جامعة الحسين التقنية
Al Hussein Technical University

Formative Assignment Brief

Student Name/ID Number	
HTU Course Number and Title	**30201110 Networking**
BTEC course number and title	**H/615/1619 Networking**
Academic Year	2021/2022 (Spring Semester)
Assignment Author	Eng. Elham Derbas
Course Tutor	Eng. Moath Sulaiman, Eng. Heba Aldahoud, Eng Sami Almashaqbeh
Formative Assignment Title	**Dynmic routing protocol and DHCP server**
Formative Assignment Ref No	Formative_2
Issue Date	**5/06/2022**
Submission Date	**11/06/2022 at 11:59PM**

Submission Format

There should be one submission for this formative assessment. Each student individually should submit his/her work that shall include:

a) Evidence of an implemented network supported. Students should use the Cisco Packet Tracer simulator version 8.1.1 to generate the Packet Tracer (.pkt) file.

Note: **One file should be submitted (include your subnetting work as a text note inside PKT file)**. Submissions of the required file should be done through the university's E-Learning system within the deadline specified above from below link: https://elearning.htu.edu.jo/

Unit Learning Outcomes

LO3 Design efficient networked systems.
LO4 Implement and diagnose networked systems.

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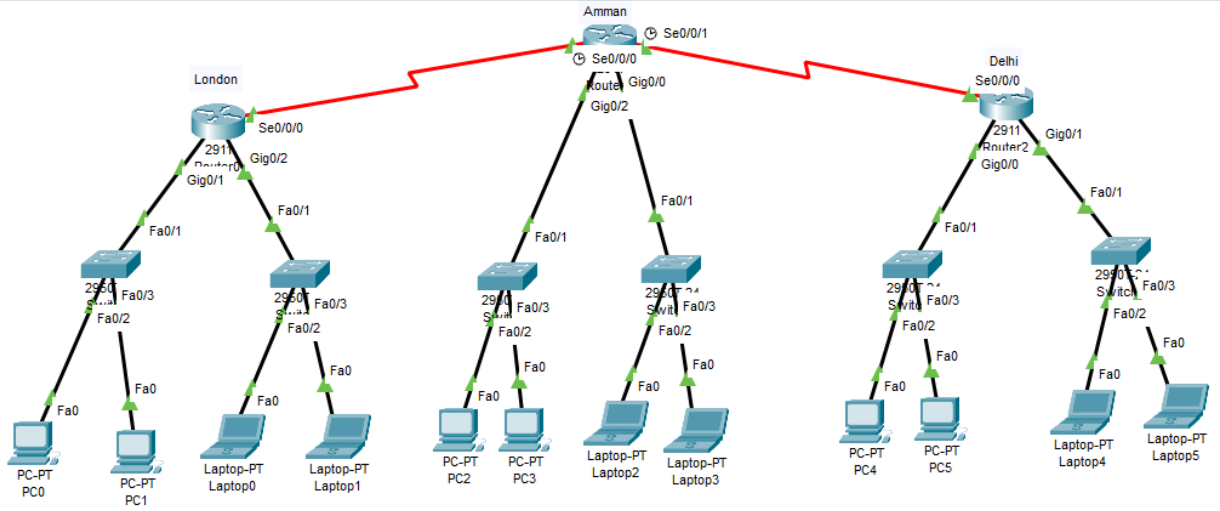
Assignment Brief and Guidance

You work for a industrial company as a junior network administrator. The company intends to open three branch offices; one in London, one in Delhi and the Headquarter in Amman. Each branch contains two offices in the same building but in different floors. You have been given the below draft blueprint and have been asked to maintain the connectivity between all devices within all of the offices. More details and required information are listed below:

1. You need to implement the whole networks using packet tracer.
2. Use the following subnet IP to do subnetting for all networks: **172.16.0.0/24 (classless IP)**.
3. For the networks between the routers, you should use the subnet IP **211.5.5.0** with the proper subnet mask.
4. All employees should be able to access the employee portal at the following secure URL https://employee-protal.com.jo.
5. All employees should be able to transfer files between different branches.
6. Each employee must have an email address within the following domain empemail.com.
7. Add a suitable dynamic routing protocol (RIP or OSPF) **hint: to delete static routes configuration use no command**
8. Add DHCP server (all devices must be able to take IP address from the DHCP server)
9. For each network provide the following information (add this information as a text note in the PKT file):

	Network 1	Network2	Network3	Network4	Network5	Network6
Number of valid hosts:						
Subnet IP:						
Broadcast IP:						
First valid IP:						
Last valid IP:						

10. Validate the connectivity between all offices and devices.



Learning Outcomes and Assessment Criteria			
Learning Outcome	**Pass**	**Merit**	**Distinction**
LO1 Examine networking principles and their protocols			**D1** Critically evaluate the topology protocol selected for a given scenario to demonstrate the efficient utilisation of a networking system.
	P1 Discuss the **benefits** and **constraints** of different **network types** and standards. **P2** Explain the impact of **network topology**, communication and bandwidth requirements.	**M1 Compare** common networking principles and how **protocols** enable the **effectiveness** of networked systems.	
LO2 Explain networking devices and operations			
	P3 Discuss the **operating principles** of networking devices. **P4** Discuss the **inter-dependence of workstation hardware with** relevant networking **software**.	**M2** Explore a range of **server types** and **justify** the selection of a server, considering a **given scenario regarding cost and performance optimisation**.	
LO3 Design efficient networked systems			

	P5 Design a networked system to meet a given specification. **P6** Test and evaluate the design to meet the requirements and analyse user feedback.	**M3** Install and configure network services and applications on your choice.	**D2** Design a maintenance schedule to support the networked system.
LO4 Implement and diagnose networked systems			
	P7 Implement a networked system based on a prepared design. **P8** Document and analyse test results against expected results.	**M4** Recommend potential enhancements for the networked systems.	**D3** Use critical reflection to evaluate own work and justify valid conclusions.