

**University of Westminster**

**School of Computer Science and Engineering**

**5**

**DATA004W Data Science Project Lifecycle**

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**Link to Streamlit app:**

<https://w1998467cwds-96evrzqcqsva6tj7k6wqch.streamlit.app/>

**Link to video:**

[https://github.com/muazzammm/w1998467\_CW\_DS/blob/main/w1998467\_das hboardVideo.webm](https://github.com/muazzammm/w1998467_CW_DS/blob/main/w1998467_dashboardVideo.webm)

The video is uploaded in the GitHub repository. It can be viewed by clicking ‘View Raw’.

**Link to GitHub repository:**<https://github.com/muazzammm/w1998467_CW_DS>

# Aims and Objectives

The primary objective of this project is to create an interactive and insightful dashboard that analyzes the Global Superstore Lite dataset using the Streamlit, Pandas, and Plotly modules. With 999 sales records containing various details such as product categories, countries, and more, the dashboard is an effective tool for collecting vital insights.  
  
Our goal was to create a user-friendly dashboard that prioritized usability and accessibility in order to optimize insight extraction. We created a dynamic dashboard using visualizations such as pie charts, bar charts, maps, and line charts, allowing users to thoroughly examine the dataset. The use of filters increases interaction by allowing users to adjust analysis to their individual needs.

Furthermore, the project aimed to go deeper into sales performance analysis, discovering trends, patterns, and areas for improvement in order to maximize overall effectiveness. Furthermore, we sought to identify top-performing products and regions through detailed analysis of sales and profit data, providing actionable insights for strategic decision-making.  
  
The chosen visualizations, such as sales vs. discount analysis, total sales by category, top products by sales and profit, region-wise analysis, geographic distribution of orders and sales by country, time series analysis of sales, and shipping mode distribution, were carefully chosen to cover a wide range of insights required for informed decision-making.

Ultimately, this project simplifies complex data, allowing users to make better-informed decisions and get insights into profitability, sales performance, descriptive analysis, and other areas. The MINGER analysis dashboard provides users with a comprehensive tool for browsing the dataset and deriving actionable insights.

# Requirements

Functional Requirements:

* The visualizations in the dashboard such as total sales and profit metric, Segmented sales data by customer type and monthly sales data must be included and displayed.
* Allow users to filter data using the parameters that were set including date ranges and product types.
* Immediate update of the data when filters are applied or when new data is available.
* Proper data processing capabilities to ensure that the filtered and latest information is presented.
* Prevention of data display errors ensuring data integrity.

Non-Functional Requirements:

* High performance in the dashboard where it should respond to the user’s requirement without delays.
* Speed and reliability to ensure smooth process of the dashboard.
* The dashboard works on any electronic device to maintain convenience.
* Convenient navigations and understandable filters to allow user friendly experience.

# 

# Test Cases

## Test case 01

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | ***TC1*** | **Title:** | | ***Dashboard Loading test*** |
| **Description** | | |  | |
| **Steps and input data** | | |  | |
| **Dependencies** | | |  | |
| **Expected result** | | |  | |

## Test case 02

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | ***TC2*** | **Title:** | | ***Initial visual display test*** |
| **Description** | | |  | |
| **Steps and input data** | | |  | |
| **Dependencies** | | |  | |
| **Expected result** | | |  | |

## Test case 03

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | ***TC3*** | **Title:** | | ***Verify Dashboard data filters*** |
| **Description** | | |  | |
| **Steps and input data** | | |  | |
| **Dependencies** | | |  | |
| **Expected result** | | |  | |

## Test case 04

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | ***TC4*** | **Title:** | | ***Interactive dashboard test*** |
| **Description** | | |  | |
| **Steps and input data** | | |  | |
| **Dependencies** | | |  | |
| **Expected result** | | |  | |

## Test case 05

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | ***TC5*** | **Title:** | | ***Error handling and output test*** |
| **Description** | | |  | |
| **Steps and input data** | | |  | |
| **Dependencies** | | |  | |
| **Expected result** | | |  | |

## Test case 06

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **#** | ***TC6*** | **Title:** | | ***Dashboard refresh test*** |
| **Description** | | |  | |
| **Steps and input data** | | |  | |
| **Dependencies** | | |  | |
| **Expected result** | | |  | |

# Test Log

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TC** | **Date** | **Executed by** | **Actual result** | **Pass/**  **Fail** | **Notes** |
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