Python Programming

RGM College of Engineering & Technology (Autonomous)

Department of Computer Science & Engineering

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PYTHON LANGUAGE FUNDAMENTALS

Guido Van Rossum

Learning Mantra

If you really strong in the basics, then remaining things will become so easy.

Agenda:

1. What is Python?

2. Who Developed Python?

3. Why Python suddenly became Popular?

4. Why the name 'Python'?

INTRODUCTION

What is Python?

❑ Python is a **Programming Language**.

We can develop applications by using this programming language.

❑ We can say that Python is a High-level Programming language.

What is the meaning of High-level Programming language?

❑ We are not required to worry about Low-level things [i.e., Memory Management, Security etc.,]

❑ In simple words, High level programming language means, by simply seeing the code programmer can understand the program.

Consider the following example,

a = 10

b = 20

c = 30 if a > b else 40

Examples of High level Programming Languages:

- ❑ C

- ❑ C++

- ❑ Java

- ❑ C#

- ❑ Python etc.,

❑ Python is a **General Purpose High Level Programming Language**.

❑ General Purpose means Python is not specific to a particular area, happily we can use Python for any type of application areas.

For example,

Desktop Applications

Web Applications

Data Science Applications

Machine learning applications

Note: Everywhere you can use Python.

Who Developed Python?

❏ **Guido Van Rossum** developed Python language while working in National Research Institute (NRI) in Netherland.

❏ Most of the people may think that so far we are heard about Java, C and C++ and we are recently knowing about python (especially in our INDIA) and they may assume that Python is a new programming language and Java is a old programming language.

❏ Java came in 1995 and officially released in 1996.

❏ Python came in 1989, this means that Python is Older programming language than Java. Even it is developed in 1989, but it is not released to the public immediately.

❏ In 1991, Python made available to the public. Officially Python released into the market on 21-02-1991 (i.e., First version).

Why Python suddenly became Popular?

❏ Generally Market requirements are keep on changing from time to time.

❏ Current market situation is, every one talks about

- I need Simple Language (i.e., Easy to understandable)

- I have to write very less (or) concise code to fulfill my requirement.

- In these days, everyone talks about AI, Machine Learning, Deep Learning,

Neural networks, Data Science, IOT etc..

For these trending requirements, best suitable programming language is Python.

That's why, **Python becomes more popular programming language.**

Easyness of Python compared to other programming languages

If you want to learn Python programming, what is the prerequisite knowledge required?

❑ **Nothing is required, If you are in a position to read English statements, that is enough to learn Python programming.**

For Example, If you are learning any programming language, the first application which we discuss is **Hello World application**.

In 'C'

1) #include <stdio.h>

2) void main()

3) {

4)   printf("Hello World");

5) }

In 'Java'

1) public class HelloWorld

2) {

3)   public static void main(String[] args)

4)   {

5)   System.out.println("Hello world");

6)   }

7) }

In 'Python

print("Hello World");

Output: Hello World

print("Hello World") # ';' is also optional

Output : Hello World

NOTE:

Just to print 'Hello World',

C language takes 5 lines of code

Java takes 7 lines of code

But, Python takes only one line of code.

Example: To print the sum of Two numbers

```
a=10
b=20
print("The Sum:",(a + b))  # 3 line of code
```

```
a,b=10,20
print("The Sum: ",a+b) # 2 lines of code
```

❑ By seeing the above code, you may get one doubt that, In C & Java we declared variables 'a' and 'b' as **int** type. But in Python we didn't declare 'a' and 'b' types. You may ask that, in Python we need not to declare the type of the variables.

❑ In Python, type concept is applicable (int, float .. types are there in Python), but **we are not required to declare type explicitly.**

❑ In Python, whenever we are assigning some value to a variable, based on the provided value, automatically type will be considered. Such type of programming languages are known as **Dynamically Typed Programming Languages**.

Examples:

```
a = 10
print(type(a)) ➜ <clas 'int'>
```

```
a = 10.5
print(type(a)) ➜ <clas 'float'>
```

```
a = True
print(type(a)) ➜ <clas 'bool'>
```

In python, same variable can be used with multiple types of data.

```
a = 10
print(type(a))          ➔<class 'int'>

a = 10.5
print(type(a))          ➔<class 'float'>

a="Karthi"
print(type(a))          ➔<class 'str'>
```

Examples of Dynamically Typed Programming Languages:

❑ Python

❑ JavaScript etc.,

Examples of Statically Typed Programming Languages:

❑ C

❑ C++

❑ Java etc.,

There is no prerequisite for learning Python programming. So, Python is recommended as first programming language for beginners.

Why the name 'Python'?

Why Guido Van Rossum selected the name Python?

❑ If you are a fan of any hero or heroine or political leader, generally you are trying to use same name for your passwords or user ids. It's a very common practice.

❑ In the same manner, **Guido Van Rossum** also very much impressed with one fun show, "**The Complete Monty Python's Flying Circus**", which was broadcasted in BBC from 1969 to 1974.

❑ From this show name, he selected the word Python to his programming language.

Key points

1. Python is a general purpose high level programming language.

2. Python was developed by Guido Van Rossum in 1989, while working at National Research Institute at Netherlands.

3. Officially Python was made available to public in 1991. The official Date of Birth for Python is : Feb 20th 1991.

4. Python is recommended as first programming language for beginners.

5. Python is an Example of Dynamically typed programming language

Any question?

If you try to practice programs yourself, then you will learn many things automatically

Spend few minutes and then enjoy the study

Thank You