

## Assessment for Data Analyst Role (Tableau, Power BI)

Objective: Evaluate the candidate's proficiency in data analysis, visualization, and reporting using Tableau and Power BI.

### Part 1: Theoretical Knowledge

#### 1. Understanding Data Visualization

Question: Explain the importance of data visualization in data analysis. What are the key principles of effective data visualization?

Evaluation Criteria: Clarity of explanation, understanding of key principles.

#### 2. Tableau Basics

Question: What are the main components of Tableau? Describe the process of creating a basic dashboard in Tableau.

Evaluation Criteria: Understanding of Tableau components, step-by-step process.

#### 3. Power BI Fundamentals

Question: Discuss the main features of Power BI. How does Power BI differ from Tableau in terms of functionality and use cases?

Evaluation Criteria: Understanding of Power BI features, comparison with Tableau.

### Part 2: Practical Application

#### 4. Data Cleaning and Preparation

Problem Statement: Given a dataset with missing values and inconsistencies, clean and prepare the data for analysis.

Requirements:

Use Python or R to perform data cleaning.

Document the steps taken to handle missing values and inconsistencies.

Evaluation Criteria: Correctness of data cleaning steps, clarity of documentation.

#### 5. Tableau Visualization

Problem Statement: Create an interactive sales dashboard in Tableau using the provided sales dataset. The dashboard should include key metrics such as total sales, sales by region, and sales trends over time.

Requirements:

Use various charts (e.g., bar charts, line charts) to represent the data.

Implement filters to allow users to interact with the data.

Evaluation Criteria: Dashboard design, interactivity, and clarity of visualizations.

#### 6. Power BI Report

Problem Statement: Develop a report in Power BI to analyze customer feedback data. The report should highlight customer satisfaction levels, common issues, and trends over time.

Requirements:

Use visualizations such as pie charts, bar charts, and timelines.

Include slicers to filter the data based on different criteria.

Evaluation Criteria: Report design, use of visualizations, interactivity.

### Part 3: Advanced Analytics

#### 7. Statistical Analysis

Problem Statement: Perform a statistical analysis on a given dataset to identify significant trends and correlations. Provide a summary of your findings.

Requirements:

Use statistical methods (e.g., correlation analysis, hypothesis testing).

Present the results using visualizations.

Evaluation Criteria: Correctness of analysis, clarity of summary, and visual presentation.

#### 8. Predictive Analytics

Problem Statement: Build a predictive model to forecast sales for the next quarter using historical sales data. Explain the steps taken and the rationale behind your model choice.

Requirements:

Use Python, R, or a similar tool to build the model.

Document the data preprocessing, model building, and evaluation steps.

Evaluation Criteria: Accuracy of the model, clarity of documentation, and rationale.

### Part 4: Scenario-Based Questions

#### 9. Real-World Problem Solving

Question: Imagine you are given a large dataset with customer transactions. How would you approach the task of identifying key customer segments and their behaviors? Describe the steps and tools you would use.

Evaluation Criteria: Problem-solving approach, understanding of segmentation techniques, choice of tools.

#### 10. Data-Driven Decision Making

Question: A company wants to launch a new product and has collected survey data on customer preferences. How would you use this data to help the company make an informed decision? Outline your approach.

Evaluation Criteria: Approach to data analysis, use of visualization tools, and ability to derive insights.