Project Title:

Remote Router and Network Supervision using SSH and SNMP in Cisco Packet Tracer

Project Description:

This project focuses on the implementation of a small-scale network environment designed to provide **secure remote management and supervision** of a router using **SSH** and **SNMP** protocols within **Cisco Packet Tracer**.

Students will configure and test the following key components:

- **Secure remote access** to a router using the **SSH protocol**.

- **Network supervision** of the router through an **SNMP server**.

- **Remote management** of the SNMP server via SSH from an **administrator workstation**.

The project also includes the **complete IP addressing plan**, the **configuration of SSH and SNMP services**, and the **verification of network connectivity and monitoring functionalities**.

Project Objectives (15 pts):

1. Implement a secure SSH connection for remote router management.

2. Configure SNMP for network supervision and monitoring.

3. Allow remote control of the SNMP server through SSH from the admin PC.

4. Ensure full network connectivity and service verification within Cisco Packet Tracer.

Bonus Tasks (for Additional Credit – 5 pts):

Task	Description
Password Encryption	Secure the router by encrypting all stored passwords.
Syslog Server Configuration	Configure a Syslog server to collect and store system logs from the router.
SNMP Trap Simulation	Configure an SNMP trap to notify the server when a network interface goes down.
SSH ACL Restriction	Restrict SSH access to the router from the admin PC only.
Advanced SNMP Traps	Configure additional SNMP traps for various network events (e.g., interface up/down, authentication failures).