Questions

1. Briefly explain the need for a programming language.

We need a programming language to write programs. Programming languages are essential tools for writing code, solving problems, and creating software.

2. Compare and contrast the differences between the following.

a. Source Code vs. Machine Code

Source code is close to the user while machine code is closer to the machine.

Source Code uses HLL Languages while machine code uses machine language.

Source code needs a language translator while machine code doesn't need a language translator.

b. High Level Language vs. Low Level Language

High level language uses English like language while low level language use binary code (machine language) or mnemonics (assembly language).

High level language is machine independent while low level language is machine dependent.

High level language is portable while low level language is not usually portable.

c. Compiler vs. Interpreter

The compiler translates the whole program at once while the interpreter translates the whole program line by line in the entered order.

d. Structured Language vs. Object Oriented Language

Structured Language and Object-Oriented Language are two different paradigms of programming languages, each with its own approach to organizing and manipulating code.

e. C vs. C++

C is a procedural programming language, whereas C++ supports both procedural and object-oriented programming paradigms.

f. C++ v. Java

C++ supports both procedural and object-oriented programming paradigms, whereas Java is primarily an object-oriented programming language

g. Syntax error vs. Logical error

Syntax error is an error that occurs in grammar of the language while logical error occurs when we use the parenthesis in the incorrect way and when the program runs it gives incorrect results.