Project Title:

Designing and Implementing a Campus Network for a [Ismahil hasan zai high school]

# Project Overview:

In this project, you will have the opportunity to design and implement a campus network for [Ismahil hasan zai high school]. The project will cover various topics related to network design and configuration, including basic switch configuration, SSH, port security, VLANs, trunking, inter-VLAN routing, and following the Network Development Life Cycle (NDLC) methodology.

# Project Objectives:

1. Understand the requirements and constraints of the school's network.
2. Design a campus network based on the Network Development Life Cycle (NDLC).
3. Implement the network design using appropriate network devices and configurations.
4. Configure basic switch settings, SSH, port security, VLANs, trunking, and inter-VLAN routing.
5. Test and verify the functionality and security of the implemented network.

# Project Tasks:

## Network Requirements Analysis:

* Identify the requirements of the school's network, including the number of users, departments, and devices.
* Determine the network performance and security requirements.
* Document the network requirements and constraints.

## Network Design:

* Develop a network design based on the Network Development Life Cycle (NDLC).
* Create a logical network diagram illustrating the network components, such as switches, routers, VLANs, and inter-VLAN routing.
* Define IP addressing schemes for different VLANs.

## Device Configuration:

* Configure the basic settings on the switches, including hostname, IP address, and default gateway.
* Implement SSH to secure remote access to the network devices.
* Apply port security measures to restrict unauthorized access.
* Create and configure VLANs according to the network design.
* Configure trunking between switches to allow VLAN traffic to traverse multiple switches.
* Enable inter-VLAN routing to facilitate communication between different VLANs.

## Testing and Verification:

* Test the network connectivity between devices within and across VLANs.
* Verify the effectiveness of port security measures.
* Conduct performance tests to ensure the network meets the required specifications.
* Document the test results and any necessary adjustments made to the network configuration.

## Project Report:

Create a comprehensive report documenting the entire project, including network requirements, design, implementation steps, configurations, test results, and any recommendations for improvements.

Present the project report to the class, highlighting the key design decisions and lessons learned during the project.

## Project Deliverables:

* Network requirements documentation.
* Logical network diagram.
* Configuration files for network devices.
* Test plan and results.
* Final project report.

Note: It is important to follow ethical guidelines and use appropriate lab equipment or simulation software to design and implement the network