Python Data Analytics

Course Introduction

Welcome to our Python for Data Analysis course! This program is designed to equip you with the essential skills and knowledge needed to harness the power of Python in data analysis. Throughout this course, you'll start with the basics of Python, including fundamental concepts and how to use Jupyter Notebook. You'll then dive into more advanced topics such as data manipulation with Pandas, exploratory data analysis, and building data models.

Each module includes a series of activities to help you grasp the core concepts and apply your learning in practical scenarios. By the end of this course, you'll have a strong foundation in Python programming and be well-prepared to analyze and interpret data effectively. Let's get started on this exciting journey into the world of data science!

1. Introduction to Python:

This module introduces learners to Python programming and its applications. It covers the fundamental concepts needed to get started with Python for data analysis.

Intro to Python Learning Objectives: Outlines the goals and objectives of learning Python, setting a foundation for the course.

Introduction to the Program: Provides an overview of the Python programming environment and its relevance.

Why a Programming Language for Data Analysis: Discusses the importance of Python as a programming language for data analysis tasks.

Introducing Python with Jupyter Notebook: Introduces the use of Jupyter Notebook as an interactive environment for Python programming.

2. Basic Python Concepts

This module delves into the core concepts of Python, focusing on variables, data structures, and conditional statements.

Python Basics Concept Learning Objectives: Defines the learning objectives for understanding basic Python concepts.

Python Concepts: Variables: Explains the concept of variables in Python and their usage.

Python Concepts: Data Structures: Covers various data structures in Python, including lists, tuples, and dictionaries.

Python Concepts: Conditional Statements: Details the use of conditional statements for decision-making in Python.

3. Obtaining and Scrubbing Data with Pandas

This module focuses on using the Pandas library to obtain, clean, and manipulate data.

Obtaining and Scrubbing Data with Pandas: Learning Objectives: Sets the learning objectives for data handling with Pandas.

Introduction to Libraries in Python: Introduces various libraries in Python, with a focus on Pandas.

Loading Data with Pandas: Covers methods for importing data into Pandas DataFrames.

Scrubbing: Removing and Modifying Data with Pandas: Details techniques for cleaning and modifying data using Pandas.

4. Exploring Data with Python

This module emphasizes exploratory data analysis (EDA) using Python, including visualization and aggregation.

Exploring Data with Python: Learning Objectives: Defines the goals for exploratory data analysis with Python.

Intro to Exploratory Analysis: Provides an overview of exploratory analysis techniques.

Exploration With Pandas: Discusses methods for data exploration using Pandas.

Exploratory Visualization: Focuses on creating visualizations to understand data patterns.

Grouping and Aggregation With Pandas: Covers grouping and aggregation techniques for summarizing data.

5. Modeling and Interpreting Data with Python

This module introduces data modeling and interpretation using Python, focusing on analytical techniques and integration.

M & I Data with Python: Learning Objectives: Outlines the learning objectives for modeling and interpreting data.

Introduction: Modeling and Interpreting: Provides an introduction to data modeling and interpretation concepts

Parts of Interpreting: Discusses different aspects of interpreting data models.

Tying It All Together: Integrates the concepts learned into a comprehensive approach to data analysis.

✏️ Project and Practical work!

As part of our course, you'll engage in hands-on projects and practical work to apply what you've learned. To help you visualize and interact with course materials, we've added notebook for your practial work.

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