ASIA PACIFIC UNIVERSITY OF TECHNOLOGY & INNOVATION
AICT004-3-2-NWN
Networks and Networking
Individual Assignment

This assignment contributes 50% of the final marks

Intake : UCDF1805ICT (SE)/UCDF1805ICT/UCDF1805ICT (DI)/UCDF1805 ITR/ UCDF1811ICT (SE)/UCDF1811ICT/UCDF1811ICT (DI)/UCDF1811 ITR
Lecturer :
Email :

LEARNING OUTCOMES:

- CLO2 : Form the local area network design and configuration using simulation tool for the given scenario (A2, PLO6)
- CLO3: Justify the topology and IP addressing plan based on the network design (A3, PLO8)

Note: PLO6 – Digital Skills, PLO8 – Personal Skills

Section A: Network Design and Configuration using Cisco Packet Tracer (60 marks)

Edutainment Zone is a newly established Mathematics and Science specialized tuition center with innovative learning environment. It is located in a busy district of Kuala Lumpur, Malaysia. It has plans to expand to other districts within one year and to achieve this goal is to offer customers with the latest and updated learning materials that cover both local and international education syllabus. The local education syllabus comprises UPSR for primary school level and SPM for secondary school level. Meanwhile the International education syllabus is preparing their customers for A-level and IGCSE examinations. Apart from that, the owner also identified the importance of a fast and reliable network infrastructure being key to achieving its innovative goal. As an innovative tuition center, Edutainment Zone also having an entertainment space in each floor that provide services such as mini cafeteria that offers free flow of healthy snacks, drinks, cyber café and the most interesting state of art facilities of special movie halls which can also be used to stream selective education movies and music videos from the cloud. The entertainment spaces are expected to accommodate their customers with innovative technology experiences in between their class sessions.

Currently Edutainment Zone is occupying a building with 2 floors which consists of separate classrooms on each floor which can accommodate 50 customers each. There are also two separate sections, one for administration and the other for IT department. Administration is responsible for customer service and also payments located on first floor. IT department located on second floor houses the necessary servers and network infrastructure in addition to IT support personnel. Therefore, to deliver the fast and reliable network infrastructure a proper plan is required in terms of physical/logical design and internetworking devices to be used. As the appointed network administrator your responsibility is to make sure the network is implemented successfully.

Design:
- Physical layout of the building (floor plan)
- Network Design

Implementation:
- Design the floor plan using Microsoft Visio (or any similar tool) and provide configuration of the logical network design using Cisco Packet Tracer.
- Network design shows exactly how different departments are connected to each other and also to the server room with the help of Cisco Packet Tracer software.
- Configurations should include static/dynamic IP addressing, VLAN and routing.
- You are required to demo the network design to the lecturer before submission date.

Section B: Report: Network Topology / IP Addressing (40 marks)

Each student is required to provide an individual report to justify the network topology and IP addressing used in network plan. A written report should be completed based on the network design and configurations performed in Section A. Below are the proposed guidelines for the report:

Proposed Guidelines for the Report:

1.0 Introduction

2.0 Floor Plan

3.0 Network Topology
- Justifications of the network topology used

4.0 IP Addressing
- Justifications of the IP addressing used

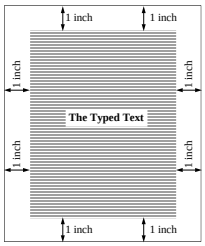
5.0 Conclusion
- Critical Evaluation (lesson learned) – reflections

References
- Adopt Harvard Referencing approach for all sources used.

Assignment Requirements

1. You are required to produce the work **individual**.
2. Your report must be typed using Microsoft Word with Times New Roman font size 12. Expected length is not more than 5 pages. Report should be in 1.5 spacing.
3. The report has to be well presented and should be *typed*. Submission of reports that are *unprofessional* in its outlook will not fare well when marks are allocated.
4. Your report must combine all the deliverables in one coherent document.

5. The report should have a one (1") margin all around the page as illustrated below:



6. The assignment should attach front cover and table of contents.
7. Plagiarism is a serious offence and will automatically be awarded zero (0) mark.
8. All information, figures and diagrams obtained from external sources must be referenced using the Harvard referencing system accordingly.

IMPORTANT

You have to hand in your assignment (only softcopy) on time to the Online Submission System. The submission include:

- *Report (Section B)*
- *Softcopy of floor plan (in MS Visio/Similar tool)*
- *Softcopy of network design (in Cisco Packet Tracer)*

Marking Scheme (Overall 100%)

Section A: CLO2: Form the local area network design and configuration using simulation tool for the given scenario (A2, PLO6) – Digital Skills						
Marking Criteria	**0-4 (Fail)**	**5-7 (Marginal Fail)**	**8-9 (Pass)**	**10-12 (Credit)**	**13-15 (Distinction)**	**Marks Awarded**
Configuration Techniques (15%)	Configuration not clear. No configuration found.	Incomplete configuration. Major issues in configuration (some parts are unable to ping).	Feasible network design with minimum requirement for the selected technique. Minimal issues in configuration – not fully working according to the network design.	Feasible network design to demonstrate the selected technique Successful network configuration (able to ping to all devices).	Good quality / complexity of network design. Extra effort shown to create a good design. Successful network configuration (able to ping to all devices).	
Marking Criteria	**0-2 (Fail)**	**3-4 (Marginal Fail)**	**5-6 (Pass)**	**7-8 (Credit)**	**9-10 (Distinction)**	**Marks Awarded**
Floor Plan (10%)	Floor plan is not visible. Hardly able to use any relevant tools in providing floor plan.	Floor plan produced has no label and legend Least number of relevant tools used in providing floor plan.	Appropriate floor plan design but no relevant explanation for the diagrams. Satisfactory number of relevant tools providing floor plan.	Good choice of floor plan design with sufficient explanation for the diagrams. Good number of relevant tools used in providing floor plan.	Very good choice of floor plan design, good justification for the diagrams with citation (if needed) Excellent number of relevant tools used in providing floor plan.	
Network Design (10%)	Network design is not clear. Minor issues in network design (not feasible).	Feasible network design, meeting the minimum requirement of a network.	Good network design showing complete setting of the network Satisfactory number of relevant tools providing network plan	Good quality / complexity of network design. Good number of relevant tools used in providing network plan	Excellent quality / complexity of network design. Very good choice of network plan design, good justification for the diagrams with citation (if needed)	
Demonstration: **Utilization of tools for network design (10%)**	Hardly able to use packet tracer simulation tool in providing network design.	Least use of packet tracer simulation tool providing network design.	Satisfactory use of packet tracer simulation tool providing network design.	Good use of packet tracer simulation tool providing network design.	Excellent use of packet tracer simulation tool providing network design.	
Q & A (10%)	Not turn up for project demonstration.	Able to show minimal understanding on the configuration done	Show good understanding in configuration, but minimal knowledge on	Very good understanding in configuration.	Outstanding configuration skills demonstrated, exceeding the expectation.	

	Poor understanding on the configuration.		other group members' work Not very good in handling questions asked during project demonstration.	Able to answer most of the questions.	Able to answer all questions posed perfectly.	
Marking Criteria	**0-1 (Fail)**	**2 (Marginal Fail)**	**3 (Pass)**	**4 (Credit)**	**5 (Distinction)**	**Marks Awarded**
Timeline (5%)	Not showing any progress.	Hardly able to show the progress on time. Incomplete work as working far behind the expected timeline - has evidence of last minute work.	Putting effort in providing the progress on time, but showing incomplete work. Need major modifications to the work done	Complete work showed. However, work need some changes and modifications for improvement.	Very good quality of work showed. Well prepared, and not doing last minute work	
Section B: CLO3: Justify the topology and IP addressing plan based on the network design (A3, PLO8) - Personal Skills						
Marking Criteria	**0-4 (Fail)**	**5-7 (Marginal Fail)**	**8-9 (Pass)**	**10-12 (Credit)**	**13-15 (Distinction)**	**Marks Awarded**
Justifications of the IP Addressing plan (15%)	Wrong IP addressing were provided (Not feasible).	Inadequate suggestion of the IP addressing	The IP addressing suggestion is clearly written	The IP addressing suggestion is comprehensive, with sufficient justifications	The IP addressing suggestion has good justification and critical discussion	
Justifications of the Network Topology (15%)	Wrong suggestion of topology (Not feasible).	Inadequate suggestion of the network topology	The topology suggestion is clearly written	The topology suggestion is comprehensive, with sufficient justifications	The topology suggestion has good justification and critical discussion	
Marking Criteria	**0-1 (Fail)**	**2 (Marginal Fail)**	**3 (Pass)**	**4 (Credit)**	**5 (Distinction)**	**Marks Awarded**
Referencing (5%)	No in-text citation and very minimal references. Major issues in the referencing format. Referencing were done manually, without using Microsoft Word features	Minimal in-text citation and references used. Minor issues in the referencing format. Not able to fully utilize the referencing features in Microsoft Word	Sufficient number of references and citation in the report. No issue in the referencing format Able to fully utilize the referencing features in Microsoft Word	Recent source of references used, with proper reference list. Limited in-text citation in the report Good utilization of the referencing features in Microsoft Word	Very good quality of references used, with proper citation and reference list for all facts and diagrams used Proficient in using the referencing features in Microsoft Word, without error	
Documentation (5%)	No table of content and page numbering, font size and type are not standardized	Table of content exist but without page numbers, report structure not standardized (including	Table of content included with proper page numbering, standardized report structure & headings.	Good structure and flow of documentation with appropriate header & footer	Very good structure and flow of documentation, with very good appearance	

	Not able to show personal skills in utilizing features in Microsoft Word to produce good formatting standard	alignment and spacing) Able to show some personal skills in utilizing features in Microsoft Word but has major issues in formatting standard	Able to show sufficient personal skills in utilizing features in Microsoft Word to produce good formatting standard, with minor issues.	Good personal skills in utilizing features in Microsoft Word to produce good formatting standard without any issue.	Very good and proficient personal skills in utilizing features in Microsoft Word to produce outstanding formatting standard	
Total Marks						**/100**
Additional Comments :						