ARBOR INTERNATIONAL SCHOOL

E-Learning module/file

GRADE: VI
SUBJECT: **COMPUTER SCIENCE**

MONTH/WEEK/DATE: April/ W-3/18-04-22 to 23-04-22
NAME OF THE TEACHER**:** Mr. Murali Krishna

Notes for the parent

- Dear parents, we hope that this learning module for the week serves its purpose with regard to students' understanding and learning.

- The learning content for the week is attached day-wise in this module to facilitate learning for your ward.

- For better clarity, kindly zoom the content.

- You can enlarge the content by clicking on the right bottom corner of the screen where the zoom option is given.

- Please refer to the page numbers of the textbook mentioned in the module for the learning content which is mentioned in the day-wise planning. E-content is attached in the module as well.

- Important notes for the chapter are attached with the learning module and the student must go through those for revision of the concepts.

- By the end of the week, the students would be able to understand the following:

  - ➢ Students will be able to understand the features of Python & identify the components of the Python window.
  - ➢ Students will be able to know how to install Python & how to run in interactive mode & Script mode.

  Thank you.
  Murali Krishna

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Days	Topic
Day 1	Ch-7: **Introduction to Python**
Day 2	Ch-7: **Introduction to Python**

CONTENT- DAY-1

Ch-7: Introduction to Python

History of Python

- Python is a widely-used general-purpose, high-level programming language.
- It was initially designed by Guido van Rossum in 1991.
- It was mainly developed for emphasis on code readability, and its syntax allows programmers to express concepts in fewer lines of code.

Python Features

Python is a dynamic, high-level, free open source, and interpreted programming language.

In Python, we don't need to declare the type of variable because it is a dynamically typed language.

For example, x = 10

Here, x can be anything such as String, int, etc.

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Features in Python

1. Easy to code:

Python is a high-level programming language. Python is very easy to learn the language as compared to other languages like C, C#, JavaScript, Java, etc. It is very easy to code in the python language and anybody can learn python basics in a few hours or days. It is also a developer-friendly language.

2. Free and Open Source:

Python language is freely available at the official website and you can download it from https://www.python.org/downloads/

3. Object-Oriented Language:

One of the key features of python is Object-Oriented programming. Python supports object-oriented language and concepts of classes, objects encapsulation, etc.

4. High-Level Language:

Python is a high-level language. When we write programs in python, we do not need to remember the system architecture, nor do we need to manage the memory.

5. Extensible feature:

Python is an Extensible language. We can write some Python code into C or C++ language and also, we can compile that code in C/C++ language.

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7. Python is a Portable language:

Python language is also a portable language. For example, if we have python code for windows and if we want to run this code on other platforms such as Linux, Unix, and Mac then we do not need to change it, we can run this code on any platform.

8. Python is an integrated language:

Python is also an integrated language because we can easily integrated python with other languages like c, c++, etc.

9. Interpreted Language:

Python is an Interpreted Language because Python code is executed line by line at a time. like other languages C, C++, Java, etc. there is no need to compile python code this makes it easier to debug our code. The source code of python is converted into an immediate form called bytecode.

10. Large Standard Library

Python has a large standard library which provides a rich set of modules and functions so you do not have to write your own code for every single thing. There are many libraries present in python such as regular expressions, unit-testing, web browsers, etc.

11. Dynamically Typed Language:

Python is a dynamically-typed language. That means the type (for example- int, double, long, etc.) for a variable is decided at run time not in advance because of this feature we don’t need to specify the type of variable.

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How to install Python on Windows?

- Python is a widely-used general-purpose, high-level programming language.
- Every Release of Python is open-source.
- Any version of Python can be downloaded from the Python Software Foundation website at python.org.

You can download it for free from the following website: https://www.python.org/

The first and foremost step is to open a browser and open https://www.python.org/downloads/windows/

- Underneath the Python Releases for Windows find the **Latest Python 3 Release – Python 3.7.4**
- On this page move to Files and click on **Windows x86-64 executable installer** for 64-bit or **Windows x86 executable installer** for 32-bit.

Windows x86-64 embeddable zip file	Windows	for AMD64/EM64T/x64	9b00c8cf6d9ec0b9abe83184a40729a2	7504391	SIG
Windows x86-64 executable installer	Windows	for AMD64/EM64T/x64	a702b4b0ad76debdb3043a583e563400	26680368	SIG
Windows x86-64 web-based installer	Windows	for AMD64/EM64T/x64	28cb1c608bbd73ae8e53a3bd351b4bd2	1362904	SIG
Windows x86 embeddable zip file	Windows		9fab3b81f8841879fda94133574139d8	6741626	SIG
Windows x86 executable installer	Windows		33cc602942a54446a3d6451476394789	25663848	SIG
Windows x86 web-based installer	Windows		1b670cfa5d317df82c30983ea371d87c	1324608	SIG

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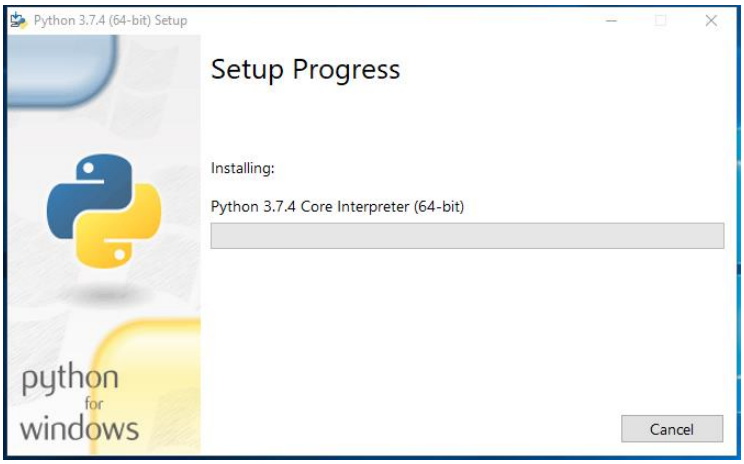
Install Python 3.7.4 Latest Version on Windows

- Run the Python Installer from the downloads folder.

- Make sure to mark **Add Python 3.7** to **PATH** otherwise, you will have to do it explicitly.

  It will start installing python on windows.



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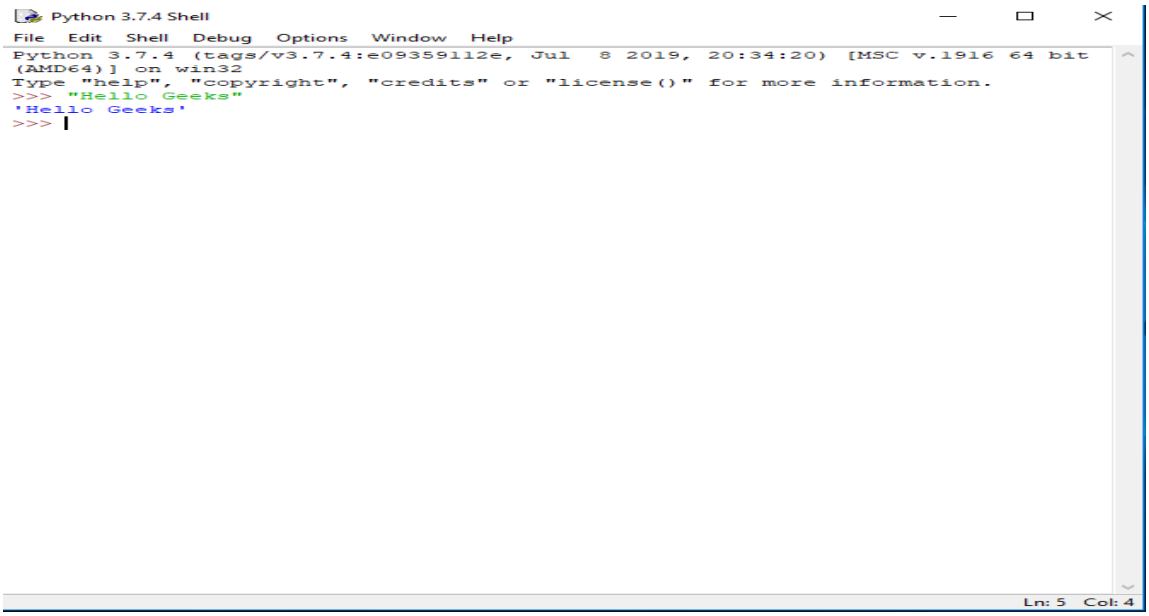
After installation is complete click on **Close**.

Bingo...!! **Python** is installed. Now go to windows and type **IDLE.**



This is **Python Interpreter**. I printed Hello Geeks; python is working smoothly.

CONTENT- DAY-2

How to Run a Python Script

The Python script is basically a file containing code written in Python. The file containing the python script has the extension '.py' or can also have the extension '. To run a python script, we need a python interpreter that needs to be downloaded and installed.

Here is a simple python script to print 'Hello World!':

```
print ('Hello World!')
```

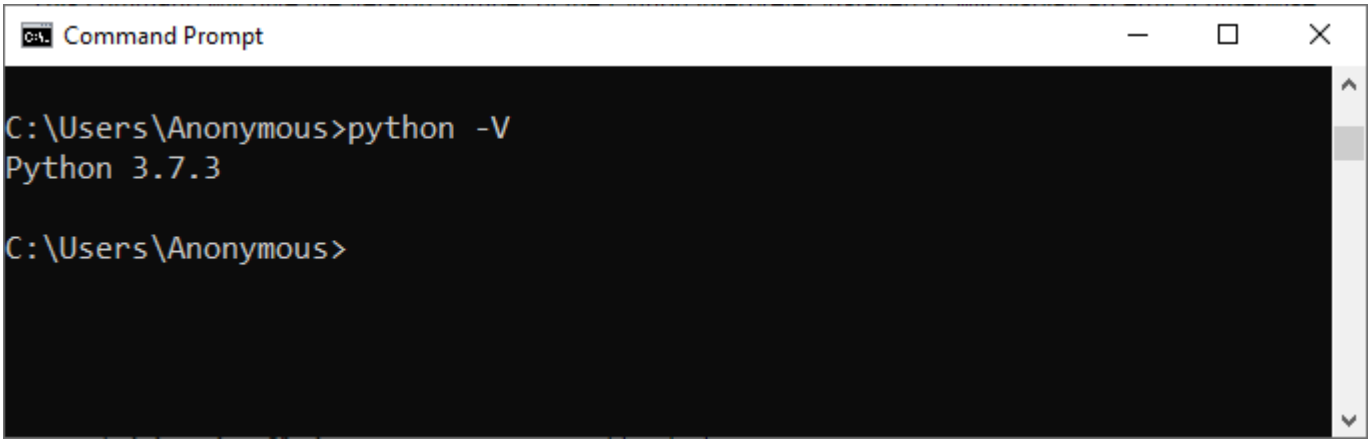
Here, the 'print ()' function is to print out any text written within the parenthesis. We can write the text that we want to be printed using either a **single quote** as shown in the above script or a **double quote**.

There is more than one way to run a python script but before going toward the different ways to run a python script, we first have to check whether a python interpreter is installed on the

system or not. So, in windows, open **'cmd' (Command Prompt)** and type the following command.

python -V

This command will give the version number of the Python interpreter installed or will display an error if otherwise.

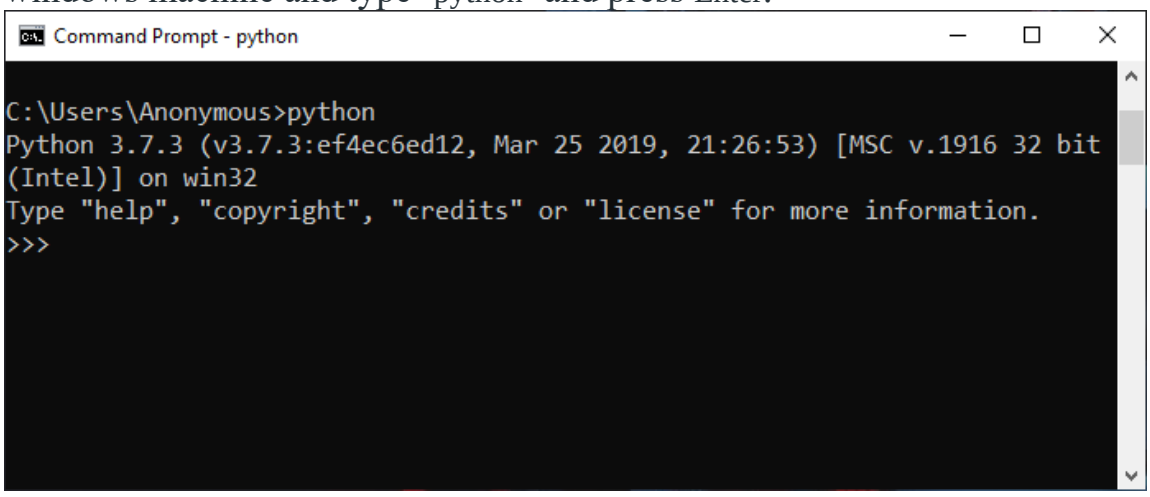


Different ways to run Python Script

Here are the ways with which we can run a Python script.

1. Interactive Mode
2. Command Line
3. Text Editor (VS Code)

1. **Interactive Mode**:
   In Interactive Mode, you can run your script line by line in a sequence.
   To enter in an interactive mode, you will have to open Command Prompt on your windows machine and type 'python' and press Enter.



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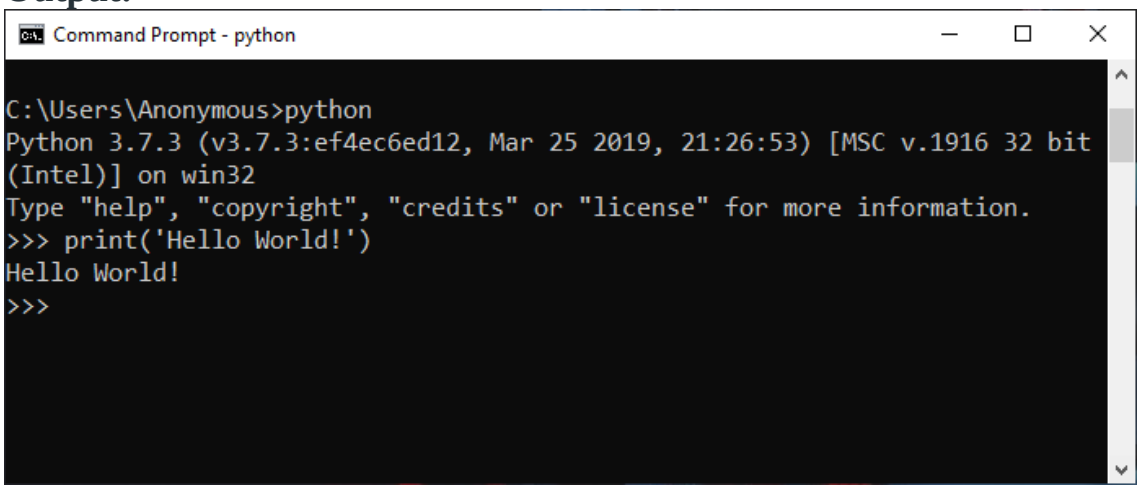
Example 1:

Run the following line in the interactive mode:

Print ('Hello World!')

Output:

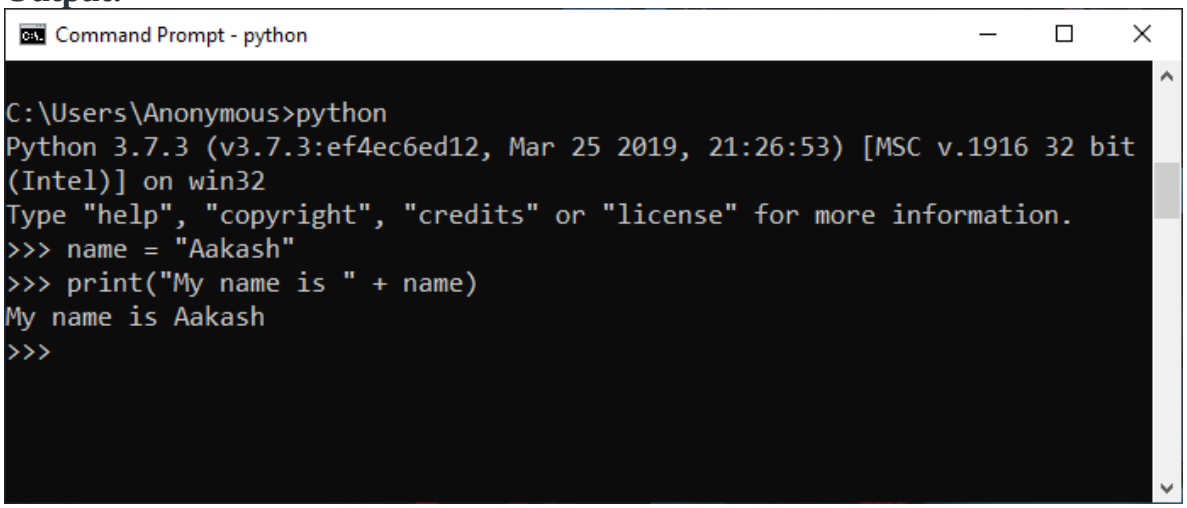


Example 2:

Run the following lines one by one in the interactive mode:

```
name = "Aakash"
print("My name is " + name)
```

Output:



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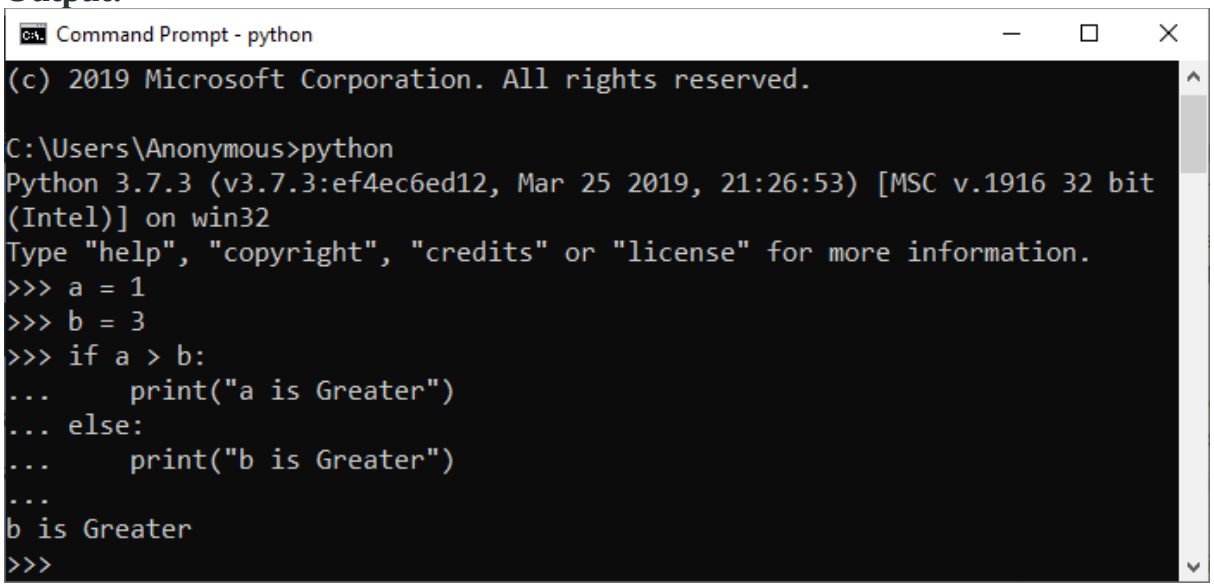
Example 3:

Run the following line one by one in the interactive mode:

```
a = 1
b = 3
if a > b:
    print("a is Greater")
else:
    print("b is Greater")
```

Output:



Note: To exit from this mode, press 'Ctrl+Z' and then press 'Enter' or type 'exit ()' and then press Enter.

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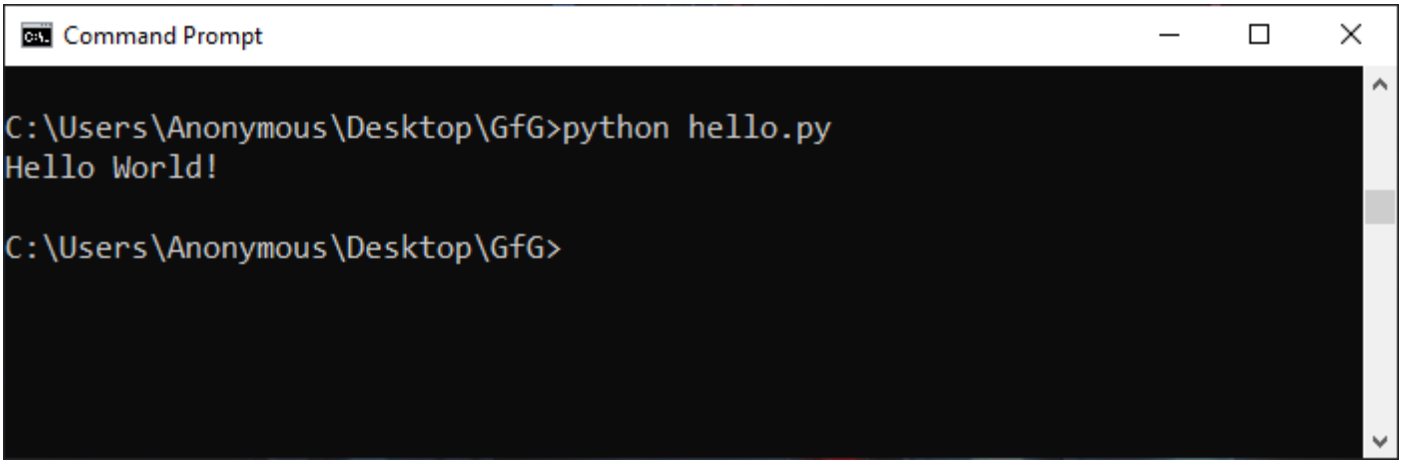
2. **Command Line**
   To run a Python script store in a '.py' file in the command line, we have to write the 'python' keyword before the file name in the command prompt.
   python hello.py

   You can write your own file name in place of '**hello.py**'.

Output:



Please follow the link for this concept on the topic Introduction to Python.

a) https://www.w3schools.com/python/

b) https://www.w3schools.com/python/python_getstarted.asp

c) https://www.geeksforgeeks.org/python-features/

d) https://www.geeksforgeeks.org/download-and-install-python-3-latest-version/?ref=lbp

==========End of the module==========

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