The IT World Report

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# Team Profile:

Team name: Duos

Personal Information:

* Viet’s Personal Information: My name is Nguyen Manh Quoc Viet and my student number is s3759306. I am Vietnamese, and I was born in Hanoi, Vietnam with my parents and my brother, but when they moved to Moscow, Russia, I was raised there, because their Vietnamese friends were living in Moscow. I didn’t have any education in Moscow, until me and my family went back to Vietnam, but in a different city, which was Ho Chi Minh city in 2004. In this city, I have enrolled in various random English schools to study English language, as well as enrolled in Russian school, in which I studied Russian language, as well as mathematics, English, Russian literature and Arts. After studying in Russian school, I was enrolled in Asia Pacific College School, but I didn’t like it there, since I don’t studied Vietnamese much in Vietnamese classes, because I have poor Vietnamese speaking skills. After that, I enrolled in Australian International School (AIS) in years 8 to 13, skipping year 7, since I have studied English at home with my English tutor. Finally, I have enrolled at RMIT University Vietnam. At first, I choose the engineering programs over IT programs, but after I have realized that the engineering programs were too difficult for me, I have switched to study IT programs, in which I became a Bachelor of IT. My hobby is playing piano when I have free time, because playing video games could waste my time and my energy, in which I could become more tired and want to sleep. In addition, they could fill my mind with video games, in which I will have less concentration when doing homework. I used to play video games, but now I stopped playing, because I have other important things to do and it destroys my restful sleep time. My interests in IT is that there are many devices that has unique features, such as smartphone’s touch screen device that allows users to touch any apps by using their fingers, the motion sensors at home could automatically turn on the lights when the person came home, a computers is able to read files when the disk has been inserted into it and internet offers many websites worldwide through wi-fi. My interest and experience in IT began in the past when I started using computer when I was a child and I could see many websites coming from the internet when I search them on Google and when I click their links in Google. In addition, there are many errors encountered when I opened a file that requires a suitable software to run it smoothly, such as when installing a Python and when inputting a code in PyCharm Community, in which they require updating my laptop’s software through sending my laptop to the computer engineers, so that they could update its software.
* Thinh’s Personal Information:

Personal Profiles:

* Viet’s Personal Profile: The results I got from 16Personalities, which was a Myers-Briggs test is that my personality type is Defender, in which I have introversion, sensing, feeling, judging, as well as thinking traits (ISFJ-T). This means that I am caring, helpful and organized person, in which I do the things I have planned in an organized way, as well as I am helping other people to fix their mistakes if they have done not right. Not only that, but I am caring to other people as I help them do their work. The results I got from TestMyCreativity website is that I have higher complexity, medium abstraction and boldness, low curiosity and perspective and lower persistence and paradox. This means that I have higher capability to carry lots of information, recreate them so that they could make sense even more and manage the relationships between them. Not only that, but I also have the capability to summarize various concepts from their original ideas. The results I got from Personality Max website is that I have higher strength of visual learning than auditory and kinesthetic learning. This means that I am good at remembering people’s faces after I have met them, although I sometimes forget their faces, because I haven’t met them again for a long time. In addition, I also could picture the things in my mind, in which when I see the objects and symbols many times, the pictures of them will form in my mind. These results could influence my behavior in a team, in which I was caring, selfless, organized and helpful person who plans which part each group member could do and when they are finished, they combine the parts together to complete a group work project. When doing the group work project, I read instructions carefully, so that I could know what to do and I have a good visual learning, in which I could see visual information clearly and precise, such as charts, graphs and diagrams. To take this into account when forming a team, I could ask them which group work project part that my group members could do and once they are finished, me and my group members will merge them together to make a complete group work project. In addition, me and my group members must read the instructions carefully and when seeing visual information, they need to see clearly their details and statistics, so that their information could be stored in our minds for paraphrasing them to be clearer. Not only that, but me and my group members must help each other when facing difficult problems and work together as a group, so that we could overcome these types of problems.
* Thinh’s Personal Profile:

Ideal Jobs:

* Viet’s Ideal Job: AI Engineer is a job that involves describing and using the right Artificial Intelligence or cognitive computing technologies in order to fix the problems of the customers’ devices when they are not working and making AI recipes for development of the new technologies, as well as understanding the business problems, contemporary technologies’ challenges and areas of applying AI technologies. In addition, AI Engineer also involves making machine learning models and prototype device applications, AI platforms and AI projects by using made AI recipes. What makes this job appeals to me is that in the past, I have used both computers and phones, but haven’t checked out what are their unique features in them and how they were made, such as smartphone’s touch screen device, laptop’s motion sensor mouse, contemporary devices’ voice commands and search, smartphone’s keyboard that allows users to swipe letters into words through the use of a finger, laptop’s face recognition for automatic log in and contemporary devices’ changeable screen through tilting them into landscape form or into tablet form. In order to be an AI Engineer, I need to have at least 0.5 years of learning how to use one of Java, C, C++ or Python programming languages, study web application development as well as building API driven interface development. For the programming languages, I need to learn how us C++ for 4 years, Java for 2 years, Swift, C# .NET, SQL, JavaScript and HTML/CSS. The technologies I need to install include API, MVC, RealmSwift, Alamofire, Google Firebase, Java Web, Swing, Tomcat Web Server, JSTL, Struts and Json. In addition, I also need to install Visual Studio, Microsoft SQL Server, NetBeans, XCode, Postman, Git and Source Tree. I currently have typing skills, but I have poor coding skills, because I have focused too much on Engineering programs than IT programs when I am studying at RMIT University Vietnam and I study a little bit of IT when I was in AIS School, in which I have little IT skills. I also have mathematical skills, because I have studied mathematics at high school. I got a certificate in AIS School when I have finished Year 13 through successfully competing at least 3 courses. I have successfully completed English, Mathematical Studies and Psychology. I have studied algorithms and strings in Introduction to Programming and made strings and algorithms, but they don’t work properly, as I have poor coding skills, since I was still new to the IT community in RMIT University Vietnam. I will learn how to code properly and use various programming languages through studying Programming 1 in order to improve my coding skills, as well as learning how to make algorithms and strings in order to make them work properly.
* Thinh’s Ideal Job:

# Tools:

My Group Website Link: <https://viet-1999.github.io/My-Group-Website-Introduction-to-Information-Technology.github.io/>

# Industry Data:

1. The job titles for AI Engineer are (from lowest to highest): Senior Network Engineer, Software Developer, Full Stack Developer, Senior Software Developer, Senior Systems Engineer, Senior Java Developer, Software Engineer, Java Developer, Systems Engineer and Solutions Architect. These job titles were ranked in terms of demand from employers, as Solutions Architect has highest demand, while Senior Network Engineer has lowest demand from employers. This is because employers wanted to have more salary, suitable schedule of work, flexible working hours, good working conditions and good business management.
2. In order to be an AI Engineer, I need to have at least 0.5 years of experience using Java, C, C++ or Python languages, learning web application development, learning how to build API driven interface development and learning to use C++, Java, Swift, C#, .NET, SQL, JavaScript, HTML/CSS. In addition, I also need to install and learn how to use API, MVC, RealmSwift, Alamofire, Google Firebase, Java Web, Swing, Tomcat Web Server, JSTL, Struts, Json, Visual Studio, Microsoft SQL Server, NetBeans, XCode, Postman, Git and Source Tree. Not only that, but I also need to have problem solving skills, communication skills, technology skills, self-management skills, teamwork skills, planning skills and initiative skills. The IT-specific skills in my required skilled set ranks in terms of employers’ demands, in which they have either already or not learned how to use IT technologies and programming languages during middle school, high school, senior school, college and university years before they could get an IT-related job that they want to have in the future. The general skills in my required skill set ranks in terms of employers’ demands, in which they have either already or not learned skills that were required in order to have an IT-related job during school, college and university years, such as doing group work, assignments, reports, presentations and projects that requires teamwork, self-management, planning and initiative skills in order to be applied in various IT industries. The three highest ranking IT-specific skills that were not in my required skills set are (from lowest to highest): LINUX, Graphic Design, SAP. The three highest ranking general skills that were not in my required skill set are (from lowest to highest): Creativity, Detail Orientated and Writing.
3. My opinion of my ideal job has not changed. This is because most IT jobs have most IT-skills and general skills that were required in order to get a job that people want, in which they need higher salaries. In addition, my required skill set which consists of general skills and IT-related skills were enough to get a job of AI Engineer.

# IT Work:

1. IT professionals are type of professionals who does a specialized technology or Internet-related professional service for a fee. This service was based on a provision of having advanced knowledge in IT and IT professionals could analyze problems and/or opportunities that were related to key business functions, recommend practical solutions and help create these recommendations. Their work is implementation of new technologies. (source: <http://www.professionalrisk.com.au/pages/information/it-liability-faq/what-are-it-professionals.php>). They do variety of tasks, such as testing, building, installing, repairing or maintaining the hardware and software that were related to complex computer systems in one or more locations. Some of the jobs hire them around the world for ensuring that wide range of networks of computer systems will remain safe and secure. Internet’s nature allows IT professionals to do their jobs in any location. However, in some circumstances, such as when there was a hardware problem, they will need to physically resolve and fix the broken system. Once they were employed by IT industries, they will constantly gain new IT-related skills and training, as not every industry that IT professional service will use one coding and programming language, one operating system, one database tool or one methodology. (source: <https://www.dynamixsolutions.com/what-is-an-it-professional-and-what-does-one-do/>). Some IT professionals, such as database, network and system administrators ensure that all information systems run smoothly, while others, such as database, network and system analysts help design the information systems when following organization’s needs. In addition, software and hardware engineers help develop hardware and software for making the systems more robust, reliable and secure. Not only that but web designers and developers ensure that information was being presented to the user in a clear, useful and dynamic way. (source: <https://money.howstuffworks.com/how-information-technology-works.htm>).
2. IT professionals interacts with general public, for example Bill and Melinda Gates Foundation, which ran by Bill Gates, an American software developer, entrepreneur and philanthropist and Melinda Gates, his wife and co-chair and founder of Bill and Melinda Gates Foundation go around the world to get a chance to meet with African students in a classroom for discussing about new innovations, things going well and things not going well. (source: <https://www.youtube.com/watch?v=4mxXdCUXSSs&list=PLBsP89CPrMePNK7yIxcyRdiIFentQVHra&index=2&t=101s>). In addition, IT professionals also interacts with developers, for example Apple’s Craig Federighi brought some developers in order to bring more new creative ideas and innovations to develop new Apple products, such as Macbook Pro’s new features like sliders for adjusting brightness and volumes and choosing pictures, multitouch displays and many more. (source: <https://www.youtube.com/watch?v=gWoqwCGQIM0&list=PLBsP89CPrMePNK7yIxcyRdiIFentQVHra&index=4>). Not only that, but they also work with external partners, such as consultants, agencies and vendors for arriving at the most appropriate system or integration of multiple systems. When information technology is continuously changing, they must stay up to date on emerging technologies and potential effectiveness of these advancements in their current systems. (source: <https://study.com/articles/Information_Technology_Specialist_Job_Description_and_Requirements.html>).
3. IT professionals spend most of their time working with IT industries, because they, developers and manufacturers need to come up with new ideas for creating new products in order to satisfy the customers. In addition, they also get meetings with people about how they are empowering others through technology, for example Microsoft’s CEO Satya Nadella get meetings with other people in the mornings, in which makes him super busy and helps him to represent the company to get a clear vision for its future. (source: <https://www.youtube.com/watch?v=ux4R5GeKMUU&list=PLBsP89CPrMePNK7yIxcyRdiIFentQVHra&index=7>). IT professionals manage projects and teams, as well as interacting successfully with IT employees, developers, manufacturers, administrators and specialists to work efficiently, as it requires their communication, creativity, determination, flexibility, leadership, negotiation and presentations skills. (source: <https://www.thebalancecareers.com/top-information-technology-it-soft-skills-2063781>). In addition, they also work in data processing industries in order to build and ensure databases, create new and efficient software applications, create strategies to decrease cybersecurity threats and provide technical support by the industries’ needs. Not only that, but they also work in telecommunications, manufacturing, telecommunications, education and finance industries. (source: <https://www.bestcollegesonline.org/faq/5-industries-where-information-technology-degrees-are-in-demand/>). IT professionals also work in car factories, as they need to program movable robotic arms to build cars and according to the interview between Marques Brownlee and Elon Musk, Tesla employees need to work hard with IT professionals to design and program the Tesla electric car in three years, in terms of its scale and the time it takes to design, program and build it. (source: <https://www.youtube.com/watch?v=MevKTPN4ozw&list=PLBsP89CPrMePNK7yIxcyRdiIFentQVHra&index=3&t=152s>).
4. There are many aspects that makes the position of being an IT professional difficult. First, if you are not careful when convincing manufacturers to fix the computer that is broken or is filled with various viruses, then the owner will still complain that there are still problems with his/her computer. This makes IT professional a complicated and frustrating job, because it requires patience. Second, if you do not understand the entire technological problem, your specialization, experiences and qualifications of IT then your IT employees, developers, administrators and specialists think that you are not qualified. Third, IT professionals must work long hours, because of the long work of fixing computer systems, in which it can affect his/her social and family life, sleeping routines and activities, which is depending on the intensity of the job and responsibilities. Fourth, some IT professionals may not have good relationships with customers and co-workers, in which causes long hours of problem solving, while staring at the screen, as it decreases their sleeping time and make their eyes irritable. Finally, IT professionals must work under a lot of pressure, regardless of their specialization in the technological community. (source: <https://www.leaderquestonline.com/blog/pros-and-cons-it-professional/>). When sitting in a chair for nearly 10 hours a day for 300 days in a year trying to solve a problem regarding computers, then he/she will have several acute health problems. This affects people of age group 35-45 years old and women IT professionals suffer more than men. (source: <http://www.technoparktoday.com/challenges-of-an-it-professional/>). When establishing a foundation, an IT professional must travel around the world to meet with people from different countries and talk to them about new innovations, things going well, things not going well and what things needs to be improved, as he/she wants to empower other countries with technology in order to have better lives. According to the video hangout between Marques Brownlee, the interviewer and Dennis Woodside, the CEO of Motorola, when Cyber Monday occurs there were huge spike of customers’ demands on new products. IT professional and his/her employees were overwhelmed with lots of responses of customers, as this makes them underprepared for making lots of new products. (source: <https://www.youtube.com/watch?v=kpqBNn_BfKE&list=PLBsP89CPrMePNK7yIxcyRdiIFentQVHra&index=6>). There are challenges that IT professionals must face, and they are: cloud computing, cybersecurity, remote management and talent retention. Cloud computing involves finding out who owns the data and how the provider is supposed to keep it, cybersecurity involves making new strategies against cybercrime, remote management involves IT professionals being scattered across different countries and time zones, and talent retention involves IT professionals unable to be recruited by IT companies, as they lacked talent. (source: <https://work.chron.com/challenges-information-technology-management-21st-century-28780.html>). Not only that, but there was a digital divide, as some remote areas, they lacked the electricity power, as computers were not used and in other sector, such as education, most developing countries have poor education of IT, in which makes a student not be aware of new information technologies. (source: <https://www.useoftechnology.com/5-ethical-challenges-information-technology/>).

# IT Technologies

Cybersecurity:

Cybersecurity is a system that is designed to protect the hardware, software and data from viruses, hacking, malware, spyware, logic bombs and many more. In addition, it is also designed to decrease the risk and protect IT information, such as confidentiality, integrity and availability of data from hackers and cyber attackers with malicious intent. The strategy of cybersecurity is that a strong cybersecurity requires multiple layers of protection that was spread through company’s computers, programs and networks. When it is occurring in every 14 seconds, firewalls, antivirus software, anti-spy software, and password management tools must all work in order to reduce the incidences of cyberattacks in order to protect company’s important information. Cyber security is important to our society and businesses, because a lack of cyber security means that there will be theft of information, cyber security breaches, having to repair affected systems, theft of money, disruption to trading and loss of business. This had led to U.S. governments to create a law called “Computer Fraud and Abuse Act”. According to the book “Cybersecurity law” by Jeff Koseff in page 46 [1], the Computer Fraud and Abuse Act is a U.S. federal law that could prohibit and penalize many forms of computer hacking. It also imposes criminal and civil penalties for actions that were done by any person, who either lacks authorization to use a computer or exceeds authorized access to a computer that they could use to hack information and data from governments and organizations. In addition, according to the article called “Cybersecurity” by CACM (Communications of the Association for Computing Machinery) staff in page 1 [2], misinformation became a major cyberattack in cyber criminal’s arsenal, as there are more cyberattacks in recent years, where it tries to change public policy, sway public opinion and change people’s behaviors. Cybersecurity was created by many different governments around the world in order to reduce the incidences of misinformation and it continues to do so, as the Internet is constantly developing quickly. Cybersecurity had positively impacted on businesspeople, as it offers protection to their businesses from cyberattacks, such as Adware and Ransomware and it increases their productivity, as it makes business’ output smoother. In addition, it protects their customers who were more vulnerable from a cyber breach by proxy. Not only that, but it also stops their websites from being closed down by a potential cyber threat, in which it saves their money from their restored transactions. In my daily life, cyber security helps me to protect my files, profiles and information from various cyber threats, such as viruses, hacking, theft, data leaks and many more. This also could affect my members of my family and my friends, as their data, files and profiles were protected by cyber security, in which their important and personal data were being safe and secure and not being lost or hacked by various cyber threats.

Robots:

Robot is a machine that was programmed by computers to do tasks that were considered repetitive, dull, boring and dangerous, in which most people don’t want or unable to do, because of size limitations or could not work at extreme environments. Its main components consists of: computation, which involves robots having a central processing unit called a controller that determines its actions, movement, which involves robots needed specific mechanical parts that allows them to move freely without the need of physical intervention from their human operators and sensors, which involves them seeing and recognizing their surroundings. According to the article called: “Mechanized creatures” by Pooya Sareh and Mirko Kovac [3], in Japan, Japanese automotive companies have advanced technological prowess on robots, such as Honda’s Asimo, a robot that is interactive and capable of recognizing movements, sounds, faces, postures and gestures, and Toyota’s Harry is a robot with nimble fingers, movable lips and a breath, in which it was designed to play a trumpet. Robots are criticized for replacing human workers, in which increases technological unemployment and the use of them in military combat raises ethical concerns. Robots had impacted on society and businesses both in positive and negative ways. For example, companion robots could help and care the elderly, milking robots could get milk from cows that reduces manual labor, robotic arms in factory for building cars to make the factory’s production lines more efficient and lifesaving, self-driving cars, more jobs created involving robots and many more. However, they also negatively impact society and businesses, such as unemployment, laziness, being overly attached to humanoid robots that were made in Japan and Korea, malfunctioning of robotic programs leading to various dangers and many more. In my daily life, robots will positively affect my future, because it makes my life easier and flexible, such as waiter robots sending food and drinks to me and my family without spilling anything, robot vacuums could clean the house’s floors without the need of plugging the vacuum cleaner, service robots could check the amount of money that I spend on buying groceries and many more. In addition, it also positively affects my family members and friends, as they want a comfortable and relaxing life.

Blockchain and cryptocurrencies:

Blockchain is a system that contains record of transaction made in bitcoin or cryptocurrency which were maintained in many computers that were linked in various networks around the world. In addition, it also contains information about people’s transactions, such as date, time and money amount of their recent purchase, as well as any people who is using transactions. For the block to be added to the blockchain, the transaction must happen, be verified, stored in a block and given a unique code called a hash in various customers’ services. Cryptocurrency is a digital currency when encryption techniques were being used in order to manage the generation units of currency and check the transfer of money. In addition, many different cryptocurrencies around the world were operated independently in a central bank. Blockchain had impacted on economic people in a positive way, as it reduces the incidence of stealing money, increases crowdfunding, saves foreign money transfers and transactions through cryptocurrencies, increases cyber security, increases trust between third-party companies and customers, allows people to exchange money faster, more efficiently and securely, enables faster, safer and more trusted automated digital communication, decreases bureaucracy and gives people more control of their money. However, Blockchain also negatively impacted on economic people. According to the article called: “Blockchain” by Michael Nofer, Peter Gomber, Olivier Hinz and Dirk Schiereck in page 1 [4], Blockchain was considered to be a disruptive technology, because it was driven by continuous inefficiencies, Bitcoin being a well-known cryptocurrency and application of Blockchain and a big cost issue that had impacted the Blockchain Industry. Not only that, but the financial crisis revealed that it is not always possible to find the correct present owner of an asset. For example, the US investment bank Bear Stearns had failed in 2008 and was acquired completely by JP Morgan Chase. This had led to the increased number of shares offered to the acquired, which was more than the shares out-standing in the books of Bear Stearns. In addition, it was not possible to check the accounting issues of financial crisis and JP Morgan Chase had to bear the damage from the increasing number of digital shares. Cryptocurrencies positively impacted economic people, as it could reduce fees, in which it decreases the need of bank charges, removes barriers of trade, which allows the acceptance of payments in different currencies, faster payments and attracts new customers for making new businesses. However, cryptocurrencies also negatively impacted economic people, as it involves cybersecurity issues, as cryptocurrencies will be a subject to cybersecurity breaches and could be used by hackers to decrease cybersecurity in banks. According to the article called “Cybersecurity” by Monia Milutinović [5], cryptocurrencies increases the power to the dark web, which was the section of the web that could not be accessed through search engine and instead requires a special software that allows people to enter the dark web, such as Tor Browser. In this web, they could make illegal transactions, in which they don’t have to give information about themselves and these transactions were powered by cryptocurrencies, such as Bitcoin. This leads to the increase of cyberattacks, when these transactions were popular around the world. In addition, there are scaling problems of cryptocurrencies, such as number of transactions that the payment companies process each day and the speed of the transaction that cryptocurrencies could not compete with the same level as payment companies. However, its problems could be reduced through several solutions, such as fast networks, sharding and staking. Not only that, but cryptocurrencies could not be controlled by banks and financial institutions and they were very unpredictable form of currency, as it allows people to launder money outside the countries, which creates more gaps and loopholes in securing and collecting data about money transactions, as well as making it difficult for banks and financial institutions to track all people’s transactions and economic activities. Blockchain and cryptocurrencies had impacted me, my family and my friends in a positive way, because our transactions when using taxi apps will be recorded and saved, in which we know how much digital and real money we pay to taxi companies and get from banks in a digital way, such as Moca bank being implemented on Grab taxi app and Gmail notifications regarding our digital money being paid being implemented on Grab, Be and Vato taxi apps.

Natural Language Processing:

Natural Language Processing (NLP) is a network of artificial intelligence that can deal with interactions between computers and humans using natural language. Its aim is to read, decode, understand and make sense of human languages that is valuable and important and most of its techniques focused in machine learning to derive meaning from human languages. Its procedure consists of: human talking to a machine, machine captures the audio, audio to text happens, text data being made in a technological way, data to audio happens and the machine responds to a human through playing the audio file. It is used for making various useful applications, such as Google Translate, Microsoft Word, Interactive Voice Response and Siri. According to the article called: “Natural language processing” by Angel R. Martinez [6], there are concepts that were used in NLP and they are: Corpus is a set of documents with corpora that could denote the plural form or more than one set of documents, while lexicon is a set of unique words contained in corpus. In addition, morphology is a term that focuses on the structure of induvial words, while syntax is a term that focuses on the structure of sentencing and the rules of structuring them and it is important, because it helps people to determine the meaning of a sentence. Natural Language Processing had impacted on society and businesses, as it could analyze more language-focused data and information that is unbiased in business records, manages a highly unstructured data source to be more structured and detailed, translates every word and text from one language to another for many people who are not very skillful to read a language that they haven’t learned, converts person’s spoken words into data that a computer could understand when asking a natural question to the search engine or an app (e.g. Siri, Cortana, Google Search) that has speech recognition and searches the topics that people wanted to learn more in many search engines. Not only that, but it could also be used for making apps and software that uses natural language commands. Natural Language Processing had impacted me, my family members and my friends in a positive way, as our mistakes when typing words in Microsoft Word will be resolved, thanks to its auto-correct technology, we could search topics we want through search engines and we could translate a word that we want from one language to another through using Google Translate.

# Project Ideas:

# Feedback:

# Group Reflection:

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