L5 + L6

Principle of Computer Communications

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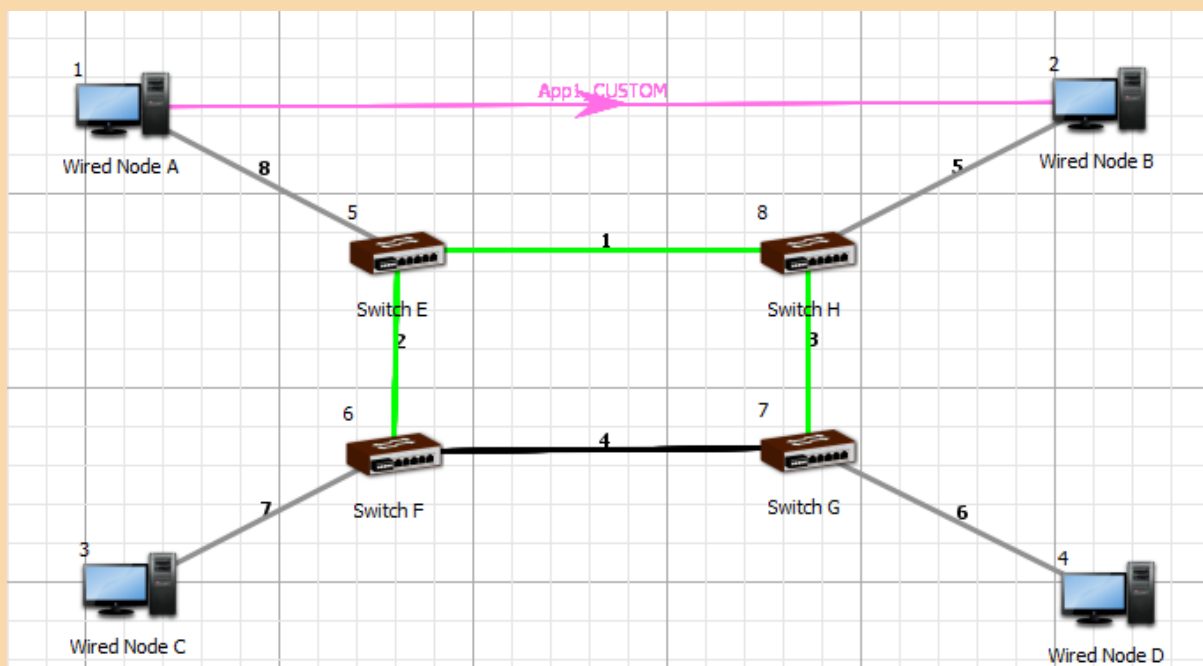**Assessment - 2**

Spanning tree - 1

Aim

To simulate Networks using switch priorities in Netsim and compare their performance.

Tools Required

Netsim Software

Network Diagram – 1111

Switch E:

1. D560 – H
2. 1241 – F   - Root Port
3. 1F41 – Node A

Switch F:

1. 62C2 – E
2. D67C – G
3. 3611 – Node C   - Root Port

Switch G:

1. B4A1 – H
2. 1CB6 – F   - Root port
3. FC01 – Node D

Switch H: - Root switch

1. 0140 – E   - Root port
2. 28D9 – G
3. 8E99 – Node B

Inference:

Smallest MAC address of each switch shows their root port

And the smallest MAC address among the root ports, show the root switch

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The message packet is transferred usually through the ports which has the lowest MAC address for switches of **equal priority**, but since the priority of the switches have been changed manually – new routes of packet transmission is made automatically.

Hence, the following experiment has been observed with multiple sequences of priority arrangement among the switches. This changes the root switch, the root ports and the blocked ports.

So, "1234" means that switch 'E' has been given **1st** priority, 'F' got the **2nd** priority, 'G' got the **3rd** priority and 'H' got the **4th** priority. 4 different sequences have been listed below.
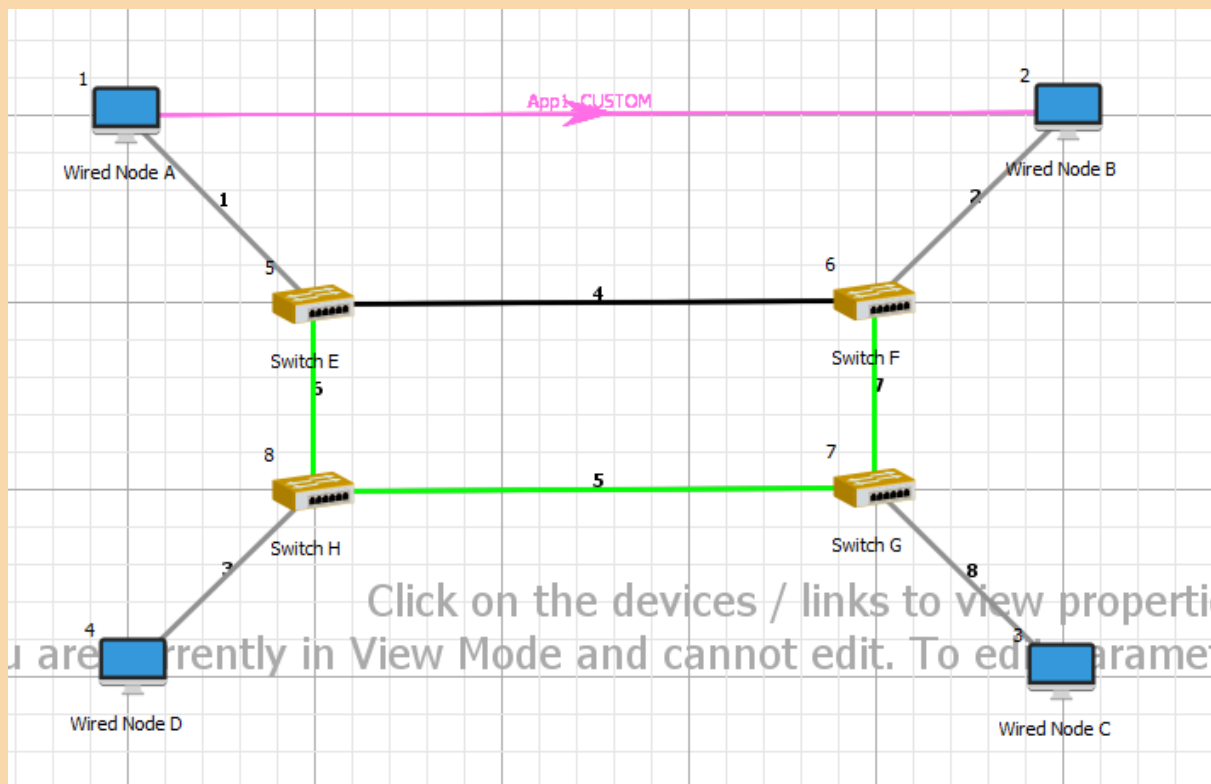
Network Diagram – 1234
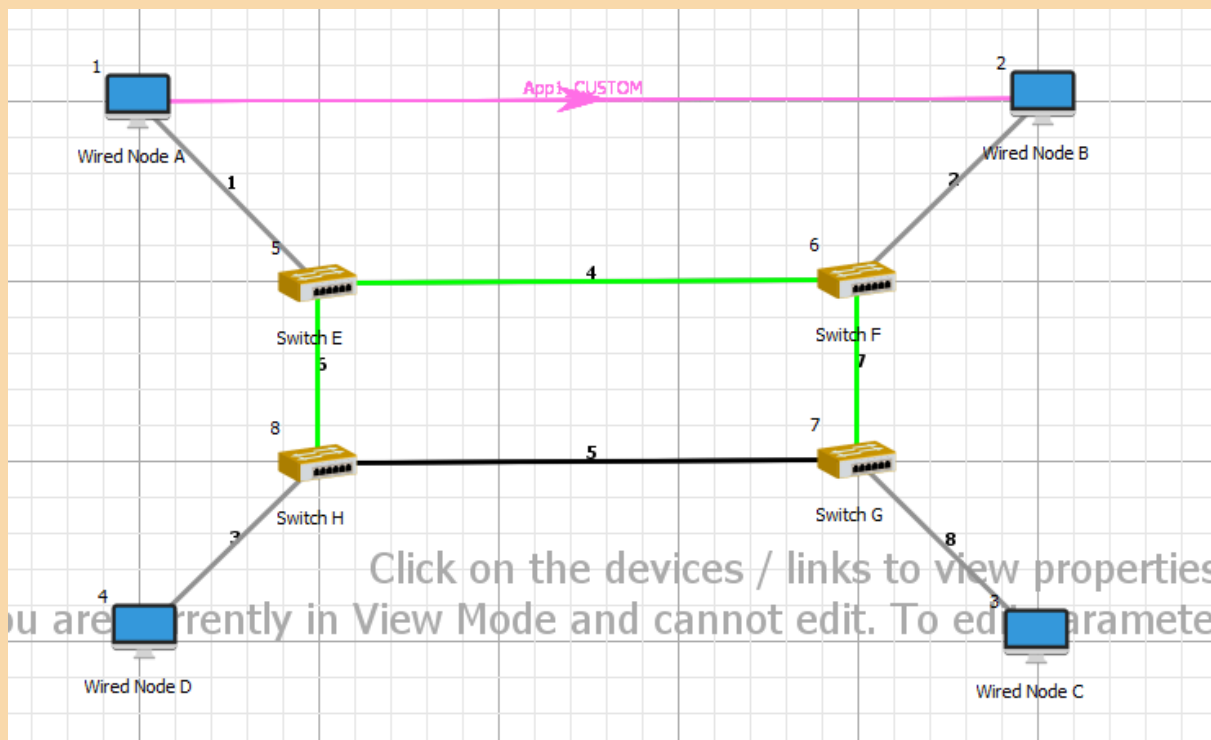
Root switch: E

Root ports: G(7), F(4), H(6)

Designated ports: E(4), E(6), F(7)

Blocked ports: H(5), G(5)

Forward paths: 4, 6, 7

Network Diagram – 4312
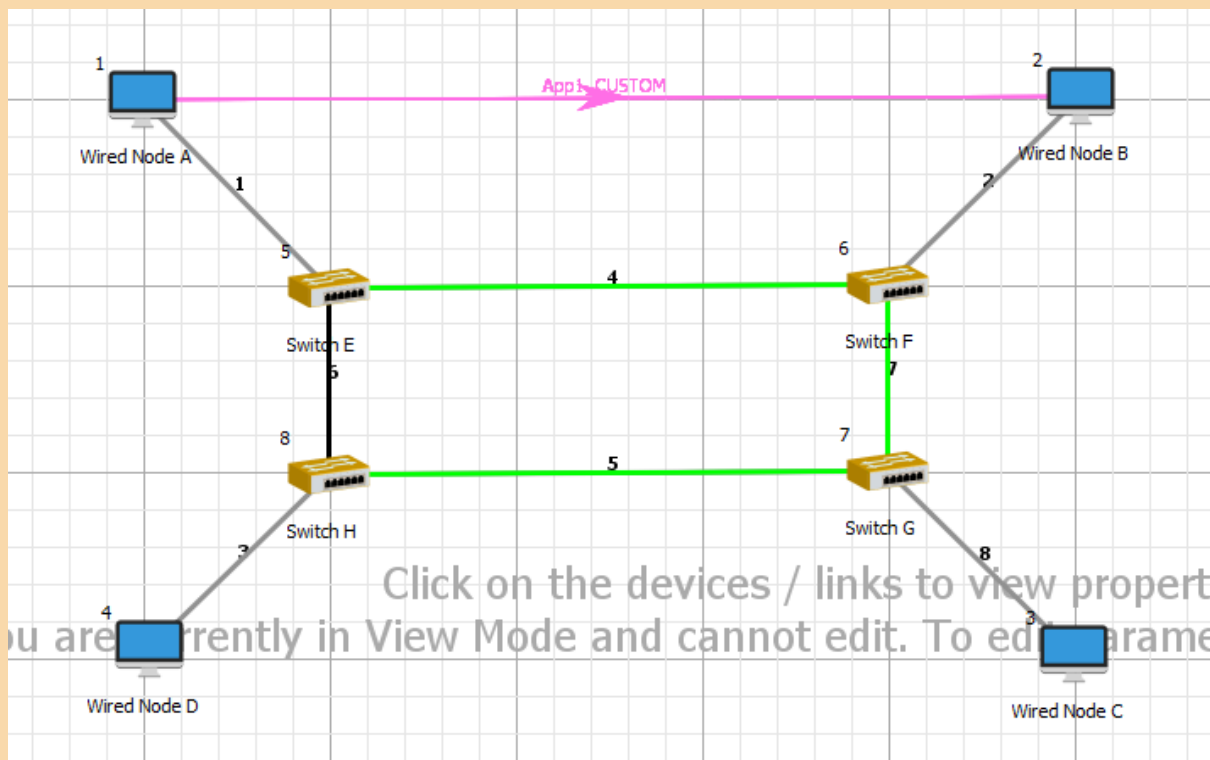

Root switch: G

Root ports: F(7), H(5), E(6)

Designated ports: G(7), G(5), H(6)

Blocked ports: E(4), F(4)

Forward paths: 5, 6, 7
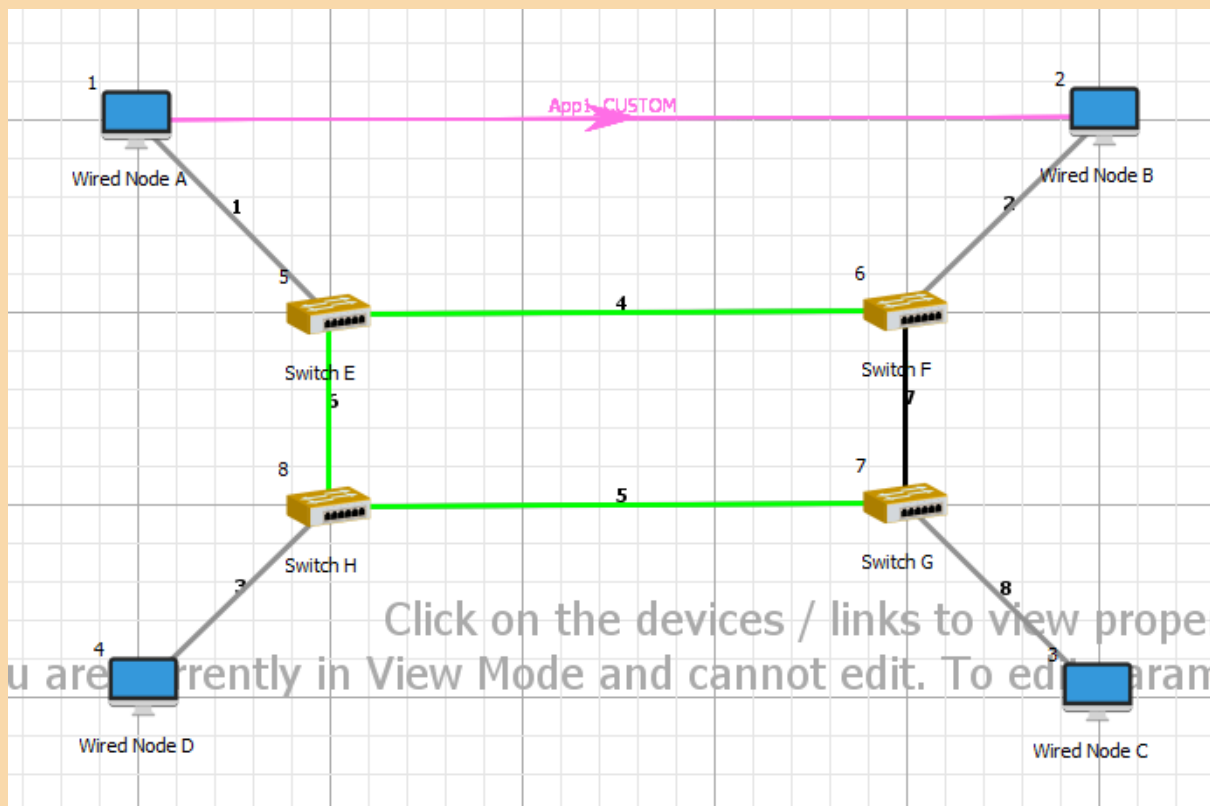
<u>Network Diagram – 3124</u>

Root switch: F

Root ports: E(4), H(5), G(7)

Designated ports: F(7), F(4), G(5)

Blocked ports: H(5), G(5)

Forward paths: 4, 5, 7

Network Diagram – 2431

Root switch: H

Root ports: E(6), G(5), F(4)

Designated ports: H(5), H(6), E(4)

Blocked ports: H(5), G(5)

Forward paths: 4, 5, 6