Computing Foundations and Python Setup (Week 1)

Part A: computing research

1. Hardware vs software analysis:

Hardware is the parts of the computer you can actually touch. The software is like programs or apps on a computer that tell the computer what to do. An example of hardware is the CPU, which is like the brain of the computer, it thinks and solves problems. Another example of hardware would be the keyboard that lets you type anything you may need into the computer. The last example of hardware would be the monitor, and this is where you look to see what the computer is doing. And for software it is a little different. An example of software would be like windows which is the main program that helps you use your computer. Another example of software would be google chrome and chrome is the thing that allows you to visit other website on your computer, and lastly you have Microsoft word or google docs and these allow you to write letters, stories, or even do homework. Hardware and software work together because hardware is like the body and software is like the brain it tells it what to do.

1. Programming language interpretation:

A programming language is a way that we give instructions to computers. It’s like teaching the computer how to do a job. First programming language we have is python which is easy to read, its great for beginners and it is used by bigger companies like google and NASA. By using python, you learn how to code, make apps, build games, etc. the next programming language would be JavaScript which is used for making websites more fun and interactive. JavaScript is run in web browsers and can make buttons, animations, and other things on websites. It’s used for web design, making websites respond when you click, scroll, or type. And lastly we have c++ which is used for building big software like computer programs. C++ is very fast and used in professional game design and software. It is used for making computer programs and controlling machines. Pyhton is easy for beginners because It is easy to read, You don’t need to write a lot to make something work, You can make cool things like games, stories, and calculators quickly, and It's used by beginners and professionals.

1. Career exploration:

First career we have is a software developer and they typically create apps and computer programs. For this job you need to know how to code, have good problem solving skills, and can work in a team environment. In this job you will need to  Write code to build apps or games, Test programs to make sure they work, and Fix bugs. Programming is the main part of this job. The next career we have is a web developer and they build websites that people use everyday. You need to know web languages like HTML**,** CSS, JavaScript, Good design sense, and attention to detail. You will need to design how the website looks, make sure buttons and links work, and keep websites updated. Web developers use code to create and style the website. The last career would be Cybersecurity Specialist and they protect computers and data from hackers and viruses. You need to know how networks and computers work, use tools to find security problems, and understand programming languages (like Python) you will check for weak spots in computer systems, stop hackers from stealing information, and make security rules and systems programming helps them write tools and scripts to find and fix security issues.

Part B: python environment: