Data Analytics with Tableau Training Curriculum

STRUCTURE

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Data Analytics with Tableau Training

About Croma Campus:

Croma Campus Training & Development Private Limited is an education platform since 2010 providing rigorous industry-relevant programs designed and delivered in collaboration with world-class faculty and industry.

- Hands-On Live Projects
- Industry Cases Studies
- 61,640+ Satisfied Learners
- 140+ Training Courses
- 100% Certification Passing Rate
- Live Instructor Classroom / Online Training
- 100% Placement Assistance

Course Objectives:

- Install, configure, and secure your Jenkins server
- Organize and monitor general-purpose build jobs
- Integrate automated tests to verify the build
- Set up code quality reporting
- Establish effective team notification strategies and techniques
- Configure build pipelines, parameterized jobs, matrix builds, and other advanced jobs
- Implement automated deployment and continuous delivery

Croma Campus Training Program Deliverables:

- **Session Recordings** - Original Class Room Voice & Video Recording
- **Training Material** - Soft Copy Handbooks
- **Assignments** | Multiple Hands-on Exercises
- **Test Papers** - We provide **Practice Test** as part of our course to help you prepare for the actual certification exam.
- **Live Case Studies**
- **Live Projects** - Hands-on exercises and Project work. You will work on real time industry-oriented projects and assignments for each module to practice.
- **Key focus on Hands-on exercises and Project work**. You will work on real time industry-oriented projects.
- Faculty with more than **10+ Years of Experience** in the Industry.
- **Technical Resume Designing & Job Assistance:** With more than 100+ Clients across the Globe and we help learners to get a good job in their respective field. We also help learners with resume preparation.
- **Interview Q&A**
- **About Croma Campus Training Certificate:** Croma Campus will provide you with an industry-recognized (Certified by **ISO 9001:2015** & **E-Cell IIT Jodhpur**) course completion certificate, which has lifelong validity.

How I unlock my Croma Campus Certificate: Attend Complete Batch & Submit at least One Completed Project.

Data Analytics Program Modules:

- Python for Data Analytics
- Data Analytics Overview
- MS SQL For Data Analytics
- Advance Excel for Data Analytics
- Tableau for Data Analytics
- Data Analytics Live Projects

Course Content for Data Analytics with Tableau:

Module 1: Python Statistics for Data Science

- **Introduction To Python:**
  - Installation and Working with Python
  - Understanding Python variables
  - Python basic Operators
  - Understanding the Python blocks.
- **Introduction To Variables:**
  - Variables, expression condition and function
  - Global and Local Variables in Python
  - Packing and Unpacking Arguments
  - Type Casting in Python
  - Byte objects vs. string in Python
  - Variable Scope
- **Python Data Type:**
  - Declaring and usingNumeric data types
  - Using stringdata type and string operations
  - Understanding Non-numeric data types
  - Understanding the concept of Casting and Boolean.
  - Strings
  - List
  - Tuples
  - Dictionary
  - Sets
- **Introduction Keywords and Identifiers and Operators**
  - Python Keyword and Identifiers
  - Python Comments, Multiline Comments.
  - Python Indentation
  - Understating the concepts of Operators

Data Structure

- **List**
  - What is List.
  - List Creation
  - List Length
  - List Append
  - List Insert
  - List Remove
  - List Append & Extend using "+" and Keyword
  - List Delete
  - List related Keyword in Python
  - List Revers
  - List Sorting

- List having Multiple Reference
- String Split to create a List
- List Indexing
- List Slicing
- List count and Looping
- List Comprehension and Nested Comprehension

- **Dictionary**
  - Dict Creation
  - Dict Access (Accessing Dict Values)
  - Dict Get Method
  - Dict Add or Modify Elements
  - Dict Copy
  - Dict From Keys.
  - Dict Items
  - Dict Keys (Updating, Removing and Iterating)
  - Dict Values
  - Dict Comprehension
  - Default Dictionaries
  - Ordered Dictionaries
  - Looping Dictionaries
  - Dict useful methods (Pop, Pop Item, Str , Update etc.)

Sets, Tuples and Looping Programming

- **Sets**
  - What is Set
  - Set Creation
  - Add element to a Set
  - Remove elements from a Set
  - PythonSet Operations
  - Frozen Sets
- **Tuple**
  - What is Tuple
  - Tuple Creation
  - Accessing Elements in Tuple
  - Changinga Tuple
  - TupleDeletion
  - Tuple Count
  - Tuple Index
  - TupleMembership
  - TupleBuilt in Function (Length, Sort)
- **Control Flow**
  - Loops
  - Loops and Control Statements (Continue, Break and Pass).
  - Looping techniques in Python
  - How to use Range function in Loop?
  - Programs for printing Patterns in Python

- How to use if and else with Loop
- Use of Switch Function in Loop
- Elegant way of Python Iteration
- Generator in Python
- How to use nested IF and Else in Python
- How to use nested Loop in Python
- Use If and Else in for and While Loop
- Examples of Looping with Break and Continue Statements
- How to use IN or NOTkeywordin Python Loop.

Exception and File Handling, Module, Function and Packages

- **Python Exception Handling**
  - Python Errors and Built-in-Exceptions
  - Exception handing Try, Except and Finally
  - Catching Exceptions in Python
  - Catching Specific Exception in Python
  - Raising Exception
  - Try and Finally
- **Python File Handling**
  - Opening a File
  - Python File Modes
  - Closing File
  - Writing to a File
  - Reading from a File
  - Renaming and Deleting Files in Python
  - Python Directory and File Management
  - List Directories and Files
  - Making New Directory
  - Changing Directory
- **Python Function, Modules and Packages**
  - Python Syntax
  - Function Call
  - Return Statement
  - Write an Empty Function in Python –pass statement.
  - Lamda/ Anonymous Function
  - *argsand **kwargs
  - Help function in Python
  - Scope and Life Time of Variable in Python Function
  - Nested Loop in Python Function
  - Recursive Function and Its Advantage and Disadvantage
  - Organizing python codes using functions
  - Organizing python projects into modules
  - Importing own module as well as external modules
  - Understanding Packages
  - Programming using functions, modules & external packages

- Map, Filter and Reduce function with Lambda Function
- More example of Python Function

Data Automation (Excel, SQL, PDF etc)

- **Python Object Oriented Programming—Oops**
  - Concept of Class, Object and Instances
  - Constructor, Class attributes and Destructors
  - Real time use of class in live projects
  - Inheritance, Overlapping and Overloading operators
  - Adding and retrieving dynamic attributes of classes
  - Programming using Oops support
- **Python Database Interaction**
  - SQL Database connection using
  - Creating and searching tables
  - Reading and Storing configinformation on database
  - Programming using database connections
- **Reading an excel**
  - Reading an excel file usingPython
  - Writing toan excel sheet using Python
  - Python| Reading an excel file
  - Python | Writing an excel file
  - Adjusting Rows and Column using Python
  - ArithmeticOperation in Excel file.
  - Plotting Pie Charts
  - Plotting Area Charts
  - Plotting Bar or Column Charts using Python.
  - Plotting Doughnut Chartslusing Python.
  - Consolidationof Excel File using Python
  - Split of Excel File Using Python.
  - Play with Workbook, Sheets and Cells in Excel using Python
  - Creating and Removing Sheets
  - Formatting the Excel File Data
  - More example of Python Function
- **Working with PDF and MS Word using Python**
  - Extracting Text from PDFs
  - Creating PDFs
  - Copy Pages
  - Split PDF
  - Combining pages from many PDFs
  - Rotating PDF's Pages
- **Complete Understanding of OS Module of Python**
  - Check Dirs. (exist or not)
  - How to split path and extension?
  - How to get user profile detail?
  - Get the path of Desktop, Documents, Downloads etc.

- Handle the File System Organization using OS
- How to get any files and folder's details using OS?

Data Analysis & Visualization

- **Pandas**
  - Read data from Excel File using Pandas More Plotting, Date Time Indexing and writing to files
  - How to get record specific records Using Pandas Adding & Resetting Columns, Mapping with function
  - Using the Excel File class to read multiple sheets More Mapping, Filling Nonvalue's
  - Exploring the Data Plotting, Correlations, and Histograms
  - Getting statistical information about the data Analysis Concepts, Handle the None Values
  - Reading files with no header and skipping records Cumulative Sums and Value Counts, Ranking etc
  - Reading a subset of columns Data Maintenance, Adding/Removing Cols and Rows
  - Applying formulas on the columns Basic Grouping, Concepts of Aggregate Function
  - Complete Understanding of Pivot Table Data Slicing using iLocand Locproperty (Setting Indices)
  - Under sting the Properties of Pivot Table in Pandas Advanced Reading CSVs/HTML, Binning, Categorical Data
  - Exporting the results to Excel Joins:
  - Python | Pandas Data Frame Inner Join
  - Under sting the properties of Data Frame Left Join (Left Outer Join)
  - Indexing and Selecting Data with Pandas Right Join (Right Outer Join)
  - Pandas | Merging, Joining and Concatenating Full Join (Full Outer Join)
  - Pandas | Find Missing Data and Fill and Drop NA Appending DataFrameand Data
  - Pandas | How to Group Data How to apply Lambda / Function on Data Frame
  - Other Very Useful concepts of Pandas in Python Data Time Property in Pandas (More and More)
- **NumPy**
  - Introduction to NumPy: Numerical Python
  - Importing NumPy and Its Properties
  - NumPy Arrays
  - Creating an Array from a CSV
  - Operations an Array from aCSV
  - Operations with NumPy Arrays
  - Two-Dimensional Array
  - Selecting Elements from 1-D Array
  - Selecting Elements from 2-D Array
  - Logical Operation with Arrays
  - Indexing NumPy elements using conditionals
  - NumPy'sMean and Axis

- NumPy'sMode, Median and Sum Function
- NumPy'sSort Function and More

- **MatPlotLib**
  - Bar Chart using Python MatPlotLib
  - Column Chart using Python MatPlotLib
  - Pie Chart using Python MatPlotLib
  - Area Chart using Python MatPlotLib
  - Scatter Plot Chart using Python MatPlotLib
  - Play with Charts Properties Using MatPlotLib
  - Export the Chart as Image
  - Understanding plt. subplots () notation
  - Legend Alignment of Chart using MatPlotLib
  - Create Charts as Image
  - Other Useful Properties of Charts.
  - Complete Understanding of Histograms
  - Plotting Different Charts, Labels, and Labels Alignment etc.
- **Introduction to Seaborn**
  - Introduction to Seaborn
  - Making a scatter plot with lists
  - Making a count plot with a list
  - Using Pandas with seaborn
  - Tidy vs Untidy data
  - Making a count plot with a Dataframe
  - Adding a third variable with hue
  - Hue and scattera plots
  - Hue and count plots
- **Visualizing Two Quantitative Variables**
  - Introduction to relational plots and subplots
  - Creating subplots with col and row
  - Customizing scatters plots
  - Changing the size of scatter plot points
  - Changing the style of scatter plot points
  - Introduction to line plots
  - Interpreting line plots
  - Visualizing standard deviation with line plots
  - Plotting subgroups in line plots
- **Visualizing a Categorical and a Quantitative Variable**
  - Current plots and bar plots
  - Count plots
  - Bar plot with percentages
  - Customizing bar plots
  - Box plots
  - Create and interpret a box plot
  - Omitting outliers
  - Adjusting the whiskers
  - Point plots

- Customizing points plots
- Point plot with subgroups

- **Customizing Seaborn Plots**
  - Changing plot style and colour
  - Changing style and palette
  - Changing the scale
  - Using a custom palette
  - Adding titles and labels: Part 1
  - Face Grids vs. Axes Subplots
  - Adding a title to a face Grid object
  - Adding title and labels: Part 2
  - Adding a title and axis labels
  - Rotating x-tics labels
  - Putting it all together
  - Box plot with subgroups
  - Bar plot with subgroups and subplots

Module 2 : Data Analytics Overview

- **Data Analytics Overview**
  - Dealing with Different Types of Data
  - Data Visualization for Decision making
  - Data Science, Data Analytics, and Machine Learning
  - Data Science Methodology
  - Data Analytics in Different Sectors
  - Analytics Framework and Latest trends

Module 3 : MS SQL For Data Analytics

- **Introduction**
  - Overview of Oracle Database 11g and related products
  - Overview of relational database management concepts and terminologies
  - Introduction to SQL and its development environments
  - The HR schema and the tables used in this course
  - Oracle Database documentation and additional resources

- **Retrieve Data using the SQL SELECT Statement**
  - List the capabilities of SQL SELECT statements
  - Generate a report of data from the output of a basic SELECT statement
  - Use arithmetic expressions and NULL values in the SELECT statement
  - Invoke Column aliases
  - Concatenation operator, literal character strings, alternative quote operator, and the DISTINCT keyword

- Display the table structure using the DESCRIBE command

- **Usage of Single-Row Functions to Customize Output**
  - List the differences between single row and multiple row functions
  - Manipulate strings using character functions
  - Manipulate numbers with the ROUND, TRUNC, and MOD functions
  - Perform arithmetic with date data
  - Manipulate dates with the DATE functions
- **Conversion Functions and Conditional Expressions**
  - Describe implicit and explicit data type conversion
  - Describe the TO_CHAR, TO_NUMBER, and TO_DATE conversion functions
  - Nesting multiple functions
  - Apply the NVL, NULLIF, and COALESCE functions to data
  - Usage of conditional IF THEN ELSE logic in a SELECT statement
- **Aggregated Data Using the Group Functions**
  - Usage of the aggregation functions in SELECT statements to produce meaningful reports
  - Describe the AVG, SUM, MIN, and MAX function
  - How to handle Null Values in a group function?
  - Divide the data in groups by using the GROUP BY clause
  - Exclude groups of date by using the HAVING clause
- **Display Data from Multiple Tables**
  - Write SELECT statements to access data from more than one table
  - Join Tables Using SQL:1999 Syntax
  - View data that does not meet a join condition by using outer joins
  - Join a table to itself by using a self join
  - Create Cross Joins
- **Usage of Sub-queries to Solve Queries**
  - Use a Sub-query to Solve a Problem
  - Single-Row Sub-queries
  - Group Functions in a Sub-query
  - Multiple-Row Sub-queries
  - Use the ANY and ALL Operator in Multiple-Row Sub-queries
  - Use the EXISTS Operator
- **SET Operators**
  - Describe the SET operators
  - Use a SET operator to combine multiple queries into a single query
  - Describe the UNION, UNION ALL, INTERSECT, and MINUS Operators
  - Use the ORDER BY Clause in Set Operations
- **Data Manipulation**
  - Add New Rows to a Table
  - Change the Data in a Table
  - Use the DELETE and TRUNCATE Statements
  - How to save and discard changes with the COMMIT and ROLLBACK statements
  - Implement Read Consistency
  - Describe the FOR UPDATE Clause

Module 4 : Advance Excel for Analytics

- **Ms Excel Basic**
  - Creation of Excel Sheet Data
  - Range Name, Format Painter
  - Conditional Formatting, Wrap Text, Merge & Centre
  - Sort, Filter, Advance Filter
  - Different type of Chart Creations
  - Auditing, (Trace Precedents, Trace Dependents)Print Area
  - Data Validations, Consolidate, Subtotal
  - What if Analysis (Data Table, Goal Seek, Scenario)
  - Solver, Freeze Panes
  - Various Simple Functions in Excel(Sum, Average, Max, Min)
  - Real Life Assignment work

- **Ms Excel Advance**
  - Advance Data Sorting
  - Multi-level sorting
  - Restoring data to original order after performing sorting
  - Sort by icons
  - Sort by colours
  - Lookup Functions
    - Lookup
    - VLookup
    - HLookup
  - Subtotal, Multi-Level Subtotal
  - Grouping Features
    - Column Wise
    - Row Wise
  - Consolidation With Several Worksheets
  - Filter
    - Auto Filter
    - Advance Filter
  - Printing of Raw & Column Heading on Each Page
  - Workbook Protection and Worksheet Protection
  - Specified Range Protection in Worksheet
  - Excel Data Analysis
    - Goal Seek
    - Scenario Manager
  - Data Table
    - Advance use of Data Tables in Excel
    - Reporting and Information Representation
  - Pivot Table
    - Pivot Chat
    - Slicer with Pivot Table & Chart

- Generating MIS Report In Excel
    - Advance Functions of Excel
    - Math & Trig Functions
- Text Functions
- Lookup & Reference Function
- Logical Functions & Date and Time Functions
- Database Functions
- Statistical Functions
- Financial Functions
- Functions for Calculation Depreciation

- **MIS Reporting & Dash Board**
    - Dashboard Background
    - Dashboard Elements
    - Interactive Dashboards
    - Type of Reporting In India
        - Reporting Analyst
        - Indian Print Media Reporting
    - Audit Report
    - Accounting MIS Reports
    - HR Mis Reports
    - MIS Report Preparation Supplier, Exporter
    - Data Analysis
        - Costing Budgeting Mis Reporting
        - MIS Report For Manufacturing Company
        - MIS Reporting For Store And Billing
    - Product Performance Report
    - Member Performance Report
    - Customer-Wise Sales Report
    - Collections Report
    - Channel Stock Report
    - Prospect Analysis Report
    - Calling Reports
    - Expenses Report
    - Stock Controller MIS Reporting
    - Inventory Statement
    - Payroll Report
    - Salary Slip
    - Loan Assumption Sheet
    - Invoice Creation

Module 5 : Tableau for Data Analytics.

- **Introduction to Tableau2018**
  - What is Tableau?
  - Features of Tableau
  - Top Chart Types in Tableau
  - Introduction to the various File Types
  - Quick Introduction to the User Interface in Tableau
  - How to Create Data Visualization Using Tableau feature "Show Me"
  - Reorder & Remove Visualization Fields
  - How to Sort & Filter Data
  - How to Create a Calculated Field
  - How to Perform Operations using Cross-Tab
  - Working with Workbook Data & Worksheets
  - How to Create a Packaged Workbook
- **Tableau Architecture & User Interface**
  - Architecture of Tableau
  - Installation of Tableau Desktop
  - The interface of Tableau (Layout, Toolbars, Data Pane, Analytics Pane etc.)
  - How to Start with Tableau?
- **Data Preparation**
  - Connecting to Different Data Sources
  - Excel
  - CSV
  - Microsoft Access
  - SQL server
  - Google Sheets
  - Live vs. Extract Connection
  - Creating Extract
  - Refreshing Extract
  - Incremental Extract
  - Refreshing Live
  - Data Source Editor
  - Managing Metadata and Extracts
  - Pivoting & Splitting
  - Data Interpreter : Clean dirty data
  - TWB vs. TWBX
- **Data Visualization Principles**
  - What is Data Visualization?
  - Why Visualization came into the picture?
  - Importance of Visualizing Data
  - Poor Visualizations versus Perfect Visualizations
  - Principles of Visualizations
  - Tufte's Graphical Integrity Rule
  - Tufte's Principles for Analytical Design

- Visual Rhetoric
- Goal of Data Visualization
- Data Interpretation
- Pivot Tables
- Split Tables
- Responsive Tool Tips
- Radial & Lasso Selection
- Right Click Filtering
- Creating Calculated Fields
- Logical functions
- Case-if functions
- ZN function
- Else-if function
- Ad-Hoc Calculations
- Manipulating Text-Left and Right Functions

- **Basic Data Visualization**
  - Pivot Table & Heat Map
  - Highlight Table
  - Bar Charts
  - Line Charts
  - Pie Chart
  - Scatter Plot
  - Word Cloud
  - Tree Map
  - Blended Axis
  - Dual Axis
- **Managing Your Data**
  - Filters
  - Types of Filters
  - Dimension Filters
  - Measure Filters
  - Condition based Filters
  - Advanced filters using wildcards
  - Top & Bottom N Filtering
  - Filtering order of operations
  - Extract Filter
  - Data Source Filter
  - Context Filter
  - Other Filters etc
  - Sorting
  - Calculations - String, Basic, Date & Logic
  - Parameters
  - Working with Dates
  - Table Calculation
  - Discrete vs Continuous measures
  - Grouping Data
  - Groups

- Sets
- Hierarchies
- Bins
- Combined Fields

- **Formatting**
  - Size
  - Updating Axis
  - Colors
  - Borders
  - Transparency
  - Chart Lines
  - Trend Line
  - Forecasting
  - Reference Line
  - Mark Labels
  - Annotations
- **Dashboard Design**
  - Canvas Selection & Adjusting Sizes
  - Tiled Objects
  - Floating Objects
  - Pixel Perfect Alignment
  - Summary Box
  - Chart Titles & Captions
  - Adding Images & Text
  - Adding Background Color
  - Adding Shading
  - Adding Separator Lines
  - Dynamic Chart Titles
  - Information Icons
  - Creating a Story
- **Advanced Data Preparation**
  - Join
  - Inner
  - Left
  - Right
  - Full
  - Complex Joins
  - Union
  - Data Blending & when it is required
- **Advance Data Visualization**
  - Bar Chart
  - Stack Bar Chart
  - Bar in Bar Chart
  - Combo Chart
  - Line Chart
  - Single Axis

- Blended Axis
- Dual Axis
- Dual Axis Chart
- Line
- Bar
- Lollipop Chart
- Donut
- Pareto Chart
- Motion Charts
- Other Advanced Charts

- **Advanced Filtering & Actions**
  - Action Filters
  - Action Jumps
- **Sharing Your Dashboards**
  - Publishing to PDF
  - Exporting to Pivot Tables and Images
  - Exporting Packaged Workbooks
  - Publishing to Tableau Server