INFORMATICS PRACTICES

Getting Started with Python

By

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Python Language

- Introduction to Python
- Getting Started to Python
- Python Fundamentals
- Data Handling
- Flow of Control
- List Manipulation
- Dictionaries
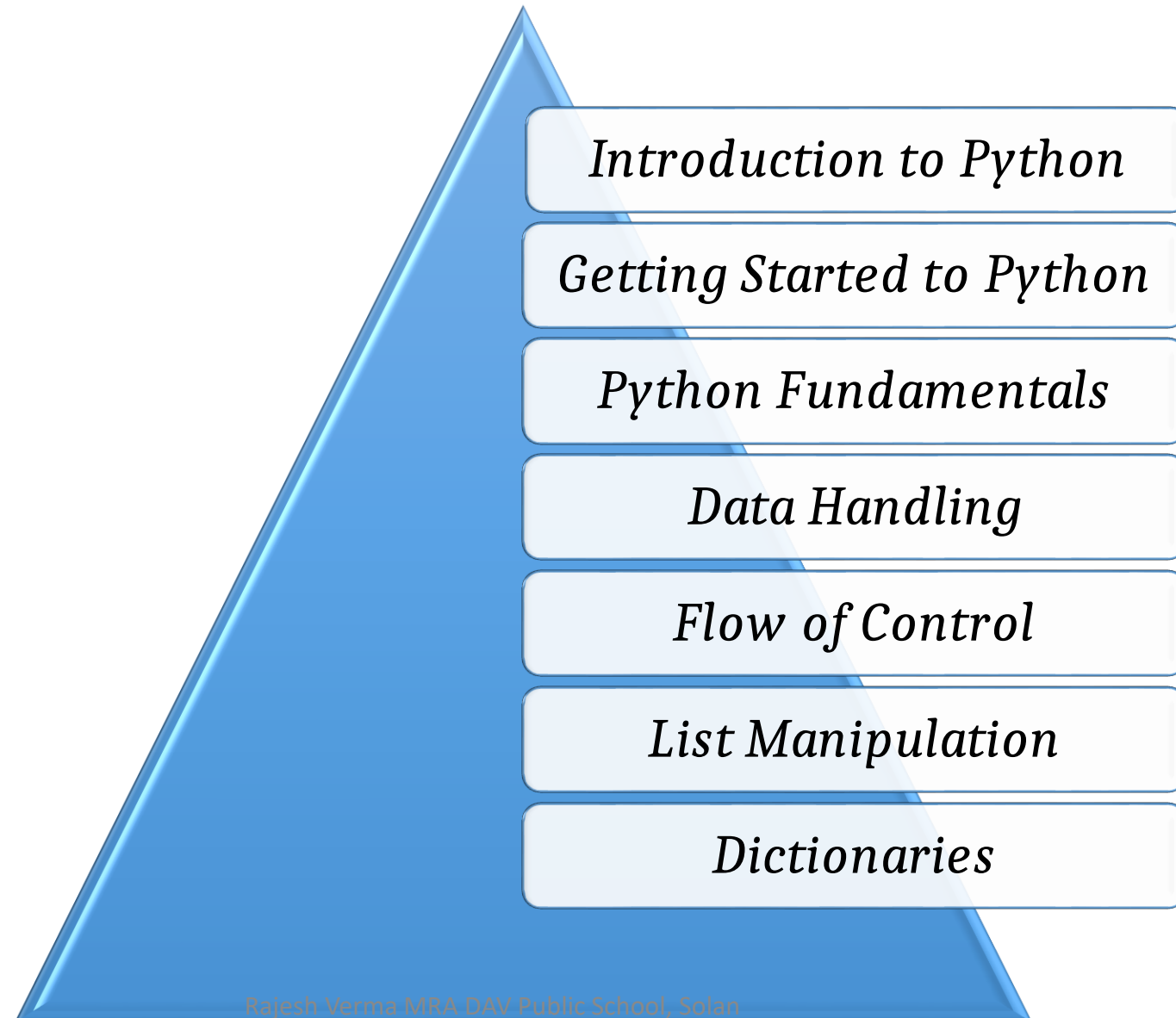
Tips to Learn Python

- *Code Every day*
- *Set a timetable*
- *Solving small problems as time allows.*
- *Write it out: Writing out notes helps you retain information better than any other methods.*
- *Planning for a programs with written notes can helps make the solution clearer.*
- *Go interactive*
- *Ask questions*
- *Build something or anything*
- *Programming is fun.*

What is Python?

- *Python is a general-purpose interpreted, interactive, object-oriented, and high-level programming language.*

- *Python was developed by Guido van Rossum in the late eighties and early nineties at the National Research Institute for Mathematics and Computer Science in the Netherlands.*

- *Python is derived from many other languages, including ABC, Modula-3, C, C++, Algol-68, SmallTalk, and Unix shell and other scripting languages.*

- *It was released by Guido van Rossum, in 1991.*

GUIDO VAN ROSSUM

Guido van Rossum is a Dutch programmer best known as the author of the Python programming language, for which he was the "Benevolent Dictator For Life" until he stepped down from the position in July 2018.

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What can Python do?

- *Python can be used on a server to create web applications.*

- *Python can be used alongside software to create workflows.*

- *Python can connect to database systems. It can also read and modify files.*

- *Python can be used to handle big data and perform complex mathematics.*

- *Python can be used for rapid prototyping, or for production-ready software development.*

Why Python?

- *Python works on different platforms (Windows, Mac, Linux)*

- *Python has a simple syntax similar to the English language.*

- *Python has syntax that allows developers to write programs with fewer lines than some other programming languages.*

- *Python runs on an interpreter system, meaning that code can be executed as soon as it is written. This means that prototyping can be very quick.*

- *Python can be treated in a procedural way, an object-orientated way or a functional way.*

WHY COMPANIES PREFER PYTHON?

The programmers of big companies use Python as it has created a mark for itself in the software development with characteristic features like:

- ✓ Interactive
- ✓ Interpreted
- ✓ Modular
- ✓ Dynamic
- ✓ Object-oriented
- ✓ Portable
- ✓ High level
- ✓ Extensible in C++ & C

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COMPANIES USING PYTHON

Companies using Python

Quora · edX · UBER · Pinterest · Google · Dropbox · YAHOO! · reddit · Instagram · yelp · IBM · Spotify · NASA · YouTube · Eventbrite · DISQUS

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Python Features

- *Easy-to-learn – Python has few keywords, simple structure, and a clearly defined syntax.*

- *Easy-to-read – Python code is more clearly defined and visible to the eyes.*

- *Easy-to-maintain – Python's source code is fairly easy-to-maintain.*

- *A broad standard library – Python's bulk of the library is very portable and cross-platform compatible on UNIX, Windows, and Macintosh.*

- *Interactive Mode – Python has support for an interactive mode which allows interactive testing and debugging of snippets of code.*

- *Portable – Python can run on a wide variety of hardware platforms and has the same interface on all platforms.*

- *Extendable – You can add low-level modules to the Python interpreter. These modules enable programmers to add to or customize their tools to be more efficient.*

- *Databases – Python provides interfaces to all major commercial databases.*

- *GUI Programming – Python supports GUI applications that can be created and ported to many system calls, libraries and windows systems, such as Windows MFC, Macintosh, and the X Window system of Unix.*

- *Scalable – Python provides a better structure and support for large programs than shell scripting.*
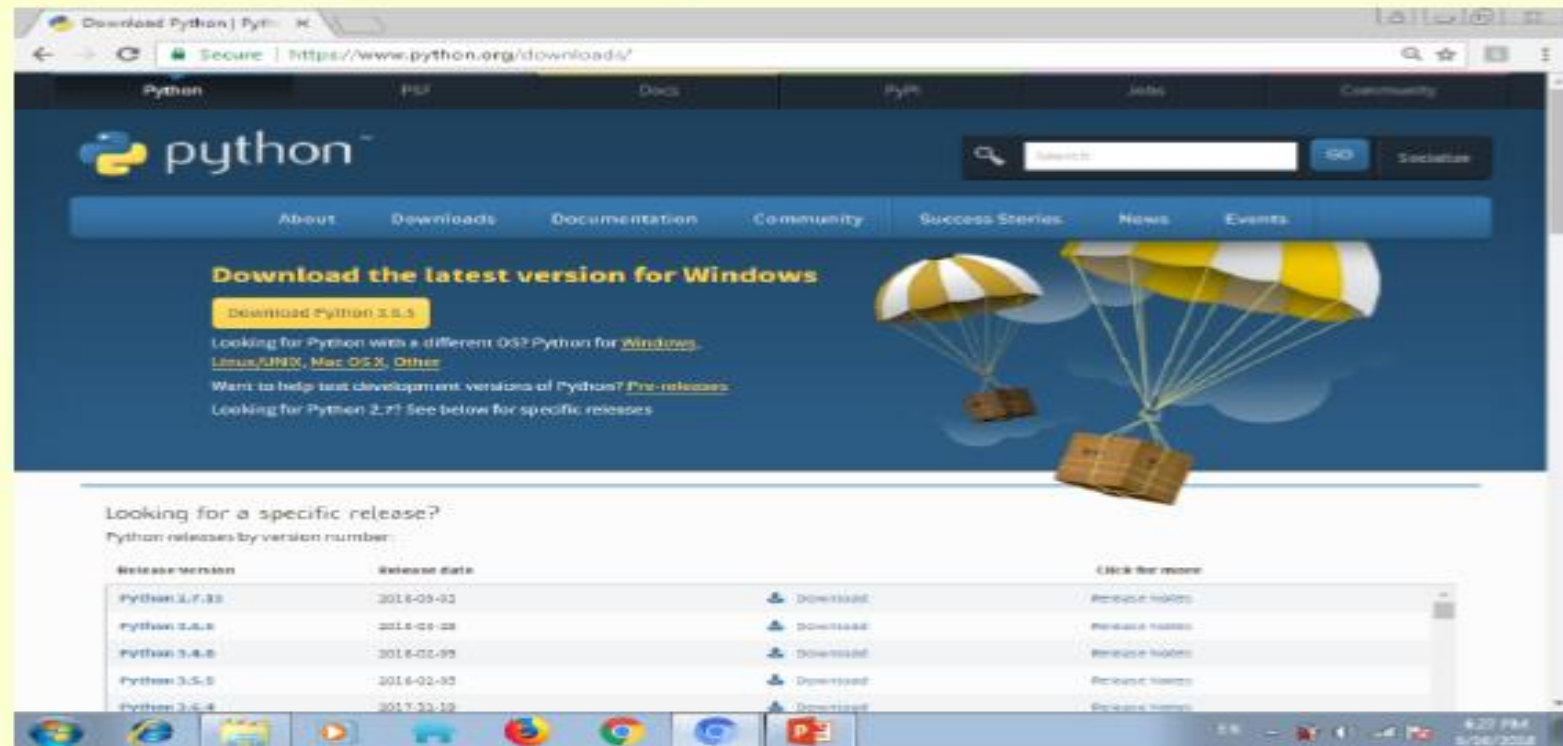
Getting and Installing Python

✓ Open the official website of Python https://www.python.org

✓ Click on Download

✓ https://www.python.org/downloads/

✓ Select windows – Click on Python 3.8.3

✓ Click Windows x86-64 executable installer start downloading

✓ Double Click on the downloaded Windows x86-64 executable installer

Installing Python

1. Download Python distribution

You can download python distribution from the link given below

https://www.python.org/downloads/

Note – Download only that python distribution/MSI Installer, which is best suited for the Operating system on which you want to install it.

Installing Python

2. Python installation process

1. Double-click the icon labeling the file **<version>.exe**
Popup window will appear

Click on Run option

Installing Python

2. Setup popup window will appear

If the Python Installer finds an earlier version of Python installed on your computer, the **Install Now** message will instead appear as **Upgrade Now**(and the checkboxes will not appear).
Highlight the **Install Now** (or **Upgrade Now**) message, and then click it

Installing Python

3. **User Account Conrol** pop-up window will appear

Click the **Yes** button.

Installing Python

4. A new **Python <version> Setup** pop-up window will appear with a **Setup Progress** message and a progress bar.
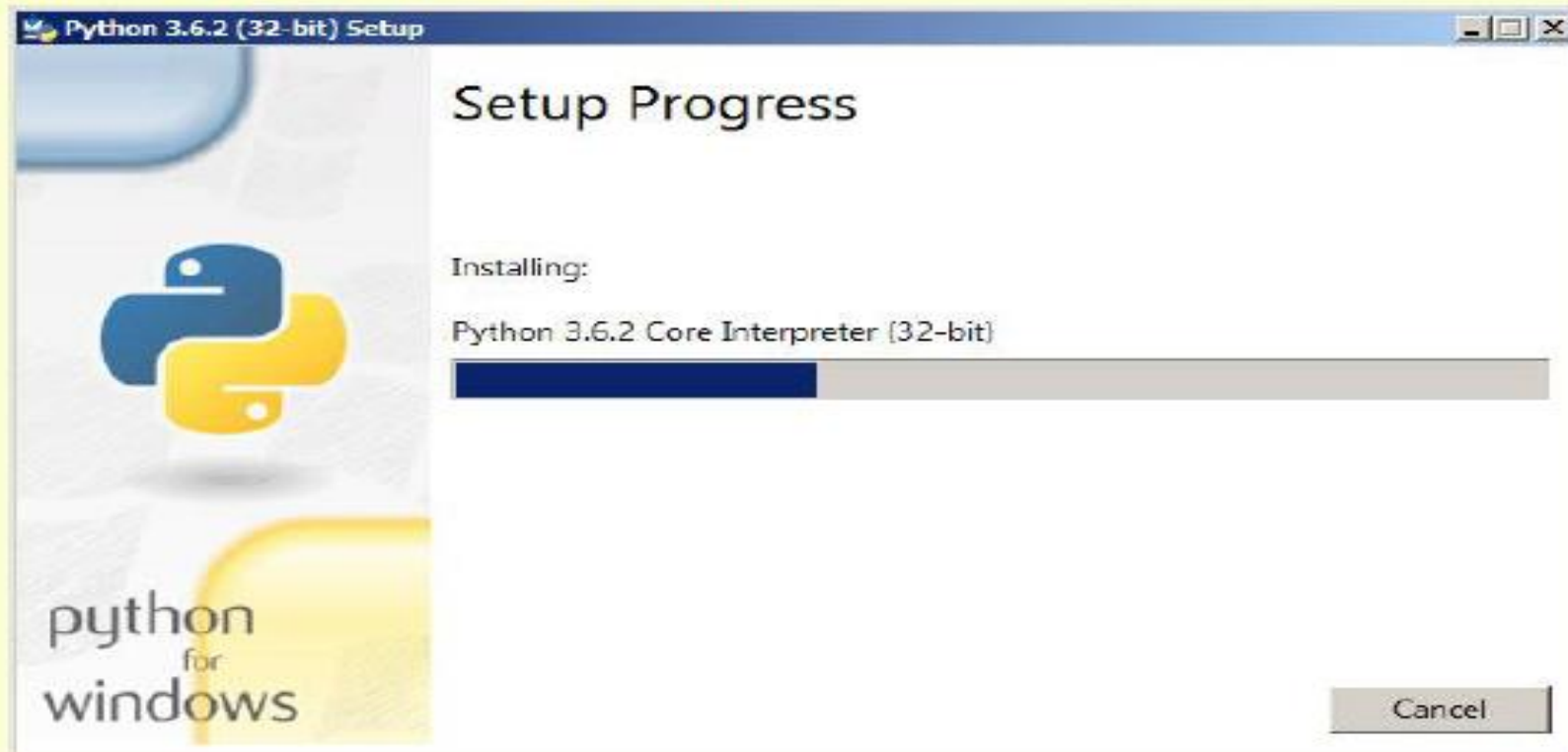
Installing Python

5. Soon, a new **Python <version> Setup** pop-up window will appear with a **Setup was successfully** message

Click the **close** button

Installing python on Android phone

- Select Google play store

- And type Pydroid3

- Touch on install

- A python will be installed on Mobile Phone.

Execution Mode

- *Interactive mode : Running a python script from the command line. Interactive mode of working means you type the command – one command at a time, and the python execute the given command there and then and gives you output.*

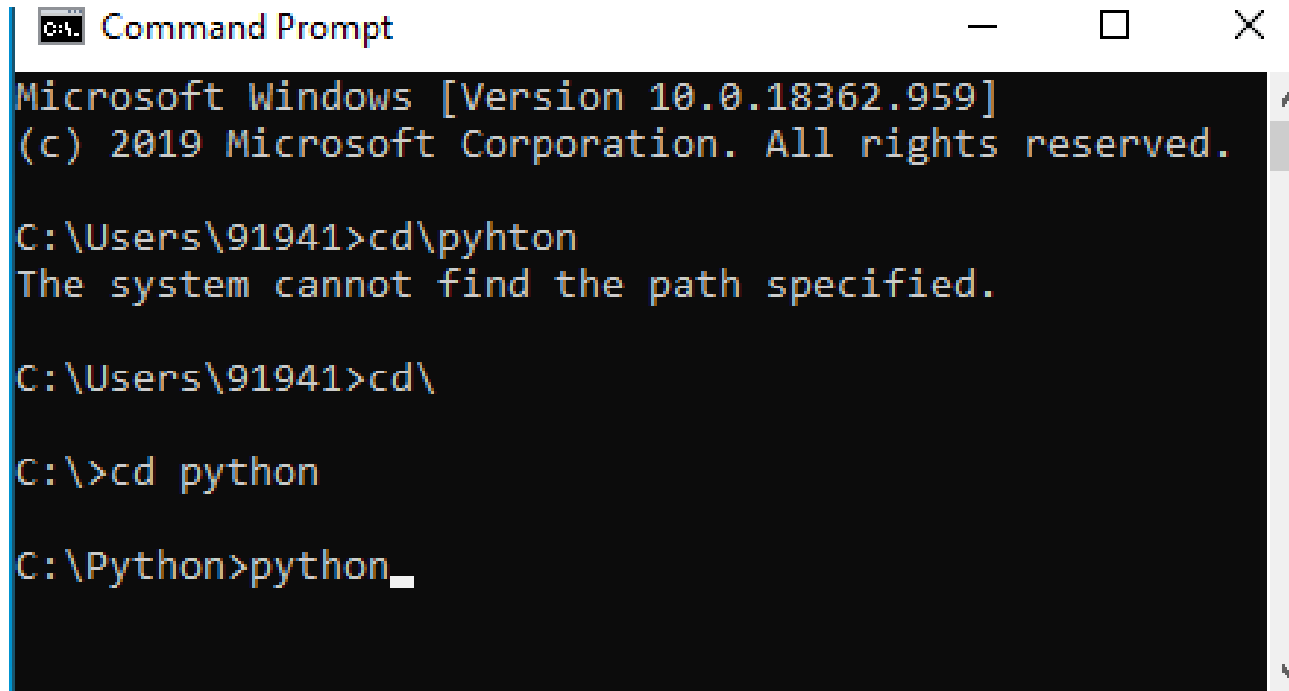   *>>> ⟶ Python prompt or command prompt and command line.*

How to open python in interactive mode?

- *Click on the start button*
- *Click on command prompt , A command prompt windows will display*
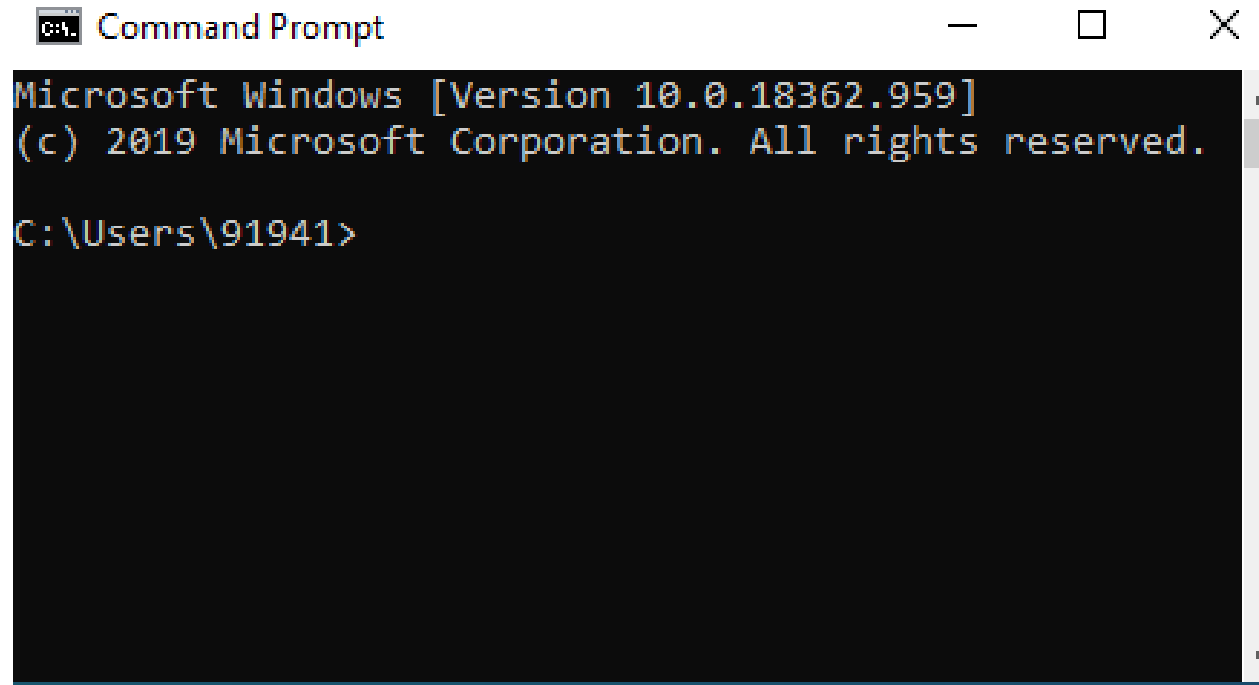
- *Type command cd*
- *A c:\> prompt will be display*
- *Type cd python on c:\>prompt*
- *To open python on command prompt C:\python>python press enter key*

```
Command Prompt                                         —    ☐    ✕

Microsoft Windows [Version 10.0.18362.959]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\91941>cd\pyhton
The system cannot find the path specified.

C:\Users\91941>cd\

C:\>cd python

C:\Python>python_
```
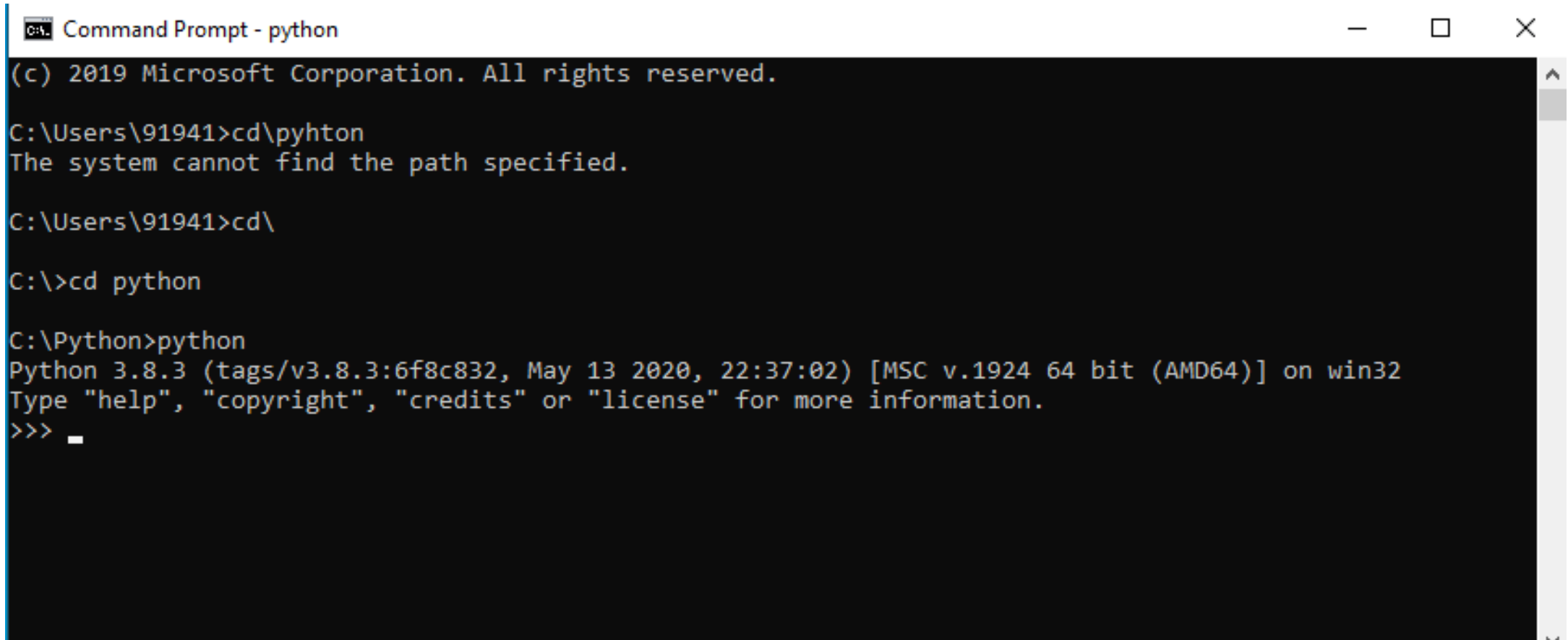
- *A python command line prompt is displayed. It allow the users to write their python code or statements in Interactive mode.*

REPL- Read Evaluate Print Loop

- *Script mode : In the script mode, we can write a python program in a file, save it and then use the interpreter to execute the program from the file. Python program file have .py extension and they are also known as script. Python script can be created by using any editor. Python has built in editor called IDLE which can be used to create a program.*

IDLE (Integrated Development Learning Environment)
*CPython Installation , Anaconda Python distribution*

Many popular IDEs are also available spyder IDE, Pycharm IDE etc.

Install script mode IDLE?

- Pycharm IDE or editor for writing programe in script mode.

- Type www.jetbrains.com in web browser.

- Download pycharm community 2020.1.3

- After download double click on the downloaded file and pycharm IDE will installed on your computer.

- To open Pycharm click on windows start button, click on Jetbrain folder. Double click on Pycharm Community edition 2020
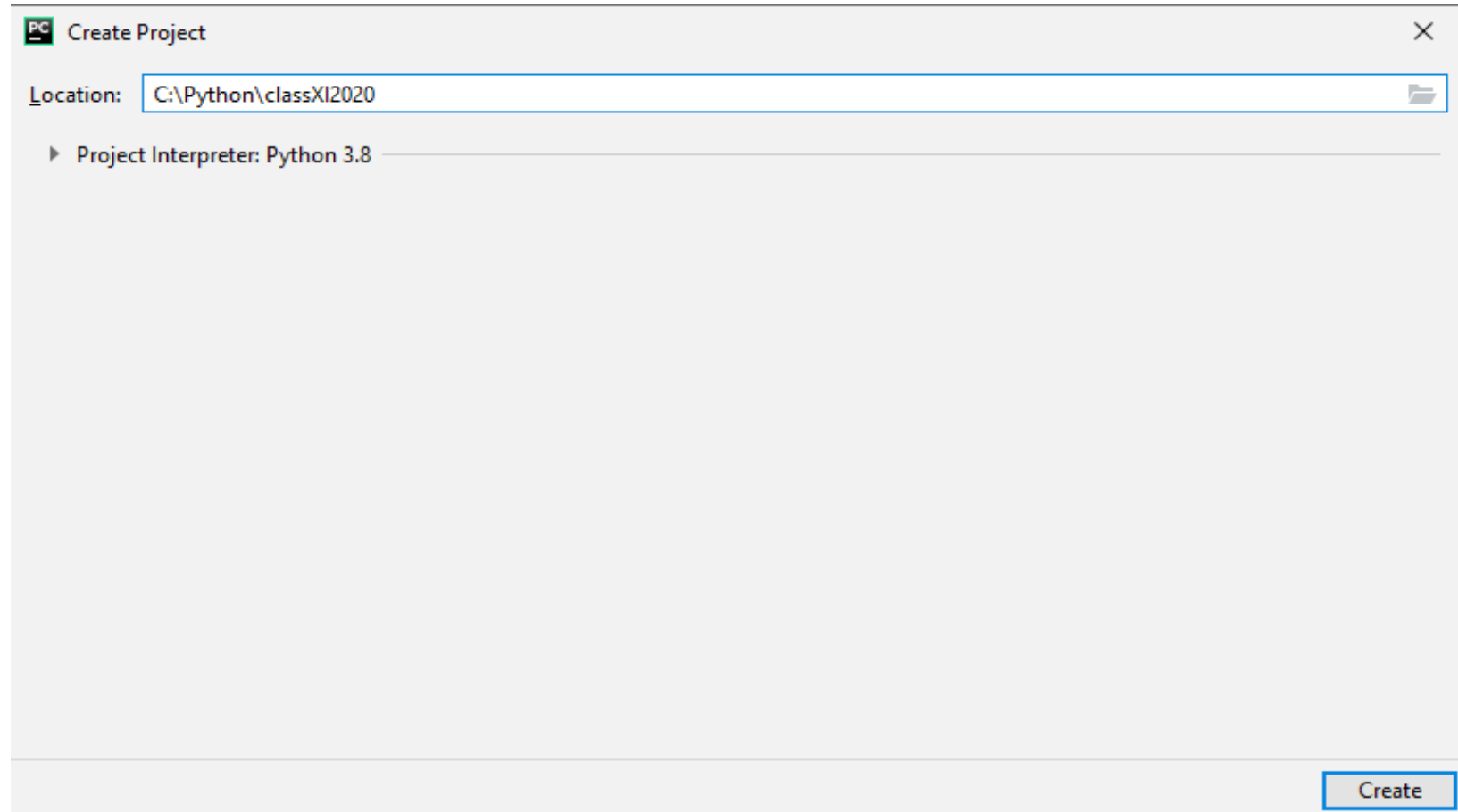
Install script mode IDLE?

- *To open Pycharm - click on windows start button - click on Jetbrain folder.*

- *Double click on Pycharm Community edition 2020. A window will be displayed.*
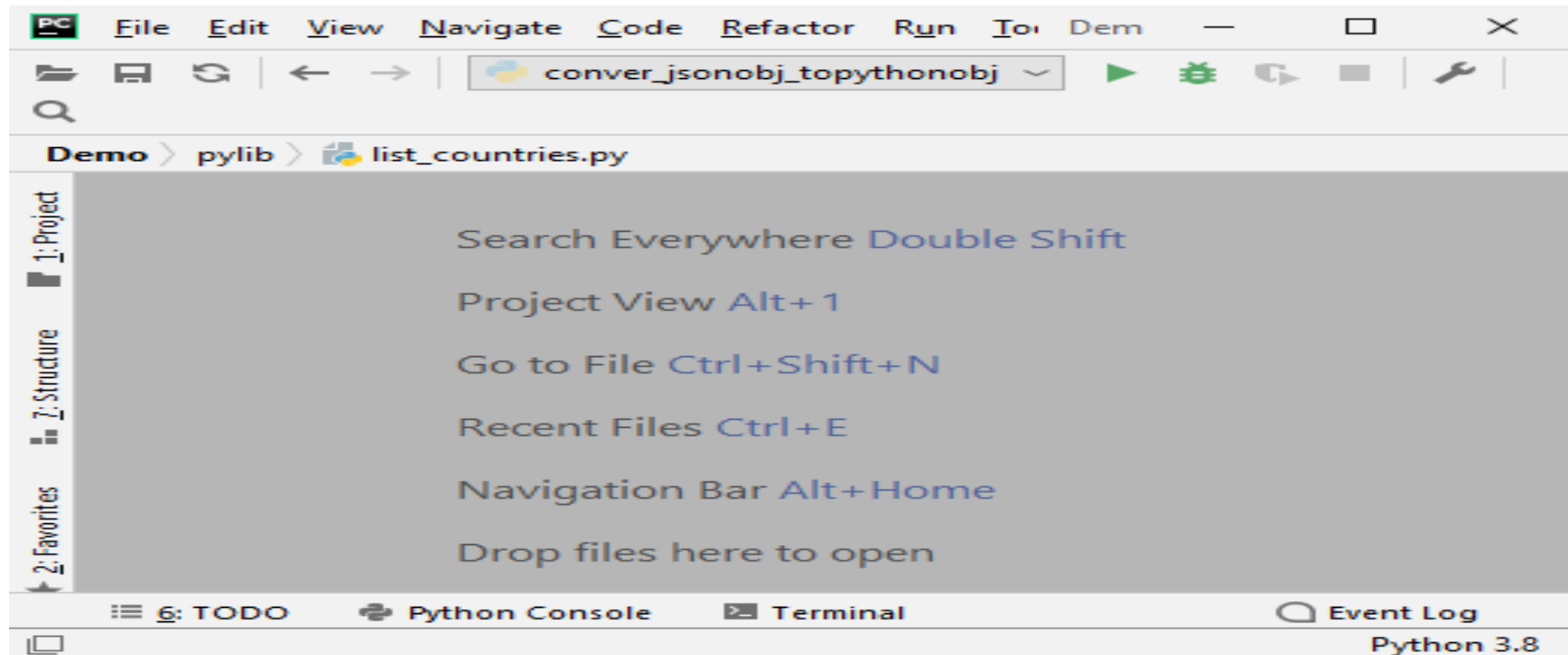
Click on file – Click on New Project- A project window will be displayed – Type project name ClassXI2020-Click on Create, your new project is created.

Writing python program

- *Open the python IDLE- Click on the file menu and click on new, A dialog box will appear, Select python file - type file name in the box and click on python file option.*
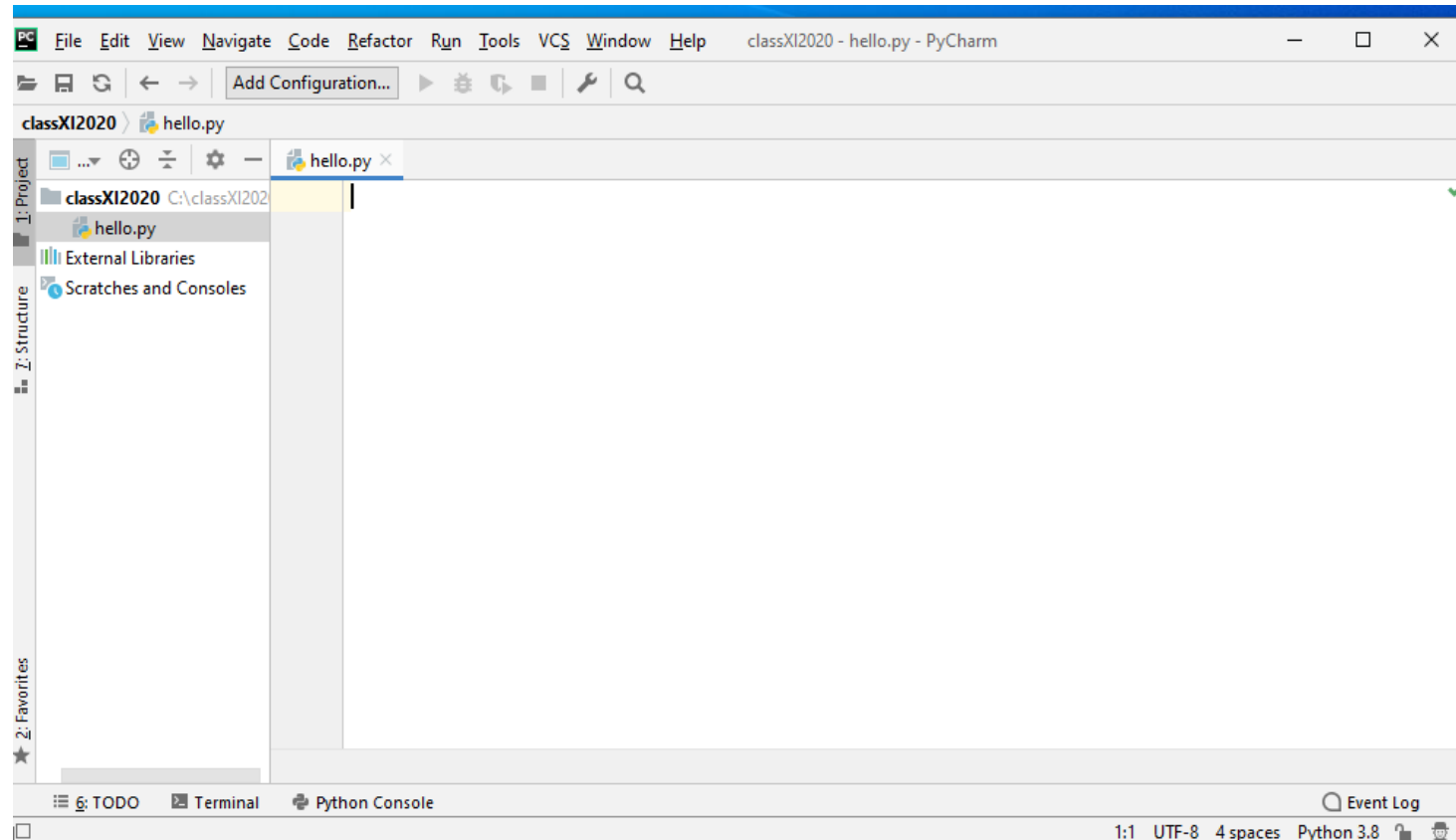
Enjoy Python Programming

By typing and executing a python Program

Assignments

1. When was python released?

2. Who was Python's developer and which two languages contributed to python as a programming language?

3. What is a Cross platform software?

4. What are the advantage and disadvantage of working in in Interactive mode in python?

5. 'Python is an interpreted high level language'. What does it mean to you?