



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

EQUIPPING FUTURE COMPUTER GRADUATES FOR SUCCESS

- SKILLS NEEDED FOR A COMPUTER SCIENCE STUDENT
- BUILDING A CAREER IN COMPUTER SCIENCE



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INTRODUCTION

In today's era of technology, the Information Technology (IT) industry is driving global innovation and reshaping the economic development of the world by bringing new high-cutting edge technology into the light and restructuring businesses and our everyday life. This has completely redefined the Information Technology (IT) the required job-related knowledge and standard skills in order to succeed in the digital-age workspace. As industries adapt to these changes, professionals are also expected to keep up with the rapid technological advancement and possess specialized technical knowledge as well as being proficient in other sectors such as programming, software engineering and even data analysis. (Evans, N., Hawkins, B., Rudy, J., & Wallace, W. (2002)). This continuous progression offers challenges for both the employers and the employees to also keep up with the advancement in technology and help drive innovation in the Information Technology (IT) industry.

SKILLS NEEDED

Mr. Mohd Hakimi Iqmall, a project manager and system analyst at Universiti Teknologi Malaysia Digital (UTMDigital) shared valuable insights into his journey, technical skills and management skills required by everyone to land an opportunity to work in the Information Technology (IT) industry. In 2013, Mr. Mohd Hakimi Iqmall took diploma in science computer (multimedia) and fast-tracked into degree in science computer (graphic and multimedia) in 2014 due to his exceptional performance and later graduated in 2018. During his internship at ME-Tech Solution Sdn Bhd in 2017, he developed a ship simulator for the Tentera Laut Diraja Malaysia (TLDM). Later, he joined Okakichi Sdn Bhd as a game programmer, contributing to the mobile RPG Kingdom Ran. In 2019, he worked at UTM Research Computing as a system programmer, creating "RADIS 4.0" and "ICESys." Since 2021, he has been with UTMDigital, where he developed systems like Welfare Service, Clinical Panel, Kenaikan Gaji Tahunan (KGT), Payroll 2.0, SSPA, and Integrity Systems. Regarding the technical skills, Mr. Mohd Hakimi Iqmall emphasized that in order to excel in IT, one need not to master every programming language but have to understand the logic behind the coding so that they can adapt to the newer languages that may come in the future. Besides that, one should also know how to debug the system to identify the problem and fix the issue that requires programmer to quickly locate the obvious problem or narrow down the causes of the problem which is time consuming and requires a lot of techniques. (Lee, G. C., & Wu, J. C. (1999)). Additionally, a programmer should also have a strong grasp of algorithm and data structure as it can help programmers create a more efficient program because as time goes on, the task becomes more complex and requires a lot of power and storage capability. (Shaffer, C. A. (1997)). On management skills, Mr. Mohd Hakimi Iqmall stated that one should have good problem-solving skills which is very critical in the planning and analysis phase so that we can assess the business needs and identify the best solution to overcome the following problem. Another skill that is crucial to have is the ability to communicate effectively with your team especially in our day to day lives as it helps us plan our work and give orders in order to better coordinate and have a better outcome on the result of the work. (Sen, L. (2007)).

BUILDING A CAREER

Mr. Nik Mohd Habibullah began his academic career at Universiti Teknologi Malaysia (UTM), where his outstanding final-year project led to a collaboration with the university library. He developed the Stern Method, a thesis cataloging system sorting theses by fields such as physics and chemistry. During his university years, he actively participated in associations and community activities, enhancing his entrepreneurial and communication skills. Professionally, Mr. Nik created impactful systems, including NI Solution, Dat SINI, GetMeHired.io, and Dialysis Manager IO. Returning to UTM as a research official, he realized his potential for entrepreneurship and transitioned to become a commercial entrepreneur despite challenges like the PKP COVID-19 Movement Control Order. Entrepreneurship education plays a crucial role in boosting industry competitiveness, offering opportunities even during the pandemic (Liguori & Winkler, 2020). One of his significant achievements is GetMeHired.io, launched in 2020, which assists users in creating ATS-friendly resumes and navigating the career search process. It has partnered with over fifty multinational and public-listed organizations, establishing itself as a key employment platform. Mr. Nik emphasized self-awareness and proper planning, advising job seekers to know their strengths and ambitions, write convincing applications, and view rejection as an opportunity. He highlighted the importance of upskilling and researching factors like job sustainability, career advancement, financial stability, and corporate culture before committing to a company. He also shared three critical life decisions: choosing a job, a place to live, and a partner or best friend. For students, he recommended gaining work experience, improving communication skills, engaging in activities, and staying focused. Social skills, essential for launching ventures, are supported by research showing their impact on interpersonal interactions (Segrin & Kinney, 1995). In closing, Mr. Nik encouraged participants to "be confident, know your worth, and never settle for less!" His resilience, creativity, and strategic approach serve as an inspiration for aspiring entrepreneurs. Entrepreneurship, despite its risks, drives new enterprises and success (Kuratko & Hodgetts, 2004). Mr. Nik's resilience and strategic mindset exemplify the entrepreneurial spirit (Kuratko & Hodgetts, 2004).

REFLECTION

Danish Izz Khan

Based on Mr. Mohd Iqmall's talk, his journey has taught me the importance to continuously learn new things and adapt to the ever-changing Information Technology (IT) industry so that I can be more successful and stand out more compared to other graduates in the future. Moreover, his emphasis on understanding the logic of the coding rather than memorizing the language motivates me to focus more on my studies so that I could understand the foundation of the coding and master all the languages over the next four years of my studies. Additionally, Mr. Mohd Iqmall also mentioned the importance of effective communication in a team in which I will also work on over the four years of my study so that I can ensure a proper teamwork in a team and become a well-rounded professional. By mastering these two skills I can ensure success and contribute significantly towards the Information Technology (IT) industry.

Afeefa Nazneen

I believe adaptability is important in the field of computer science because the technology is evolving, introducing new technologies. To stay relevant, I must be able to adapt to these technologies in the industry such as cloud computing, blockchain and artificial intelligence. I need to keep myself updated so that I can equip myself with the technical skills necessary to solve complex problems. For example, I should practice coding daily and attend tech events to enhance my problem-solving and analytical thinking skills. I also have to participate in activities that can help me improve my communication and management skills to work efficiently in groups and help the team overcome challenges. This means, therefore, that it is only through continuous learning and practicing the skills in computer science that I can make contributions to technology.

Naqyuddin

In his speech, the Director General, Mr. Nik Mohd Habibullah underscored the need for the students to be able to transform opportunities during the studies to skills like communication, entrepreneurship and flexibility. He enlightened the congregation on matters concerning career exploration, how to identify one's career interests, how to write winning C.Vs, interviews and how to keep relevant in the market. Furthermore, he stressed an importance of the employer investigation by taking into account such aspects as stability, opportunity for promotions, and organizational culture in order to ensure its compatibility with long-term self-employment strategies. His speech recommended the need for learners to acquire knowledge that will help him or her to make the right decisions in preparation for the hard market competition.

Hazza

Inspired by Mr. Mohd Hakimi Iqmall and Mr. Nik Mohd Habibullah, I will spend the next four years succeeding in computer science building on their great lessons. Mr. Hakimi builds a strong foundation for me to develop problem-solving and critical thinking skills through logic-based understanding of computers rather than memory-based study of programming languages. As technology and programming environments change, I can continue to bring forth new methods and applications within the field. Meanwhile, Mr. Nik's whole journey throws light on the need for adaptability, self-awareness, and effective communication. He also emphasized learning and planning continuously and sharpening team and leadership skills. These principles will significantly apply through internships, participating in group projects, and being updated on advances in such areas whose focus is cloud computing, artificial intelligence, and blockchain. Such seamless weaving of technical expertise with soft skills, together with resilience and strategic goal setting, shall prepare me for excellence, not just academically but also in significant contributions to the IT industry in the years to come.

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