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LEARN PYTHON FOR DATA SCIENCE& WEB - DEVELOPMENT

Python is an object-oriented programming language created byGuido Rossum in 1989. It is ideally designed for rapid prototyping of complex applications. It has interfaces to many OS system calls and libraries and is extensible to C or C++. Many large companies use the **Python Programming Language** include **NASA, Google, YouTube, Bit Torrent, Dropbox, Instagram, Pinterest, Upworketc.**

Python is widely used in **Artificial Intelligence, Natural Language Generation, Neural Networks** and other advanced fields of **Computer Science**. **Python** has deep focus on code readability & we will teach you **python from basics.**

Characteristics of Python:

- It provides rich data types and easier to read syntax than any other programming languages.
- It is a platform independent scripted language with full access to operating system API's
- Compared to other programming languages, it allows more run-time flexibility
- It includes the basic text manipulation facilities of Perl and Awk

- A module in Python may have one or more classes and free functions
- Libraries in Pythons are cross-platform compatible with Linux, MacIntosh, and Windows.
- For building large applications, Python can be compiled to byte-code.
- Python supports functional and structured programming as well as OOP.
- It supports interactive mode that allows interacting Testing and debugging of snippets of code
- In Python, since there is no compilation step, editing, debugging and testing is fast.
- The syntax of the python language is clean and length of the code is relatively short. It's fun to work in Python because it allows you to think about the business logic rather than focusing on the syntax.

Features ofLearning Python Programming: -

- Python Programming is Great for Beginners.
- Web Development with Python
- Tons of job opportunities: -
    1) Software Engineer
    2) Research Analyst
    3) Data Analyst
    4) Data Scientist
    5) Software Developer etc.
- Iterative, Agile Design & Methodologies.
- Simple Development Environment Web Developer/Mobile App Developer.
- Python has High Salaries.
- Python Programming is must for Automation Testing Professionals.
- Python is most widely used Scripting Language for Information Security, Hackers.

- Python is the Future of Artificial Intelligence and Machine Learning.
- Python is used for Game Development for Diversity and Flexibility.

In addition to the above points, there are numerous other features which makes Python the highly in demand technology for software companies and enterprises users.

Core Python

1. Introduction

- History
- Features
- Setting up path
- Working with Python
- Basic Syntax
- Variable and Data Types
- Operator

2. Conditional Statements

- If
- If- else
- elif
- Nested if-else

3. Loops

- For
- While
- Nested loops

4. Control Statements

- Break
- Continue
- Pass

5. Numbers &String Manipulation

- Accessing Numbers &Strings
- Basic Operations
- Numbers &String slices
- Function and Methods

6. Lists

- Introduction
- Accessing list
- Operations

- Working with lists
- Function and Methods

7. Tuple

- Introduction
- Accessing Tuples
- Working with Tuple
- Functions and Methods

8. Dictionary & Set

- Introduction
- Accessing values in dictionaries
- Working with dictionaries
- Functions

9. Functions

- Defining a function
- Calling a function
- Types of functions
- Function Arguments
- Anonymous functions
- Global and local variables

10. Modules

- Importing module
- Math module
- Random module
- Packages
- Composition

11. Input-Output

- Printing on screen
- Reading data from keyboard
- Opening and closing file
- Reading and writing files
- Functions

12. Exception Handling

- Exception
- Exception Handling
- Opening and closing file

- Reading and writing files
- Functions

Advance Python

13. OOPs concept

- Class and object
- Attributes
- Inheritance
- Overloading
- Overriding
- Data hiding

14. Regular expressions

- Match function
- Search function
- Matching VS Searching
- Modifiers
- Patterns

15. CGI

- Introduction
- Architecture
- CGI environment variable
- GET and POST methods
- Cookies
- File upload

16. Database

- Introduction
- Connections
- Executing queries
- Transactions
- Handling error

17. Multithreading

- Thread
- Starting a thread
- Threading module

- Synchronizing threads
- Multithreaded Priority Queue

18. GUI Programming

- Introduction
- Tkinter programming
- Tkinter widgets

20. NUMPY

- What Is A Python NumPy Array?
- Install NumPy
- Arrays
- Array indexing
- Datatypes
- Array math
- Broadcasting
- How to Subset, Slice, And Index Arrays
- How to Manipulate Arrays.
- ND-array vs List
- Image Processing
- Instagram Filters
- Object Detection
- Color Detection

Data Science

- Installation of Pandas, Matplotlib, etc
- Introduction to Pandas
- Introduction to Matplotlib
- Pi plot
- Chart plot
- Bar plot
- Scattered plot etc..
- Data Ingestion
- Descriptive Statistics
- Data Cleaning
- Data Visualization
- Graph Plotting
- Frequent Data Operations
- Merging Data frames
- String Operation
- Data Visualization
- Matplotlib

22. INTRODUCTION TO MACHINE LEARNING

- Superwised learning
- Unsuperwised learning
- Classification
- Clustering
- Regression Analysis
- Database
- Relational Data Models
- Structured Query
- Natural Language Processing with NLTK
- Corpora
- Tokenize
- Build a bug of words model
- Plotting frequency of words
- Sentiment Analysis
- Access the Twitter API
- Authentication Twitter API
- Explore Twitter Trends
- Explore Twitter Search
- Frequency Distribution
- Examination
- Live Projects