



**CST 332: Internet Protocols, Architecture & Routing /
CST 337: Network Configurations and Protocols**

Assignment 1

Group Members:

1. Name: _____ Matric No. : _____

2. Name: _____ Matric No. : _____

Lemon Corporation will be opening three (3) new factories in Penang. The company will be hiring the following personnel:

Factory #1

Level	Engineering	Admin	Sales and Marketing	IT
Ground Floor	21	9	15	8
1 st Floor	28	45	18	9
2 nd Floor	44	26	22	8

Factory #2

Level	Engineering	Admin	Sales and Marketing	IT
Ground Floor	30	32	8	16
1 st Floor	58	30	8	30
2 nd Floor	60	24	10	16

Factory #3

Level	Engineering	Admin	Sales and Marketing	IT
Ground Floor	28	10	12	10
1 st Floor	77	15	15	12
2 nd Floor	75	15	20	12

Factory #2 and Factory #3 are located 500m away from Factory #1. Factory #1, which is the main building, is connected to the ISP. Every floor (all factories) consists of IoT devices namely smoke detector, motion detector and web camera. The devices will be connected to a server located at 2nd Floor, Factory #1.

As network engineer, you are required to design a **reliable, secure, and scalable** network for the company.

Write a proposal to the top management to:

- i) Illustrate and explain the design of the company's network architecture.
- ii) Explain how you plan to avoid single point of failure in the network.
- iii) Show the IP addressing scheme that you will be adopting to meet the requirement.
- iv) Explain the strategies to connect all the buildings to the Internet.
- v) Describe in detail how you monitor the IoT devices using centralized server located at Factory #1.

You are required to simulate the network using packet tracker as well.

INSTRUCTIONS:

Please submit the **technical proposal** and **Cisco Packet tracker (.pkt) file** (two in a group) by **10 December 2021, 12am**. The technical proposal should contain the following information:

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All assignments MUST be submitted before/on the given date. Late submissions without prior approval will not be accepted.

Plagiarism/pirating and copying are serious academic offence. Students that are found to plagiarize/or copying will get an F for the assignment/report or for the whole coursework grade.

Thank you