**PROGRAMMING WITH PYTHON NOTES**

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| **Chapter 1:****Introduction and Syntax of Python Program** |
| **Teaching Hours: 04** | **Marks Distribution** |
| **Remember =****02M** | **Understanding = 02M** | **Applying =****04M** | **Total =** **08M** |

**Topics and subtopics:**

1.1Features of Python-Interactive,Object-Oriented,Interpreted,Platform Independent 1.2 Python building blocks-Identifiers,Keywords,Indenttion,Variables,Comments 1.3 Python Environmental Setup-Installation and Working of IDE 1.4 Running Simple Python Scripts to display 'welcome' message 1.5 Python Data Types:Numbers,String,Tuples,Lists,Dictionary,Declaration and use of Data Types

Python is developed by Guido van Rossum. Guido van Rossum started implementing

Python in 1989.

**Features of python –**

**Python is Interactive –**

You can actually sit at a Python prompt and interact with the interpreter directly to

write your programs.

**Python is Object-Oriented –**

Python supports object oriented language and concepts of classes and objects come into

existence.

**Python is Interpreted**

Python is an interpreted language i.e. interpreter executes the code line by line at a

time. This makes debugging easy and thus suitable for beginners.

**Python is Platform Independent**

Python can run equally on different platforms such as Windows, Linux, Unix and

Macintosh etc. So, we can say that Python is a portable language.



**Python building blocks**

**Python Identifiers**

Variable name is known as identifier.

The rules to name an identifier are given below.

o The first character of the variable must be an alphabet or underscore ( \_ ).

o All the characters except the first character may be an alphabet of lower-case(a-z),

upper-case (A-Z), underscore or digit (0-9).

o Identifier name must not contain any white-space, or special character (!, @, #, %, ^,

&, \*).

o Identifier name must not be similar to any keyword defined in the language.

o Identifier names are case sensitive for example my name, and MyName is not the

same.

o Examples of valid identifiers : a123, \_n, n\_9, etc.

o Examples of invalid identifiers: 1a, n%4, n 9, etc.

**Reserved Words**

The following list shows the Python keywords. These are reserved words and cannot use

them as constant or variable or any other identifier names. All the Python keywords



**Indentation**

Python provides no braces to indicate blocks of code for class and function definitions or

flow control. Blocks of code are denoted by line indentation, which is compulsory.

The number of spaces in the indentation is variable, but all statements within the block

must be indented the same amount. For example −

if True:

print "True"

else:

print "False"

Thus, in Python all the continuous lines indented with same number of spaces would form block.

**Variable Types**

Variables are used to store data, they take memory space based on the type of value we

assigning to them. Creating variables in Python is simple, you just have write the variable

name on the left side of = and the value on the right side.

**Python Variable Example**

num = 100

str = "BeginnersBook"

print(num)

print(str)

**Comments**

Use the hash (#) symbol to start writing a comment.

1. #This is a comment

2. #print out Hello

3. print('Hello')

**Multi-line comments**

use triple quotes, either ''' or """.

eg:

1. """This is also a

2. perfect example of

3. multi-line comments"""

**Data Types**

A data type defines the type of data, for example 123 is an integer data while “hello” is a

String type of data. The data types in Python are divided in two categories:

1. Immutable data types – Values cannot be changed.

2. Mutable data types – Values can be changed

Immutable data types in Python are:

1. Numbers

2. String

3. Tuple

Mutable data types in Python are:

1. List

2. Dictionaries

3. Sets

**Python Environment Setup-Installation and Working Of IDE**

Install Python on any operating system such as Windows, Mac OS X, Linux/Unix and others.

To install the Python on your operating system, go to this

link: https://www.python.org/downloads/. You will see a screen like this.

1. On Windows 7 and earlier, IDLE is easy to start—it‘s always present after a Python

install, and has an entry in the Start button menu for Python in Windows 7 and earlier.

2. Select it by right-clicking on a Python program icon, and launch it by clicking on the icon

for the files idle.pyw or idle.py located in the idlelib subdirectory of Python‘s Lib directory.

In this mode, IDLE is a clickable Python script that lives in C:\Python3.6\..

**Running Simple Python Scripts To Display ‘Welcome’ Message**

****//output: F

**Python data types : numbers ,string, tuples, lists, dictionary.**

Python Data Types

1 Python Data Type – Numeric

2 Python Data Type – String

3 Python Data Type – List

4 Python Data Type – Tuple

5 Dictionary

**Declaration and use of data types**

**Python Data Type – Numeric**

Python numeric data type is used to hold numeric values like;

int – holds signed integers of non-limited length.

long- holds long integers(exists in Python 2.x, deprecated in Python 3.x).

float- holds floating precision numbers and it’s accurate upto 15 decimal places.

complex- holds complex numbers.

an optional argument specifying the position within string to begin the search. Default is

0.



**Python Data Type – String**

The string is a sequence of characters. Python supports Unicode characters. Generally,

strings are represented by either single or double quotes.



**Python Data Type – List**

List is an ordered sequence of some data written using square brackets ([]) and commas (,).



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**Python Data Type – Tuple**

Tuple is another data type which is a sequence of data similar to list. But it is immutable.

That means data in a tuple is write protected. Data in a tuple is written using parenthesis

and commas.



**Dictionary**

Python Dictionary is an unordered sequence of data of key-value pair form. It is similar to

the hash table type. Dictionaries are written within curly braces in the form **key: value.**

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