at 0.5 "$traffic start"

$ns rtmodel-at 1.0 down $node2 $node3

$ns rtmodel-at 2.0 up $node2 $node3

ns at 3.0 "$traffic start"

ns at 4.0 "$traffic stop"

ns at 5.0 "finish"

$ns run
```

Output:

Distance Vector



Link State Routing



Result:

Thus the Two routing protocols Link State and Distance Vector Routing were simulated and studied using ns2 and network animator