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**GROUP ASSIGNMENT**

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| **Module Code** | **CT043-3-1-IN** |
| **Intake Code** | **APD1F2109CE** |
| **Module** | **INTRODUCTION TO NETWORKING** |
| **Lecturer Name** | **Mr.** JOSHUA SAMUAL |
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INTRODUCTION

FUNDATION OF THE COMPANY(**PEDRO**)

We’re basically focused on a relevant company called Seagate and its partner who are planning to innovate and extend their network to a different location. Seagate is a company that became private in 2001s and it’s a company that is specialized in electronic data storage technology and solutions as they work in manufacturing rigid magnetic disk and disk drives for computers. Therefore, they were planning to establish a new branch in Penang, Malaysia which is operating and offering services considering that there is an old network infrastructure in Kuala Lumpur, Malaysia. Moreover, the CEO is projecting the new building or network infrastructure that is in Penang to extend his branch and the communications between both Kuala Lumpur and Penang. Additionally, the first floor in both building got the same departments on the first floor as reception area, waiting room, CEO, CTO, administrative office, cafeteria, gym, and swimming pool while the second floor contains development-Hub, server room, technical assistant for monitoring the network, and the conference department. Each department should contain voice over internet, printer, and IoT infrastructure such as CCTV1

OBJECTIVES(**PEDRO**)

This assignment aim is to allow students to design and configure a LAN topology by applying basic principles of wired and wireless network, together with configuration of network devices including routers and switches by using Cisco Packet Tracer simulation software. Moreover, the plan of this group assignment is by organizing the two network infrastructures, Kuala Lumpur, and Penang which contain departments like waiting room, reception area, CEO room, CTO room, administrative office, Cafeteria, Gym, and swimming pool on the first floor & second floor wit its department mentioned in introduction part.

ASSUMPTIONS(**PEDRO**)

In this group assignment there are some relevant points such as the VLSM table segmented in various Ip address according to each floor, the localization of the building, the number of host machines used in each building, the total numbers of host machines in both buildings in Penang, and Kuala Lumpur, etc. so in definitely all these information will be explained with more details on Work Breakdown Structure(WBS) session.

OLD STRUCTURE IN KUALA LUMPUR(**PEDRO**)

Kuala Lumpur is an existing building that is providing its services and it was kind of old structure in terms of good design and technology, so instead of planning the layout and the infrastructure of that building the CEO wanted to restructure the existing network in Kuala Lumpur building. On the other hand, the creation of the new structure was carried out with the intention of extending the company or the enterprises since there are some companies involved as partnership both in the enterprise arena and in the B2B SaaS space. Additionally, another reason in opening the new branch infrastructure is for emphasizing more on employee values and provide a different environment where the employee can think, innovate, learn, and come up with new ideas as well as build the project.

NEW STRUCTURE IN PENANG(**PEDRO**)

Penang is the new network infrastructure designed under a well engineering plan as well as an advance technology where employees should adapt to a new environment and get familiar with new materials in this new building (Penang) which reflects the influence of Seagate.co as one of the leaders in technology solutions and a projected vision of different projects like this in the future.

GENERAL VISION(**PEDRO**)

A general vision of this group assignment is creating a suitable topology or network connection between the two buildings that are in Kuala Lumpur and Penang. As an assumption in each building there are over 80 people including people working on staff and visitors or guess. There are a minimum of 30 host machines in every floor of each building to maintain a good regulation from the network infrastructure until the layout of the buildings in a way that the communication of data transferring can be effective as well as providing effective services for people with suitable office’s environments. Thanks to VLSM method, the Ip address were segmented into different network id that helped us in assigning a unique Ip address to different departments in both buildings. Additionally, the topology justification, the table of the Ip address, etc. will be completed in the upcoming session.

GROUP CONFIGURATION

TOPOLOGY JUSTIFICATION

PHYSICAL TOPOLOGY(**PEDRO**)

LAN TOPOLOY(RUMI)

RING TOPOLOGY

STAR TOPOLOGY(RUMI)

MESH TOPOLOGY IN PENANG FLOOR(RUMI)

HYBRID TOPOLOGY(RUMI)

WAN TOPOLOGY(RUMI)

MODE TRANSMISSION(SHOKRI)

TYPES OF CABLES(SHOKRI)

COPPER STRAIGHT-THROUGH CABLE AND COPPER CROSS-OVER CABLE(SHOKRI)

SERIAL CABLE (DCE, DTE) SHOKRI

DEVICES IN THE DESIGN (ARAVIND TILL IP ADDRESSING)

THE PC

LAPTOP

PRINTER

THE SERVER

THE IP PHONE

CCTV-CAMERA

AIR CONDITIONAL

RFID READER

SWITCH

ROUTER

IP ADDRESSING (ARAVIND)

PENANG FIRST FLOOR(SHOKRI)

PENANG SECOND FLOOR(**PEDRO**)

KUALA LUMPUR FIRST FLOOR(ARAVIND)

KUALA LUMPUR SECOND FLOOR(RUMI)

PROOF OF SUCCESFUL DATA TRANSMISION (**PEDRO**)

**REFERECES.**