

A Review of Comparative Analysis Among Different Types of Programming Language

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praveenkumar870769@gmail.com**Abstract**

Computer is an essential part in today's world. To interact with computer we need language like humans use language to communicate, and different regions have different language, like this computers also have their own language which provides communication between a user and a computer, this language specific to them. A large number of different kind of programming languages has been developed to perform different types of work on the computer. There are many programming languages such as COBOL, PASCAL, C, C++, JAVA, PYTHON etc. In these languages, there are many drawbacks, to overcome these drawbacks we introduced more number of programming languages. In this paper, we review and compare four different languages that are C, C++, JAVA and PYTHON.

Keywords: C, C++, Java, Python.

Introduction

A programming language means a set of instructions, and other syntax used to create a software program. Languages that the programmers used to write code are called "high-level languages". Code can be compiled into a "low-level language", which is recognized directly by the computer hardware.

A programming language is an official language that matches a set of trends that are used Provide different types of output. It contains programming languages markedly From instructions to a computer. It is used to create programs that run Particular. There is a programmable machine that uses a limited set of metadata Trends, instead of general programming languages for fashion computers. Early the invention of digital computers was probably preceded by being an automatic flute. The player was described in the ninth century by the Musa brothers in Baghdad, throughout Islam. Golden age. Since the early 1800s, programs were used to guide the behavior of such machines. Jacquard also looks out, music boxes and pianists. However, your software can not Production of different behaviors in response to some input or condition. New languages have been invented, especially in the field of computers, and many languages. They are still is created every year. The programming languages need to be computed Described in an unavoidable way (that is, sequence of processes to be performed) while others Languages use other forms of description software, such as the ad format (ie, The desired result is determined, not how to achieve it. Description of the programming language it is generally divided into two elements, namely, syntax and semantics. Some languages Defined by a definition document (for example, C programming is selected) through the ISO standard) while other languages (like both, with the language you selected). The standard and the inhalation extensions are the same [1].

Types of programming languages

Programming languages are

A. C programming language:

a) Introduction

C was originally developed by “DENNIS RITCHIE” between 1969-1973 at “BELL LABS” and use to re-implement the UNIX operating system. It has one of the most widely used programming languages. It has been standardized by the (AMERICAN NATIONAL STANDARDS INSTITUTE) ANSI SINCE 1989.

About

C is a powerful general purpose programming language. It is fast, and available in all platforms. C programming is highly efficient. That is a main reason why it is very popular despite being more than 40 year old.

C is a portable language because we can transfer the information from one system to another system without any changing in the information.

Initially it is a best language to start learning programming as it is easy to understand as well as very fast and efficient language.

It is middle-level language. C combine the feature of both high-level language and low-level language. C program file is saved with .C extension.

CODE OF HELLO WORLD

```
#include <stdio.h>
#include <conio.h>
void main ()
{
    Printf (“HELLO WORLD”);
    getch ();
}
```

OUTPUT

HELLO WORLD

b) Drawback of C

1. It does not support the reusability of the source of code.
2. It does not support encapsulation, polymorphism properties.
3. It does not perform run-time checking.
4. It also does not use the concept of constructor and destructor.

Advantages	Disadvantage
It is a very fast and efficient language.	C does not use the concept of object oriented programming.
It is very easy to understand.	There is no run time checking.
C is highly portable language.	There is no strict type checking.

They are only 32 keyword in ANSI C.	C does not have the concept of main space.
It is ability to extend itself.	C does not have the concept of constructor and destructor.

To overcome the drawback of C language, introduced a new programming language named as C++.

B. C ++programming language

a). Introduction:

C++ originally developed by “BJARNE_ STROUSTRUP” since 1979 at “BELL AT&T”.

b). About:

C++ supports object oriented features like class, object, inheritance which makes programming very effective.

C++ is the most versatile language in the world. It is used for system programming and numerical computing, web programming etc.

C++ support a layer of abstraction which hides a unwanted information. C++ support inline function and default argument.

C++ also support exception handling and generic programming or reusability of source code. C++ program file is saved with .CPP extension.

CODE OF HELLO WORLD

```
#include<iostream.h>
# include<conio.h>
void main()
{
    cout <<"HELLO WORLD";
    getch();
}
```

OUTPUT

HELLO WORLD

c). DRAWBACK OF C++

1. It has no security.
2. Complex in a very large high level program.
3. Use for platform specific application commonly.
4. C++ cannot support garbage collection.

Advantage	Disadvantage
It uses the concept of object oriented programming	It has less security.
It has the concept of namespace.	C++ has a bootable.
It support the concept of constructor and destructor.	C++ does not support the garbage collection.
It use multi paradigm programming..	Used for platform specific commonly.

C. Java Language

a). Introduction

Java programming language was originally developed by SUN MICROSYSTEMS which was initiated by JAMES GOSLING and released in 1995 as core component of sun microsystem java platform. It was designed for the development of software for consumer electronic devices like TV, VCRs etc.

b). About:

Java is the most popular programming language and is the language of choice for Android programming.

In JAVA, everything in an object.java can be easily extended since it based on the object module. It is design for easy to learn.

Java is a high-level, robust, object-oriented and secure programming languages. It is a platform independent and portable.

It is a very easy to learn and its syntax is simple, clean and easy to understand.

Java is both a compiled and interpreted language. It is designed for the distributed environment of the internet. It has the ability to share both data and program.

CODE FOR HELLO WORLD

class simple

```
{  
    public static void main (string args[])  
    {  
        System.out.println("HELLO WORLD");  
    }  
}
```

OUTPUT

HELLO WORLD

c). Drawbacks of Java

1. Java compiler is not well.
2. There is no separation of specification for implementation.
3. Memory management with java, is a little expensive.
4. The lack of templates can limit the ability of java to create the high quality data structure.

Advantages	Disadvantages
It is platform independent and portable.	Its performance is slow.
It is true object oriented.	It is not support for low level programming.
It is a robust language.	It has a poor feature in GUI.
It support multi-threaded programs.	No control over garbage collection.

d). How Java differs from C and C++:

Java differs from C and C++ in many ways. Java does not incorporate a number of features available in C and C++.

JAVA & C:

I: Java does not include the C unique statement keywords sizeof and typedef.

II: Java does not contain the data types struct and union.

III: Java does not support an explicit pointer type.

IV: Java does not define the type modifiers, keywords auto, extern, register, signed & unsigned.

JAVA & C++:

I: Java does not support operator overloading.

II: Java does not have template classes as in C++.

III: Java does not support multiple inheritance of classes.

IV: Java does not use pointers.

D. Python Language

a). Introduction

Python was developed by GUIDO VAN ROSSUM in the late eighties and early nineties at the NATIONAL RESEARCH INSTITUTE FOR MATHEMATICS AND COMPUTER SCIENCE in the NETHERLANDS.

b). About:

Python is a general purpose, dynamic, high-level & interpreted programming languages. It is a powerful modern computer programming language.

It support multiple programming pattern, including object oriented, imperative & functional or procedural programming styles.

Its syntax in dynamic typing with its interpreted nature, makes it an ideal language for scripting and application development. It is not intended to work on special area such as web programming. Python file is saved with .PY extension.

CODE OF HELLO WORLD

```
print("HELLO WORLD BY");
```

OUTPUT

HELLO WORLD

Drawback of Python

1. Difficulty in using other languages.
2. Weak and mobile computing and browser.
3. Get slow in speed.
4. Run time error.

Advantages	Disadvantage
Extensive support libraries.	Difficulty in using other languages.
Integration feature.	Weak in mobile computing.

Improved programmer's productivity.	Run time error.
Free and open source.	Get slow in speed

Conclusion

Java is best because it supports the concept of object oriented programming. One you have knowledge of key OOP concepts like Encapsulation, polymorphism and inheritance use all these concepts in java. One more reason for java, it is easy to learn. And The python programming is best in automation. Python is also simple and easy to learn. Python contain the less number of line of code. Python is important for those who are beginners in programming and they can easily understand the concepts of python.

Reference

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