EXPERIMENT 5

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BRANCH: BE-CSE   **SECTION: 22BCS-IOT-613B**

SEMESTER: 5   **DATE: 11/9/2024**

SUBJECT: COMPUTER NETWORKS   **SUBJECT CODE: 22CSH-312**

1. Aim:

Implement Data link Layer Protocols such as CSMA, CSMA/CD etc.

2. Objective:

The goal is to explore how Data Link Layer protocols, particularly CSMA/CD, manage network traffic and collisions in a simulated environment using Cisco Packet Tracer. You'll configure devices, observe protocol behavior, and analyze how CSMA/CD ensures efficient communication on a shared medium.
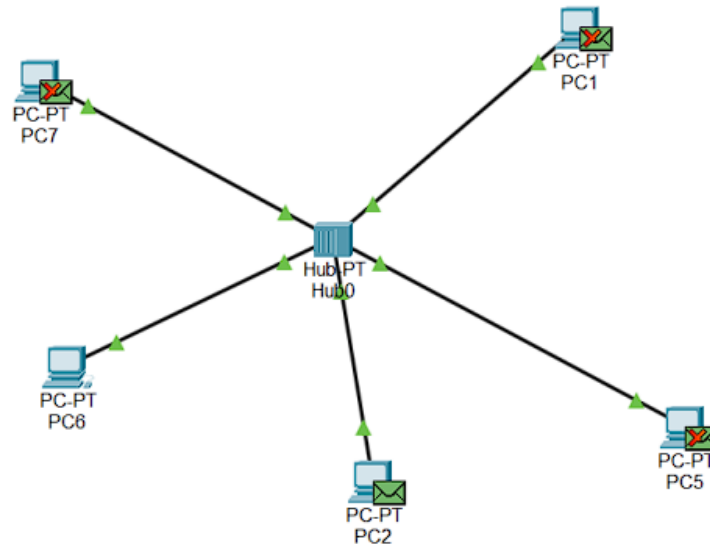
3. Requirements:

Cisco Packet Tracer.

4. Procedure:

• Open Cisco Packet Tracer and add a single hub and PCs .

• Connect the PCs to the hub using copper crossover cables.

• Assign static IP addresses to each PC via the Desktop tab in IP Configuration.

• Switch to Simulation Mode and observe how data frames are transmitted through the hub.

• Notice how the hub shared among all PCs, leading to potential collisions.

• Analyze the transmission to understand the impact of collisions in this setup.

5. **Output:**


```
PC1
Physical   Config   Desktop   Programming   Attributes

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>arp -a
No ARP Entries Found
C:\>
```



```
PC2
Physical   Config   Desktop   Programming   Attributes

Command Prompt

Cisco Packet Tracer PC Command Line 1.0
C:\>arp ~a
Invalid Command.

C:\>arp -a
   Internet Address        Physical Address        Type
   192.168.1.1             000d.bd74.3c9c           dynamic
```

6. Learning Outcome:

- Understand how CSMA/CD manages network traffic and handles
- collisions.
- Learn to configure network devices and assign static IP addresses in
- Cisco Packet Tracer.
- Observe the behavior of data transmission through a hub and its impact
- on network performance.
- Analyze the difference in collision management