

Task 6C: Individual Video

Part 2: Group Video (Task 6c)

Group Name: Group G

Group Members: Liu Wanpeng (A23MJ4016), Zhao Wei (A23MJ4018), Thamer Alharbi (A23MJ4015)

Project Title: Network Design for Faculty of Computing Block N28B

Intro

Hello, my name is Liu Wanpeng, and I am part of Group G. My teammates are Zhao Wei (A23MJ4018), Thamer Alharbi (A23MJ4015). Our project, titled "Network Design for Faculty of Computing Block N28B", focused on designing a scalable, secure, and cost-effective network infrastructure for an academic setting. This video will reflect on the key tasks of the project, what I have learned, and how this project contributes to both academic and practical growth.

Reflection on Every Task

Task 1: Project Setup

The first task laid the foundation for our project. As a group, we divided responsibilities, defined the scope, and developed an accurate CAD-based floor plan. I realized the importance of aligning technical requirements with realistic design constraints. Personally, I learned how critical it is to gather initial feedback from the instructor to ensure that early designs align with project objectives.

Task 2: Feasibility Analysis

This task emphasized comprehensive research and team collaboration. My primary responsibility was evaluating equipment feasibility, identifying financial limitations,

and ensuring alignment with project goals. This task taught me to anticipate future needs, such as scalability and technological upgrades, making the analysis both forward-looking and realistic.

Task 3: Choosing the Appropriate LAN Devices

In this task, I led the research and selection of networking devices. Through this process, I learned how to balance performance, cost, and security. While selecting equipment like Cisco switches and Fortinet firewalls, I understood the need for reliable infrastructure to ensure seamless connectivity. Additionally, it highlighted the complexity of cybersecurity integration in academic networks.

Task 4: Making the Connections

This task challenged us to integrate devices into a cohesive network. I was responsible for calculating cable lengths, assigning switch locations, and ensuring the logical flow of data across the network. A key takeaway was understanding how physical design influences logical network design, especially when implementing horizontal and vertical cabling.

Task 5: IP Addressing Scheme

This was one of the most technically challenging yet rewarding tasks. I spearheaded the subnetting process, ensuring each lab, classroom, and administrative space had unique and conflict-free IP addresses. This task deepened my understanding of IP addressing, network segmentation, and the importance of scalability in designing robust networks.

What I Have Learned

From Working on the Project

1. Technical Skills:

- Enhanced knowledge of VLAN configurations, firewall deployment, and IP addressing.
- Developed a stronger grasp of balancing budget constraints with technical requirements.

2. Practical Application:

- Recognized the importance of scalability in network design.
- Learned to anticipate challenges, such as equipment compatibility and data security.

From Working in a Group

1. Team Collaboration:

- Learned the importance of clear communication and role allocation to prevent uneven workload distribution.
- Valued the perspectives and strengths each member brought to the table, particularly during brainstorming sessions.

2. Conflict Resolution:

- Addressed feedback collaboratively and worked as a team to overcome challenges, such as redesigning the floor plan after early feedback.

Comments and Suggestions

1. Improved Planning:

- Setting stricter internal deadlines would have reduced last-minute pressure, allowing more time for refinement.

2. Resource Optimization:

- Allocating budget for simulation software, such as Cisco Packet Tracer, could enhance accuracy in network design evaluation.

3. Stakeholder Engagement:

- Including stakeholders (e.g., faculty representatives) during critical phases could ensure alignment with real-world needs and increase the relevance of our design.

Given report marks following the rubric

Item	Marks	Reasoning
Intro	1	Clear and concise introduction of myself, the group, and project objectives.
Reflection of Every Task	3	Detailed and critical reflection on all tasks, emphasizing both learning and outcomes.
Video Quality	1	Well-structured, clear, and professionally presented.
Total	5/5	Comprehensive and reflective, meeting all rubric criteria.

This video not only represents my technical contributions but also reflects my journey in learning teamwork, technical design, and balancing project goals with practical constraints. I would like to express my heartfelt gratitude to the following:

1. My group members, Zhao Wei and Thamer Alharbi, for their collaboration and dedication.
2. Our instructor, Dr. Kaiyisah Hanis Mohd Azmi, for her guidance and valuable feedback.
3. The Faculty of Computing, for providing resources and support

Thank you for reviewing this summary.

https://drive.google.com/file/d/1Fpzik7Q_DBsHBv2-9bVoBqacVsXmBomI/view?usp=sharing