02A Lesson Proper for Week 3

What are the Programming Languages used in Application Development?

I. INTRODUCTION:

We begin this module by developing a motivation for learning about what are the programming languages used in Application Development. The career of Application development need to be in-depth in programming skills. Traditional programming like procedural approach and object-oriented approach are very essential skills to become a good application developer.

II. OBJECTIVES:

At the end of this module, you should be able to:

1. Identify what are the programming languages used in Application Development.

2. Know the advantages of each programming language used in Application Development.

3. Learn the best programming language used in Application Development

IV. LESSON PROPER

Application developer needs to know various programming languages used for software development but still he must have command on at least one programming language in depth. When it comes to deciding which programming language will be used, so it depends on his area of interest and in which language he loves to solve the problems or he is comfortable with. Some might pick the most secure one, some easiest or some pick the robust. Bus still, which are the programming languages for software development? which languages do programmers rely on developing software in this age of heightened competition and elevated customer dema

Top Programming Languages for Application Development

1. Python- is a high-level programming language used for general-purpose programming. With a simple syntax, Python has automatic memory management and dynamic features that make it suitable to be used in a variety of applications in the software development companies such as gaming, web applications, language development, prototyping, etc. The testers use it, as debugging is quite easy in this language.

Advantages:

Consist of third-party modules

Object-oriented languages

Portable across operating systems

Contains user-friendly data structures

Widely supported

2. Java - is an object-oriented programming language that can be written on any device and can work even on a cross-platform basis. Often used to develop mobile applications, Java is also the basis of the Android operating system. The language is preferred by the testers owing to its ability to use even on cross-platforms.

Advantages:

- This language is platform-independent in both binary and source level
- User and design-friendly
- Known for its feature of security and called as the safest programming language which can disrupt corruption or errors.
- Has the added feature of Stack allocation system which helps in data storing and easy restoring
- Java has the feature of automatic garbage collection and memory allocation.

3. Ruby- With numerous tools and libraries available along with the language, Ruby is simple to use. This programming language that does not require one to learn programming vocabulary or commands. Quite popular on small websites, Ruby does not deliver the expected performance on large websites. With a full-stack framework, testing any program that has been developed using Ruby is easy.

Advantages:

- Fast, efficient & user-friendly
- Consist of easy & understandable syntax
- Has a large worldwide community with a lot of online tutorials and learning resources
- Ruby on Rails is known to be one of the best frameworks which help you build web apps quickly

4. C - One of the most difficult programming languages for software development, gaining an understanding and knowledge of C makes it simple to learn other languages such as C++. Since it is a machine-level language, a tester who has its knowledge does not find it difficult to test a program written in any other language as well.

Advantages:

- It is known to be the building block of many other languages seen today
- Consists of a lot a function that includes system-generated functions
- It is portable and can be set-up fast

- Has the capability to arrange the program in a clear, easy and logical way

5.LISP - The second oldest programming language, LISP is one of the most preferred language in artificial intelligence development due to its high level of flexibility and ability to complete a particular task as chosen. LISP is also one of the top programming languages for software testing as it allows for efficient coding due to compilers and fast prototyping capabilities.

Advantages:

- Can modify its own syntax for a specific program/programming style
- Most important advantage is its format of determining data is same as that of writing code, which makes lisp macros a natural part of the syntax
- Its homo-iconic
- Supports functional and imperative programs

6. Perl - One of the commonly used languages for software, hardware, and network testing, PERL helps in ensuring the best quality of a software product. Its file handling techniques and powerful file analyzing that consume the least execution time make it one of the most preferred languages over other programming languages.

Advantages:

- Most used programming languages for web apps
- Open-source software
- Can integrate with different database products via the platform
- Can handle HTML, XML, PDF formats
- With more than 500 modules available, it can be expanded and its flexible
- Supports OOP like Java and C++

7. MATLAB - is one of the most preferred languages over other programming languages for software testing. This language allows the testing team to execute test algorithms without any sort of recompilation. Its desktop environment allows one to work interactively with the data, which, in turn, helps one to keep an easy track of files and variables and hence, simplifies the debugging process.

Advantages:

Has a toolbox of formats and functional features

Syntax of the program is easily understandable

Data analysis is very easy as all the data is stored in the matrices

Allows to test algorithms without any recompilation

Has the ability to process both images and videos

Helps users to keep track of data and variables

Java program as Best Application Development Program

Java language is the best application development language. It is the object-oriented programming language that is used to create efficient quality applications for both the computers and mobile phones and it was introduced 1995 by James Gosling , It is multithreaded that means the capability for the program to perform several tasks

within the program Java has been developed after including the concepts of various languages like C, C++, etc., It is the versatile and platform independent language, It is used on any platform including Windows , Android , iOS , Linux , etc., Apart from this , Android , the product of techno giant Google Inc , completely relies on Java application development for apps development.

Advantages and Disadvantages of Java Application Development

Java is considered as the best application development language. It is an object-oriented programming language which is used to create efficient quality applications for both computers and mobile phones. It was first introduced in 1995 by James Gosling, Sun Micro Systems. Java language has been developed after including the concepts of various languages like C, C++, etc. It is a versatile and platform independent language. It can be used on any platform including Windows, Android, iOS, Linux, etc. Apart from this, Android, the product of techno giant Google Inc. completely relies on Java application development for apps development.

Advantages of Java Application development:

a. Simplicity: Java provides a very easy interface for the users and developers. It has been considered as the simplest language when compared to other programming languages. Java has eliminated the use of pointers and also replaced the complexity of multiple inheritances in C++ with a simple structure and that structure is called interface.

b. Portability and Platform Independent Behavior: Java is platform independent. It provides the facility to "Write Once and Run Anywhere". The applications developed by using this language can be run on any hardware and software platform. The Java applications are supported by every Java compatible browser.

c. Allocation: Java has the feature of Stack allocation system. It helps the data to be stored and can be restored easily. Stack management is actually an arrangement process of objects in LIFO (Last In First Out) management system. This management system makes it easy to store and restore any object. Unlike other programming languages where the developer needs to allocate data and collect garbage, Java has the facility of automatic garbage collection and memory allocation.

d. Distributiveness: Distributive computing is basically the platform where two or more computers can work together on a network. Java has a great networking capability. Networking on Java is too easy that writing a networking program feels like sending and receiving between files.

Disadvantages of Java Application development:

e. Performance: Java is comparatively slower and takes more memory space than the other native programming languages like C and C++.

f. Single Paradigm Language: Java is actually predominantly a single paradigm language but in the newer versions of Java like Java 5.0 and onwards, the procedural paradigm is made batter by adding some static imports in it.

g. Enumeration Types and Local Constants: Java doesn't have the enumeration types, but they can be stimulated by using a series of constant instead of them.

All the above advantages and disadvantages are brought to you by the experienced Java application developer provide you a better analytical view of Java.

EXERCISE 1

A student unintentionally enters a wrong user-id, (default data type: integer) causing temporary halt entering in the student information system. Write a simple program in C or Java that could be embedded in the system.

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EXERCISE 2

Your school would like to create simple registration system to help students enrolled in the college. In Java or C program, is it necessary to include user-id to register in the college enrollment ?

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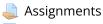
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