### OPMT-7750 Data Modelling & Business Intelligence

# SAMPLE MIDTERM PRACTICAL

### WINTER2022

# PRACTICAL

You will complete the following steps in a new Excel workbook you created.

You will start by downloading the MidtermSampleSourceFiles.zip file. Unzip the contents of this file to a folder on your computer. You will then create a new **Excel** file to perform the required steps to come up with your answers.

* 1. **LOAD A TEXT FILE**

Get Data to Edit/Transform the Sales Org.csv file (a text file) into the Power Query Editor in Excel.

* **Promote the first row** values to headers
* **Rename** the **Description** field to **Region**
* **Rename** the **Org field** to **Organization**.

**Load** this as a **Connection Only** and add to the **Data Model**.

*What is the total number of****rows****loaded by this query?*

* 1. **LOAD MULTIPLE WORKSHEETS**

**Import & Edit/Transform** the Excel file called **Category Product.xlsx** into the Power Query Editor in Excel.

* **Select** both the **Categories**and **Products** sheets from the workbook and **load them as individual queries.**
* Ensure **headers are promoted** and **field types** are selected appropriately
* **Load** these as **Connections** **Only** and add to the **Data Model**.

*What is the* ***combined total number of rows****loaded by the* ***Category****,* ***Products*** *and* ***Sales Org*** *queries?*

**Edit** the Products query:

* **Change** the data type of the **Price** field to **Currency**
* **Change** the data type of the **Cost** field to **Currency**
* **Replace** blanks in the **Components**field with the value **None**

**Close and load** the query.

**Convert** the Products query to a **Connection Only** (do not load to the data model.)

*How many* ***columns*** *are contained in the* ***Products*** *query?*

**Import & Edit/Transform** the worksheet in the **Transactions.xlsx**file from the source data folder into the Power Query Editor in Excel.

* **Load** as **Connection** **Only** and add to the **Data Model**.

*What is the* ***name of the query*** *produced by this import?*

* 1. **LOAD FROM A WORKBOOK**

**Edit** the query you just created using the Power Query Editor in Excel.

* **Add** a new **Custom Column** called **Discount Percent** which divides the **Discount** by the **Revenue** fields.
* **Change** the data type of this field to **Percentage**.

*What is the* ***Discount Percent*** *value displayed for* ***TrNum 28*** *of this table? Round to zero decimal places and include the % sign.*

In the same query, **Create**a new **Conditional Column** called **Revenue Multi** which returns 1.14 if the Currency field contains EUR, and otherwise returns 1.

*What is the* ***Revenue Multi*** *value displayed for* ***TrNum 14*** *of this table?*

**Add** a new **Custom Column** called **USD Revenue** which multiplies **Revenue** by **Revenue Multi**. **Change** the data type of this field to **Currency**.

*What is the value for* ***USD Revenue*** *displayed for* ***TrNum 16****of this table? Round to two decimals places.*

(While still in the Power Query editor) **merge** the **Products** query into this query (Left Outer Join) using the **ProductID** field.

* **Expand** the **Products** field and select only the **Price, Cost,** **Product description** and **Category** fields.

*What is the* ***Product*** *description displayed in* ***TrNum******22****of the table?*

**Close and Load** the query to Excel as a **Connection only** and add to the **Data Model**.

*How many* ***rows*** *were loaded by the* ***Sales****query?*

* 1. **LOAD FROM A FOLDER**

**Import & Edit/Transform** the file **Cust Header Conversion.xlsx** into the Power Query Editor in Excel.

* Ensure **headers are promoted**
* **Rename** this query **Conversion Table**
* Load as a **Connection Only** (do not add to the data model)

**Import** the contents of the **Customers** folder into the Power Query Editor in Excel.

* Use the **Combine and Edit/Transform**command to combined your mismatched data.
* **Select** the **US Customers** as the sample file and select **Sheet1** under **Parameter1**

**Edit** the **Transform Sample File** using the methods from Assignment 3 (Chapter 4) as a reference.

* **Merge** to the **Conversion Table** query and perform the steps necessary to replace the headers in your sample file with the **Target** column
* **Load** this query as **Connection** **Only** and add to the **Data Model**

*In the* ***Customer Query,*** *what is the the* ***Location****displayed for****Customer 5000?***

* 1. **BUILD THE RELATIONAL MODEL**

*How many* ***relationship joins*** *did you need to create?*

*Which is the* ***FACT*** *table in this model?*

* 1. **PIVOT TABLE - PRODUCTS IN CATEGORY**

**Add a Pivot Table** on a new worksheet called **Products in Category**.

* **Display** the **Distinct Count of ProductID** in each **Category Description** in the Pivot Table.

*How many* ***Trend Bikes****products does the company have?*

*How many distinct Products are sold* ***in all Categories****?*

**Filter** the **Pivot Table** to hide the **Accessories** and **Wearable**category rows.

* **Rename** your **field headers** to communicate concisely and clearly
* **Sort** the value field in **descending** order
* **Apply** White, Pivot Style White Medium 1 **PivotTable Style**

*Copy and paste your* ***pivot table*** *into the answer box****.***

* 1. **MODIFY THE SALES QUERY**

**Edit** the **Sales** query to add Custom Columns for **Total Cost**, **Total Sales** and **Total Profit** using the correct fields to calculate the values.

* **Format** these columns as **Currency**.

*What is the* ***Total Cost*** *displayed for* ***TrNum 16****of the Sales table?*

**Add a Pivot Table** on a new worksheet called **Category Profit** to enable you to answer the following question.

*What is the* ***Description*** *of the* ***Category****that contributes the smallest percentage of****Total Profit****?*

*What percentage does the category E-Bikes represent of Total Profit? Round your answer to 2 decimal places.*

**2.1 LOAD MULTIPLE SHEETS**

**Import & Edit/Transform** all the worksheets from **Competitive Data.xlsx** to combine the data from different regions into one query.

*If you need help please refer to Assignment 4 (Chapter 5.) Hint: Right click on the workbook name to edit/transform.*

* **Remove** any columns with **null** values
* Use **Region** as the field name
* **Rename** your query to **Competitive Data**
* **Load** as a **Connection Only** and add to **Data Model.**

*Create a new pivot table on a new worksheet* ***Competition*** *to show the competitive****Region****that sold the highest quantity of****Off Road Helmets****?*

*Use the same pivot table to show how many* ***Water Bottles*** *were sold in* ***Canada****?*

**Add a Pivot Table** on a new worksheet called **Product Avg Price by Region** using the **Competitive Data** query to illustrate **Average Unit Price** by **Product** (rows) by **Region**(columns).

* **Rename** columns for clarity
* **Do not show Field Headers**
* **Format** values as **Currency** with zero decimal places
* **Remove** **Grand Total** columns & rows
* **Apply** PivotTable Style **White, Pivot Style Medium 1**
* **Apply** conditional formatting **Solid Fill Blue Data Bar**

*Copy and paste your* ***pivot table*** *in the answer box****.***

**2.2 APPEND NEW DATA**

**Load** the Excel file called **Mexico.xlsx** into the Power Query Editor in Excel.

* **Add** a **Custom Column** named **Region** with the value "**Mexico**".
* **Rename** your query **Mexico**.
* **Close & Load** the query as a **Connection Only** (do not load to the data model.)

Open the **Competitive Data** query and edit in Power Query Editor in Excel.

* **Append** the **Mexico** query, making adjustments as required to ensure the data appends correctly

*How many* ***columns****now appear in your* ***Competitive Data*** *query****?***

**Close and load** your **Competitive Data** query.

* **Refresh** your **Average Price** by **Product** & **Region** Pivot Table.

***What is the Average Price of Elbow Pads in Mexico.*** *Round to zero decimal points.*

**Edit** the **Competitive Data**query to add **Custom Columns** for **Total Sales, Total Cost, Total Profit $** and **Total Profit %**using the correct fields to calculate the values.

* **Format** these new columns appropriately

**Add a Pivot Table** on a new worksheet called **Avg Profit By Regio**n using the**Competitive Data** query to illustrate **Average Total Profit %** by **Region.**

* **Rename** columns for clarity
* **Do not show Field Headers**
* **Format**values as **Percentage**with two decimal places
* **Apply** PivotTable Style **White, Pivot Style Medium 1**
* **Sort**in descending value

***Copy and paste****your pivot table in the box below.*

**3.1 UNPIVOT**

**Import & Edit/Transform** the **ORDERS** sheet in **DrinkDelivery.xlsx**. The data on the worksheet is formatted as a 2x2 table so you will need to unpivot it to add it to the data model.

*If you need help please refer to textbook activities 6-5 and 6-6.*

* **Load** as a **Connection Only** and add to **Data Model.**

*How many* ***rows*** *does the* ***ORDERS*** *query load to the data model?*

Create a new **pivot table** based on the **ORDERS** table. Your pivot table should illustrate the breakdown of **Wine, Beer, Spirits by Region** (by percentage.)

*What is the* ***percentage of overall orders*** *were for* ***Wine*** *in the* ***Okanagan****?*

Ensure your **Pivot Table** for the **ORDERS** query in the previous step shows Region (rows) and Category (columns) and Orders as a percent of grand total.

* **Format** values as **Percentage** with zero decimal places
* **Apply** PivotTable Style **White, Pivot Style Medium 1**

*Copy and paste your* ***pivot table*** *in the answer box****.***