Faculty of Ocean Engineering Technology and Informatics
Universiti Malaysia Terengganu (UMT)

CSF3223: Networking (Semester II 2022/2023)

Group Assignment Objective:

1. To expose students with the IP addressing and sub-netting IP networks.
2. To expose students to use variable-length subnet mask (VLSM) to assigned IP addresses.

Background:

A multinational organization has corporate offices at the big cities of the south east Asia. VLAN 1 and VLAN 2 have a WAN connection to LAN 1. VLAN 3 and VLAN 4 also have a WAN connection to LAN 1.

The required of the IP addressing scheme are given in Table 1.

Table 1: Number of usable hosts for each subnet

Network	Required hosts
VLAN 1	250
VLAN 2	200
LAN 1	170
VLAN 3	60
VLAN 4	50

Assume that you are hired as an IT office and given a class B IP address of 172.168.0.0/16. You have to apply efficient IP addressing scheme based on the requirements of the organization. You should calculate VLSM and draw logical network diagram.

Requirement:

i. Project Report Submission must be submitted before or on **22nd June 2023** at the provided link in e-learning platform.
ii. Consist of 3 group members for each group.
iii. Only group leader should submit the assignment report. (File name: Group number, eg: Group 1)
iv. Copying your friends' work & plagiarism is strictly forbidden (policy applicable).
v. All group members should participate in contributing to the group assignment. Faculty of Ocean Engineering Technology and Informatics Universiti Malaysia Terengganu (UMT)

Report details:

- Write a complete report on the results of your study. Final report should have paragraph with 1.5 spacing, 12 font size and type of font is Times New Roman (From Table of Content to Summary).
- The report should follow the appropriate format and contain at least the following information:
    i. Cover page should include *Title of the Report*, C*ourse Name* and Course *Code, Names of Group members' information including Metrics No., Program Name* and *Session.*

    ii. Table of Content (Consist of contents and pages)

    iii. Introduction
    a. Basic information about the sub-netting
    b. Basic information about the variable-length subnet mask (VLSM)

    iv. Examine the network requirements for each subnet
    a. Number of subnets are needed in the network topology.
    b. Total number of host address available for each subnetwork.
    c. Total number of host addresses needed in the topology diagram for each subnetwork.

    v. VLSM subnets
    a. Step to calculate VLSM subnets (provide step to calculate VLSM subnets and the respective hosts allocate the largest requirements first from the address range. Requirements levels should be listed from the largest to the smallest).
    b. Diagram of the network design (including interface and the network address for each LAN and WAN).

    vi. Summary (Conclusion about the overall statement. Also, can comment on project contributions or improvement if necessary)
    a. What you have learnt along the way
    b. Reflection

    vii. References (Any sources that you are referred. For example, URL link of the information).