**Date: 14/03/2022**

**DEPARTMENT OF COMPUTER ENGINEERING**

**Computer Networks Laboratory (DJ19CEL405)**

**Academic Year: 2021-22**

**Semester IV**

**Computer Network Lab Manual**

**Experiment 1**

Aim: - To Study and understand different networking devices and Topologies.

**Devices are:** - HUB, SWITCH, ROUTER, and BRIDGE.

Include the following points for all the above mentioned devices.

1. Introduction

2. Definition

3. Picture

4. Logical Symbol

5. Working

6. Advantages & Disadvantages

**Topologies** are: - Bus, Star, Ring, Mesh, Tree, Hybrid.

Include the following points for all the above mentioned topologies.

1. Introduction
2. Features
3. Architectures
4. Advantages and Disadvantages.
5. Applications

Conclusion.

**Experiment 2**

Aim: - To study different networking commands.

Commands are: - ipconfig, ipconfig/all, arp/a, netstat, netstat/an, ping(id/website), ping –t(id/website), pathping(id/website) and nslookup

Include the following points for all the above mentioned Commands

1. Introduction to command with different parameters
2. Execute them and copy paste output in word document.

**(NOTE:- Use color switch while copy/pasting).**

Conclusion.

**Experiment 3**

Aim: - To implement CRC and hamming code as error detection and correction codes.

Topics: - CRC, Hamming Code

Include the following points for all the above mentioned topics.

1. Introduction
2. Example
3. Code
4. Output

Conclusion.

**Experiment 4**

Aim: - To Study & implement Dijkstra’s Algorithm.

Topics: - Dijkstra’s Algorithm.

Include the following points for all the above mentioned topic.

1. Theory
2. Example
3. Code
4. Output
5. Application.

Conclusion.

**Experiment 5**

Aim: - To Study & implement different framing techniques.

Topics: - 1. Character count. 2. Starting and ending characters, with character stuffing.

3. Starting and ending flags, with bit stuffing.

Include the following points for all the above mentioned topic.

1. Theory
2. Example
3. Diagram
4. Code
5. Output.

Conclusion.

**Experiment 6**

Aim: - To implement socket communication in Java.

Topics: - 1. Socket Communication

Include the following points for all the above mentioned topic.

1. Theory for socket Communication
2. Code
3. Output

Conclusion.

**Experiment 7**

Aim: - Creation of Duplex links in ns2 between two nodes.

Topics: - 1. Creating Links in ns2

Include the following points for all the above mentioned topic.

1. Code
2. Output

Conclusion.

**Experiment 8**

Aim: - Creation of TCP and UDP in ns2

Topics: - 1. Creating TCP and UDP in ns2

Include the following points for all the above mentioned topic.

1. Code
2. Output

Conclusion.

**Experiment 9**

Aim: - Creation of Stop and Wait in ns2

Topics: - 1. Creating Stop and Wait in ns2

Include the following points for all the above mentioned topic.

1. Code
2. Output

Conclusion.

**Experiment 10**

Aim: - Create different networking topologies in packet tracer.

Topics: - networking topologies

Include the following points for all the above mentioned topic.

1. Network topologies
2. Packet tracer
3. Output

Conclusion.

**Experiment 11**

Aim: - To Implement RIP in packet tracer.

Topics: - Routing Information Protocol

Include the following points for all the above mentioned topic.

1. Introduction
2. Diagram
3. Output

Conclusion.

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| --- | --- |
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