Data preparation

1.

- Open the workbook called 1_1_data_preparation.xlsx from the Workbooks folder.
- Open the **metadata sheet** in a separate page as this may come in handy throughout the course.

Hint

- The *File* menu can be found in the ribbon at the top of the workbook.
- To open a workbook, click on *Open* in the *File* menu. If you click on *Browse*, you can navigate to the Workbooks folder and open the 1_1_data_preparation.xlsx file.

2.

- Navigate to Databel - Aggregate and convert the range of data ($A$1:$U$6670) into a tabular format.
- Rename this table "Aggregate".

Hint

- Highlight all the data to be included in the table: $A$1:$U$6670.
- Under the *Insert* tab in the ribbon, select *Table* .
- Ensure "My table has headers" is checked and click *OK*.
- Type in "Aggregate" for the *Table Name* under the *Table Design* ribbon.

3.

- Navigate to Databel - Customer and convert the range of data ($A$1:$AC$6688) into a tabular format.
- Rename this table "Customers".

Hint

- Highlight all the data to be included in the table: $A$1:$AC$6688.
- Under the *Insert* tab in the ribbon, select *Table*.
- Ensure "My table has headers" is checked and click *OK*.
- Type in "Customers" for the *Table Name* under the *Table Design* ribbon.

4.

Identify whether there are any duplicate values in the Customers table, there are two approaches that you can use:

- Remove duplicates feature
- Conditional formatting

Hint

Remove duplicates feature

- Highlight Customer ID in the Customers table.
- Click on *Data* in the menu at the top, then click on *Remove Duplicates*.
- Make sure all columns are selected in the pop-up window. Ensure that the *My list has headers* option is also selected. Click *OK*.

Conditional formatting

- With the Customer ID column selected, click on *Conditional Formatting > Highlight Cells Rules > Duplicate Values…*.
- In the *New Formatting Rule* window, leave all options as per default settings, with the formatting type being *Light Red Fill with Dark Red Text*.

5.

Does our dataset contain any duplicate values?

- Yes
- No

Hint

There are multiple ways to check for duplicate values in Excel including the **remove duplicates feature** and **applying conditional formatting**.

Remove duplicates feature

- Highlight Customer ID in the Customers table.
- Click on *Data* in the menu at the top, then click on *Remove Duplicates*.
- Make sure all columns are selected in the pop-up window. Ensure that the *My list has headers* option is also selected. Click *OK*.

Conditional formatting

- With the Customer ID column selected, click on *Conditional Formatting > Highlight Cells Rules > Duplicate Values…*.
- In the *New Formatting Rule* window, leave all options as per default settings, with the formatting type being *Light Red Fill with Dark Red Text*.

If you're still stuck, review the solution in 1_2_calculating_churn.xlsx from the Workbooks folder.

Calculating churn

1.

Create a new column "Churned" in our Customers table that uses an IF() to convert the values in Churn Label based on the following criteria:

- "Yes" then 1
- "No" then O

Hint

- In column `AD` you should have a header "Churned" with the following formula: `=IF([@[Churn Label]]="Yes", 1, 0)`

2.

Create a blank *PivotTable* of the Customers table and place it in a new *Worksheet*. Rename this worksheet "Customer Pivots".

Hint

- Select any cell in the Customers table and click *Insert* then *PivotTable*.
- Ensure that the *Table/Range* input is Customers.
- Check *New Worksheet* and click *OK*.
- To rename a worksheet, double-click on it and type in the updated name.

3.

- In the *PivotTable*, display the total count of customers and number of churned customers.
- Update the column headers to user-friendly names such as "Total Customers" and "Churned Customers".

Hint

- Drag Customer ID and Churned to the *Values* section.
- Customer ID should be aggregated as a *Count*.
- Churned should be aggregated as a *Sum*.

4.

Great! Now we can easily identify how many customers have churned, but what if we want to find out what our churn rate is?

- Next to your *PivotTable*, create a new calculation with the header "Churn Rate" that divides churned customers by total customers.
- Format this as a % to two decimal places.

Hint

Your formula should look something like this:

- =GETPIVOTDATA("Churned Customers",$A$3)/GETPIVOTDATA("Total Customers",$A$3)
- B4/A4

To format a cell with decimal places:

- Under *Home* > *Number* there is a dropdown where you can change the format. Select *Percentage*.
- To change the decimal places, there are two icons under the dropdown to increase and decrease decimal. Click *Increase decimal* twice.

5.

What's the total churn rate for "Databel"? (Answer format: XX.XX%)

26.86%

Hint

Your formulas should look like the below:

- Churned: =IF([@[Churn Label]]="Yes", 1, 0)
- Churn Rate:
  - =GETPIVOTDATA("Churned Customers",$A$3)/GETPIVOTDATA("Total Customers",$A$3)
  - B4/A4

In your PivotTable, you should have:

- Columns: Values
- Values: Total Customer, Churned Customers

If you're still stuck, review the solution in 1_3_investigating_churn.xlsx from the Workbooks folder.

Investigating churn reasons

1.

Create a blank *PivotTable* of the Customers table in the Customer Pivots worksheet.

Hint

- Select any cell in the Customers table and click *Insert* then *PivotTable*.
- Ensure that the *Table/Range* input is Customers.
- Check *Existing Worksheet* then navigate to Customer Pivots and select a cell (i.e Customer Pivots!$A$8) and click *OK*.

2.

- Analyze the total number of churned customers by Churn Reason.
- Rename the row header to "Churn Reason" and the column header to "Churned Customers".

Hint

- Drag Churn Reason into the *Rows* section.
- Drag Churned into the *Values* section. This should be aggregated as a *Sum*.

3.

- Order the churn reasons ascending, to the most popular churn reason appears at the bottom .
- Show the Churned Customers as a "% of Grand Total".

Hint

- To sort a *PivotTable*, right-click any value and navigate to *Sort* > *More Sort Options*.
    - Sort *Ascending (A to Z) by* Churned Customers.
- To convert *Values* in a *PivotTable* to "% of Grand Total", right-click on a cell and navigate the *Show Value As* > *% of Grand Total*.

4.

- Visualize your analysis with a *2D Bar Chart* and title it "Churn Reasons".
- Hide all field buttons on chart and delete the *Legend* .

Hint

- To create a *2D Bar Chart*, click anywhere in the *PivotTable* and navigate to *Insert* > *Charts* menu and click on *Insert Column or Bar Chart* button and select the *Clustered Bar* variant.
- To rename the chart, double-click on the title above the chart and type in a new name.
- To hide field buttons, right-click on the gray chart buttons and select *Hide all Field Buttons on Chart*.
- To delete a legend, right-click on the *Legend* and select *Delete*.

5.

Which of the following is part of the top 3 churn reasons?

- Competitor offered more data
- Price too high
- Poor expertise of phone support
- Competitor had better devices

Hint

In your PivotTable, you should have:

- Rows: Churn Reason
- Values: Churned Customers (as % of grand total)

If you're still stuck, review the solution in 1_4_churn_categories.xlsx from the Workbooks folder.

Digging deeper into churn categories

1.

Create a blank *PivotTable* of the Customers table in the Customer Pivots worksheet.

Hint

- Select any cell in the Customers table and click *Insert* then *PivotTable*.
- Ensure that the *Table/Range* input is Customers.
- Check *Existing Worksheet* then navigate to Customer Pivots and select a cell (i.e Customer Pivots!$A$36) and click *OK*.

2.

- Analyze the total number of churned customers as % of grand total by Churn Category and Churn Reason.
- Rename the row header to "Churn Reason" and the column header to "Churned Customers".

Hint

- Drag Churn Category and Churn Reason into the *Rows* section.
- Drag Churned into the *Values* section. This should be aggregated as a *Sum*.
- To convert *Values* in a *PivotTable* to "% of grand total", right-click on a cell and navigate the *Show Value As > % of Grand Total*.

3.

We can see that category driving the highest % of churn is **Competitor**.

- Filter the *PivotTable* to only include this churn category.

Hint

- Drag Churn Category from *Rows* to *Filters* .
- Open *Filter* and de-select all categories except for **Competitor**.

4.

- Create a visualization of your choice to display the Churned Customers PivotTable you created and name it "Competitor Churn Analysis".
- Clean this visual up by removing unnecessary components such as field buttons and apply any style customizations.

Hint

- You can use either a bar chart, column chart, pie chart or donut chart to visualize the data.

- To hide field buttons: right-click on the gray chart buttons and select *Hide all Field Buttons on Chart*.

5.

What % of customers churned due to "Competitor made better offer"? Rounded to two decimal places.

37.64%

Hint

In your PivotTable, you should have:

- Filters: Churn Category
- Rows: Churn Reason
- Values: Churned Customers (as % of grand total)

If you're still stuck, review the solution in 2_1_analyzing_demographics.xlsx from the Workbooks folder.