

# Data Analytics and Visualization with Python and IBM Cognos BI (Trial License)

**Duration:** 05 days

**Labs:** Trial license will be provided (organization email will be required)

**Courseware:** Unofficial ppt

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## Course Objective:

- Master Python basics, including data structures and control flow.
- Utilize pandas and NumPy for data manipulation and create visualizations with Matplotlib and Seaborn.
- Set up Cognos, create basic reports, and navigate its interface.
- Build and customize interactive dashboards and visualizations in Cognos BI.
- Integrate Python and Cognos BI skills to develop and present a comprehensive BI solution.

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## Module 1: Python Fundamentals for Data Analytics

- 1.1 Python Overview and Setup
- 1.2 Python Basics: Variables, Data Types, and Control Structures
- 1.3 Data Structures in Python: Lists, Dictionaries, and Sets
- **Lab 1: Basic Python Exercises**
  - Practicing Python syntax, loops, and data structures.

## Module 2: Data Analysis with Python

- 2.1 Introduction to pandas and NumPy
- 2.2 Data Cleaning and Manipulation
- 2.3 Basic Data Visualization with Matplotlib and Seaborn
- **Lab 2: Data Analysis and Visualization**
  - Conducting data cleaning, manipulation, and visualization exercises.

## Module 3: Getting Started with IBM Cognos Analytics

- 3.1 Cognos Overview and Trial Setup

- Setting up a Cognos Analytics trial account
- Understanding the interface and key components
- **Lab 3: Cognos Trial Environment Setup**
  - Navigating the Cognos interface, configuring a simple workspace.
- 3.2 Creating Simple Reports
  - List and Crosstab Reports with limited data sources
- **Lab 4: Building Basic Reports**
  - Creating and customizing simple reports with available data.

#### **Module 4: Dashboards and Visualizations in Cognos**

- 4.1 Introduction to Dashboards in Cognos
- 4.2 Creating Interactive Dashboards Using Available Widgets
- **Lab 5: Dashboard Creation**
  - Hands-on experience with creating and customizing dashboards.

#### **Module 5: Data Exploration and Analysis in Cognos**

- 5.1 Exploring Data Modules
- 5.2 Using Basic Data Visualization Tools
- **Lab 6: Data Exploration and Visualization**
  - Practical exercises on exploring datasets and using visualizations.

#### **Module 6: Report Authoring and Formatting**

- 6.1 Formatting Reports and Adding Calculations
- 6.2 Using Basic Filters and Prompts
- **Lab 7: Advanced Report Formatting**
  - Building reports with filters, prompts, and simple calculations.

#### **Module 7: Introduction to Data Governance and Security Basics**

- 7.1 Overview of User Roles and Permissions (Trial Level)
- 7.2 Managing Access and Basic Security Setup
- **Lab 8: Managing Users and Permissions**
  - Setting up simple security roles and permissions.

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