TRAINING SYLLABUS

Machine Learning using Python 3 Essential Training

Description:

Python is mainly stated as high-level, general-purpose programming language, which emphasizes code readability. The syntax helps the programmers to express their concepts in few general "lines of code" when compared with other promising languages, like Java or C++. Through our courses, you can easily construct clear programs, on both large and small scales. As the importance of Python programming language is gaining huge popularity, therefore; the need to understand and know the language is increasing among people. When you think about Python training, you must look for an Tech Explica expert help.

Tech Explica
Office: E-78, IInd Floor,
South Extension-I, 110049
Delhi, India.

Contact us:
Email: info@techexplica.com
Website: www.techexplica.com
Office: +91-9582999345/46/48

"We believe in long term relationship of trust "

TOPICS

Day-1-2

Introduction

- ❖ What is Python..?
- ❖ A Brief history of Python
- ❖ Why Should I learn Python..?
- ❖ Installing Python
- ❖ How to execute Python program
- ❖ Write your first program

🟤 Variables & Data Types

- ❖ Variables
- ❖ Numbers
- ❖ String
- ❖ Lists , Tuples & Dictionary

Practical

Day-3-4

🟤 Conditional Statements & Loops

Theory + Practical

- ❖ if...statement
- ❖ if...else statement
- ❖ elif...statement
- ❖ The while...Loop
- ❖ The for....Loop

🟤 Control Statements

- ❖ Continue statement
- ❖ Break statement
- ❖ Pass statement

Day-5-6

Theory + Practical

🟤 Function
- o Calling a function
- o Function arguments
- o Built-in functions

🟤 Modules & Packages
- o Modules
- o How to import a module...?
- o Command line arguments using sys module
- o Standard module- os
- o Packages

Practical
- ❖ Scripting assignment

"We believe in long term relationship of trust "

Day-7-8

Theory + **Practical**

- 🟤 **Classes & Objects**

  - ❖ Introduction about classes & objects
  - ❖ Creating a class & object
  - ❖ Inheritance
  - ❖ Methods Overriding
  - ❖ Data hiding

- 🟤 **Files & Directories**

  - ❖ **Writing data to a file**
  - ❖ **Reading data from a file**
  - ❖ **Additional file methods**
  - ❖ **Working with files**
  - ❖ **Working with Directories**

Day-9

Theory :-

- 🟤 **INTRODUCTION TO MACHINE LEARNING**

  - ❖ What is Machine Learning?
  - ❖ Overview about Sci-Kit learn and TensorFlow
  - ❖ Types of ML
  - ❖ Some complementing fields of ML
  - ❖ ML algorithms
  - ❖ Machine learning examples

Practical:-
  - ❖ Assignment

Day-10-11

Theory + **Practical**

- 🟤 **REGRESSION BASED LEARNING**

  - o Simple regression
  - o Multiple regression
  - o Logistic regression
  - o Predicting house prices with regression

- 🟤 **CLUSTERING BASED LEARNING**

  - ❖ Definition
  - ❖ Types of clustering
  - ❖ The k-means clustering algorithm

Day-12-13

Theory + **Practical**

- 🟤 **DATA MINING**

  - ❖ Introducing data mining
  - ❖ Decision Tree
  - ❖ Clustering
- 🟤 **NATURAL LANGUAGE PROCESSING**

  - ❖ Install nltk
  - ❖ Tokenize words
  - ❖ Tokenizing sentences
  - ❖ Stop words with NLTK
  - ❖ Stemming words with NLTK
  - ❖ Speech tagging

Python 3+ Machine Learning Essential Training

Day-14-15

Theory + **Practical**

- 🟤 **MAKING SENSE OF DATA THROUGH VISUALIZATION**

  - o Introducing matplotlib
  - o Bar Charts
  - o Line Charts
  - o Scatter plots
  - o Bubble charts
- 🟤 **WORKING WITH OPENCV**
  - ❖ Setting up opencv
  - ❖ Loading and displaying images
  - ❖ Applying image filters
  - ❖ Tracking faces
  - ❖ Face Detection
  - ❖ Video Operations

Day-16-17

Theory + **Practical**

- 🟤 **Introduction PERFORMING PREDICTIONS WITH LINEAR REGRESSION**
  - o Simple linear regression
  - o Multiple regression
  - o Training and testing model
- 🟤 **SUPPORT VECTOR MACHINES(SVM)**
- 🟤 **NEURAL NETWORKS**

Day-18-19

Theory + **Practical**

- 🟤 **Data Mining and Machine Learning Techniques**
  - o K-Nearest-Neighbors: Concepts
  - o Using KNN to predict a rating for a movie
  - o Dimensionality Reduction; Principal Component Analysis
  - o PCA Example with the Iris data set

"We believe in long term relationship of trust "

Day-20

- **Practical**

  - Project Based on Python and database
  - Project Based on opencv computer vision
  - Develop a window based security cam application with python
  - Project Based on Machine Learning with python

- **Projects Submission**
- **Query Handling**
- **Post –Test**

Python 3+ Machine Learning Essential Training

Testing Partner

"We believe in long term relationship of trust "

Pre-Requisites

1. Basic knowledge of C\C++ Programming.
2. Eagerness to learn new innovative things.

Recommendation

It is strongly recommended to bring your own LAPTOP during the training so that you can easily practice the exercises at home.

Who Could Attend this Training?

- Students from BCA/MCA/B.E/B.Tech/M.Tech/Diploma (ECE/EEE/CSE/IT/MECH) can join this training.
- Anyone who have interest in this field and have pre-requisite knowledge.

Note:-
- Working on project will start from second week. Students must complete their assignments.
- Assignments and Doubts Clarification after each class.

UTKARSH SHARMA
ML Consultant

E – 78, South Extension – I
(Near INA Metro Station)
New Delhi - 110 049
+91-9582999345/46/48
Nucleus Computers Ltd.
(ISO 9001:2015 Certified Company)
E-55, 2nd Floor, Sec- 3 , Noida- 201301
+91-8588893993 | info@techexplica.com | www.techexplica.com

Testing Partner

"We believe in long term relationship of trust "