Assignment 01 – Power BI– CPSC 4820

For this assignment, you need to work through the entire business intelligence workflow: **connecting and shaping the source data, building a relational model, adding calculated columns and measures,** and **designing an interactive report**. Download the 8 csv files from D2L assignment folder.

Rubric

Item	Rubric
Transformations	10/100
Data Models	10/100
DAX//Measures	20/100
Power BI Final Report & Design	40/100
Executive Summary	20/100
Total	100/100

Transformation:

You need to ensure that at least the following transformations are done in Power BI:

- **Custoemrs.csv:** Add a new column named "*full_name*" to merge the the "*first_name*" and "*last_name*" columns, separated by a space
- Custoemrs.csv: Create a new column named "*birth_year*" to extract the year from the "*birthdate*" column, and format as text
- **Custoemrs.csv:** Create a **conditional column** named "*has_children*" which equals "**N**" if "*total_children*" = 0, otherwise "**Y**"
- **Prdocuts.csv:** Add a calculated column named "*discount_price*", equal to 90% of the original retail price
    - Format as a fixed decimal number, and then use the rounding tool to round to 2 digits
- **Stores.csv:** Add a calculated column named "*full_address*", by merging "*store_city*", "*store_state*", and "*store_country*", separated by a comma and space
- **Stores.csv:** Add a calculated column named "*area_code*", by extracting the characters before the dash ("-") in the "*store_phone*" field
- **Calender.csv:** Use the date tools in the query editor to add the following columns:
    - *Start of Week (starting Monday)*
    - *Name of Day*
    - *Start of Month*
    - *Name of Month*
    - *Quarter of Year*

    - *Year*
- Combine the transaction files

Data Models:

Create proper data models

In the data view, add the following calculated columns

- **Weekend, End of the Month, Current Age, Priority of customers** (Equals "***High***" for customers who own homes and have Golden membership cards (otherwise "***Standard***"))

Add the following measures:

- Create new measures named "**Quantity Sold**" and "**Quantity Returned**" to calculate the sum of quantity from each data table
- Create new measures named "**Total Transactions**" and "**Total Returns**" to calculate the count of rows from each data table
- Create a new measure named "**Return Rate**" to calculate the ratio of quantity returned to quantity sold (format as %)
- Create a new measure named "**Weekend Transactions**" to calculate transactions on weekends
- Create a new measure named "**% Weekend Transactions**" to calculate weekend transactions as a percentage of total transactions (format as %)
- Create new measures named "**All Transactions**" and "**All Returns**" to calculate grand total transactions and returns (regardless of filter context)
- Create a new measure to calculate "**Total Revenue**" based on transaction quantity and product retail price, and format as $ (***hint:*** *you'll need an iterator*)
- Create a new measure to calculate "**Total Cost**" based on transaction quantity and product cost, and format as $ (***hint:*** *you'll need an iterator*)
- Create a new measure named "**Total Profit**" to calculate total revenue minus total cost, and format as $
- Create a new measure to calculate "**Profit Margin**" by dividing total profit by total revenue calculate total revenue (format as %)
- Create a new measure named "**Unique Products**" to calculate the number of unique product names in the **Products** table
- Create a new measure named "**YTD Revenue**" to calculate year-to-date total revenue, and format as $
- Create a new measure named "**60-Day Revenue**" to calculate a running revenue total over a 60-day period, and format as $
- Create new measures named "**Last Month Transactions**", "**Last Month Revenue**", "**Last Month Profit**", and "**Last Month Returns**"
- Create a new measure named "**Revenue Target**" based on a 5% lift over the previous month revenue, and format as $

Report

Create and design your table, be creative and artistic about the design.

Executive Summary

Create 1-page executive summary report to explain the summary of your findings.

Publish your Report to the Power BI Service

You need to submit your power bi (.pbix) file, your executive summary in pdf format and you need to explain the transformations that you did. Make sure to share the online report with myself and Nitin.