



Data Science Using Python



About Course

This Data Science with Python program provides learners with a complete understanding of data analytics tools & techniques. Getting started with Python can help you gain knowledge on data analysis, visualization, NumPy, SciPy, web scraping, and natural language processing.

A data scientist is someone who creates programming code and combines it with statistical knowledge to create insights from data.

DATA SCIENCE WITH PYTHON

CURRICULUM

① Course Overview

Overview of Data science

What is Data Science

Different Sectors Using Data Science

② Data Analytics Overview

Exploratory Data Analysis(EDA)

EDA-Quantitative Technique

EDA - Graphical Technique

Data Analytics Conclusion or Predictions

Data Types for Plotting

Data Types and Plotting

③ Mathematical Computing with python(NumPy)

Introduction to Numpy

Activity-Sequence

Creating and Printing an ndarray

Class and Attributes of ndarray

Basic Operations

Activity – Slicing
Copy and Views
Mathematical Functions of Numpy
Advance Slicing
Transpose and arance
Searching

④ Scientific Computing with Python(SciPy)

Introduction of SciPy
SciPy Sub Package - Integration and Optimization
SciPy sub package
Demo - Calculate Eigenvalues and Eigenvector
Demo - Calculate Eigenvalues and Eigenvector

⑤ Data Manipulation with Pandas

Introduction of Pandas
Data Types in Pandas
Understanding Series
Understanding DataFrame
View and Select Data Demo
Missing Values
Data Operations
File Read and Write Support
Pandas Sql Operation

6 Python for Data Visualization-Matplotlib

Introduction to Matplotlib

Matplotlib Part 1 Set up

Matplotlib Part 2 Plot

Matplotlib Part 3 Next steps

Matplotlib Exercises Overview

Matplotlib Exercises – Solutions

7 Python Data Visualization – Seaborn

Introduction to Seaborn

Distribution Plots

Categorical Plots

Matrix Plots

Regression Plots

Grids

Style and Color

Seaborn Exercise Overview

Seaborn Exercise Solutions

8 Introduction to Machine Learning

Link for ISLR

Introduction to Machine Learning

Machine Learning with Python

9

Linear Regression

Linear Regression Theory

Model selection Updates for SciKit Learn

Linear Regression with Python – Part 1 Introduction

Linear Regression with Python – Part 2 Deep Dive

Linear Regression Project Overview and Project Solution

10

Logistic Regression

Logistic Regression Theory – Introduction

Logistic Regression with Python – Part 1 – Logistics

Logistic Regression with Python – Part 2 – Regression

Logistic Regression with Python – Part 3 – Conclusion

Logistic Regression Project Overview and Project Solutions

11

K Nearest Neighbours

KNN Theory

KNN with Python

KNN Project Overview and Project Solutions

12

Decision Trees and Random Forests

Introduction to Tree Methods

Decision Trees and Random Forest with Python

Decision Trees and Random Forest Project Overview
Decision Trees and Random Forest Solutions Part 1
Decision Trees and Random Forest Solutions Part 2

13

Support Vector Machines

SVM Theory
Support Vector Machines with Python
SVM Project Overview
SVM Project Solutions

14

K Means Clustering

K Means Algorithm Theory
K Means with Python
K Means Project Overview
K Means Project Solutions

15

Principal Component Analysis

Principal Component Analysis
PCA with Python

16

Recommender Systems

Recommender Systems
Recommender Systems with Python –
Part 1 The Foundation

Recommender Systems with Python – Part 2 Deep Dive

17

Natural Language Processing

Natural Language Processing Theory

NLP with Python

NLP Project Overview

NLP Project Solutions

18

Big Data and Spark with Python

Big Data Overview

Spark Overview

Local Spark Set-Up

AWS Account Set-Up

Quick Note on AWS Security

EC2 Instance Set-Up

SSH with Mac or Linux

PySpark Setup

Lambda Expressions Review

Introduction to Spark and Python

RDD Transformations and Actions



www.softcrayons.com



info@softcrayons.com



(+91) 854 501 2345



693, Sector 14-A, Vasundhara,
Ghaziabad (U.P.), 201012



@softcrayons