22

# AACS1473

# INTRODUCTION TO INFORMATION TECHNOLOGY

**Assignment Submission Form**

|  |  |
| --- | --- |
| **Faculty** | Faculty of Computing and Information and Technology |
| **Programme** | Diploma In Information |
| **Tutorial Group** | Group 3 |
| **Lecturer / Tutor** | Punitha A/P Turumugon |
| **Submission Date** |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Name** | **Student ID** | **Signature** | **Marks** |
| **1.** | LUAH ZHENG SHENG | 2206594 |  |  |
| **2.** | LUAH ZHENG YANG | 2206468 |  |  |
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|  | **Total** | |  |  |

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Plagiarism according to the Oxford Advanced Learner’s Dictionary of Current English means “take and use somebody else’s ideas, words, etc as if they were one’s own.”

**Plagiarism** can take the form of reproduction without acknowledgement from published or unpublished works of others including materials download from computer files an Internet.

Student’s work submitted for assessment is accepted on understanding that it is the students’ own effort without falsification of any kind. Acknowledgement to the source must be made if students had replied on any sources for information with appropriate reference being made in their work.

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**Obligations of students**

Students are required to sign a declaration that the work submitted such as course work assignment, essays and projects, etc is their own work and that they have not in any way knowingly allow another student copy it. It will be assumed that all submitted work is that of the students’ own work.

Students are expected to familiarize themselves with or make use of method(s) of citing other people’s work in accordance with acceptable referencing.

**Plagiarism Statement Form**

**We confirm that the submitted work are all our own work and are in our own words.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Name (Block Capitals)** |  | **Student ID** |  | **Signature** |
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|  |  |
| --- | --- |
| **Tutorial Group :** | 3 |
| **Date :** |  |

**QUESTION**

Your friend, Lee is an 18-year-old student who noticed that social media is becoming an important aspect today. Therefore, he would like to take his first step into becoming one of the social media influencers and hopefully make a name for himself out there.

**Section A (58 marks)**

1. Suggest a suitable computer for Lee. List out the brand, model, price, date released, brief product description and a photo of the product. Justify your selection. **Note:** Your team MUST carry out research to thoroughly study the LATEST (most recent 3 years) computer available. You may make your own assumptions on the types of content Lee maypost,number of followers etc. (10 marks)

|  |  |
| --- | --- |
| **Brand** | Hewlett-Packard (HP) |
| **Model** | HP Victus Gaming Laptop 16-e0120AX |
| **Price** | MYR 4399.00 |
| **Date Released** | 2021 |
| **Brief Product Description** | **Operating System:** Windows 11 Home  **Processor:**AMD Ryzen™ 7 5800H (up to 4.4 GHz max boost clock, 16 MB L3 cache, 8 cores, 16 threads)  **Graphics:** NVIDIA® GeForce RTX™ 3050 Ti Laptop GPU (4 GB GDDR6 dedicated)  **Screen:** 16.1" diagonal, FHD (1920 x 1080), 144 Hz, 7 ms response time, IPS, micro-edge, anti-glare, Low Blue Light, 250 nits, 100% sRGB color gamut  **RAM:** RAM 8GB (1x8GB) DDR4 3200 (Memory accessible) (2 Slots- support up to 32GB)  **Storage:** 512 GB PCIe® NVMe™ TLC M.2 SSD  **Size & Weight:** 37 (W) x 26 (D) x 2.35 (H) CM, 2.46 kg |
| **Photo** | **Diagram 1**    **Diagram 2** |

**Specification of HP Victus Gaming Laptop 16-e0120AX**

**Table 1**

**Justification**

The HP VIctus Gaming Laptop was chosen because the laptop's mobility helped Lee a lot. As a student, Lee can use it to make videos and he can also take his laptop to school for study, saving Lee from having to buy another one computer. In addition to that, this laptop comes with Windows 11 and an AMD Ryzen 7 5800H 8-core processor. Powerful CPU allows Lee to do a lot of CPU rendering and accomplish complex editing tasks faster. This laptop's CPU has a base frequency of 3.3 GHz and a maximum boost frequency of 4.4 GHz. High clock speeds allow the CPU to process more instructions at the same time. This helps Lee's computer complete more tasks faster. Besides, this laptop also dedicated graphics NVIDIA® GeForce RTX™ 3050 Ti Laptop GPU 4 GB GDDR6. A powerful graphics card can help the CPU calculate the movement of the pixels so that can provide video quality with higher resolution and more detail. As a result, these configurations let Lee easily edit videos on this laptop. It also includes 8GB of DDR4 3200 RAM. It should be mentioned that the laptop has two slots and 512 GB PCIe® NVMe™ TLC M.2 SSD storage, the memory supports up to 32GB of RAM. I suggest Lee can increase the RAM to 32GB if needed. As having more RAM will give Lee a smooth video editing experience. I also recommend Lee to get the same model of memory card from any computer accessories store and install it to increase the memory. Lee has adequate RAM to edit videos. Moreover, this laptop comes with a 16.1-inch FHD screen with a 144Hz refresh rate. The large 16.1-inch screen allows Lee to see the screen display clearly. This laptop has also a 100% sRGB color gamut, which is healthier for your eyes than RGB because it has a wider color gamut, can make Lee's visual experience better. The wide color gamut allows Lee to have better color saturation, bringing the colors closer to reality, allowing him to edit more realistic videos. I believe Lee will gain more followers on many social networks such as Instagram, Facebook, Youtube, etc, if he operates his social media more easily with this laptop.

1. Suggest any **TWO (2)** types of utility software and **TWO (2)** types of application software that are suitable to Lee. Describe these applications in terms of company, price, and **THREE (3) features**. Explain the reason why these features might benefit Lee. (48 marks)

|  |  |
| --- | --- |
| **Utility software I/II** | |
| **Software** | WinZip |
| **Company** | Corel Corporation |
| **Price** | MYR 184.41 / Year (WinZip n.d.a) |
| **Features** | **Compression and decompression files or video**  Compress data in the files to reduce the logical size of the files to save the disk space of computer. It will save the numerous space to make your computer smoother. (TechTerms.com n.d.) Besides, WinZip support a variety of file format like Zip, RAR, 7Z, GZ, etc. (WinZip n.d.b)  **File Management**  It will change the interface to manage mode and display the file and folder properties like date, file type and size when you want to find your files and it can save your time and trouble. It also support create, delete, modify, or manage other file operations. (Toppr n.d.)  **Backup & Automate**  Clean and sort out the computer automatically. It will remove old files to save space, maintain speed and protect file when you set the rules. (WinZip n.d.c) Besides, it can save the backup to or backup files from the Cloud like Google Drive, OneDrive, CloudMe, etc. It will perform conversion file before compression and create custom backups for selected files and folders. Therefore, users can rest assured use it to backup files. (WinZip n.d.b) |
| **Reason** | Lee wants to make some videos about video clip tutorial and post them on the social media to increase the influence on social media. Therefore, his computer needs more space to store the video. He can uses WinZip to compress his video files, it can reduce the file size and save a lot of storage space and cost savings. Lee can compression his video to the format type he wanted and decompress the different type of file formats because WinZip support a variety of format type. This saves Lee a lot of trouble. Besides, WinZip can help Lee to manage his files, he can use it to create a file to store the video and can be modify at any time. When Lee has made a lot of videos and wants to retrieve the previously made videos, he can quickly search for the required files by the production time and size. Lee can also classify his files by naming them. Doing this will allow Lee to have a concise page that doesn't look dazzling. Finally, he can use WinZip to backup the important video or file to prevent the lost of them. Besides, Lee has many option for backup his files to the drive he wants to store like Google Drive. WinZip will also remove the old file to maintain the speed and save space when he set the rule and let Lee have a smooth computer at all times. |

**Features and Advantages of WinZip**

**Table 2**

|  |  |
| --- | --- |
| **Utility software II/II** | |
| **Software** | Avira AntiVirus |
| **Company** | Avira Operations GmbH & Co.KG |
| **Price** | Free |
| **Features** | **This app has real time protection and repair**  It can protect the user’s computer from billions of malware attacks annually, including against ransomware, Trojans, worms, viruses, and more. Besides to virus scans, this app also includes advanced repair features.  **Avira can real-time updates via the cloud**  Every secured device act as a transducer, which discover the new and never-seen-before attacks. All of the customers are straightway immunized against the threat with every update as soon as a new threat is identified, protecting millions within minutes.  **Avira is also light and fast**  It has one of the smallest footprints in the industry - virus definition updates are lighter than most other antivirus products (2-5 times more lighter). Unlike many others, the protection won't make the user’s computer becomes lag or take up their system resources.  <https://www.antivirussoftwareguide.com/reviews/totalav?forceLid=34&gclid=Cj0KCQjwrs2XBhDjARIsAHVymmSWefsJgoxScbEkhCfz37MwPyA8eGoVZNqcIV_IFDOk6f_wecBR2kkaAo0MEALw_wcB> |
| **Reason** | This app can help Lee to protects his data and files in the computer. It keeps attention on all the files that enter your system closely. All those files will be scanned to check for any peculiarity or maliciousness. Viruses can easily be spread to your network through infected files which in turn can potentially damage your data and files. Thus, it can help to prevent the loss of data. Avira can also help to defense against hackers and data thieves. Avira can either put an antihacking lock, or they execute scans regularly to detect the presence of any hacker or hacking based programs in the computer network. Thus, Avira provides comprehensive protection against hackers. Avira will limit the access of websites to enhance web protection. Lee’s computer system will be exposed to variety type of cyber threats such as spyware, hackers, ransomware and more when Lee visits unauthorized websites. These threats can potentially harm Lee’s data and files. Thus, Avira can limits the web access to restrict Lee’s activities on unauthorized networks. This is done to ensure that Lee only visit the websites that will not damage the computer system to longer the computer life. Additionally, when transducer detect a new and never-before-seen attack appears, Avira will automatically scan Lee's computer to make sure that no such virus is present, which will greatly increase Lee's computer's resistance to new viruses. Lastly, Avira requires very little memory, which will help lee save more space and allow lee's computer to store more files. |

**Features and Advantages of Avira AntiVirus**

**Table 3**

|  |  |
| --- | --- |
| **Application software I/II** | |
| **Software** | Adobe Premier Pro |
| **Company** | Adobe System Incorporated |
| **Price** | $ 20.99/month (GetApp n.d.) |
| **Features** | **Video Editing**  Premiere Pro contain many editing tools that is powerful for content creator to edit video files. For example, motion blur and the transform effect, bezier keyframes, track mattes, etc.. Besides, it can also enhance image quality and fine-tune audio. (Motion Array n.d.)  **Audio Editing** Premiere Pro can accelerate audio post production because it has Essential Sound Panel and will teach the beginners to clean up and enhance audio step by step so it is easier for beginners. Premiere Pro also contain Adobe Stock Music, it provide high quality music and user can use it for free. (Beginners Approach 2021) Besides, Premiere Pro also allow user to record audio. User can also adjust the audio easily and efficiently because it provide audio type and assign function . It have 4 type audio that are dialogue, ambiance, music and SFX for user to assign. (Kilefner, M 2022) **Timeline editing**  The timeline is the area that you can arrange your video clip by using the video editing tools. User can use it to draw out the edits that he want to apply. (Martin, J n.d.) |
| **Reason** | Because of Lee wants to make video clip tutorial, so he needs an application software to teaching video clip. Premiere Pro is contain various type of powerful editing tool. It can be used to edit a variety of different effects to a video or image such as he can use transform effects to build a variety of animation in the text or image. This powerful editing feature will attract viewers to learn. Besides, Premiere Pro is comprehensive, it also contain audio editing. Premiere Pro provide numerous high quality music for free. This will not only allows Lee to save money, but it will also allow him to put a variety of music in his videos to attract viewers. Premiere Pro provide audio type and assign function allows Lee to apply different audio types such as dialogue, background music, etc. in different scenarios. It also contain Essential Sound Panel to teach the beginners enhance their audio step by step so it is suitable for beginners. Therefore, coupled with Lee's tutorial, it will be easier for beginners to get started. Finally, Lee can use Premiere Pro to cut video files that he wants on the timeline then drag and drop it in the desired sequence. Although this looks professional, it's great for beginners because it's intuitive. (Adobe n.d.) Therefore, Lee can use it to make his videos achieve the expected effect and can use it as a teaching material to attract beginners to learn. |

**Features and Advantages of Adobe Premier Pro**

**Table 4**

|  |  |
| --- | --- |
| **Application software II/II** | |
| **Software** | Microsoft PowerPoint 365 |
| **Company** | Forethought, Inc. |
| **Price** | MYR 709.00 |
| **Features** | **Can share your ideas to others in a brief and clear way**  Users can share and effectively present their ideas and their goals to others through image and video attachments.  **Design influential slides with the help of Designer in PowerPoint**  Users can add transitions and animations to the slideshow, and also add background music while the slideshow is playing. Besides, users can also change the font style and color to make the slideshow look better.  **Different styles and types of slideshows can be made**  Users can insert a lot of things in the slideshow to make the slideshow with more possibilities and interest. For example, users can insert table, shapes, chart, images, comment, symbols, equation, audio and also video to the slideshow. This will allow users to have more imagination and creativity. |
| **Reason** | It compatible with multiple operating systems Windows 11, Windows 10, or macOS. Lee can easily shows the slideshows such as the introduction of video clip, recommended apps and the required computer specifications to the viewers. This will give them some insight into the clip. Lee can create more attractive and beautiful slideshows to attract passers-by viewers and increase followers. For example, he can play some slideshows about editing skills before the actual operation. In this case, Lee can create his slideshows by using the tools such as table, symbol, chart and also images. These slides will help them to understand what to do, which will make it easy for them to follow the lessons while they're actually doing it. This actually reduces the time it takes for them to study. This is very important because nowadays people don't have much free time and patience to learn additional knowledge. Although the price is expensive, but it can be used for a lifetime and it is worth for Lee who needs to use it frequently. |

**Features and Advantages of Microsoft PowerPoint 365**

**Table 5**

**Section B (40 marks)**

1. One of the main tasks for Lee is to setup an Internet connection at his home. Before he can set it up, he must decide between a wireless network and wired network. Compare between wireless and wired network, then suggest the most suitable network to Lee. Justify your selection. (20 marks)

|  |  |  |
| --- | --- | --- |
| **Comparison** | **Wired Network** | **Wireless Network** |
| **Mobility** | A computer network that uses coaxial cable, twisted-pair cable, and fiber-optic cable to connect. Therefore, the mobility is lower than wireless network and the computer can’t be changed easily.  **Disadvantage**  **Internet is unable to access anytime and anywhere**  Lee cannot change position if needed. For example, if some parts of the house need to be renovated, lee will be more difficult to adjust the wiring. | A computer network that uses infrared, broad radio, cellular radio, microwave radio or communications satellite to connect. Freedom to change the location of the device as long as it is within the network coverage. Therefore the mobility is higher than wired network.  **Advantages**  **Internet access anytime and anywhere**  Because Lee bought a laptop, the mobility of wireless network will not limit Lee to use it in a fixed location, he can surf the Internet anytime and anywhere as long as he is within the network coverage. |
| **Speed** | Uses cables to connect to network, so the network signal is not well affected by distance and wall barriers.  **Advantages**  **High network stability**  The network is extremely difficult to be affected by external influences such as bad weather, so Lee will have a stable network at all times, and there will not be disconnection problems easily to prevent Lee from being interrupted when uploading videos or suddenly disconnected during live broadcasts.  **Strong network signal**  Because the network signal is not affected by external factors, Lee will have a strong network signal, which ensures that his network speed is always maintained at the highest state. High-speed internet allows Lee to save more time when uploading videos. | The transmission speed lower than wired networks because the wireless network signal will be affected by distance and wall barriers.  **Disadvantages**  **Low network stability**  Lee needs to be more patient, as the instability of the network may cause Lee to be interrupted while uploading the video. Prolonged disconnection issues are more likely when the weather is bad.  **Week network signal**  When the weather is bad, even if there is no disconnection, the network signal will be greatly affected, which will greatly affect the Internet access. Lee needs to worry about the weather all the time. |
| **Security** | Great, signals on a wired network remain in the cables and are protect by physical access controls. Sniffing is significantly simple over a wireless network since any receiver in the vicinity may process the radio broadcasts.  **Advantage**  **Safety and security**  Lee's video footage will be more secure. lee doesn't have to worry about theft of hard-won video footage. | Poor because anybody within range of the transmitter with the right antenna may access the network broadcasts on wireless networks, security is frequently a top priority.  **Disadvantage**  **Risk of hacking**  Lee's data has a high risk of being stolen by hackers. So lee may also need to learn about cyber security to avoid losing. |
| **Flexibility** | Low, each device must be connected to a cable. Smartphone can’t work with wired networks.  **Disadvantage**  **Restrictions on the type of device required**  Lee's cell phones and tablets cannot be used for work because these devices cannot be connected to a wired network. This will limit Lee's work efficiency. | High, because wireless network easy, quick to connect. Just select the network name and enter password.  **Advantages**  **Connect multiple devices**  When Lee wants to connect multiple devices at the same time to perform multiple different operations in order to improve efficiency, he does not need to worry about the network access problem, because as long as device has the password and is within network coverage, it can connect. |
| **Releability** | Ethernet cables, hubs and switches are reliable, largely because manufactures have been improving Ethernet technology for decades. But loose cables are probably still the most common source of failure in wired networks.  **Advantage**  Lee will not have to worry about the cost and anxiety of reinstalling or repairing network equipment that fails. | Wireless LANs face more reliability issues than wired LANs, although not enough to be a significant problem. Most wireless signals are subject to interference from other household appliances, including microwave ovens, cordless phones, and garage door openers. Careful installation minimizes the potential for interference.  **Disadvantage**  Lee needs to check and maintain the wireless network equipment regularly. This will take more time and effort. |

**Comparison of Wired and Wireless network**

**Table 6**

**Suggestion**

I suggest Lee to use wireless network. Although the transmission speed of wired networks is faster than wireless networks but the traditional wired network layout is subject to the limitations of the wiring pattern, if the building is not reserved for the line and the amount of debugging work is relatively large. If Lee use wireless network, Lee can solve the above-mentioned problems, because the wireless network card is small, light and portable. Therefore, Lee can setup a network anytime and anywhere without pulling a long network cable, and do not have to be bothered by the space restrictions and network installation time. With a wireless network, Lee and mates can use a PC or laptop in every corner of the house.

When Lee change the location of the Internet, Lee will not lose the cost of wiring, Lee only need to remove the wireless access device, and then take away all the network components, which is quite simple and convenient. It realize simultaneous access to the Internet anywhere and anytime.

In addition, the wired network is not very scalable, so if Lee want to add new users and new devices, and the ports reserved for the original cabling are not enough, then Lee have to rearrange the cables and other work. Although the wire itself is not expensive but it is more troublesome for the user because Lee needs to rearrange the cables to connection the network. Moreover, once the network is built, its function is more fixed.

In contrast, the scalability of wireless networks is stronger, a Wireless Access Point can support 2048 users, if Lee need to add new users, the network does not need to make any changes. If Lee need to add new users, the network does not need to be changed, just install a wireless card in the computer. For lee, it is better to choose wireless network because the devices of working partners can easily connect to the network without the need of connecting cables. Thus, a wireless network allows lee to increase the efficiency of his work and video editing.

Most importantly, the cost of installation wireless networks are relatively inexpensive compared to wired networks. This is undoubtedly a better choice for Lee who is still a student. This will make it easier for Lee to be successful on social media. Although wireless networks are easily affected by bad weather, based on the development of current technology, this problem has gradually been solved, so Lee does not need to worry about the stability of the network.

**Appendix 1**

A wireless network is formed by three basic devices: **MODEM**, **Wireless Access Points** and **router**.

**MODEM**, often known as a modulator-demodulator, is a piece of computer hardware that translates data from a digital format to one appropriate for an analogue transmission medium, such as a telephone or radio. A modem sends data by modulating one or more carrier wave signals to encode digital information, which is then demodulated by the receiver to reconstitute the original digital information. The objective is to create a signal that can be simply sent and consistently deciphered. Modems may be used with practically any analogue signal transmission method, from light-emitting diodes to radio.

**Wireless access point** is a device that enables several wireless devices to communicate with one another. An access point, similar to how a hub or switch links numerous devices in a single or many wired LAN networks, connects multiple wireless devices in a single or multiple wireless networks. An access point can also be used to connect wired and wireless networks.

**Router** is a device that links two or more packet-switched networks or subnetworks. It has two basic functions: handling traffic across these networks by forwarding data packets to their intended IP addresses, and allowing many devices to use the same Internet connection.

1. List and explain TWO (2) devices required for Lee to setup the network your team suggested above. Include a picture for each of the devices and describe these devices in terms of company, model, price and THREE (3) features. (20 marks)

|  |  |
| --- | --- |
| **Device I** | |
| **Company** | TP-Link |
| **Model** | TD-W8961N |
| **Price** | MYR 88 |
| **Photo** | 300Mbps Wireless N ADSL2+ Modem Router 1 |
| **Features** | **Easy installation assistant with multi-language**  Support fast, hassle-free installation. Lee can be installed by itself without the need for professional help to avoid unnecessary costs.  **Broadband transmission speed of up to 300Mbps (High Speed)**  It helps Lee to be more efficient when he downloads material, uploads HD videos and interacts with his followers on the Internet, for example live. This has helped Lee save more time because when Lee wants to upload high-resolution (2k - 4k) and high-volume videos, the high-speed network allows him doesn’t wait too ling and can spend his time exploring social media more deeply. Multiple devices can also be connected at the same time without lagging. Enables the Lee’s team to work together efficiently.  **Advanced network security and flexible management**  For example, NAT Firewall, SPI Firewall, Web Based Configuration (HTTP), Remote management and other. When LEE has a certain number of followers, he will be known to the public. Lee may have his privacy and information stolen by illegal elements through the Internet. There is also a chance that his home address will be found and his personal safety is at risk. Besides, computer may be attacked by hackers or malware. Firewall can prevent user’s privacy and information stolen by illegal elements through the internet and also block malware from accessing your computer. This is why internet security is also very important. |

**Spectification of TD-W8961N**

**Table 7**

|  |  |
| --- | --- |
| **Device II** | |
| **Company** | TP-Link |
| **Model** | Archer AX10 |
| **Price** | MYR 199 |
| **Photo** | AX1500 Wi-Fi 6 Router 1 |
| **Features** | **Equipped with WIFI 6 technology with Wi-Fi speeds of up to 1.5Gbps**  Achieves speed through a combination of 2.4GHz and 5GHz spectral bands. Allows Lee to work in different places within the cable LAN, increasing flexibility in their work, and to be inspired to create more interesting videos or work to engage the audience by changing the environment.  **Easy to Setup**  Finish network upgrade in minutes with application. Lee doesn't need to spend time researching how to set up and upgrade the router, Lee just needs to do it through the app. This router is also equipped with a triple-core CPU, which responds instantly to all your network activity with a 1.5GHz triple-core CPU.  **Full Gigabit port**  To take advantage of broadband speeds of up to 1Gbps.Allowing Lee to create videos without worrying about the speed of the internet and allowing Lee to take part in various online courses to learn video creation techniques. |

**Spectification of Archer AX10**

**Table 8**

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**Appendices**

Appendix 1: Wireless Router Network Diagram

