UNIVERSITI TEKNOLOGI MALAYSIA

SKILLS IN UNIVERSITY & INDUSTRY

1. DESCRIPTION OF SPEAKER EXPERIENCE
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1. DESCRIPTION OF SPEAKER EXPERIENCE

The speaker shared valuable insights into the essential skills required to excel in the field of computer science. Drawing from industry experience, they highlighted the importance of both technical and management skills in navigating the evolving tech landscape. The session covered foundational programming languages, system design principles, cybersecurity awareness, and project management methodologies. The speaker also emphasized the significance of adaptability, continuous learning, and soft skills like teamwork and leadership. Real-world examples and industry case studies provided practical context, helping attendees understand how these skills translate into career opportunities. The discussion concluded with advice on staying updated with emerging technologies and best practices to remain competitive in the job market.

2.1 BASIC SKILLS REQUIRED FOR COMPUTER SCIENCE (TECHNICAL SKILLS)

To succeed in computer science, it's essential to develop key technical skills, starting with proficiency in programming languages like Python, Java, or C++. Problem-solving and debugging abilities are crucial, as is experience with software development practices, including version control tools like Github. Knowledge of database management, including SQL and NoSQL, is important for handling data efficiently. Understanding operating systems and networking protocols, alongside cybersecurity basics, ensures a well-rounded skillset. Web development expertise, both front-end and back-end, is necessary for building applications. Additionally, studying mathematics and logic, particularly in areas like discrete math and linear algebra, supports algorithm design and data science. A strong grasp of system design principles and cloud platforms, such as AWS or Azure, is vital for scalability. Lastly, soft skills like effective communication, teamwork, and time management are essential for a successful career in computer science.

2.2 BASIC SKILLS REQUIRED FOR COMPUTER SCIENCE (MANAGEMENT SKILLS)

Management skills are a vital set of skills, as they combine technical knowledge with the ability to lead and coordinate complex projects. Key skills include problem-solving to address challenges, technical expertise for system development, and strong communication to connect clients and team members. Knowledge of Software Development Life Cycle (SDLC) methodologies, such as Agile and DevOps, ensures adaptability in various projects. Testing and quality to avoid any errors that may occur in a system, while risk management anticipates potential issues followed by the minimization, and control of the impact or probability of those risks occurring. Whereas, clear documentation keeps projects organized and aligned. Leadership and teamwork are essential for a harmonious workplace and ensure a successful result. These skills together enable efficient and beneficial project execution.

3. SKILLS REQUIRED BY INDUSTRY

The skills required by the industry span across various IT roles. For programming and system development, essential skills include algorithms, data structures, object-oriented programming (OOP), debugging, and version control tools like Git. System network and security professionals need expertise in firewalls, encryption, authentication, intrusion detection, and penetration testing. System analysts must excel in requirements gathering, feasibility studies, system design, and stakeholder analysis. Project management skills, such as scope management,

budgeting, risk mitigation, and Agile methodologies, are also critical. Additionally, roles like graphic designers, web developers, and mobile application developers require proficiency in typography, color theory, responsive design, native app development, and frameworks like Flutter and React Native. Tools like Visual Studio Code, Docker, Wireshark, Adobe Creative Suite, and project management platforms such as Jira and Trello are vital across these roles. Collectively, these skills and tools cater to roles like software developers, cybersecurity specialists, data scientists, UI/UX designers, and project managers.

4. REFLECTION

1. Nabilah - Need to focus on building a strong foundation in both technical and management skills. Success will require mastering essential skills like programming, system design, cybersecurity, and project management. We should also stay updated on tools and technologies while continuously improving soft skills like problem solving, teamwork, leadership and adaptability.
2. Sanjana - I have learned the skills required to survive in this field in the coming future. Thus, I hope that I can secure myself a position in which the data is kept safe, which is cybersecurity.
3. Sarah - To prepare myself for a job in the Computer Science industry, I need to focus on developing key technical skills and implementing management skills in my daily life as it is an ever-evolving skill. By continuously improving both technical and soft skills, I'll be better equipped for job opportunities.
4. Rayan - I have learned about the importance of security in general, as well as some methods of security breaches. I hope to be one of those who contribute to increasing the level of security in the coming years insha Allah.
5. Mohamed - The workshop helped me understand the critical skills required in computer science, especially in cybersecurity and system development. I realized the importance of continuously improving both technical and management skills to stay relevant in the industry. Moving forward, I aim to enhance my problem-solving abilities, gain hands-on experience with programming and security tools, and keep up with the latest technological advancements to build a successful career in IT.

5. REFERENCES

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