



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/

python tut x Python Ge x Python Tut x Learn Pyth x python pp x Introductio x 3.10.2 Doc x What is Py x Monty Pyt x +

docs.python.org/3/

Python » English 3.10.2 3.10.2 Documentation » Quick search Go modules index

## Download

Download these documents

## Docs by version

- Python 3.11 (in development)
- Python 3.10 (stable)
- Python 3.9 (stable)
- Python 3.8 (security-fixes)
- Python 3.7 (security-fixes)
- Python 3.6 (EOL)
- Python 3.5 (EOL)
- Python 2.7 (EOL)
- All versions

## Other resources

- PEP Index
- Beginner's Guide
- Book List
- Audio/Visual Talks
- Python Developer's Guide

## Python 3.10.2 documentation

Welcome! This is the official documentation for Python 3.10.2.

### Parts of the documentation:

- [What's new in Python 3.10?](#)  
*or all "What's new" documents since 2.0*
- [Tutorial](#)  
*start here*
- [Library Reference](#)  
*keep this under your pillow*
- [Language Reference](#)  
*describes syntax and language elements*
- [Python Setup and Usage](#)  
*how to use Python on different platforms*
- [Python HOWTOs](#)  
*in-depth documents on specific topics*
- [Installing Python Modules](#)  
*installing from the Python Package Index & other sources*
- [Distributing Python Modules](#)  
*publishing modules for installation by others*
- [Extending and Embedding](#)  
*tutorial for C/C++ programmers*
- [Python/C API](#)  
*reference for C/C++ programmers*
- [FAQs](#)  
*frequently asked questions (with answers!)*

### Indices and tables:

# 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

Command Prompt

```
E:\>python
Python 3.5.2 (v3.5.2:4def2a2901a5, Jun 25 2016, 22:01:18) [MSC v.1900 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print ("hh")
hh
>>> exit()
E:\>_
```

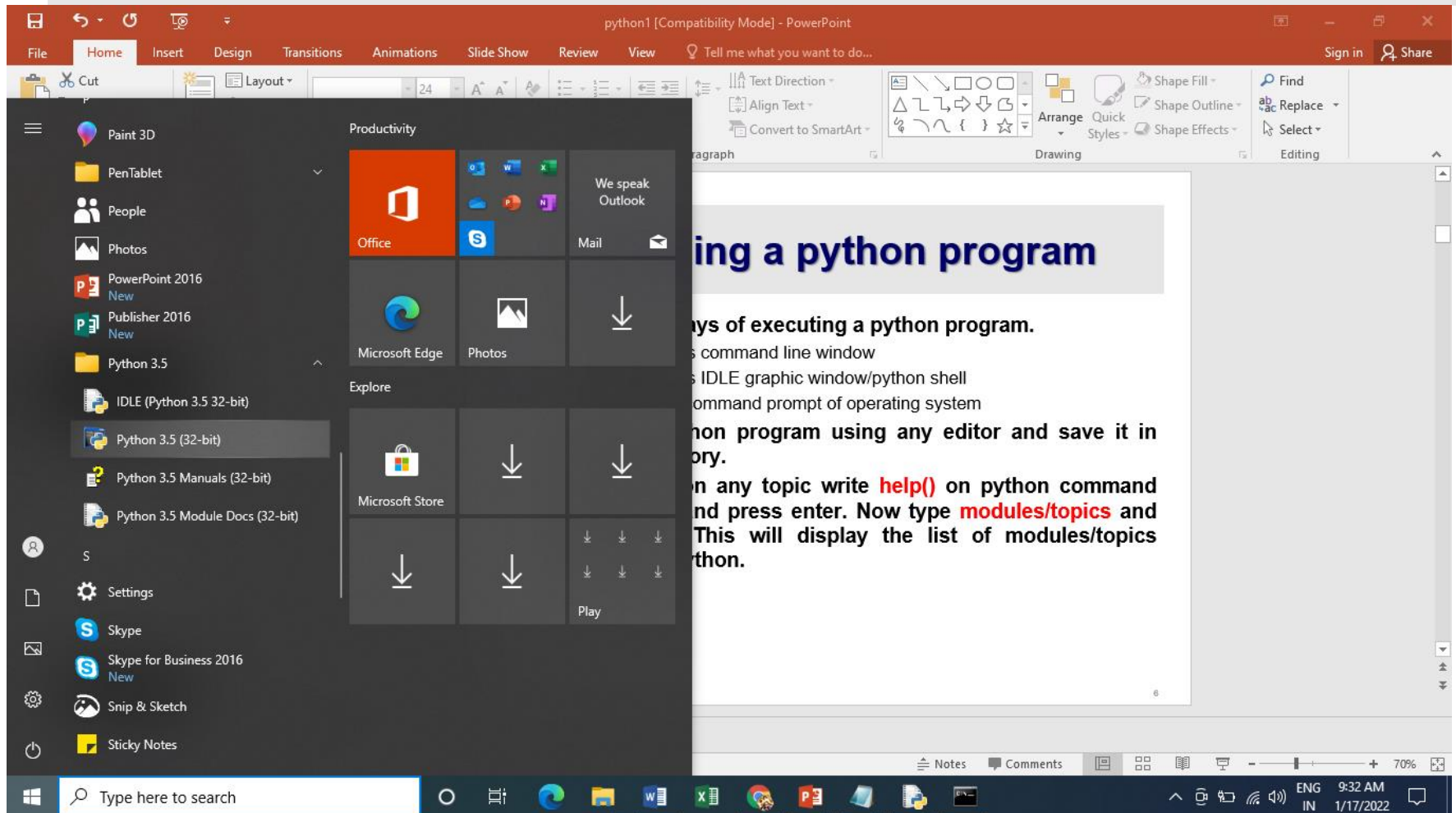


Type here to search



ENG  
IN

# Using python's command line window



# Using python's IDLE graphic window/python shell

## Using a script file (Script Mode Programming)

Python 3.5.2 Shell

File Edit Shell Debug Options Window Help

Python 3.5.2 (v3.5.2:4def2a2901a5, Jun 25 2016, 22:01:18) [MSC v.1900 32 bit  
Type "copyright", "credits" or "license()" for more information.

>>>

===== RESTART: G:/a.py =====

hhdsjd

0

1

2

3

4

5

6

dasdsa

>>>

a.py - G:/a.py (3.5.2)

File Edit Format Run Options Window Help

2\*3

```
print("hhdsjd")
```

```
for a in range(7):  
    print (a)
```

```
print("dasdsa")  
|
```

- 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

CA Command Prompt

E:\>g:

G:\>python a.py

hhdsjd

0

1

2

3

4

5

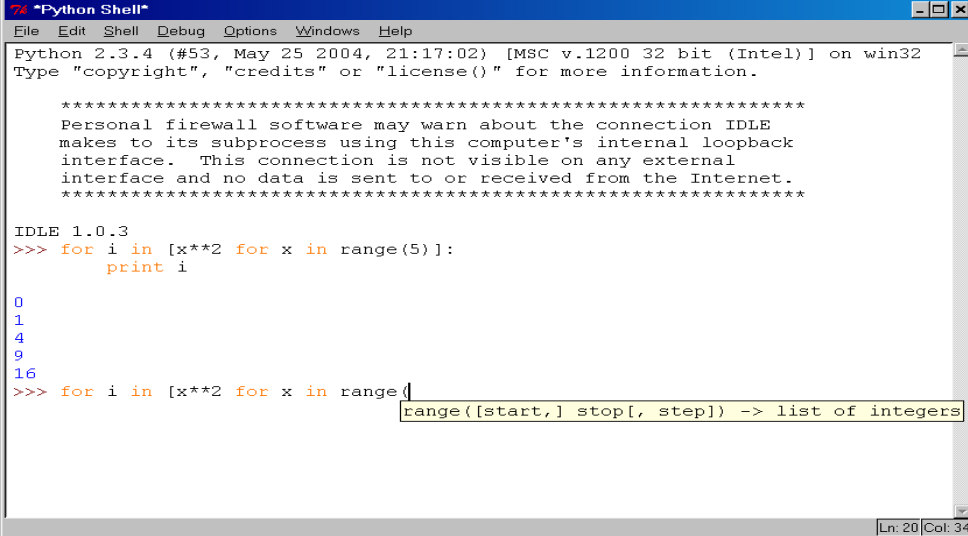
6

dasdsa

G:\>

# IDLE Development Environment

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



```
*Python Shell*
File Edit Shell Debug Options Windows Help
Python 2.3.4 (#53, May 25 2004, 21:17:02) [MSC v.1200 32 bit (Intel)] on win32
Type "copyright", "credits" or "license()" for more information.

*****
Personal firewall software may warn about the connection IDLE
makes to its subprocess using this computer's internal loopback
interface. This connection is not visible on any external
interface and no data is sent to or received from the Internet.
*****

IDLE 1.0.3
>>> for i in [x**2 for x in range(5)]:
    print i

0
1
4
9
16
>>> for i in [x**2 for x in range(
range([start,] stop[, step]) -> list of integers

Ln: 20 Col: 34
```

# 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.....**