BCA – 401: Java Programming

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In today's Class we have discussed on differences between C++ and Java Programming.

C++ vs Java:-

There are many differences and similarities between the C++ programming language and Java programming languages.

A list of top differences between C++ and Java are given below:

C++	Java
C++ is platform-dependent. C++ uses compiler only. C++ is compiled and run using the compiler which converts source code into machine code so, C++ is platform dependent.	Java is platform-independent. Java uses both compiler and interpreter. Java source code is converted into bytecode at compilation time. The interpreter executes this bytecode at runtime and produces output. Java is interpreted that is why it is platform-independent.
C++ is mainly used for	Java is mainly used for

system programming.	application programming. It is widely used in Windows-based, web-based, enterprise, and mobile applications.
C++ was designed for systems and applications programming. It was an extension of the C programming language.	Java was designed and created as an interpreter for printing systems but later extended as a support network computing. It was designed to be easy to use and accessible to a broader audience.
C++ supports the goto statement.	Java doesn't support the goto statement.
C++ supports multiple inheritance.	Java doesn't support multiple inheritance through class. It can be achieved by using interfaces in java.
C++ supports operator overloading.	Java doesn't support operator overloading.
C++ supports pointers. You can write a pointer program in C++.	Java supports pointer internally. However, you can't write the pointer program in java. It means java has restricted pointer

	support in java.
C++ supports both call by value and call by reference.	Java supports call by value only. There is no call by reference in java.
C++ supports structures and unions.	Java doesn't support structures and unions.
C++ doesn't have built-in support for threads. It relies on third-party libraries for thread support.	Java has built-in thread support.
C++ doesn't support documentation comments.	Java supports documentation comment (/** ... */) to create documentation for java source code.
C++ supports virtual keyword so that we can decide whether or not to override a function.	Java has no virtual keyword. We can override all non-static methods by default. In other words, non-static methods are virtual by default.
C++ doesn't support unsigned right shift >>> operator.	Java supports unsigned right shift >>> operator that fills zero at the top for the negative numbers. For

	positive numbers, it works same like >> operator.
C++ always creates a new inheritance tree.	Java always uses a single inheritance tree because all classes are the child of the Object class in Java. The Object class is the root of the inheritance tree in java.
C++ is nearer to hardware.	Java is not so interactive with hardware.
C++ is an object-oriented language. However, in the C language, a single root hierarchy is not possible.	Java is also an object-oriented language. However, everything (except fundamental types) is an object in Java. It is a single root hierarchy as everything gets derived from java.lang.Object.
C++ support default arguments.	Java doesn't support default arguments like C++.
C++ support header files.	Java does not support header files like C++. Java uses the import keyword to include different classes and methods.

Features supported by C++ and Java:-

C++ and Java both have several Object Oriented programming features which provide many useful programming functionalities. Some features are supported by one and some by the other. Even though both languages use the concept of OOPs, neither can be termed 100% object-oriented languages. Java uses primitive data types and thus cannot be termed as 100% Object-Oriented Language. C++ uses some data types similar to primitive ones and can implement methods without using any data type. And thus, it is also deprived of the 100% Object-Oriented title.

Below is the table which shows the features supported and not supported by both the programming languages:

Features	C++	Java
Abstraction	Yes	Yes
Encapsulation	Yes	Yes
Single Inheritance	Yes	Yes
Multiple Inheritance	Yes	No
Polymorphism	Yes	Yes
Static Binding	Yes	Yes
Dynamic Binding	Yes	Yes
Operator Overloading	Yes	No

Header Files	Yes	No
Pointers	Yes	No
Global Variables	Yes	No
Template Class	Yes	No
Interference and Packages	No	Yes
API	No	Yes