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Data Analytics Mentor

2025

Data Analytics

7 Data Analytics Projects



1. Sales Performance Dashboard

Business Problem

Sales leaders often struggle to get real-time insights into which products, regions, or sales reps are performing well. A centralized dashboard can help monitor sales trends and drive decisions.

Project Steps

- Import historical sales data (CSV/Excel).
- Clean and preprocess the data.
- Calculate key metrics: revenue, average order value, growth %.
- Create time-series visuals (monthly sales trends).
- Segment sales by region, product, sales rep.

Tools



Excel



Tableau



Power BI

Skills Gained

- Data cleaning and modeling
- Dashboard creation
- KPI identification and tracking
- Visual storytelling

2. Customer Churn Prediction

Business Problem

It's more expensive to acquire a new customer than retain an existing one. Companies want to predict which customers are likely to leave so they can intervene early.

Project Steps

- Import customer usage and demographic data.
- Label churn vs. active customers.
- Engineer features like last login date, purchase frequency.
- Build a classification model (e.g., logistic regression or random forest).
- Evaluate using accuracy, recall, and ROC curve.

Tools



Python



Pandas



Scikit-learn



Jupyter Notebook

Skills Gained

- Predictive modeling
- Classification algorithms
- Data preprocessing
- Business insight generation

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3. Web Traffic Analysis

Business Problem

Marketers need to know which campaigns are working and where users drop off. Web traffic data helps identify which content drives engagement.

Project Steps

- Export data from Google Analytics.
- Clean and structure data by sessions, source, medium.
- Identify top landing and exit pages.
- Analyze bounce rate, average session duration.
- Visualize trends over weeks/months.

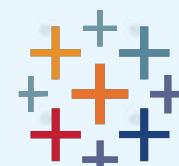
Tools



Google Analytics



Excel



Tableau

Skills Gained

- | | |
|---|---|
| <input checked="" type="checkbox"/> Funnel analysis | <input checked="" type="checkbox"/> Trend and cohort analysis |
| <input checked="" type="checkbox"/> Campaign performance tracking | <input checked="" type="checkbox"/> Data visualization |

4. Retail Inventory Optimization

Business Problem

Retailers lose money when they run out of stock or overstock. Forecasting future inventory needs ensures smoother operations and less waste.

Project Steps

- Import historical sales and inventory data.
- Group data by SKU, store, and week.
- Apply time series models (ARIMA, Exponential Smoothing).
- Forecast stock needs for the next month/quarter.
- Visualize reorder points and trends.

Tools



Python



Statsmodels



Excel



Power BI

Skills Gained

- Time series forecasting
- Demand pattern analysis
- Inventory KPIs (turnover rate, reorder point)
- Decision-making insights

5. HR Analytics – Employee Attrition

Business Problem

High attrition leads to higher recruitment costs and productivity loss. Identifying early signals of attrition helps improve employee retention.

Project Steps

- Load employee data (tenure, salary, department, performance).
- Label employees who left vs. stayed.
- Perform exploratory data analysis (age vs. attrition, job role, etc.).
- Build a model to predict likelihood of leaving.
- Share insights in a dashboard for HR.

Tools



Power BI



Excel



Python

Skills Gained

- EDA (exploratory data analysis)
- Logistic regression
- HR metrics: turnover rate, satisfaction index
- Strategic storytelling

6. Financial Statement Analysis

Business Problem

Understanding a company's financial health is crucial for investors and management. Financial analysis helps in spotting growth areas and risks.

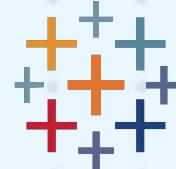
Project Steps

- Collect P&L and balance sheet data over 3-5 years.
- Calculate key financial ratios: gross margin, net profit %, ROE, ROA.
- Identify trends in revenue, cost, and net income.
- Visualize year-over-year comparisons.
- Provide recommendations for improving margins or reducing costs.

Tools



Excel



Tableau

Skills Gained

- | | |
|--|--|
| <input checked="" type="checkbox"/> Financial literacy | <input checked="" type="checkbox"/> Business health diagnostics |
| <input checked="" type="checkbox"/> Ratio and trend analysis | <input checked="" type="checkbox"/> Clear financial storytelling |

7. Social Media Sentiment Analysis

Business Problem

Brands want to know what people are saying about them online. Are customers happy or frustrated? Sentiment analysis turns text into insight.

Project Steps

- Scrape tweets, reviews, or YouTube comments.
- Clean text: remove stopwords, emojis, special characters.
- Use NLP libraries (TextBlob, Vader) to score sentiment.
- Visualize positive vs. negative trends over time.
- Tag common themes or words in feedback.

Tools



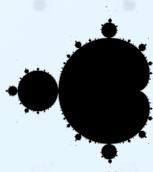
Python



BeautifulSoup



Tweepi



TextBlob



NLTK

Skills Gained

- Natural Language Processing (NLP)
- Text data cleaning and tokenization
- Sentiment scoring
- Word cloud and feedback theme analysis



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Tableau/Power BI
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