

# •*Session-1*

# Agenda

- Introduction to Python Programming
- What is Jupyter notebooks
- Python Basic Operators
  - Conditional and Control Statements

# Topics- Python

- What is Python?
- What can I do with Python?
- Scope of Python
- Why Python?
- Who uses Python today?
- Installing Python IDE

# What is Python?

- Invented during early 90s by Guidovan Rossum
- Python is a general purpose and high level programming language.
  - You can use Python for developing desktop, websites and web related **applications**.
  - As a high level programming language, allows you to focus on **core functionality** of the application by taking care of common programming tasks
  - The **simple syntax rules** of the programming language further makes it easier for you to keep the code base readable and application maintainable
- Top 5 popular programming languages of 2019-20

# What can I do with Python?

- System programming
- Graphical User Interface (GUI) Programming
- Internet Scripting
- Component Integration
- Database Programming
- Gaming, Images, XML , Robot and more

# Scope of Python

- Science
  - Bioinformatics
- System Administration
- - Unix
  - Web logic
  - Web sphere
- Web Application Development
  - CGI
  - Jython –Servlets   - Testing scripts
-

# Why Python?

- Python is simple, elegant, consistent, and math-like
- Python is like the swiss army knife of machine learning



- It is not the fastest...most of the heavy lift actually done by C or Fortran libraries but Python is easy to pick up due to its consistent syntax and the way it mirrors human language and/or their mathematical counterparts.



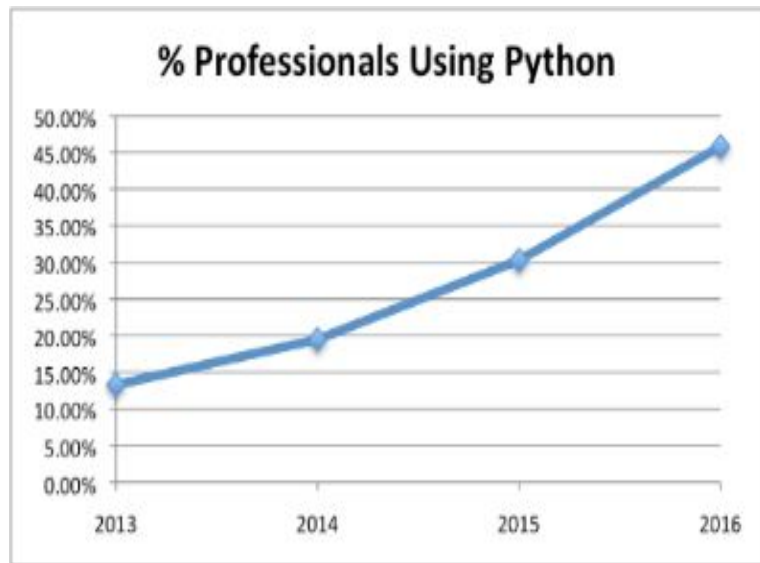
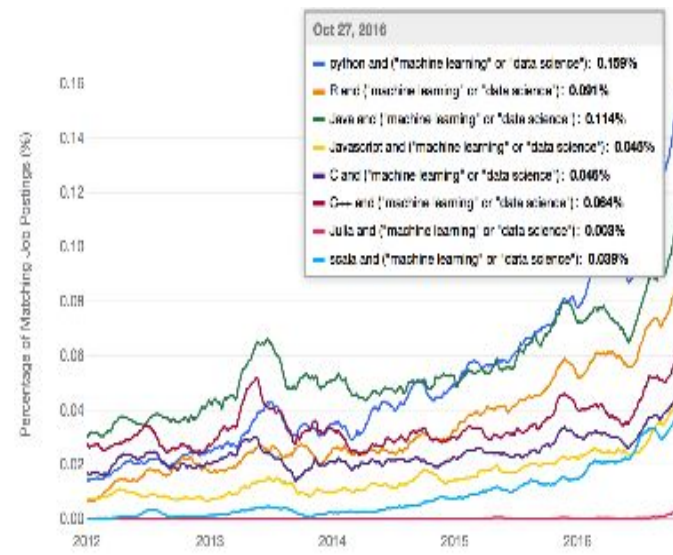
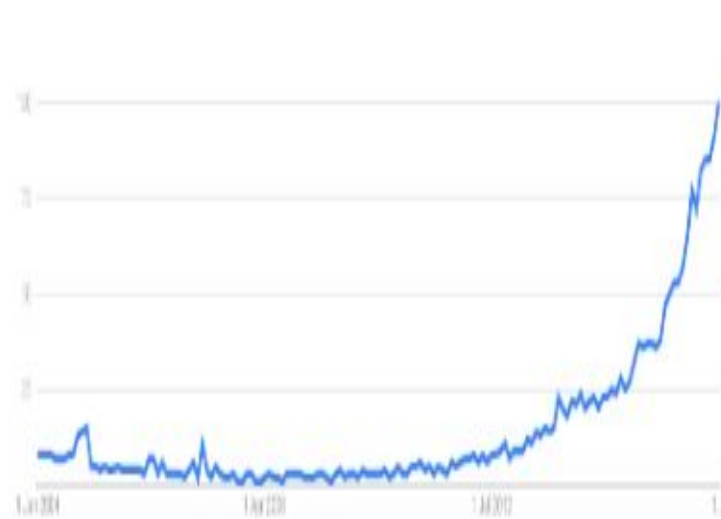
## ...& most importantly...

- Python package available for almost any conceivable function & libraries that you might need...
  - Numerical linear algebra: Numpy
  - Dataset manipulation: Pandas
  - Drawing graphs- matplotlib
  - Convex optimisation: CVXOPT
  - Statistical modelling: Statsmodel, PyMC
  - Symbolic algebra: SymPy
  - General scientific computing: Scipy





# No wonder Python popularity trends are upbeat....



# Who uses Python today?

Python is being applied in many commercial products by companies. Some of the example-

- Google for its web search system
- YouTube video sharing service
- Instagram
- Reddit
- Spotify
- Dropbox
- Quora

# Installing Python

Is pre-installed on most Unix systems, including Linux & MAC OS

- For Windows Operating Systems , user can download from the <https://www.python.org/downloads/>
- Installing Python through Anaconda Environment- <https://www.anaconda.com/products/individual#windows>
- Google Colaboratory has built in Python environment