Chapter-1 Introduction to python

Prepared By:
Prof. Vishal A. Polara
Asst. Prof.
IT Department
BVM Engg. College

Introduction

- Scripting Language
- Object Oriented
- Powerful
- Portable
- Easy to learn and Use
- Readable
- General Purpose Language

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Web Development

You can use Python to create web applications on many levels of complexity.

There are many excellent Python web frameworks including, Pyramid, Django and Flask, to name a few.

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Data Analysis

Python is the leading language of choice for many data scientists.

Python has grown in popularity, within this field, due to its excellent libraries including; NumPy and Pandas and its superb libraries for data visualization like Matplotlib and Seaborn.

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Machine Learning

What if you could predict customer satisfaction or analyze what factors will affect household pricing or to predict stocks over the next few days, based on previous years data?

There are many wonderful libraries implementing machine learning algorithms such as Scikit-Learn, NLTK and TensorFlow.
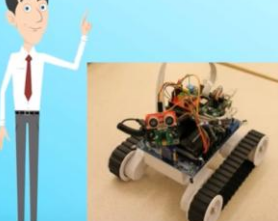
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Computer Vision

You can do many interesting things such as Face detection, Color detection while using Opencv and Python.
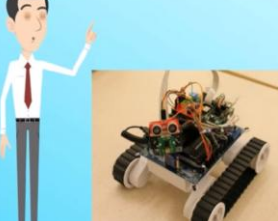
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Raspberry Pi

Raspberry Pi is a very tiny and affordable computer which was developed for education and has gained enormous popularity among hobbyists with do-it-yourself hardware and automation.

You can even build a robot and automate your home.

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Raspberry Pi

Raspberry Pi can be used as the brain for your robot in order to perform various actions and/or react to the environment.

The coding on a Raspberry Pi can be performed using Python. The Possibilities are endless!

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Game Development

Create a video game using module Pygame.

Basically, you use Python to write the logic of the game.

PyGame applications can run on Android devices.

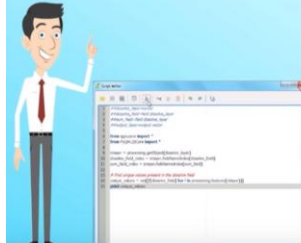13   Prof. Vishal Polara

Web Scraping

If you need to grab data from a website but the site does not have an API to expose data, you can use Python to scraping data.

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Writing Scripts

If you're doing something manually and want to automate repetitive stuff, such as emails, it's not difficult to automate once you know the basics of this language.

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Browser Automation

Perform some neat things such as opening a browser and posting a Facebook status, you can do it with Selenium with Python.

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GUI Development

Build a GUI application (desktop app) using Python modules Tkinter, PyQt to support it.

Python GUI Development

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Use of Python

- System Utilities
- GUIs(Tkinter, windows)
- Internet Scripting
- Embedded Scripting
- Database Programming
- Artificial Intelligence
- Image Processing

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Compiling and Interpreting

- In all other language compiler first convert source code into byte code or (machine understandable code) and gives the output.
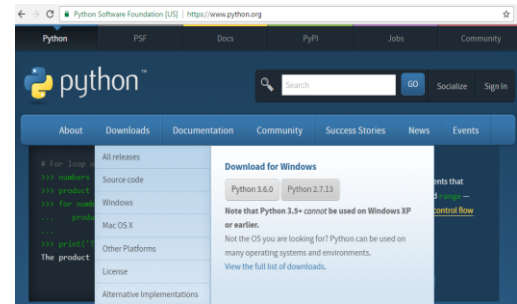

- While python is directly interpreted into machine instructions.

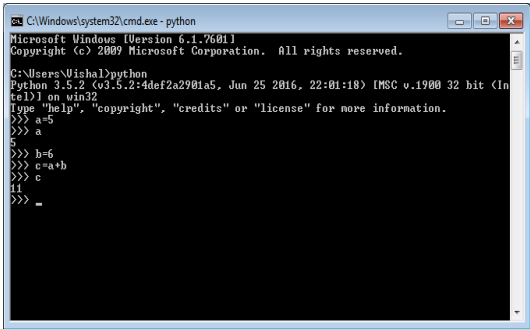
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Python Installation

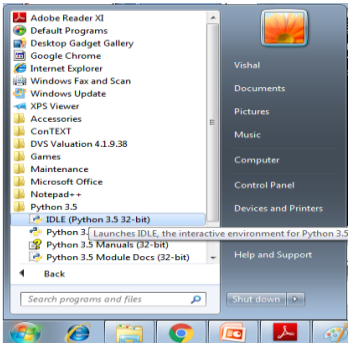20   Prof. Vishal Polara

Steps for Installation

- Download python from official website python.org
- Install it in your computer after downloading it.
- Open command prompt and type python to check it is installed it or not.
- You can also use idle of python to directly work on string.
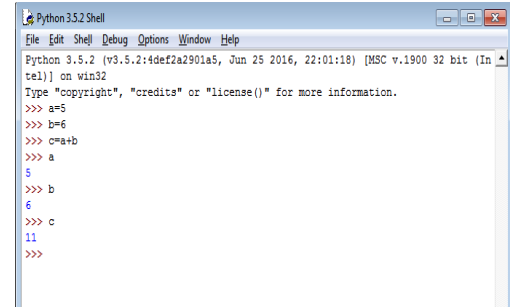
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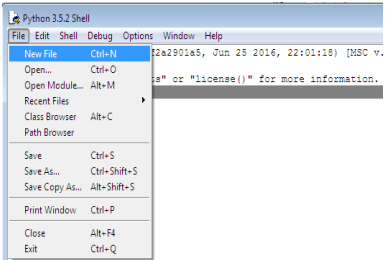
Start IDLE

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Python Idle shell

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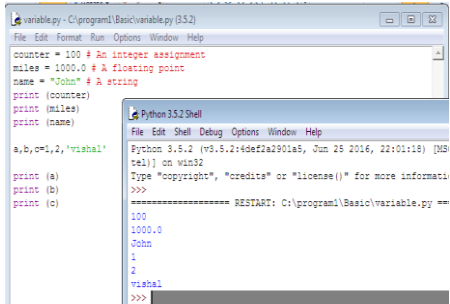## Editor Use

- Click on following option to create a new file
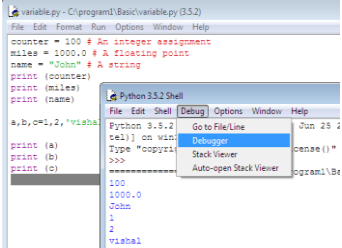

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- After writing line of code press F5

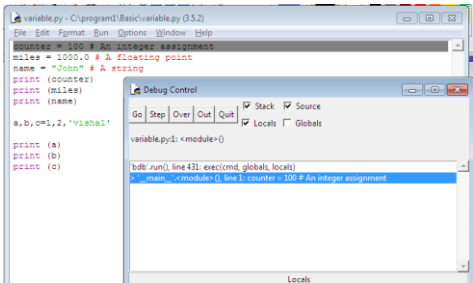26   Prof. Vishal Polara

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Use of debugger

- To use debugger press F5 once then goto debug option like figure.

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- Now press F5 again to activate debugger.
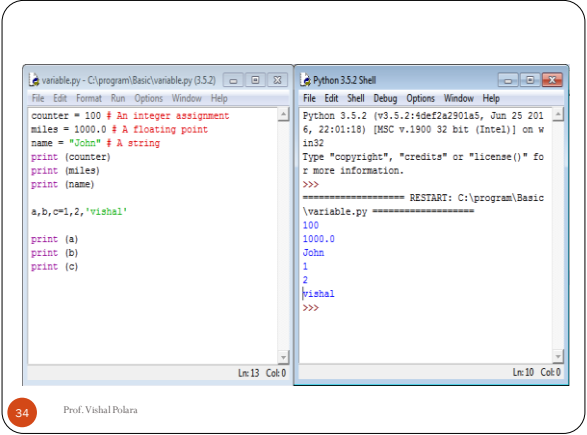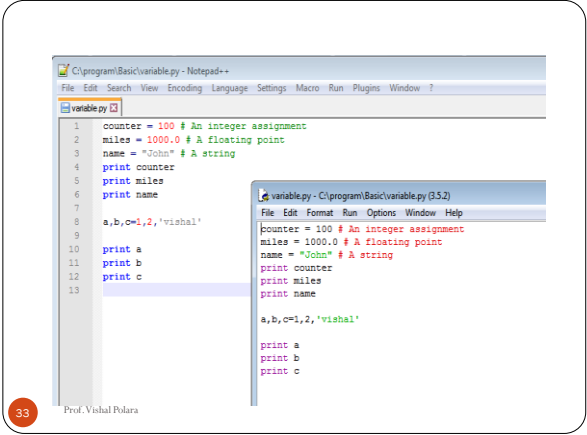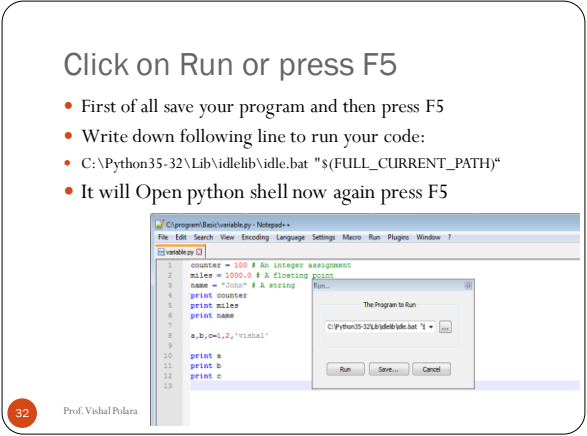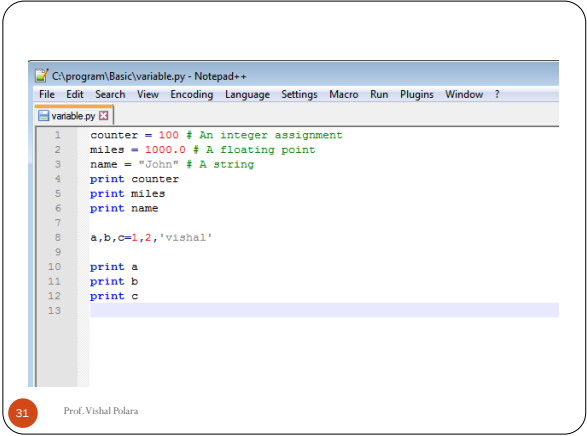

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- Now press **over** to jump the loop or block of statement if you wants to check each and every line of code click on **step.**

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Notepad++ editor

- It is also possible to use external editor to write python.py file and run it using python interpreter.
- Install notepad++ from official website.
- Then type code as show in figure:

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Click on Run or press F5

- First of all save your program and then press F5
- Write down following line to run your code:
- C:\Python35-32\Lib\idlelib\idle.bat "$(FULL_CURRENT_PATH)"
- It will Open python shell now again press F5

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Thank You

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