

PYTHON PROGRAMMING LANGUAGE

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Abstract: Rapid technological developments in the world of information have led to a rapid change of hardware and software. Hardware and software, which are inseparable pairs, have not changed at a parallel speed. In the hardware world, a faster development has been observed. But in the software world, they have not developed at the same speed.

Without a software, we know that a piece of hardware cannot sum two numbers. Therefore, the programming language, which is the main factor in the production of software, has a great importance. The most widely used programming languages are C, C++, Java, C# programming languages.

There are a number of enhancements as well as a lack of script-based programming languages. The obvious features of coding are easy to understand and easy to learn. For the first time, students who will start learning programming languages have great benefits when starting with a language that is easy to learn. Especially Python and Ruby programming languages are simple to learn. However, these languages have quite advanced features.

The aim of this study is to make sure that the reasons that will enable university students to turn to scripting languages in their programming language teaching curriculum. It is to explain the basic features of the Python programming language and to explain that it is easy to learn. Python programming language to explain what can be done with examples.

Keywords: Programming Language, Script Programming Languages, Python Programming Language, Ruby Programming Language

Introduction

Python is a programming language written by a Dutch programmer named Guido Van Rossum. Python started its development in 1990. While many people think that the name Python comes from the python snake, this is not the case. Python developer Guido van Rossum inspired his programming language with the name of Monty Python's Flying Circus, a British comedy group called The Monty Python. Although it is the case, the Python programming language has become a tradition.

Unlike Python language C - C++, Interpreter is an interpretive language. Therefore, you can run without compiling and thus you can develop applications very quickly. If you know any programming language, the speed of learning Python will be very high. Using Python's simple syntax, it is much easier to write programs in Python or to read a program written by someone else than in other languages. Python can be run on many systems thanks to cross platform support. Many Linux distributions include Python 2.x or higher. Popular Linux distributions also use Python to develop various applications. (For example, Ubuntu Software Center) Python, Google, Youtube, Yahoo! used by companies to develop software. Google also provides business opportunities for people with advanced Python knowledge. Python developer Guido Van Rossum worked on Google from 2005 to 2012. Using Python, desktop programming, game programming, portable device programming, web programming and network programming can be developed. Python optimizes your application's memory usage thanks to its Garbage Collector. It is capable of working with Python, Java and .NET platforms. Python is a free language.

1. Python Installation

The most up-to-date and current source code, binaries, documentation, news, etc., is available on the official website of Python <https://www.python.org/>

It can be download Python documentation from <https://www.python.org/doc/>. The documentation pages are available in popular document format. Python deployment is available for a wide variety of platforms. You can only download and install the distribution on your computer.

Windows Installation;

- Open <https://www.python.org/downloads/> address in a web browser
- Click download windows installer link.
- Run MSI file (Your system must support Microsoft Installer). Install Wizard starts. Accept default settings.

You can check Python installation on Windows. Open command prompt and type it python –version
Running Python;

In Linux/Unix

\$ python

In Windows

C:\> python

```
C:\>python
Python 3.6.5 (v3.6.5:f59c0932b4, Mar 28 2018, 16:07:46) [MSC v.1900 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>>
```

Python is an interpreted programming language, this means that as a developer you write Python (.py) files in a text editor and then put those files into the python interpreter to be executed.

The way to run a python file is like this on the command line:

C:\> python helloapp.py

“helloapp.py” is the name of Python file.

2. Python Programming Rules

As with any programming language, there are some basic rules of the Python programming language.

Syntax;

Where in other programming languages the indentation in code is for readability only, in Python the indentation is very important. Python uses indentation to indicate code block.

Example;

```
if(10 > 5):
    print("Ten is greater than five")
```

If you type an error occurs;

```
if(10 > 5):
print("Ten is greater than five")
```

```
print("Ten is greater than five");
```

^

IndentationError: expected an indented block

Comments;

```
# Comments
```

```
print("Hello Students")
```

You can use multi line comments with """""

```
"""""
Comments Line 1
Comments Line 2
Comments Line 3
"""""
```

3. String Type Using

String literals in python are surrounded by ' ', or "" .

'Ali ' is same with this "Ali"

```
print("Ali")
```

Strings in Python are arrays of bytes representing unicode characters.

```
name = "Mustafa"
print(name) # 'Mustafa'
print(name[1]) # 'u'
```

name[1] is second character of name variable.

```
print(name[2:6]) # 'staf' from 2.position to 6.position
```

strip() method removes beginning or the end spaces

```
message = " Hello students "
print(message.strip()) # 'Hello students'
```

len() method returns the length of string

```
message = "Hello students"
print(len(message)) # lengths is 14
```

lower() method returns the lower of string

```
message = "Hello students"
print(message.lower()) # hello students
```

upper() method returns the lower of string

```
message = "Hello students"
print(message.upper()) # HELLO STUDENTS
```

replace() method replaces a string with new string

```
message = "Hello students"
print(message.replace("H", "M")) # Mello students
```

split() method splits into substrings by a separator

```
message = "Hello, students"
print(message.split(", ")) # ['Hello', ' students']
```

You can input any string from command line

```
print("Enter your department")
```

```
department = input()
print("You are working in " + department)
```

Result:

```
Enter your department
Computer Technology
You are working in Computer Technology
```

4. Operators

We make various operations when working with variables. Arithmetic or logical operations. Operator symbol is a decision of this operation. In a Go program you will find operators are listed;

- Arithmetic
- Assignment
- Comparison
- Logical
- Identity
- Membership
- Bitwise

4.1. Arithmetic Operators

Python arithmetic operators are listed below

Operator Name	Description	Using
+	Addition	d + e
-	Subtraction	d - e
*	Multiplication	d * e
/	Division	d / e
%	Modulus	d % e
**	Exponentiation	d ** e
//	Floor division	d // e

```
d = 100
e = 10
f = d + e
print("Sum :" + str(f) )
f = d - e
print("Subtract :" + str(f) )
f = d * e
print("Multiply :" + str(f) )
f = d / e
print("Divide :" + str(f) )
f = d % e
print("Modulus :" + str(f) )
f = d ** e
print("Exponentiation :" + str(f) )
f = d // e
print("Floor Division :" + str(f) )
```

Result:

```
Sum :110
Subtract :90
```

Multiply :1000
Divide :10.0
Modulus :0
Exponantiation :10000000000000000000
Floor Division :10

Conclusions

Developing a program is not as difficult as it is thought. Anyone with an analysis ability and who is in the world of computing can develop an application. Developing a software and running it is a really good feeling. Starting with high-level programming languages is much more reasonable. Using a good development environment (IDE), an application can be said to be a simple operation. In today's world the need for programmers is increasing day by day. Programming has become a profession with high income and can be used in all areas. Consideration should be given to the advanced features of the Python programming language, such as the easy structure and fast operation. Python is a language that can be used in various fields and is easy to learn. It is a language with a library according to the desired needs. Programming can be started with Python. Especially high school and higher level students must meet Python. According to research, students have shown more interest in simple programming languages. Python stands out with ease here.

References

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