FACULTY OF COMPUTING

SEMESTER I, SESION 2024/2025

BACHELOR OF COMPUTER SCIENCE (BIOINFORMATICS)

SECR1213 NETWORK COMMUNICATIONS - SECTION 01

PROJECT TASK 6B: INDIVIDUAL REPORT

NETWORK DESIGN FOR FACULTY OF COMPUTING BLOCK N28B

NAME : CHIN PEI WEN

MATRIC NO : A23CS0065

GROUP NAME : DATA VOYAGERS

LECTURER'S NAME : DR MUHAMMAD ZAFRAN BIN MUHAMMAD ZALY SHAH

SUBMISSION DATE : 25 JANUARY 2025

VIDEO LINK : https://youtu.be/TZywjqGl-8Uhttps://youtu.be/TZywjqGl-8U

Detail your contribution to the group and the project work

Being part of the team Data Voyagers has been a fulfilling and educational experience, allowing me to apply my skills while learning from others. My main contributions were centered around the design and analysis of the network infrastructure for the Faculty of Computing building. In Task 1, I took the lead in drafting detailed floor plans that integrated essential components like IP cameras, internet access points, and technician rooms for troubleshooting. Additionally, I conducted an online interview with the faculty representative, Dr Zafran and determined the project's feasibility in Task 2. Moreover, in Task 3 I did research to select high-performance and cost-effective LAN devices such as switches, routers, and wireless access points to ensure that our design met both technical requirements and the RM 2 million budget. I also worked on drawing the network diagram in Task 4 and planning for scalability to accommodate future growth to enhance the practicality and efficiency of the infrastructure. In Task 5, I worked on calculating the subnet mask and subnet address by using the assigned IP address. Beyond these technical tasks, I documented meeting minutes and contributed to the preliminary analysis report to ensure our project goals were clearly defined and met.

Detail the other members contribution to the group and the project work

Koo Xuan is responsible for designing the floor plan for the first floor in Task 1 and focuses on the layout's functionality and efficiency. In Task 2, she formulated the questions and conducted extensive research on network scalability, security and cost-effectiveness to ensure that the proposed solutions were both practical and secure. Additionally, she managed the device selection and budgeting to balance the performance and financial constraints in Task 3. Her efforts extended to identifying work areas on the floor plan and determining optimal placement for devices and connections in Task 4. In Task 5, her input in the subnetting plan discussions was invaluable, helping shape the overall network architecture.

Ling Yu Qian collaborated with Koo Xuan to design the first floor layout in Task 1 to ensure the floor plan met the project's goals. She conducted detailed research and provided clear answers to project questions in Task 2 to help our team address the key challenges. In Task 3, she helps in comparing the devices to select the best options within the budget so that the network would be cost-effective and efficient. She also worked for network arrangement for cable and connection in Task 4 and lastly in Task 5 she engaged in the discussion and contributed to the subnetting plan.

Tan Zhao Hong wrote the detailed descriptions of the floor plan in Task 1 to help everyone understand its design and purpose. In Task 2, she conducted research to address specific project questions to provide valuable insights. Next, she is responsible for comparing and selecting the most suitable network devices in Task 3 to ensure the final choices are aligned with the performance needs and the budget. In Task 4, she helped in drawing the cabling diagrams which provided a clear visual guide for the network setup. In Task 5, she managed the IP assignment for all work areas to make sure that the communication across the network is smooth.

Explain how you work as a group

Our group dynamic was a key factor in our success. We collaborated closely, holding regular meetings to share updates, address challenges, and brainstorm ideas. Each member actively contributed insights that enriched the final solution. Tools like SmartDraw and cloud-based document sharing were instrumental in keeping our communication and coordination seamless. By fostering mutual respect and support, we were able to leverage each other's strengths and maintain a steady and productive workflow.

Explain what you have learned from working as a group

This project taught me invaluable lessons about teamwork and technical problem-solving. Working in a group highlighted the importance of clear communication, adaptability, and collaboration. I learned how diverse perspectives can lead to innovative solutions and how patience and compromise are crucial when navigating differing opinions.

Explain what you have learned from doing the project

This project deepened my understanding of network design and the technical considerations involved in setting up an infrastructure that balances cost, scalability, and performance. I gained insights into device selection, IP addressing, and the practical challenges of designing a future-ready network for an academic setting.

Your comments and suggestions on the project

Looking back, there are areas where we could have improved. For instance, allocating roles and responsibilities earlier could have reduced last-minute adjustments and ensured a smoother workflow. Incorporating feedback from potential users, such as faculty staff and students would have made the design more user-centered. Overall, this project was a highly enriching experience. It allowed me to apply theoretical knowledge of network communication in a practical setting while enhancing my technical, collaborative, and project management skills. I would especially like to express my sincere appreciation to my lecturer, Dr. Zafran for providing clear instructions and offering unwavering support throughout the development of this project. His guidance has been invaluable and greatly contributed to our learning experience. Additionally, I want to extend my gratitude to my group members for their support and assistance. Their collaboration and dedication were instrumental in successfully completing this project.