ASSIGNMENT 2 FRONT SHEET

Qualification	BTEC Level 5 HND Diploma in Computing		
Unit number and title	Unit 2: Networking Infrastructure		
Submission date		Date Received 1st submission	
Re-submission Date		Date Received 2nd submission	
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Student declaration

I certify that the assignment submission is entirely my own work and I fully understand the consequences of plagiarism. I understand that making a false declaration is a form of malpractice.

Student's signature	

Grading grid

P5	P6	P7	P8	M3	M4	D2	D3

✿Summative Feedback:	✿Resubmission Feedback:

Grade:	Assessor Signature:	Date:
Lecturer Signature:		

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Introduction:

After being employed as a network engineer by Nguyen Networking Limited, a firm that creates high-tech networking solutions, I finished my first report. My next task will be to study the organizational requirements that I provided before. In this report, I plan to build and create a network project that I am very much looking forward to.

Task 1 - Provide a logical/physical design of the networked system with a clear explanation and addressing table (P5)

1. Explain the difference between logical and physical design. (Alex Heath, 2021)

*   Logical design:
    -   The logical design of a system pertains to an abstract representation of the data flows, inputs and outputs of the system. This is often conducted via modeling, using an over-abstract model of the actuall system.

*   Physical design:
    -   The physical design is a graphical representation of a system showing the system's internal and external entities, and the flows of data into and out of these entities.

2. Discuss and explain the user requirements for general network design.

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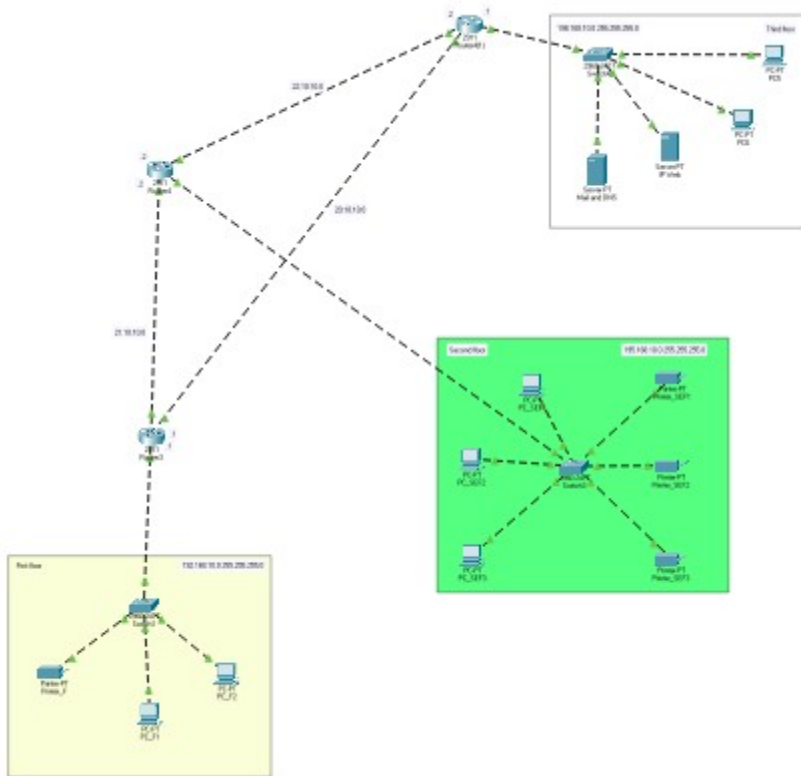- A logical design of the network based on the specific requirements of the user.

Image 1: Logical design

- In the logical design consists of three main network floors each with one router.(assumption)

+ The first floor is the staff floor . This floor consists of 2 computers connected together.

+ The second floor is the student lab floor. This floor consists of 3 computers connected together.

+ The third floor is the student lab floor. This floor consists of 2 computers connected together.

+ These rooms are all connected to the network and connected to the server, the machines are all linked together, stable network connection.

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- The physical design of this network is based on the specific requirements of the user.
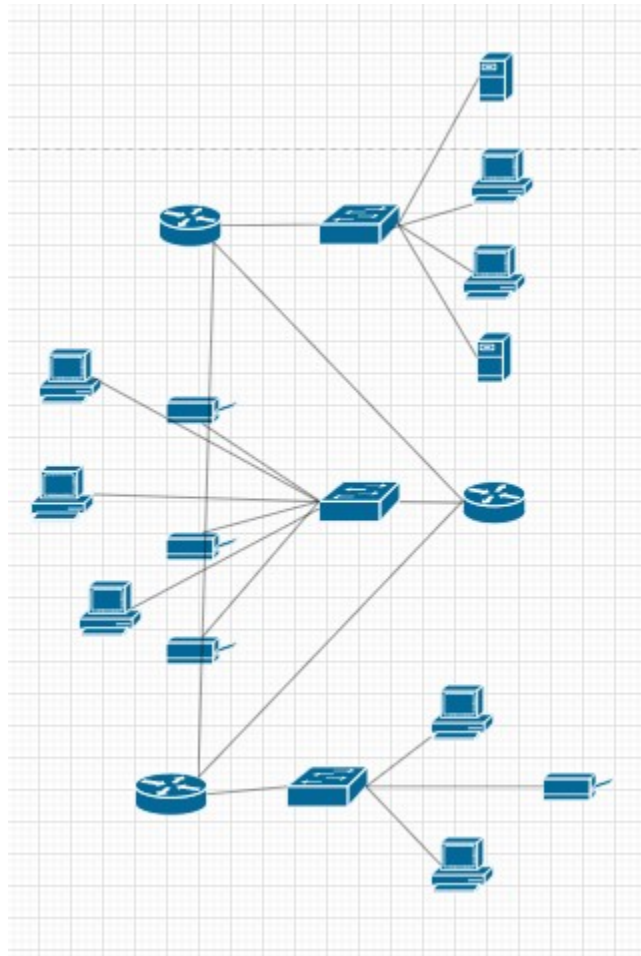

Image 2: Physical design

- In physical design, the devices are divided into floors. The design is completely linked together through wires.
- For floor 1 I use switch 24 ports because this floor contains 2 computers and 1 printer.
- For floor 2 I use switch 24 ports because this floor contains 3 computers and 3 printers.
- For floor 3 use switch 24 ports because this floor contains 2 computer and 2 servers.

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- The address table of the network devices used in your design above.

Addressing table 1 floor

Device	Address
Default gateway first floor	192.168.10.1/24
PC_F1	192.168.10.3/24
PC_F2	192.168.10.2/24
Printer_F	192.168.10.4/24

Addressing table 2 floor

Decive	Address
Default gateway second floor	195.168.10.1/24
PC_SEF1	195.168.10.2/24
PC_SEF2	195.168.10.7/24
PC_SEF3	195.168.10.4/24
Printer_SEF1	195.168.10.3/24
Printer_SEF2	195.168.10.5/24
Printer_SEF3	195.168.10.6/24

Addressing table 3 floor

Decive	Address
Default gateway third floor	198.168.10.1/24
PC5	198.168.10.3/24
PC6	198.168.10.4/24
IP Web	198.168.10.2/24
Mail and DNS	198.168.10.5/24

Task 2: Evaluate the design to meet the requirements (P6)

Prepare a written step-by-step plan of how you are going to design a Local Area Network including a blueprint of your LAN.

- Steps to create a LAN Network:
- Justify the choice of devices for your network design.
    - Router 1841:
    - Switches 2960:
        + Allow internal connection configured as a firewall
        + Connected via straight copper cable
    - Generic PC:

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- Produce a test plan to evaluate this design for the requirements of bandwidth and cost constraints as per user specifications.

3. A test plan for the design above without specific results.

- Evaluation of network design based on user requirements.
  - Bandwidth utilization
  - Security
  - Network flexibility and complexity

- Clarity of network topology for logical and physical design
  - Pros:
    + The networked system is divided clearly into three different floors: third floor, first floor, and second floor.
    + The network layout has been effectively indicated.
  - Cons:
    + No security

4. For this design network to work effectively, provide any advice or solutions to the users?

Task 3 - Implement a networked system based on a prepared design (P7)

5. A screenshot of this realization as proof of the network implementation designed above

- Ping
  E.g Router to PCa, PCa to PCb, through Switches and other devices

- Extended ping
- Trace route
- Telnet
- SSH

6. Diagram of the overall network realization, which contains all of the network devices active based on the original user requirements.

Task 4 - Document and analyze test results against expected results (P8)

7. Based on the network realization diagram above, write down the above implementation process into the logbook, so that later on when you need to expand the network or have a network problem, you can easily handle it.
   Table: logbook

8. Test results, based on the test plan done above.

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