

Lrn&Shr

LEARN PYTHON

PYTHON



LEARNING MODULE-1

INTRODUCTION

Python is a high level language widely used for general purpose. This language was created by Guido Van Rossum and released in 1991. It is a scripting and programming language with an object oriented approach.

Python language uses English keywords and standard library is the strength of this language that can be used for the – machine learning, GUI (Graphical User Interface) applications, web frameworks, image Processing, multimedia, scientific programming etc.

FEATURES OF PYTHON

- It is interpreted as an interactive language.
- It supports object oriented style and encapsulates code within objects.
- Python programmes can run on platforms such as Windows, Linux, Macintosh etc.

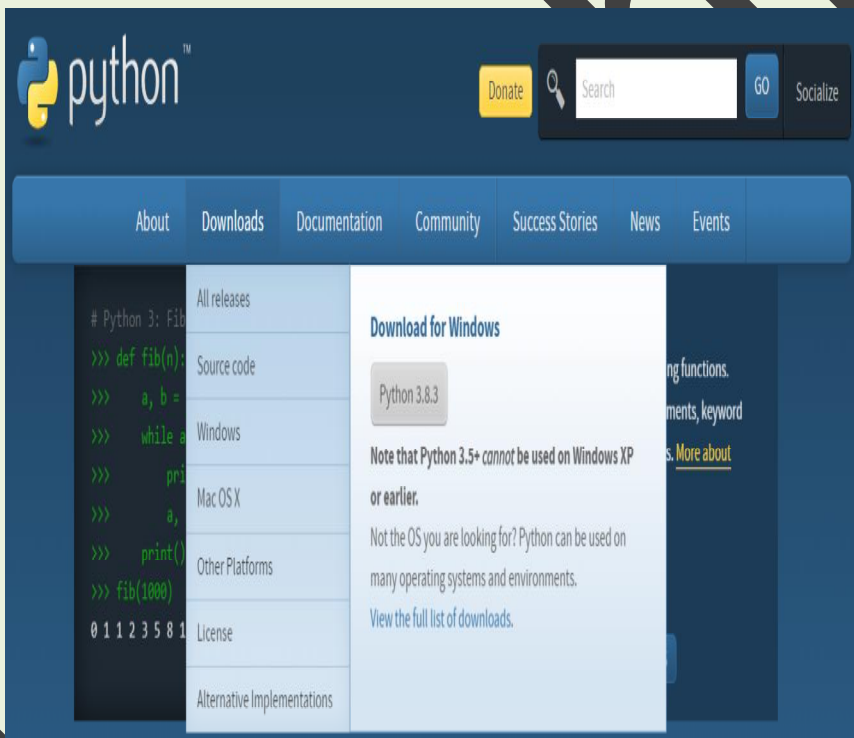
- It is freely available for community users. Users can download it from www.python.org.
- Python programs can be easily integrated with languages such as C, C++, JAVA, CORBA etc.
- It automatically allocats memory to the variable at run time, hence no need to specify the data type of variable.

Python language is easy to learn and maintain source code. But learners should have the basic understanding of the programming concept.



INSTALL PYTHON LANGUAGE:

- Click on the link - www.python.org
- Select downloads as given in the image below and download the latest version:



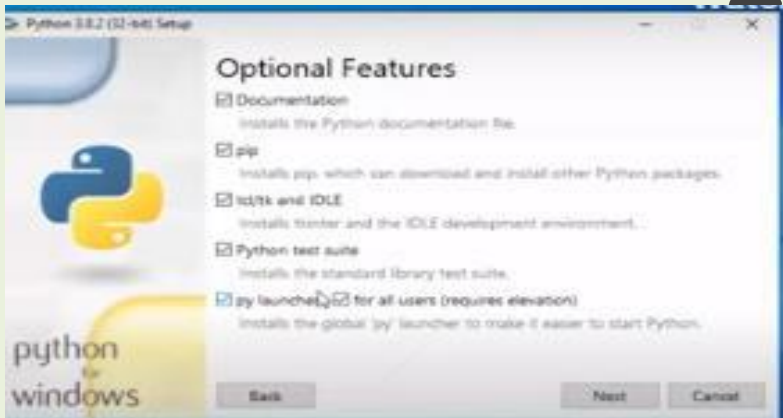
(You can select the platform as per your requirement;
here description is given for Windows platform.)

- Once you click on download it starts downloading exe file as per the image below:

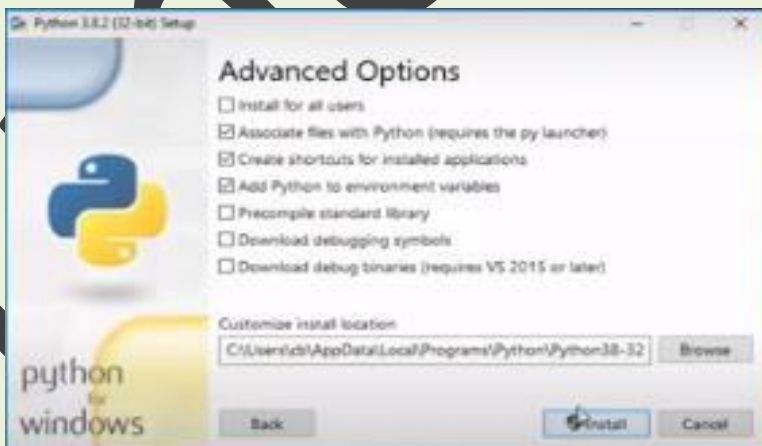


- You can find two options one is Install Now and Customize installation.
 - Install Now - option saves file by default in a location
 - Customize Installation - is the user defined location.
- You can decide anyone of the option, as per your convenience. Also click on the option – Add Python 3.8 to Path.

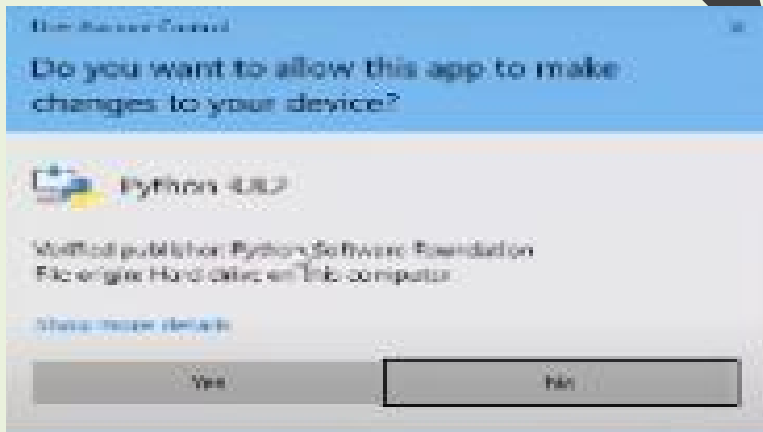
- Next Window is for optional features. Select Next button. (All options by default)



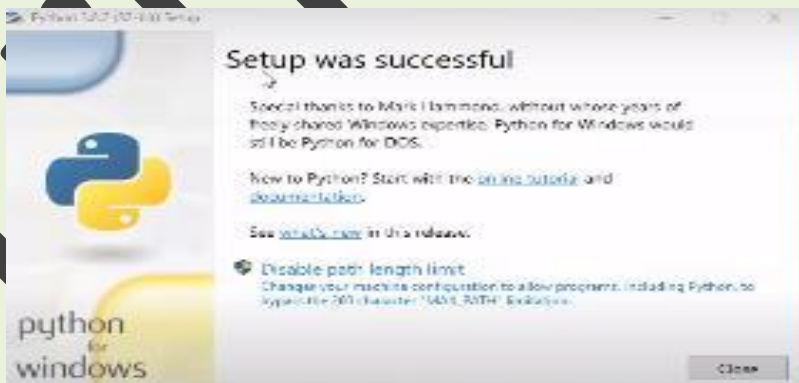
- Here write the location of the files in Customize Install Location box.
(Example C:\Pythondirectory\)



- Click on the option box – Install for all users and then click on Install button.
- Next, Click on Yes button.



- Finally you will get the message for successful installation as shown in the image below.



START PYTHON PROGRAMMING

- Type Python program in text editor such as Notepad / Notepad++ and execute the program in Python interpreter.

Program 1:

- Type the following program statements in Notepad page:

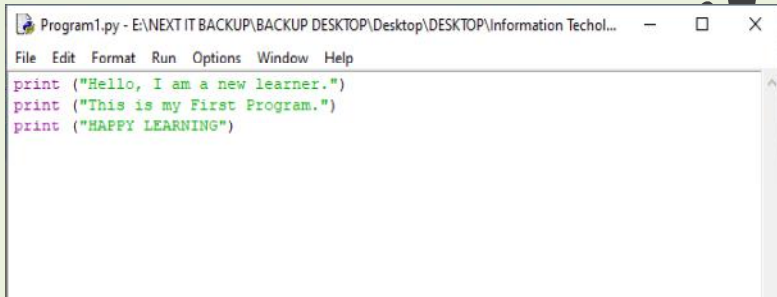
```
print ("Hello, I am a new learner.")  
print ("This is my First Program.")  
print ("HAPPY LEARNING")
```

- Save the file with .py extension. – Program1.py



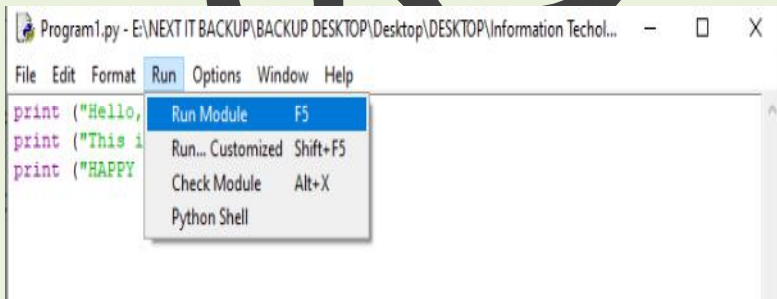
Execute the Program

- Open file- Program1.py



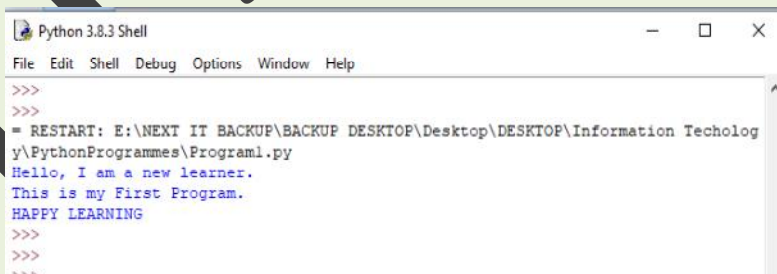
```
print ("Hello, I am a new learner.")
print ("This is my First Program.")
print ("HAPPY LEARNING")
```

- Click on Run and select Run Module.



```
print ("Hello,
print ("This i
print ("HAPPY
```

- Output Screen shown below.



```
>>>
>>>
= RESTART: E:\NEXT IT BACKUP\BACKUP DESKTOP\Desktop\DESKTOP\Information Technolog
y\PythonProgrammes\Program1.py
Hello, I am a new learner.
This is my First Program.
HAPPY LEARNING
>>>
>>>
>>>
```

PYTHON FUNDAMENTALS

There are five important fundamentals used for programming:

- Data-types
- Flow-control
- Functions
- File-handling
- Object and Class

Data-types

Numbers, Strings,
Lists, Dictionaries

Flow-control

If Else, While, For,
Continue

Functions

Definition, Function
call, Docstring,
Return

File-handling

Reading, Writing,
Editing

Object and Class

Variables, Functions

IDENTIFIERS

An identifier is a name used to identify a variable, function, module, class or object. An identifier starts with alphabets (A to Z or a to z) or an underscore symbol (`_`) followed by other alphabets and numbers (0-9).

Important Note – *Python does not allow punctuation characters like @, \$ and % within identifiers.*

RESERVED KEYWORDS

There are some reserved keywords which we cannot use as variable, constant or an identifier.

and	exec	not	assert	class
finally	or	break	for	from
pass	print	continue	global	raise
def	if	return	del	import
try	elif	in	while	else
is	with	except	lambda	yield

PROGRAM 2:

Program to perform arithmetic operations – add, subtract, multiply and divide.

```
num1 = input ('Enter number : ')
num2 = input ('Enter another number : ')

sum = float (num1) + float(num2)

difference = float (num1) - float(num2)

multiply = float (num1) * float(num2)

divide = float (num1) / float(num2)

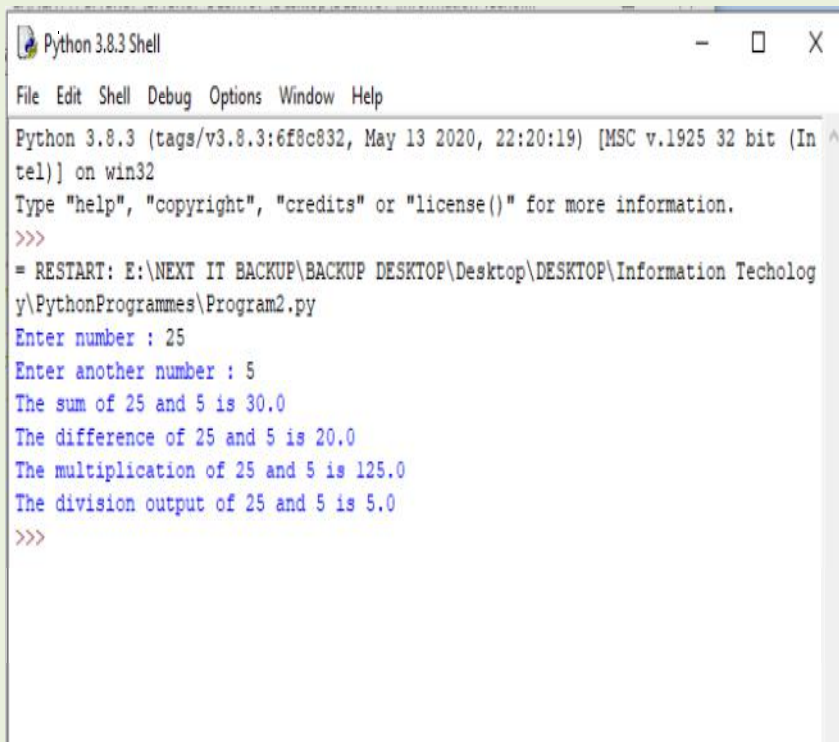
print('The sum of {0} and {1} is {2}'.format(num1, num2, sum))

print('The difference of {0} and {1} is {2}'.format(num1, num2,
difference))

print('The multiplication of {0} and {1} is {2}'.format(num1, num2,
multiply))

print('The division output of {0} and {1} is {2}'.format(num1,
num2, divide))
```

PROGRAM OUTPUT



A screenshot of a Windows command prompt window titled "Python 3.8.3 Shell". The window has a menu bar with "File", "Edit", "Shell", "Debug", "Options", "Window", and "Help". The text inside the window shows the Python version and build information, followed by instructions to type "help", "copyright", "credits", or "license()" for more information. The prompt is ">>>". The user has entered a multi-line program that restarts from a specific file path, prompts for two numbers (25 and 5), and then displays the sum (30.0), difference (20.0), multiplication (125.0), and division (5.0) of these numbers. The prompt is ">>>" again.

```
Python 3.8.3 (tags/v3.8.3:6f8c832, May 13 2020, 22:20:19) [MSC v.1925 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: E:\NEXT IT BACKUP\BACKUP DESKTOP\Desktop\DESKTOP\Information Technology\PythonProgrammes\Program2.py
Enter number : 25
Enter another number : 5
The sum of 25 and 5 is 30.0
The difference of 25 and 5 is 20.0
The multiplication of 25 and 5 is 125.0
The division output of 25 and 5 is 5.0
>>>
```

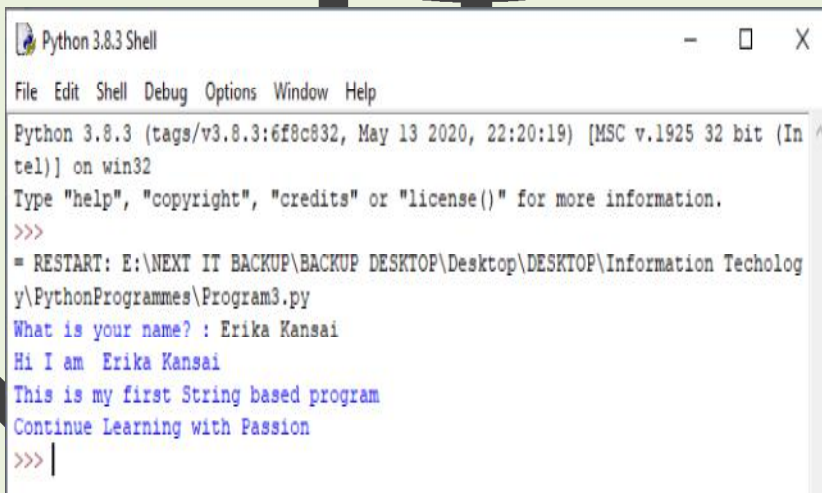


PROGRAM 2:

Program to input and print name.

```
NAME=str(input("What is your name? : "))  
  
print("Hi I am ",NAME)  
  
print("This is my first String based program")  
  
print ("Continue Learning with Passion")
```

PROGRAM OUTPUT



```
Python 3.8.3 Shell  
File Edit Shell Debug Options Window Help  
Python 3.8.3 (tags/v3.8.3:6f8c832, May 13 2020, 22:20:19) [MSC v.1925 32 bit (Intel)] on win32  
Type "help", "copyright", "credits" or "license()" for more information.  
>>>  
= RESTART: E:\NEXT IT BACKUP\BACKUP DESKTOP\Desktop\DESKTOP\Information Technology\PythonProgrammes\Program3.py  
What is your name? : Erika Kansai  
Hi I am Erika Kansai  
This is my first String based program  
Continue Learning with Passion  
>>> |
```

PRACTICE ACTIVITY

Write a Python Program for the following:

1. To add and multiply five different numbers.
2. To divide 625 by 15, 460 by 12 and 33712 by 14
3. To create your profile summary.
4. To find the square root of the 3452.



REFERENCED SOURCE

- www.python.org,
- Python Tutorial,
- Introduction to Computer Programming Python-Ebook
- Python Concepts by Wikiversity

Find Learning Modules and Articles
in various languages

Visit at : www.cln-shr.com

or

Email : clrnandshr@gmail.com