UPES

UNIVERSITY WITH A PURPOSE

Faculty Information

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Examination Scheme

Components	Internal	Mid Term	ESE	Total
Weightage (%)	30%	20%	50%	100%

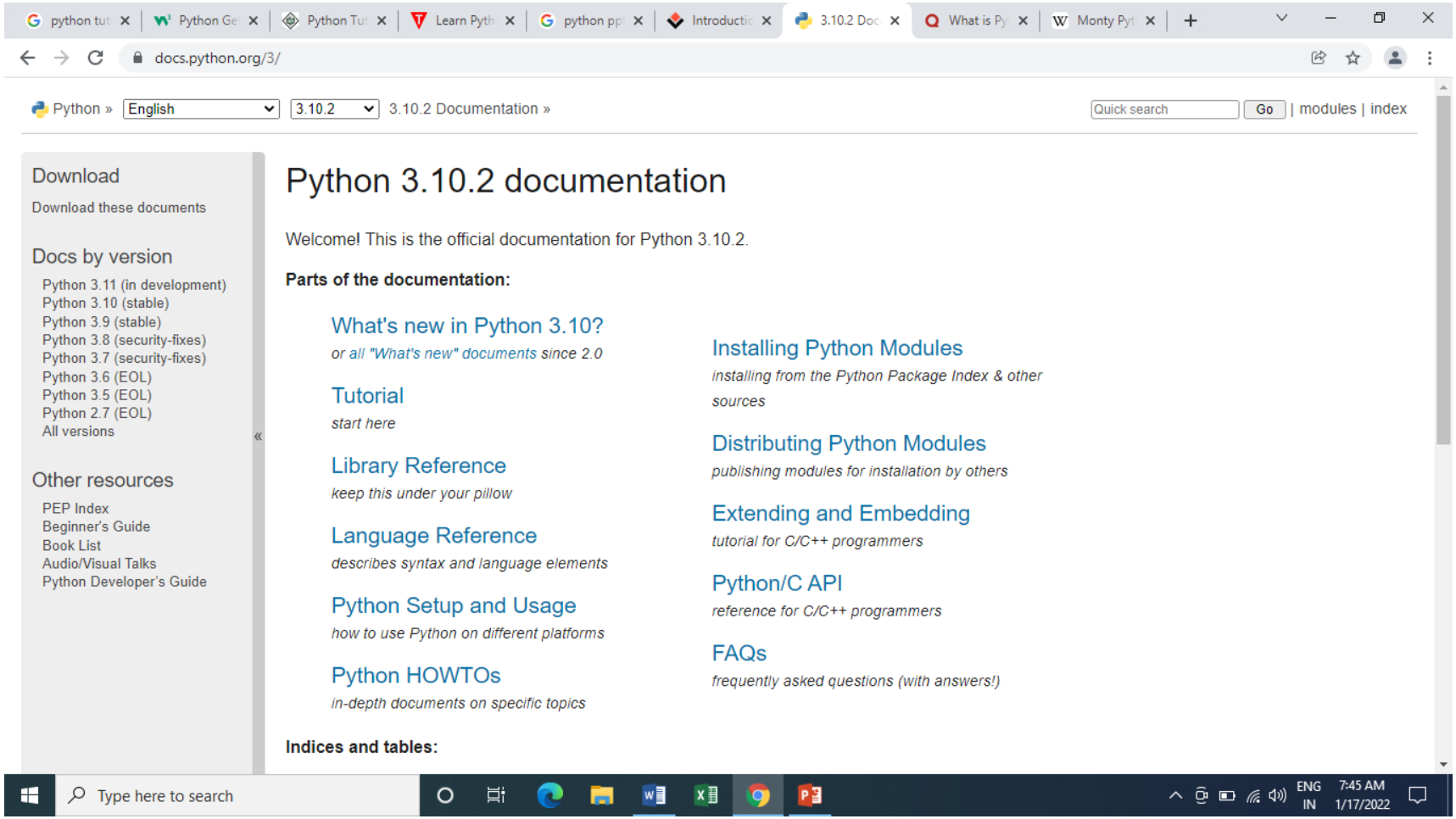
Prerequisite

- **Knowledge of Computer**
- **Basic knowledge of Programming Language along with concept of object and classes**

Brief History of Python

- Invented in the Netherlands, early 90s by Guido van Rossum
- Named after Monty Python
- Open sourced from the beginning
- Scalable, object oriented and functional from the beginning
- Used by Google from the beginning
- Increasingly popular

http://docs.python.org/



Installing

- Many PCs and Macs will have python already installed.
- Open cmd and type

C:\Users*Your Name*>python --version

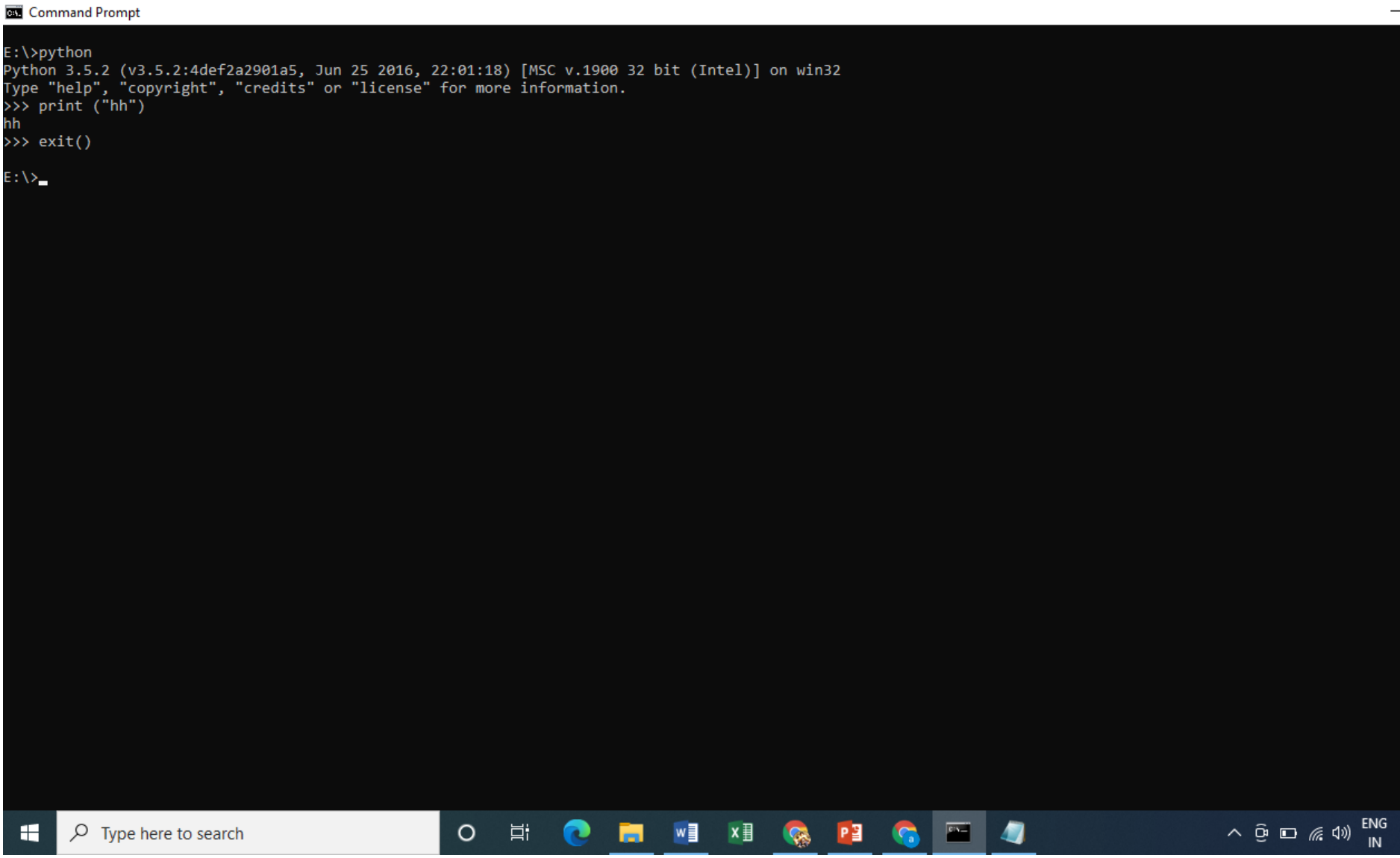
- Download from http://python.org/download/
- Python comes with a large library of standard modules
- There are several options for an IDE

Running a python program

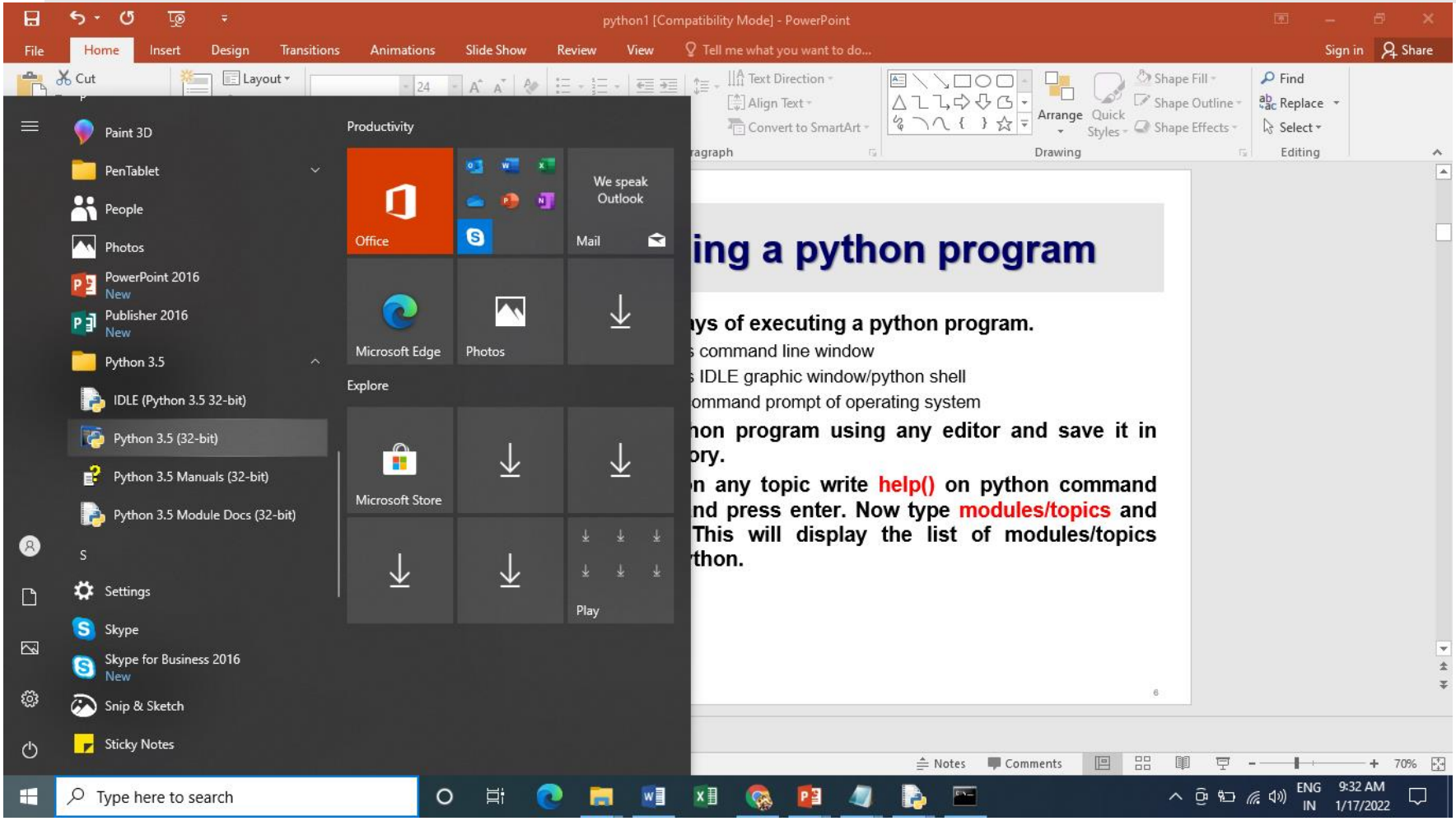
- **There are 3 ways of executing a python program.**
  - Directly from command prompt of operating system
  - Using python's command line window
  - Using python's IDLE graphic window/python shell
- **Write the python program using any editor and save it in desired directory.**
- **To get help on any topic write help() on python command line window and press enter. Now type modules/topics and press enter. This will display the list of modules/topics available in python.**

Directly from command prompt of operating system

Using Interactive interpreter prompt

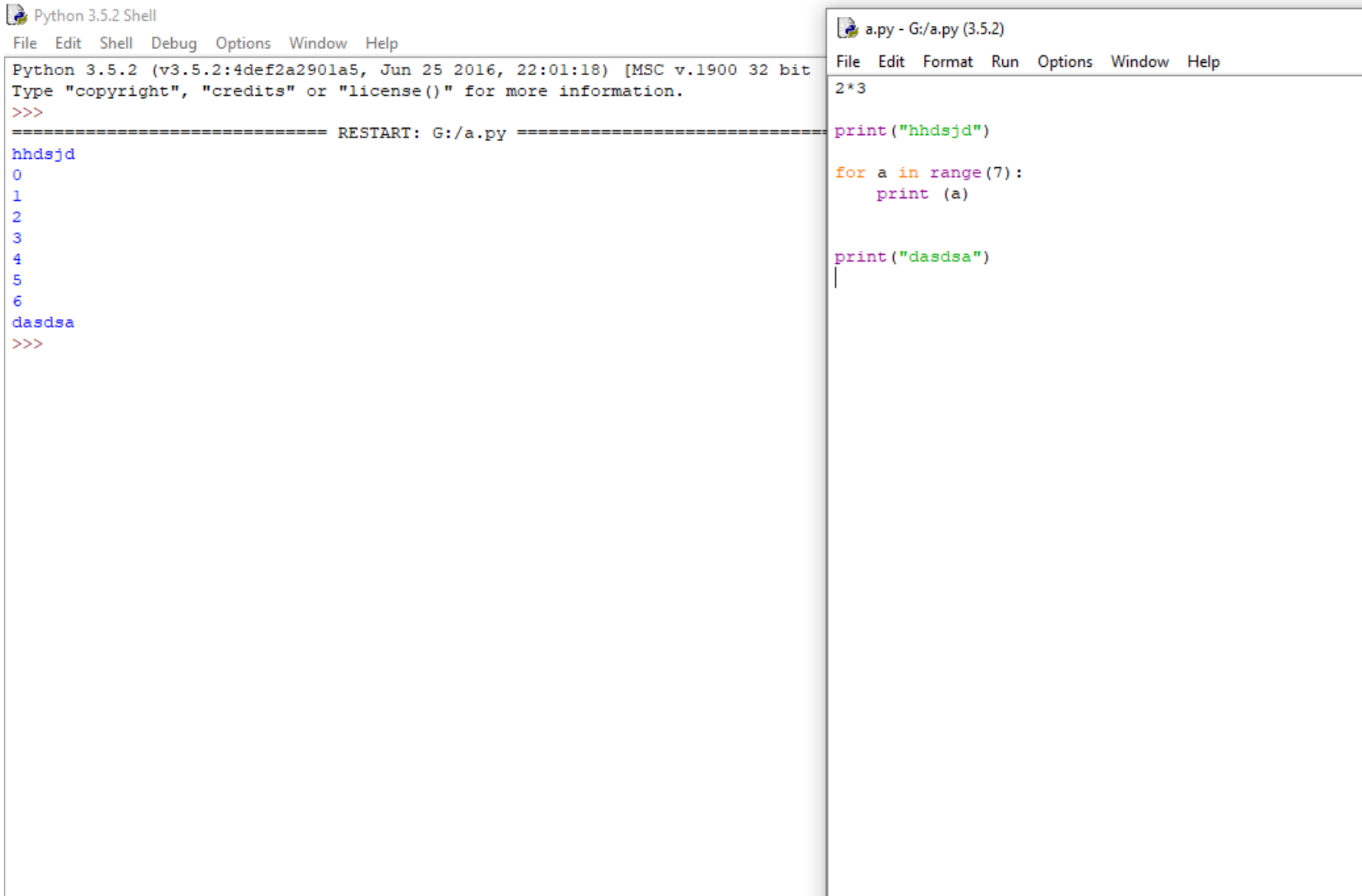


Using python's command line window



Using python's IDLE graphic window/python shell

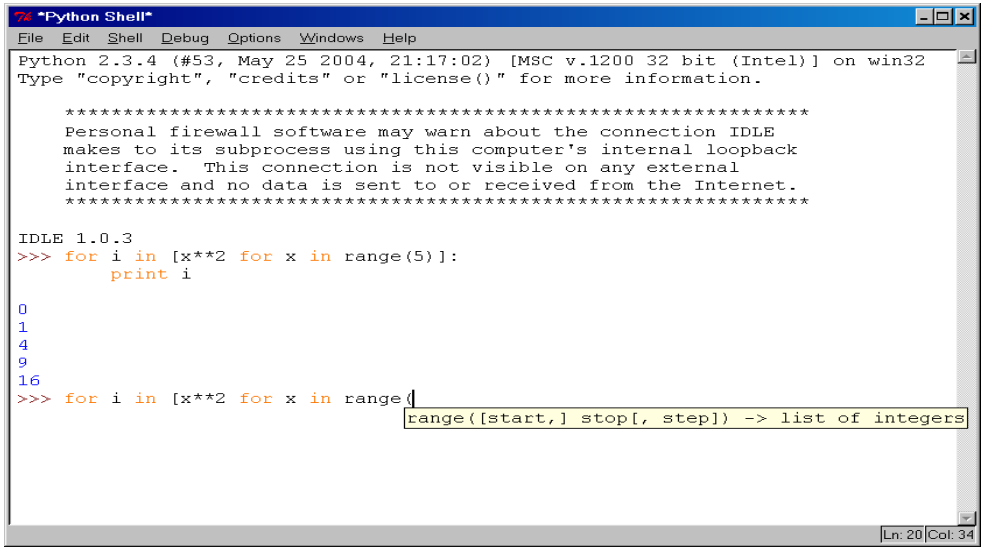
Using a script file (Script Mode Programming)



- we can run the file using the operating system terminal. But, we should be aware of the path of the directory where we have saved our file.
- Open the command line prompt and navigate to the directory

IDLE Development Environment

- IDLE is an Integrated DeveLopment Environment for Python, typically used on Windows
- Multi-window text editor with syntax highlighting, auto-completion, smart indent and other.



Python Features

- Easy to Learn and Use
- Expressive Language
- Interpreted Language
- Cross-platform Language
- Free and Open Source
- Object-Oriented Language
- Large Standard Library
- GUI Programming Support
- Integrated
- Dynamic Memory Allocation

C vs Python

C is structure programming language.	Python blends the functional programming with object oriented programming features.
C program executes faster.	Python program executes slower relative to C.
It is compulsory to declare the datatype of variable.	Type declaration is not required.
Pointer concept is used in C.	Pointer concept is not available in python.
Does not have exception handling feature.	It has exception handling feature.
C has switch statement.	Python does not have switch statement.
C has for, while and do while loop.	Python has for and while loop.

C vs Python

Variable in loop does not increment automatically.	Variable in loop increments automatically.
There is no garbage collector.	Automatic garbage collector is available in Python.
Array index must be positive integer.	Array index can be positive or negative integer
Indentation is not necessary	Indentation is necessary to represent the block
Semicolon is used to terminate the statement	New line indicates the end of statement

Python IDE

- PyCharm
- Spyder
- Eclipse PyDev
- IDLE
- Wing
- Jupyter Notebook
- Others……