

---

# Python Tableau

## **1: Introduction to Python and Tableau Integration**

- 1.1 Overview of Python and Tableau
- 1.2 Advantages of combining Python and Tableau
- 1.3 Setting up Python and Tableau environments

## **2: Python Basics for Data Processing**

- 2.1 Data types, variables, and operators in Python
- 2.2 Control structures (if statements, loops)
- 2.3 Functions and modules
- 2.4 File I/O and data handling in Python

## **3: Data Manipulation with Python Libraries**

- 3.1 Introduction to NumPy and Pandas
- 3.2 Data cleaning and preprocessing with Pandas
- 3.3 Combining and transforming data
- 3.4 Working with missing data

## **4: Python for Data Analysis**

- 4.1 Exploratory Data Analysis (EDA) with Python
- 4.2 Descriptive statistics and data visualization with Python (Matplotlib, Seaborn)

## **5: Python for Advanced Data Analysis**

- 5.1 Introduction to Scikit-Learn for machine learning
- 5.2 Building and evaluating predictive models
- 5.3 Feature engineering and selection

## 5.4 Exporting Python data to Tableau

## 6: Introduction to Tableau

- 6.1 Tableau basics: Connecting to data sources
- 6.2 Creating simple visualizations
- 6.3 Customizing and formatting visuals
- 6.4 Dashboard design principles

## 7: Integrating Python and Tableau

- 7.1 TabPy (Tableau Python Server) integration
- 7.2 Passing data between Python and Tableau
- 7.3 Creating advanced visualizations with Python calculations
- 7.4 Real-world use cases and best practices

## 8: Final Project and Course Review

- 8.1 Capstone Project: Students will work on a project that involves integrating Python data processing and analysis with Tableau data visualization.
- 8.2 Course Review and Exam: A final review of key concepts and an assessment to test students' knowledge.

## 9: Additional Topics (Optional, depending on course duration)

- 9.1 Advanced Tableau features (e.g., mapping, calculated fields)
- 9.2 Advanced Python libraries (e.g., TensorFlow for machine learning, natural language processing with NLTK)



9.3 Web scraping with Python and integrating the data into Tableau

9.4 Data storytelling and communication with Tableau.

