



Basic Level Programming Training with Python

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Online Python Training



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Cyber Security Analyst / Developer

- National Defense University Computer Engineering Cyber Security Program – Master's Degree with Thesis
- 10 years of experience
- Web Application Development and Web Security



dating

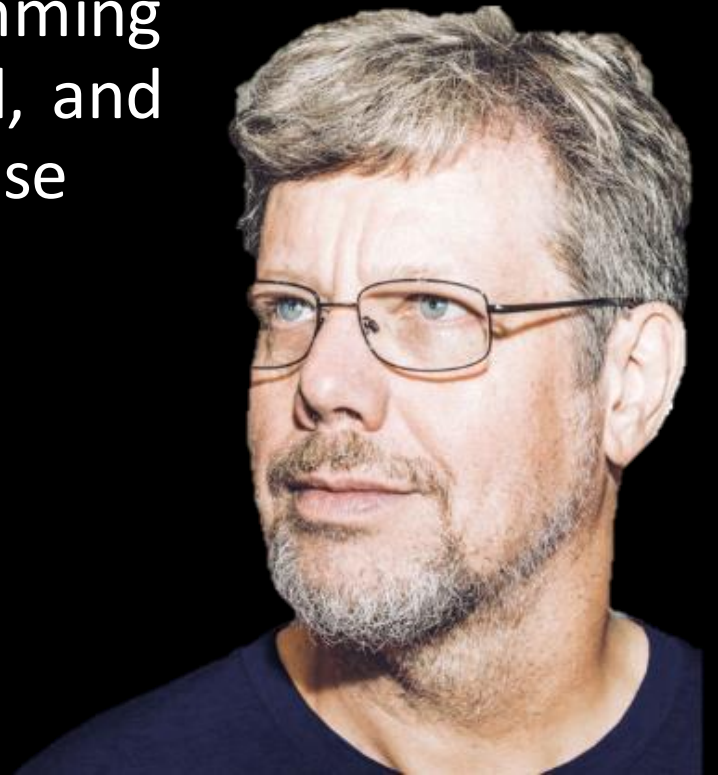


- **Instructor introducing himself**
- Participants introducing themselves
 - Name and Surname
 - Job description you work for
 - Past work experience
 - What You Know About Computer Programming and Python
 - Your purpose for attending training
 - Your expectations from education

What is Python?



- Python is a widely used high-level programming language with interpreted, object-oriented, and dynamic semantics used for general-purpose programming.
- Monty Python's Flying Circus
- Guido van Rossum Created by



What is Python?



- A language that is as powerful, easy and intuitive as that of major competitors;
- Open source, so anyone can contribute to its development;
- Code as understandable as plain English;
- Suitable for daily tasks, allowing short development times.

What is Python?



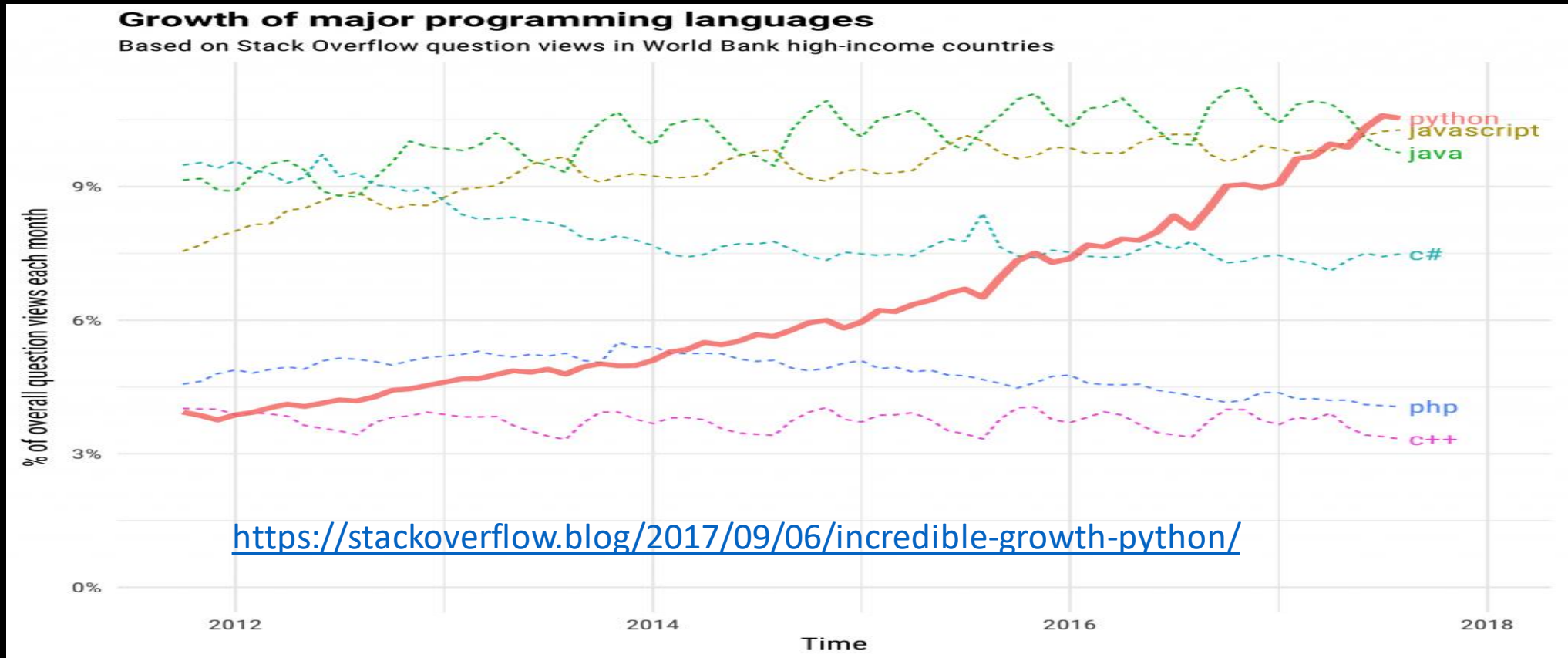
- Python is a programming language which is suitable for;
 - Web applications,
 - Software development,
 - Data science and machine learning (ML).
- Developers use Python because it is efficient, easy to learn, and can be run on many different platforms.
- Python software can be downloaded for free, provides good integration with any system and increases development speed.

of Python ?



- Python is readable and productive.
- Python contains reusable code.
- Python is compatible with other languages.
- Python has a supportive community.
- Python is easy to learn.
- Python is portable.

Why Python?



Why Python ?



- An interpreted language
- Easy to use language
- A dynamically typed language
- A high level language
- An object-oriented language

learn
Python
after C++



learn C++
after
Python



Python's Competitors



- Perl
- Ruby

Why Not Python?



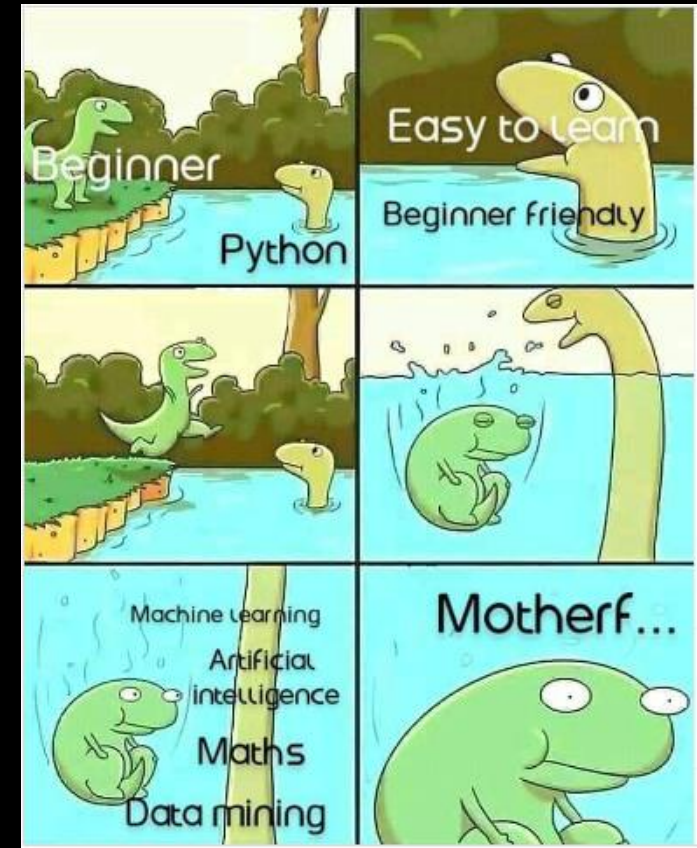
- RAM and processor economically!!!
- It consumes a lot of energy compared to other programming languages.
- [Link](#)
- Low Level Programming
- Mobile Device Applications

	Energy
(c) C	1.00
(c) Rust	1.03
(c) C++	1.34
(c) Ada	1.70
(v) Java	1.98
(c) Pascal	2.14
(c) Chapel	2.18
(v) Lisp	2.27
(c) Ocaml	2.40
(c) Fortran	2.52
(c) Swift	2.79
(c) Haskell	3.10
(v) C#	3.14
(c) Go	3.23
(i) Dart	3.83
(v) F#	4.13
(i) JavaScript	4.45
(v) Racket	7.91
(i) TypeScript	21.50
(i) Hack	24.02
(i) PHP	29.30
(v) Erlang	42.23
(i) Lua	45.98
(i) Jruby	46.54
(i) Ruby	69.91
(i) Python	75.88
(i) Perl	79.58

Python Used?



- Server side web development
- Automation with Python scripts
- Data science and machine learning
- Software development
- Software test automation



Server side web development



- It includes the backend functionality of websites.
- Includes database operations, communication with other websites and data security.
- Python offers many libraries that contain pre-written code for these functions.
- Python also offers various frameworks for building web applications.
- These frameworks help developers create web applications faster and easier.

Automation with Python scripts



- Rename many files at once
- Convert a file to another file type
- Delete repetitive words in a text file
- Performing basic mathematical operations
- Send email messages
- Download content
- Perform basic log analysis
- Finding errors in many files

Data science and machine learning



- Correcting and removing incorrect data, known as data cleansing
- Extract data and select various features of the data
- Data tagging, i.e. adding meaningful names for data
- Draw different insights from data
- Visualize data using charts such as line charts, bar charts, column charts, and pie charts

Software development



- Tracking errors in software code
- Compiling software automatically
- Performing software project management
- Developing software prototypes
- Developing desktop applications using Graphical User Interface (GUI) libraries
- Developing a variety of games, from simple text-based games to more complex video games

Software test automation



- use Python unit testing frameworks like unittest , Robot , and PyUnit to test the functions they write .
- Python to write test cases for various test scenarios . For example, they use Python to test the user interface of a web application, multiple software components, and new features.

Python Derivatives



- Python2
- Python3
- Python or Cpython
- Cython
- jython
- PyPy and RPython



What will this course give you?



- You will learn the basics of programming.
- Python- based programming.
- Your code reading skills will improve.
- Since you have learned the basics of object-oriented programming, you will easily learn languages such as C# and asp.net.
- Machine learning , Artificial You will be able to work in areas such as Intelligence .
- ' I know Python ' to your CV .

What are Python libraries?



- What is a Library? => Collection!
- Python comes with standard libraries.
- More than 137,000 bookcases!
 - matplotlib
 - pandas
 - NumPy
 - Requests
 - OpenCV -Python
 - keras

What are Python frameworks?



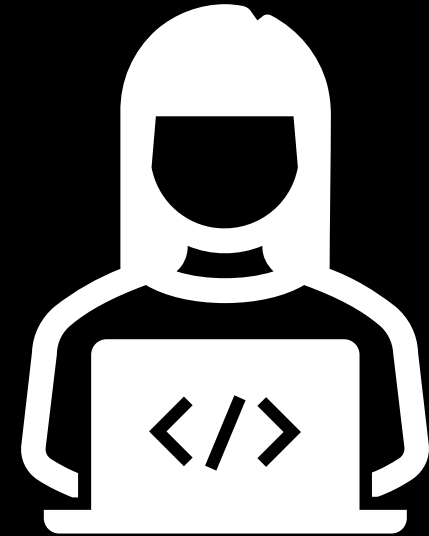
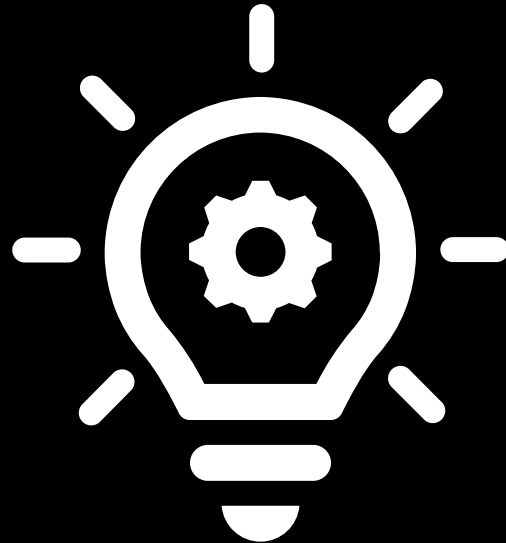
- A Python framework is a collection of packages and modules.
- A module is a set of related codes, while a package is a set of modules.
 - Django
 - flask
 - TurboGears
 - Apache MXNet
 - PyTorch

What Will We Learn?



- Python Culture
- Basic Data Types in Python
- Commonly Used Built-in Functions
- Operators in Python
- Compile Time Data Types
- Decision Mechanisms
- Loops
- Functions
- Errors and Exceptions
- File Operations
- Modules and Packages
- Classes and Objects

Our Expectations from You



How Should I Study?



- Review the documents presented to you before class.
- After the lesson is over, do the topics covered in the lesson yourself.
- Do the homework and projects assigned to you after class.
- Try to put everything that comes to your mind into code



How Should I Study?



- Improve your algorithm skills.
- Subscribe to repos such as Github , Gitlab .
- Increase your math knowledge. Coding=Math!
- Be sure to ask questions about things you don't understand in class, but do research on the internet when you can't do anything while studying on your own. Challenge yourself. If you can't find any solution then ask.