



PROTECHSKILLS

G14, 1st Floor, Sector 3

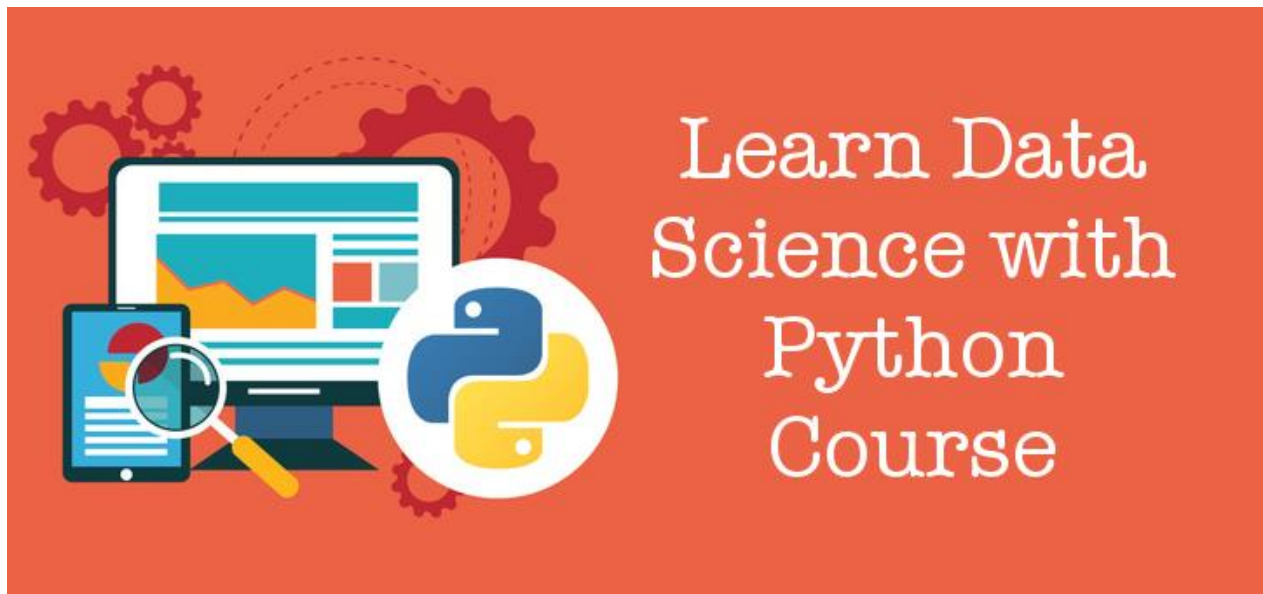
Near Sector 16 Metro Station

Noida, Uttar Pradesh – 201301

Website: www.protechskills.com

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Data Science with Python



Overview

Python is a popular general purpose programming language used for both large and small-scale applications. Python's wide-spread adoption is due in part to its large standard library, easy readability and support of multiple paradigms including functional, procedural and object-oriented programming styles. This Course follows pragmatic approach to tackle end-to-end data science project cycle right from extracting data from different types of sources to exposing your machine learning model as API endpoints that can be consumed in a real-world data solution.

This course will not only help you to understand various data science related concepts, but also help you to implement the concepts in an industry standard approach by utilizing Python and related libraries.



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Targeted Audience

Students having prior knowledge of some programming experience and interested to choose their career as Data Scientist or Python Developers.

Note:

The following unit and exercise durations are estimates, and might not reflect every class experience. If the course is customized or abbreviated, the duration of unchanged units will probably increase.

Course Agenda

Unit 1. Getting Started with Python

- What is Python
- Python Features
- Install Python
- Python Path
- Python Example
- Execute Python
- Python Variables and Keywords
- Python Identifiers
- Python Literals
- Python Operators
- Python Comments

Unit 2. Control Statements in Python

- Conditioning in python
- Python If
- Python If else
- Python else if
- Python nested if
- Python for loop and while loop
- Python Break and Continue
- Python Pass



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Unit 3. Python Strings

String count() Method
String endswith() Method
String expandtabs() Method
String find() Method
String format() Method
String index() Method
String isalnum() Method
String islower(), isnumeric(), isprintable() Methods
String isspace(), istitle(), isupper() Methods
String join(), lower(), partition() Methods
String replace(), rfind(), rindex() Methods
String rjust(), rpartition(), rsplit() Methods
Stringrstrip(), splitlines(), split() Methods
String startswith(), swapcase() Methods
String translate() Method
String upper() Method

Unit 4. Python Lists

Python List
List append() Method
List clear() Method
List copy() Method
List count() Method
List extend() Method
List insert() Method
List index() Method
List pop() Method
List remove() Method
List reverse() Method
List sort() Method

Unit 5. Python Tuples and Set

Python Tuples
Set add() Method
Set discard() Method
Set pop() Method



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Set remove() Method

Unit 6. Python Dictionary

Dictionary clear() Method

Dictionary copy() Method

Dictionary get() Method

Dictionary len() Method

Dictionary items() Method

Dictionary keys() Method

Dictionary popitem() Method

Dictionary pop() Method

Dictionary count() Method

Dictionary index() Method

Dictionary update() Method

Dictionary values() Method

Unit 7. Python Functions, Files I/O

Unit 8. Python Exceptions

Unit 9. Python Program with Conditions and Loop

Unit 10. Python OOPs

Python OOPs Concepts

Python Object Class

Python Constructors

Python Inheritance

Multilevel Inheritance

Overriding

Data hiding

Encapsulation

Abstraction

Unit 11. Multithreading in Python



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Unit 12. Python Module

Importing Module

Built in Module in Python

Python Package

Installing new module

Unit 13. Connectivity with SQLITE Database

Database Connection

Crud Query

Cursor Introduction to Python Numpy Array

Unit 14. Numpy

Introduction to Python Numpy Array

Numpy Installation

Working with Numpy.

Fast analysis and data handling with Pandas.

Exercise: Average Gold, Silver and Bronze medal problem.

Unit 15. Pandas

What is Pandas

Pandas Operation

Slicing the Data Frame

Working with pandas data structures.

Working with pandas visualization.

Reading and Writing files with pandas

Unit 16. Matplotlib and Seaborn visualization

What is Python Matplotlib

Types of Plots

Working with matplotlib : creating figures, adding multiple axes and different Plots.

Working with seaborn: add-on regression, distribution and matrix plots.

Unit 17. Regularization techniques

Notion of Overfitting

Cost function



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Regularized Linear regression

Regularized Logistic regression

Implementation in Python module - sci-kit learn

Unit 18. Supervised Learning - SVM

What are SVMs?

Introducing Hyper-parameters of SVM

Hyperparameter tuning

Types of kernels

High vs Low gamma

Disclaimer

All the assignments and discussion links will be provided after the lecture of current topic.