# Green University of Bangladesh
# Department of Computer Science and Engineering (CSE)
**Faculty of Sciences and Engineering**
**Semester: (Summer, Year:2023), B.Sc. in CSE (Day)**

**Lab Report NO # 05**
**Course Title:** Computer Networking Lab

**Course Code:** CSE-312 **Section:** 212D3

**Lab Experiment Name:** Configuration of static and dynamic routing using Cisco Packet Tracer

## Student Details

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**Lab Report Status**

**Marks: ……** **Signature:.....**
**Comments:.....** **Date:.....**

**1. TITLE OF THE LAB REPORT EXPERIMENT**

Configuration of static and dynamic routing using Cisco Packet Tracer

**2. OBJECTIVES/AIM**

- To know about DNS and Distributed database
- Implementing a distributed database management system for the iterative
- And recursive queries of DNS (Domain Name System)
- Also implement the Non-recursive queries of DNS.

**3. PROCEDURE / ANALYSIS / DESIGN**

Configuring static and dynamic routing in Cisco Packet Tracer involves several steps, including designing the network, analyzing the routing requirements, and implementing the configuration. Below is a step-by-step guide for configuring both static and dynamic routing in Cisco Packet Tracer. We'll use a simple scenario with two routers to demonstrate the process.

## Procedure:

### 1. Design the Network Topology:

Create a simple network topology with at least two routers, each connected to a different network.

PC1 and PC2 are two end devices.

- R1 and R2 are two routers.
- N1 and N2 are two different networks.

### 2. Assign IP Addresses:

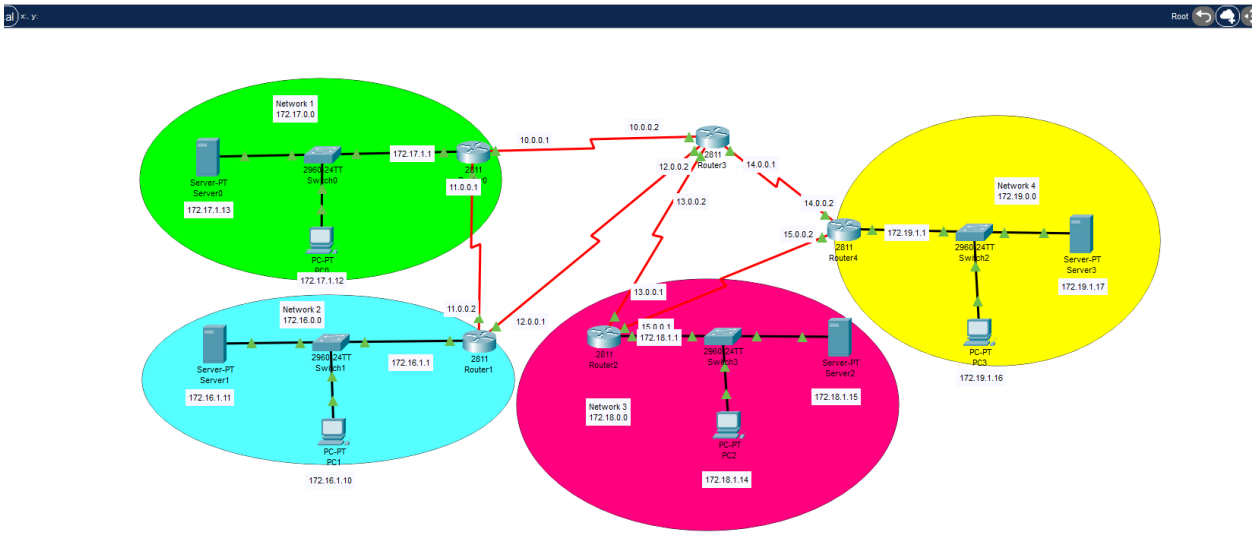
Assign IP addresses to the router interfaces and end devices. For this example:

- R1: Fa0/0 - 192.168.1.1/24, Fa0/1 - 10.0.0.1/24
- R2: Fa0/0 - 10.0.0.2/24, Fa0/1 - 192.168.2.1/24
- PC1: 192.168.1.2/24, Default Gateway - 192.168.1.1
- PC2: 192.168.2.2/24, Default Gateway - 192.168.2.1

Consider the size and complexity of your network when choosing between static and dynamic routing.
Use dynamic routing protocols for larger networks to allow for automatic updates and adaptability.

This is a basic example, and in a real-world scenario, you may need to consider other factors such as redundancy, security, and routing metrics when designing and configuring your network.

## 4. IMPLEMENTATION




## 6. ANALYSIS AND DISCUSSION

Static Routing:

- Advantages:
  - Simple to configure and understand.
  - Lower resource usage as compared to dynamic routing protocols.
- Disadvantages:
  - Lack of adaptability to network changes.
  - Manual configuration can lead to errors and maintenance challenges.

Dynamic Routing (OSPF):

- Advantages:
  - Automatically adapts to changes in the network.
  - Scalable and suitable for larger networks.
- Disadvantages:
  - Requires more initial configuration than static routing.

- Consumes more resources, especially in larger networks.

In practice, a combination of static and dynamic routing is often used in enterprise networks, with static routes for simple and stable connections and dynamic routing protocols for adaptability to changes. The choice depends on the specific requirements and characteristics of the network.