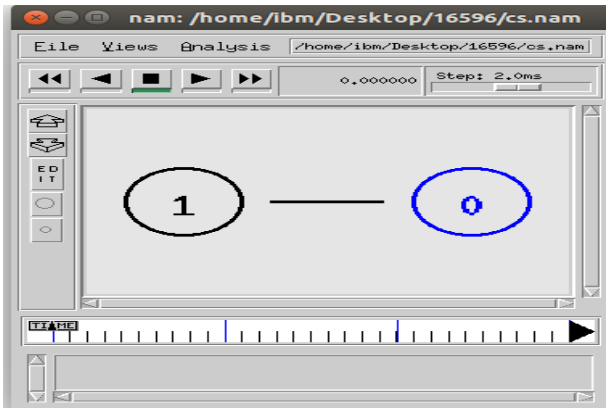
# WEEK 6

Aim:- Write a TCL program to create two nodes client and server and establish a connection between them.

Code:-

```
set namf [open cs.nam w]
$cs namtrace-all $namf
set cst [open cs.tr w]
set client [$cs node]
set server [$cs node]
$client color Blue
$cs duplex-link $client $server 10Mbps 10ms DropTail
$cs duplex-link-op $server $client orient right
proc finish { } {
global set cs [new Simulator]
cs namf cst
$cs flush-trace
close $namf
exec nam cs.nam &
exit 0
}
$cs at 5.0 "finish"
$cs run
```

Output:-



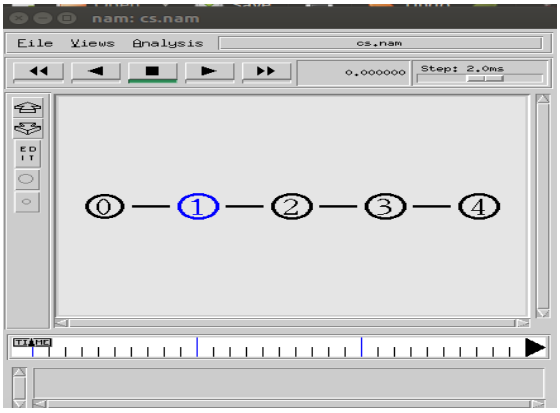

Aim:- Implement all the topologies using TCL

Bus Topology

## Code:-

```
set cs [new Simulator]
set namf [open cs.nam w]
$cs namtrace-all $namf
set cst [open cs.tr w]
set n0 [$cs node]
set n1 [$cs node]
set n2 [$cs node]
set n3 [$cs node]
set n4 [$cs node]
$n1 color Blue
$cs duplex-link $n0 $n1 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $n1 orient right
$cs duplex-link $n1 $n2 10Mbps 10ms DropTail
$cs duplex-link-op $n1 $n2 orient right
$cs duplex-link $n2 $n3 10Mbps 10ms DropTail
$cs duplex-link-op $n2 $n3 orient right
$cs duplex-link $n3 $n4 10Mbps 10ms DropTail
$cs duplex-link-op $n3 $n4 orient right
proc finish { } {
global cs namf cst
$cs flush-trace
close $namf
exec nam cs.nam &
exit 0
}
$cs at 5.0 "finish"
$cs run
```

## Output:-

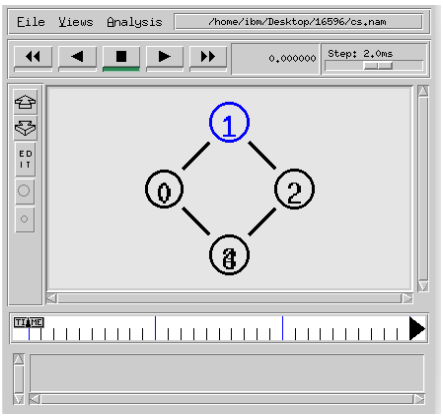



Ring Topology

## Code:-

```
set cs [new Simulator]
set namf [open cs.nam w]
$cs namtrace-all $namf
set cst [open cs.tr w]
set n0 [$cs node]
set n1 [$cs node]
set n2 [$cs node]
set n3 [$cs node]
set hub [$cs node]
$n1 color Blue
$cs duplex-link $n0 $n1 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $n1 orient right-up
$cs duplex-link $n1 $n2 10Mbps 10ms DropTail
$cs duplex-link-op $n1 $n2 orient right-down
$cs duplex-link $n2 $n3 10Mbps 10ms DropTail
$cs duplex-link-op $n2 $n3 orient left-down
$cs duplex-link $n3 $n0 10Mbps 10ms DropTail
$cs duplex-link-op $n3 $n0 orient left-up
proc finish { } {
global cs namf cst
$cs flush-trace
close $namf
exec nam cs.nam &
exit 0
}
$cs at 5.0 "finish"
$cs run
```

# Output:-



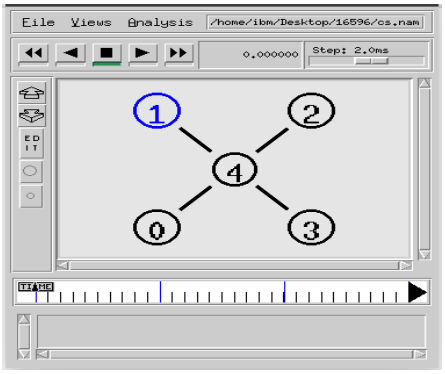

Star Topology:-

# Code:-

```
set cs [new Simulator]
set namf [open cs.nam w]
$cs namtrace-all $namf
set cst [open cs.tr w]
set n0 [$cs node]
set n1 [$cs node]
set n2 [$cs node]
set n3 [$cs node]
set hub [$cs node]
$n1 color Blue
$cs duplex-link $n0 $hub 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $hub orient right-up
$cs duplex-link $n1 $hub 10Mbps 10ms DropTail
$cs duplex-link-op $n1 $hub orient right-down
$cs duplex-link $n2 $hub 10Mbps 10ms DropTail
$cs duplex-link-op $n2 $hub orient left-down
$cs duplex-link $n3 $hub 10Mbps 10ms DropTail
$cs duplex-link-op $n3 $hub orient left-up
proc finish { } {
global cs namf cst
$cs flush-trace
close $namf
exec nam cs.nam &
exit 0
}
```

$cs at 5.0 "finish"
$cs run

## Output:-



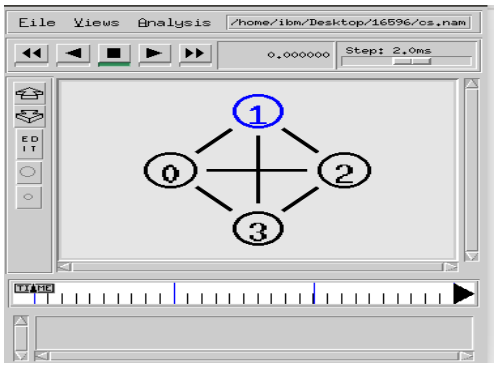

Mesh Topology:-

## Code:-

```
set cs [new Simulator]
set namf [open cs.nam w]
$cs namtrace-all $namf
set cst [open cs.tr w]
set n0 [$cs node]
set n1 [$cs node]
set n2 [$cs node]
set n3 [$cs node]
$n1 color Blue
$cs duplex-link $n1 $n3 10Mbps 10ms DropTail
$cs duplex-link-op $n1 $n3 orient down
$cs duplex-link $n0 $n1 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $n1 orient right-up
$cs duplex-link $n0 $n3 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $n3 orient right-down
$cs duplex-link $n0 $n2 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $n2 orient right
$cs duplex-link $n1 $n2 10Mbps 10ms DropTail
$cs duplex-link-op $n1 $n2 orient right-down
$cs duplex-link $n3 $n2 10Mbps 10ms DropTail
$cs duplex-link-op $n3 $n2 orient right-up
proc finish { } {
global cs namf cst
$cs flush-trace
```

```
close $namf
exec nam cs.nam &
exit 0
}
$cs at 5.0 "finish"
$cs run
```

## Output:-



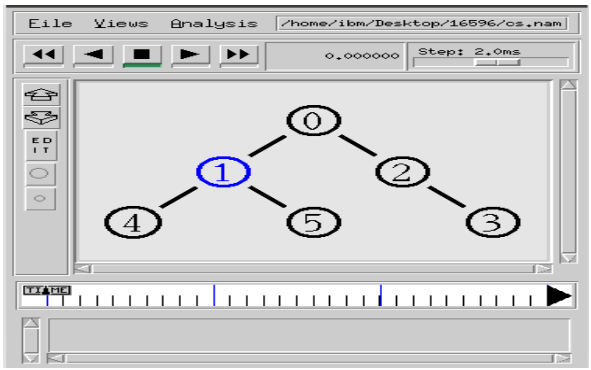

Tree Topology:-

## Code:-

```
set cs [new Simulator]
set namf [open cs.nam w]
$cs namtrace-all $namf
set cst [open cs.tr w]
set n0 [$cs node]
set n1 [$cs node]
set n2 [$cs node]
set n3 [$cs node]
set n4 [$cs node]
set n5 [$cs node]
$n1 color Blue
$cs duplex-link $n0 $n1 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $n1 orient left-down
$cs duplex-link $n0 $n2 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $n2 orient right-down
$cs duplex-link $n2 $n3 10Mbps 10ms DropTail
$cs duplex-link-op $n2 $n3 orient right-down
$cs duplex-link $n1 $n4 10Mbps 10ms DropTail
$cs duplex-link-op $n1 $n4 orient left-down
```

```
$cs duplex-link $n1 $n5 10Mbps 10ms DropTail
$cs duplex-link-op $n1 $n5 orient right-down
proc finish { } {
global cs namf cst
$cs flush-trace
close $namf
exec nam cs.nam &
exit 0
}
$cs at 5.0 "finish"
$cs run
```

## Output:-




Hybrid Topology:-

## Code:-

```
set cs [new Simulator]
set namf [open cs.nam w]
$cs namtrace-all $namf
set cst [open cs.tr w]
set n0 [$cs node]
set n1 [$cs node]
set n2 [$cs node]
set n3 [$cs node]
set n4 [$cs node]
set n5 [$cs node]
set n6 [$cs node]
set n7 [$cs node]
$cs duplex-link $n0 $n1 10Mbps 10ms DropTail
$cs duplex-link-op $n0 $n1 orient right
$cs duplex-link $n1 $n2 10Mbps 10ms DropTail
```

```
$cs duplex-link-op $n1 $n2 orient right
$cs duplex-link $n2 $n3 10Mbps 10ms DropTail
$cs duplex-link-op $n2 $n3 orient right
$cs duplex-link $n3 $n4 10Mbps 10ms DropTail
$cs duplex-link-op $n3 $n4 orient right
$cs duplex-link $n4 $n5 10Mbps 10ms DropTail
$cs duplex-link-op $n4 $n5 orient right-up
$cs duplex-link $n5 $n6 10Mbps 10ms DropTail
$cs duplex-link-op $n5 $n6 orient right-down
$cs duplex-link $n6 $n7 10Mbps 10ms DropTail
$cs duplex-link-op $n6 $n7 orient left-down
$cs duplex-link $n7 $n4 10Mbps 10ms DropTail
$cs duplex-link-op $n7 $n4 orient left-up
proc finish { } {
global cs namf cst
$cs flush-trace
close $namf
exec nam cs.nam &
exit 0
}
$cs at 5.0 "finish"
$cs run
```

## Output:-