Activity 1

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1.1. Computer Basics

1. What is a computer?

   - Is a device that accepts information (in digitalized data form) and manipulates it for some result based on a program, software, or sequence of instructions on how the data is to be processed.

2. What is a bios?

   - is the first thing that loads when you start your computer and it also manages data flow between computer's operating system after you turn it on

3. What is an internet?

   - is a worldwide system of computer networks -- a network of networks in which users at any one computer can, if they have permission, get information from any other computer (Rouse, 2015)

4. What is the difference between wifi and fibre?

   - Wifi converts data it transmits into electromagnetic waves for broadcasting, basically it doesn't use cable but Fibre convert packets of data into a stream of light and travels through the cable.

5. Do you need a graphics card to do your day to day work?

   - Yes

6. Name 2 ways you can install Windows 10 into your computer?

   - Use a licensed disc (DVD/CD) from Microsoft supplier.
   - By inserting an usb drive and restart your pc and select an option to boot from media and follow the on-screen instructions.

7. Name 2 ways you can format your computer?

   - Backup any important data and insert your windows installation disc and also set your computer to boot from that drive, start the setup process, select a "custom" Installation, select the partition you want format and click on format it will install the windows afresh

   - Just press windows button + R and type " diskmgmt.msc " , on disk management program select the partition you want to format and right click on it, select format and click on start

8. Why has Windows discontinued Windows OS development?

- (Warren, 2015) Windows 10 is the last version of Windows, Microsoft has been discussing the idea of Windows as a service, Instead of releasing an entirely new and different version of its desktop OS every few years, Microsoft is taking an Apple-like approach to subsequent Windows releases, standardizing on Windows 10 as its Cupertino-based rival has done with OS X. Under this new strategy, Microsoft will deliver regular improvements to Windows through software updates.

9. What is Linux?

- Is the best-known and most-used open source operating system.

10. List 3 Linux based OS and their advantages

- Ubuntu - It is as simple as well as productive as it gets. You can search anything from applications to files by pressing the Windows key.
- Linux Mint Cinnamon - Linux Mint is fast. Runs fine on older computers.
- Zorin OS - dodges past this obstacle because of its similarities with Windows appearance wise.

11. Why is Windows adding a Linux based Kernel into their OS?

- I think they want to increase receptiveness to open source software.

1.2. Web And Mobile

1. Why do you want to be a software developer?

- It gives me the opportunity to learn about technology because I am always curious about what's happening around and I want to expand my programming skills in the field and also it gives me joy to see the programs I have been coding be executed successful

2. What are web applications?

- Is a computer program that utilizes web browsers and web technology to perform tasks over the Internet

3. What is a mobile application?

- Is a software application designed to run on a mobile device such as a phone.

4. What is the difference between native and cross platform?

- Native applications developed for android will not function on iOS and vice versa
- Cross-platform applications are compatible multiple platforms

5. What do we mean by native and cross platform applications?
    - Native Applications are designed for a specific OS
    - Cross-platform Applications are flexible they can be used in multiples OS

6. What do we mean by native and cross platform development?
    - The native approach means the one intended for a specific OS, Android or iOS (Apple).
    - The cross-platform approach provides the ability to compile source code for execution on multiple mobile platforms

7. How many mobile operating systems are available in the world?
    - 6

8. How many android devices are there in the world and in South Africa?
    - 2.5 billion

9. How many iOS devices are there in the world and in South Africa?
    - 1.35 billion

10. What are the advantages and disadvantages of developing apps on iOS and Android?

iOS

Advantages	Disadvantages
Better App Revenue	Not flexible only support iOS Devices
Security of Enterprise Data	It is not Open source
High-Quality Standards	It has a long publishing process for an app
High Market Penetration	iOS has fewer users than andriod

Andriod

Advantages	Disadvantages
Easy to customize android apps	It is expensive.
It generates high revenue from in-app ads	It has a greater tendency for potential bugs.
Android apps take lesser time to get into the market	Android development generates lesser revenue than iOS.
It holds the biggest market share	There is a design complexity that occurs due to fragmentation.

11. What is your favourite mobile application and give 3 reasons why?

Facebook   - it helps me to connect with people

                - it save my memories (pictures, videos, etc)

                - is the best way to market your business, if you have one

12. What would you like to change about that application? Please give a brief description for your reason.
    - Security - inside the application you can be hacked easily by the unnecessary ads that keep popping on our screens which causes us to be the victims of identity theft and that one time touch login is a alright , if by mistake you lose your phone someone can just login on your profile and do unspeakable things.

    - That is why I would like their security to be changed no more ads, ask for password every time you want to login in

13. What is the importance of using play stores(Google and Apple)?
    - To protect your devices to be infected with virus from other source
14. Do you know what a cross-platform application is?
    - Yes
15. What is open-source software?
    - Is a type of computer software in which source code is released under a license in which the copyright holder grants users the rights to use, study, change, and distribute the software to anyone and for any purpose

16. List 3 mapping solutions/companies and give the advantage each mapping solution has over its competitors.
    - WillowTree   -Top iOS, Andriod & web development company in the US
    - RightPoint   - best when it comes to be strategic
    - Appinventiv   - it uses open-source platform and makes app compatible with multiple devices

1.3. Database

1. What is SQL?
    - Is a standard language for accessing and manipulating database.
2. What is SQL used for?
    - used to insert, search, update, and delete database records
3. How do you link tables in SQL?
    - to link data from two or more tables together into a single query result--from one single SELECT statement

4. What would you change about SQL?
    - Their interface , it has a complex interface that creates difficulty for some user to access it
5. What are No-SQL databases?
    - are non-tabular, and store data differently than relational tables
6. What is the advantage of using No-SQL databases?

- Multiple data views
7. List all the databases you have worked with?
    - Microsoft Access Database
8. Name one you like working with and define reasons why?
    - Microsoft Access Database – it easy to use

1.4. Essay

Write a brief piece of an essay of not more than 1200 words about The Fourth Industrial Revolution (4IR) and how it might affect our lives (where in a positive or negative way). Please state your argument clearly. Give it an appealing title, include introduction, body and conclusion. You are also welcome to include images on your essay.

<u>Industrial 4.0</u>

- ## Introduction

The Fourth Industrial Revolution represents a fundamental change in the way we live, work and relate to one another. It is a new chapter in human development, enabled by extraordinary technology advances commensurate with those of the first, second and third industrial revolutions. These advances are merging the physical, digital and biological worlds in ways that create both huge promise and potential peril. The speed, breadth and depth of this revolution is forcing us to rethink how countries develop, how organisations create value and even what it means to be human. The Fourth Industrial Revolution is about more than just technology-driven change; it is an opportunity to help everyone, including leaders, policy-makers and people from all income groups and nations, to harness converging technologies in order to create an inclusive, human-centred future. The real opportunity is to look beyond technology, and find ways to give the greatest number of people the ability to positively impact their families, organisations and communities. (WORLD ECONOMIC FORUM, 2020)

New technologies can be powerful agents for good.

Education and access to information can improve the lives of billions of people. Through increasingly powerful computing devices and networks, digital services, and mobile devices, this can become a reality for people around the world, including those in underdeveloped countries.

The social media revolution embodied by Facebook, Twitter, and Tencent has given everyone a voice and a way to communicate instantly across the planet. Today, more than 30% of the people in the world use social media services to communicate and stay on top of world events.

These innovations can create a true global village, bringing billions more people into the global economy. They can bring access to products and services to entirely new markets.

They can give people opportunities to learn and earn in new ways, and they can give people new identities as they see potential for themselves that wasn't previously available.

"The Fourth Industrial Revolution, finally, will change not only what we do but also who we are. It will affect our identity and all the issues associated with it: our sense of privacy, our notions of ownership, our consumption patterns, the time we devote to work and leisure, and how we develop our careers, cultivate our skills, meet people, and nurture relationships." —Klaus Schwab, the Fourth Industrial Revolution

Online shopping and delivery services—including by drone—are already redefining convenience and the retail experience. The ease of delivery can transform communities, even in remote places, and jumpstart the economies of small or rural areas.

In the physical realm, advances in biomedical sciences can lead to healthier lives and longer life spans. They can lead to innovations in neuroscience, like connecting the human brain to computers to enhance intelligence or experience a simulated world. Imagine all that robot power with human problem-solving skills.

Advances in automotive safety through Fourth Industrial Revolution technologies can reduce road fatalities and insurance costs, and carbon emissions. Autonomous vehicles can reshape the living spaces of cities, architecture, and roads themselves, and free up space for more social and human-centered spaces.

Digital technology can liberate workers from automatable tasks, freeing them to concentrate on addressing more complex business issues and giving them more autonomy. It can also provide workers with radically new tools and insights to design more creative solutions to previously insurmountable problems. (TRAILHEAD, 2019)

• **Conclusion**

Industry 4.0 is underway and there is no chance we can isolate ourselves from the reality and live in a technological vacuum. Instead, we need to consider it as a brilliant opportunity to become shapers of our future. At this point, I absolutely agree with the Schwab (2016) who suggests that "as a complement to the best parts of human nature—creativity, empathy, stewardship—it can also lift humanity into a new collective and moral consciousness".

Industry 4.0 may bring an opportunity to provide the core needs of the planet as clean air and water, sustainable energy, protection of environment and healthy nations. Essays, UK. (November 2018)

References

Rouse, M., 2015. *SearchWinDevelopment.* [Online]
Available at: https://searchwindevelopment.techtarget.com/definition/Internet
[Accessed 08 July 2020].

TRAILHEAD, 2019. *Understanding the Impact of the fourth Industrial Revolution on Society and Indiviuals.* [Online]
Available at: https://trailhead.salesforce.com/en/content/learn/modules/impacts-of-the-fourth-industrial-revolution/understand-the-impact-of-the-fourth-industrial-revolution-on-society-and-individuals
[Accessed 09 July 2020].

Warren, T., 2015. *why microsoft is calling windos 10 'the last version of windows'.* [Online]
Available at: https://www.theverge.com/2015/5/7/8568473/windows-10-last-version-of-windows
[Accessed 08 July 2020].

WORLD ECONOMIC FORUM, 2020. *Forth Industrial Revolution.* [Online]
Available at: https://www.weforum.org/focus/fourth-industrial-revolution
[Accessed 09 July 2020].

Essays, UK. (November 2018). The Fourth Industrial Revolution. Retrieved from
https://www.ukessays.com/essays/technology/the-fourth-industrial-revolution.php?vref=1