Assignment

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- Write briefly on Unix operating system especially linux flavor:

Unix whose full form is (also referred to as UNICS) is **Unimplexed Information Computing System**, is a highly popular multitasking Operating system, and was launched in 1969. The history of Unix dates back to the mid-1960s. When the Massachusetts institute of technology, AT&T Bell Labs, and General Electric were jointly developing an experimental operating system.

Linux is a Unix-like open-source operating system based on the Linux kernel, an operating system first released on September 17, 1991, by Linus Torvalds.

Linux flavor(s) are types of linux based operating systems which include Ubuntu, Fedora Linux, Alpine Linux, Kubuntu, Molinux among many others.

- Write a short note on software functional requirements:

Software functional requirements, generally expressed in the form “system must do <requirement>” is defined as a function of a system, where a function is described as a specification of behavior between inputs and outputs. This defines what a product must do, what its features and functions are.

It is usually brought up by stakeholders/clients, and presented to the software developers/engineers in the creation of the software.

- Why is Unix often preferred at some points:

Below is small list of what Unix offers and why it's your go to operating system.

1. It is an open-source operating system, which make its source code readily available.
2. It is free to use.
3. It is a very flexible operating system; it can be used for desktop applications, server applications and embedded systems.
4. It offers a live CD/USB option, it allows you to try or run the Unix operating system without installing it.
5. It is suitable for programmers as it supports all of the most used programming language such as C/C++, Java, Python, Ruby, and more.
6. It offers a large community support for users who need assistance.
7. It is compatible with a large number of files as it supports almost all file formats.

Written above is a few of the many reasons as to why Unix is the preferred operating system.

- Why is Unix referred to as a scientist OS:

Unix is referred to as a scientist OS because, it was developed by a team of **Computer Scientist** in the **AT&T Corporation's Bell Laboratories** in the late 1960's as a result of efforts to create a time-sharing computer system. The team was led by computer scientists **Ken Thompson** and **Dennis Ritchie**.

- What type of programming language is C:

The programming language C is a general-purpose, high-level language. It was originally developed by Dennis M Ritchie to develop the Unix operating system at Bell labs. It was originally first implemented on the DEC PDP-11 computer in 1972, and in 1978, Brian Kernighan and Dennis Ritchie produced the first publicly available description of C now know as the K&R standard.

- Give the detailed structure of a complete C programming language:

Most programming languages have a structure and C is no different. The C structure is into six major sections: Documentation, Link, Definition (preprocessor commands), Global Declaration, Main() Function, and Subprograms.

1. **Documentation:** This consists of information about the programmer, the creation date and brief description about the program.
2. **Link:** This section houses all header files which contains different functions from the libraries. A copy of these header files are inserted into your code before compilation.
3. **Definition (preprocessor commands):** This includes preprocessor directive, which contains symbolic constants. E.g. **#define** allows us to use constants in our code. It replaces all the constants with its value in the code.
4. **Global Declaration;** This section houses the declaration variables, function, declaration that can be used throughout the program.
5. **Main() Function:** For every program written with the C programming language te execution starts from the main() function. It is mandatory to include a main function in every C program.
6. **Subprograms:** This includes all user defined functions, they contain the inbuilt functions and the function definitions declared in the Global declaration section. These are called in the main() function.

While the main section is compulsory, the rest are optional in the structure of the C program.

- How can I create a programming C file on the OS:

Follow the following steps to create, write and run compile C program in linux:

1. Install GCC compiler and other dev tools.
2. Open a text editor/IDE on your Linux Os
3. Write your first C program in the editor

4. Save the file with a **.c** extension
5. Compile with the GCC compiler
6. Run C program in your Linux Terminal.