



Data Skills Bootcamp Final Project

Data Analyst – Management Information Reporting

Version 1.0
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Project Overview and Objectives

You are the Data Analyst for Matrix Manufacturing and Retail. Your role is pivotal in both performance reporting and analysis, as well as lending insight and direction to possible business decisions. The company sells in excess of 100 products across various departments and provides delivery nationwide. Your manager has an important meeting with senior executives in one week's time to discuss business performance.

As the data analyst, your manager has requested that you produce a report showing the following:

1. **how sales on the bike product category are performing by region.**
2. **profitability year on year.**
3. **profitability this year against last year's figures.**
4. **a breakdown by product subcategory.**
5. **you are also expected to advise on any issues you feel may face the organisation based on your report.**

Project Outputs and Deliverables

Once completed, to demonstrate completion of the tasks you will be asked to provide a series of outputs, that should be submitted.

Deliverable	Output	Evidence
Conducting analysis	Time series forecasting and data modelling to identify trends and patterns.	Excel spreadsheet or PowerBI or Python to show formulas, analysis and charts generated.
Developing insight and making recommendations	Translating analyses into insight, extracting the "so what" of each analysis/piece of information from the charts and tables.	Word document or PowerPoint of relevant charts and tables.
Communicating recommendation	Using the generated charts and tables to provide arguments to underpin the case to be made to senior executives.	Delivering a report using Word or PowerPoint presentation.

Project Information and Equipment

To complete this project, you will need to review all the information specified in this document, this will enable you to deliver the key outputs and deliverables for this project detailed in the table above.

In addition, you will need the following to complete the task:

- Microsoft PowerBI installed
- Python (Anaconda) Installed
- Microsoft Excel, Word and PowerPoint;
- Internet access to enable you to perform any research.

Competencies and Knowledge Standards

Below is a list of competencies and knowledge standards covered by this project.

Knowledge Standards

- Understand and can apply industry standard tools and methods for data analysis
- Understand the importance of clearly defining customer requirements for data analysis
- Understand the steps involved in carrying out routine data analysis tasks
- Understand the organisation's data architecture

Competency Standards

- Identify, collect and migrate data to / from a range of internal and external systems
- Manipulate and link different data sets as required
- Perform database queries across multiple tables to extract data for analysis
- Perform routine statistical analysis and adhoc queries
- Use a range of analytical techniques such as data mining, time series forecasting and modelling techniques to identify and predict trends and patterns in data
- Apply the tools and techniques for data analysis, data visualisation and presentation
- Summarise and Present the results of data analysis to a range of stakeholders making recommendations

Appendix A – Background Information

- The overall aim of this project is to develop a report that can determine the overall performance of the company. This report will bring together data from a core set of performance indicators, into a single analysis.
- The organisation has recently experienced a decline in its profit margin, despite a huge increase to their marketing budget. The boards aim is to understand the root cause of this decline and make an informed decision around their future spend on marketing campaigns.
- The business has been witnessing a quarterly 20% sales increase, which enabled them to introduce new products every other month.
- The incremental pattern in sales and expansion has declined drastically over recent months and the board believe that by identifying the products generating fewer sales, would allow for a marketing programme to be developed leading to an increase in sales.
- This initial piece of work will lead to a more detailed application of data analytics across specific business areas and / or to the implementation of targeted marketing actions and new product development.
- This report will help to encourage the board that intelligent and creative use of data analysis can give the organisation an advantage. It will also help them to understand the marketing strategy for each product, whilst considering the time of year at which sales are highest.
- Your manager would like to understand the relationships between customer purchases, product categories and revenue, to enable more sales, an increase in revenue per sale and to improve the quantity of products purchased per sale.
- They want to understand the role that the time of year plays to a customer, as this insight would likely improve sales significantly.
- The key challenge facing the board is that decisions will need to be made regarding upcoming, coinciding marketing campaigns and if these should be postponed temporarily or permanently.