**Student Name:** **Weight:** 17.5%

**Student ID:** **Marks:** /15

# Assignment: Individual Project 1

## Overview

This assessment is for you to demonstrate data visualization design techniques for a Power BI report/dashboard. You will create a data model using the MaxMinManufacturingDM dataset and create data visualizations to answer business questions. You will apply best practices to maximize the data-to-ink ratio and build effective data visualizations.

## Instructions

**Scenario**

MaxMinManufacturing has contracted you to create a Power BI report/dashboard for their shift managers to help them understand metrics related to Rejected Products. They want to answer the following questions:

1. How many rejected products have been created by each plant? Which country does each plant belong to?
2. What is the total # of rejected products that were manufactured each month?
3. What proportion of rejected products came from each type of machine?

**Exercise 1: Creating a Data Model**

1. In Power BI Desktop, load the MaxMinManufacturingDM SQL Server Database including all tables.
   1. Data transformation is not required but you can apply transformations to the tables if you desire.
2. Ensure that appropriate table relationships are created. You can use relationship autodetect but verify that the relationships are valid.

**Exercise 2: Creating a Data Visualizations**

1. Create data visualizations to answer the business questions listed above.
2. Make sure to choose appropriate chart types based on the data you are working with.

**Exercise 3: Formatting Visualizations**

1. Using the techniques covered in class, format your visualizations to maximize the data-to-ink ratio while providing the information required to answer the business questions.
2. Ensure that colour is used effectively to aide in understanding and avoid distracting your audience.

**Exercise 4: Submitting Report/Dashboard**

To submit, either:

* Submit your .pbix file in the Brightspace dropbox, or
* Publish your report to Power BI service, then use the “share” feature to share your dashboard URL with your instructor.

## Marking Criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Criteria** | **Missing**   (0 marks) | **Needs Improvement**  (1 mark) | **Good**  (2 marks) | **Excellent**  (3 marks) | **Marks** |
| **Report/dashboard clearly answers the questions** | No questions answered by visualizations. | 1 question answered by visualizations. | 2 questions answered by visualizations. | All questions answered by visualizations. | **/3** |
| **Appropriate chart types used** | Chart types are inappropriate. | Few chart types are appropriate for the data used. | Most chart types are appropriate for the data used. | All chart types are appropriate for the data used. | **/3** |
| **Data-to-ink ratio** | Data-to-ink ratio is low. Difficult to interpret visualizations | Data-to-ink ratio is ok. Many elements should be removed. | Data-to-ink ratio is high. Some elements could be removed. | Data-to-ink ratio is maximized. Visualizations are clean and well-formatted. | **/3** |
| **Effective use of colour** | Colour is used poorly. Colour is distracting and makes it difficult to understand visualizations. | Colour choices could be better. Colour is distracting in most cases. | Colour is mostly effective for conveying meaning. Some colour may be distracting. | Colour is used effectively to convey meaning. Colour is not distracting. | **/3** |
| **Clear and accurate annotation (e.g. no typos)** | Significant typos and inconsistencies. Annotations are inaccurate or not meaningful. | Many typos and inconsistencies. Some chart annotations are inaccurate or not meaningful. | Minor typos or inconsistencies. Chart annotations are mostly accurate and meaningful. | No typos or inconsistencies. All chart annotations are accurate and meaningful. | **/3** |
| **Total** |  | | | | **/15** |