

## Task 1

### PREREQUISITES

This task has two concepts in it which serve as the prerequisites for learning about cloud computing and cyber security. They are Basic knowledge of C++ and Python and operating systems.

#### Basic knowledge of C++ and Python

C++ and python are the most prominent and most important programming languages. Their knowledge is a must for developing various tools and completing the upcoming tasks.

#### C++:

I learned how to install c++ on my computer also to write the first hello world programme, variables, databases, draw a shape, work with strings, databases, constructors, work with numbers, build a calculator, arrays, functions, return statements, if statement, switch statements, inheritance and so on. As I knew about c language learning c++ was a little easier than directly learning c++. C++ is way better than c. While learning C++ I got many errors, which I learned to Correct one by one by using YouTube. I also searched for various other codes to implement the same program statement with the help of geeks for geeks and stack overflow.

Here are some program codes which I tried:

Hello, world:

<https://docs.google.com/document/d/16YPLsTNKo-GOdbVyzbSHq8Kj1B667GsbmSPRnxjrra8/edit?usp=drivesdk>

Calculator:

[https://docs.google.com/document/d/1jLK7Nm-h11IY5a\\_24K5u2Tg6FOYyNZhRKsCrS\\_bjyPs/edit?usp=drivesdk](https://docs.google.com/document/d/1jLK7Nm-h11IY5a_24K5u2Tg6FOYyNZhRKsCrS_bjyPs/edit?usp=drivesdk)

Thus there are many other programs which I have tried but for simplicity, I have shared only 2 simple programs.

#### Python:

Python is a powerful general-purpose programming language. It is used in web development, data science, creating software prototypes, and so on. Fortunately for beginners, Python has **simple easy-to-use syntax**. This makes Python an excellent

language to learn to program for beginners. This language is easier than other programming languages which are much more complex.

I learned about various concepts of python like variables, function calls, lists, using booleans for branching logic, loops and list comprehensions, strings and dictionaries, working with external libraries and much more functions. I also completed two courses on python in datacamp to learn more about python whose course completion certificates I have provided below. Though considered an easy language, python also has some difficult concepts which I learned through the courses.

Hello, world:

[https://docs.google.com/document/d/1TcScTIRvv\\_jtKBfo-c0nYypwtEFcFzWHpdyXXGmpnX4/edit?usp=drivesdk](https://docs.google.com/document/d/1TcScTIRvv_jtKBfo-c0nYypwtEFcFzWHpdyXXGmpnX4/edit?usp=drivesdk)

Course completion certificates:

<https://www.datacamp.com/statement-of-accomplishment/course/b4c4d3c270e688c801cfac1b32db6a79e3be2ed9>

<https://www.datacamp.com/statement-of-accomplishment/course/5902c9a308f38694f884eef6ef945da2ab82109b>

Basic operating systems:

An operating system is system software that manages computer hardware and software resources and provides common services for computer programs. The three most common operating systems for personal computers are **Microsoft Windows**, **macOS**, and **Linux**. Modern operating systems use a **graphical user interface**, or **GUI** (pronounced **gooey**). Through the courses provided in this task, I got to know CPU Features, Kernel Architectures, Linux basics, Linux basics, Interrupts and I/O, Interrupt Controllers, Interrupt Handling, Memory Resources, Kernel Memory Allocation. Operation of the operating system, in general, can be given as

<https://media.geeksforgeeks.org/wp-content/uploads/os.png>

I also learned in detail about Linux, the history of Linux, the comparison of windows vs Linux, Linux commands and many more interesting features about Linux. After learning which I am planning to switch from windows os to Linux. A picture of the Linux os is given below

[https://i.kinja-img.com/gawker-media/image/upload/c\\_fill,f\\_auto,fl\\_progressive,g\\_center,h\\_675,pg\\_1,q\\_80,w\\_1200/yjdoicyuw04lvrebijtw.jpg](https://i.kinja-img.com/gawker-media/image/upload/c_fill,f_auto,fl_progressive,g_center,h_675,pg_1,q_80,w_1200/yjdoicyuw04lvrebijtw.jpg)

The concept of operating systems and python was new to me. With the help of this task, I got to know about various new concepts of os and many more. This task helped me to learn the basics. I am working harder to improve my basic knowledge. I

am now able to apply this basic knowledge to performing many coding tasks. I am daily practising to solve coding problems and improve further.