

Plugging into the Future: An Exploration of Electricity Consumption Patterns Using Tableau

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An Exploration of Electricity Consumption Patterns Using Tableau

 Assignment

 Assignment Title

Analyzing Electricity Consumption Patterns Using Tableau

 Assignment Objective

To analyze electricity consumption data using Tableau, identify patterns and trends, and present insights through interactive dashboards and visual storytelling.

 Assignment Description

Electricity consumption is a key indicator of economic growth, industrial activity, and population development. In this assignment, students will use Tableau to:

Explore electricity consumption data

Identify seasonal and regional trends

Compare sector-wise usage

Create interactive dashboards

Present insights using Tableau Story

 Dataset Requirements

The dataset should include:

Year

Month

Region / State

Sector (Residential, Commercial, Industrial)

Total Electricity Consumption (kWh or GWh)

Peak Demand (Optional)

You may use open datasets from government portals or sample datasets.

 Tools Required

Tableau Desktop / Tableau Public

Microsoft Excel (for data cleaning)

 Assignment Tasks

 1 Data Preparation

Import dataset into Tableau

Clean and format data

Create calculated fields if necessary

 2 Trend Analysis

Create a Line Chart for yearly consumption

Create a Monthly comparison chart

Identify peak consumption periods

 3 Regional Analysis

Create a Map visualization

Highlight top 5 highest consuming regions

Compare regional consumption patterns

 4 Sector-wise Analysis

Create a Stacked Bar Chart

Compare Residential, Commercial, and Industrial usage

Identify dominant sector

 5 Forecasting

Use Tableau Forecast feature

Predict next 1–2 years consumption trend

Interpret forecast results

6 Dashboard Creation

Create an interactive dashboard including:

KPI indicators (Total Consumption, Highest Region, Peak Year)

Filters (Year, Region, Sector)

At least 4 visualizations

Clean and professional layout

7 Story Presentation

Create a Tableau Story explaining:

Problem statement

Key findings

Major insights

Recommendations

Conclusion

(Expected Learning Outcomes)

After completing this assignment, students will be able to:

Perform data visualization using Tableau

Analyze time-series data

Create interactive dashboards

Apply forecasting techniques

Present data insights effectively

Submission Requirements

Tableau Workbook (.twb or .twbx)

Project Report (PDF/Word)

Screenshots of dashboards

Summary of insights (1–2 pages)

Evaluation Criteria

Criteria

Marks

Data Preparation

15

Visualization Quality

20

Dashboard Design

20

Analysis & Insights

25

Forecasting

10

Presentation & Documentation