**Project : Spend**

There are many stores in which a survey was conducted based on students i.e. how much they are spending on different kind of purchases like Video games, Indoor games, Toys, Books, Gadgets etc. In the data set (Student Survey), Store setting is the column that explains the Type of location in which the store is present. By using data set (Student Survey), try to extract the meaningful Insights.

**Data set -**Student survey

**Problem Statement-**Create a Power BI Report:

1.   **Tabular Visualization**- Format the total amount ofpurchase (TAP) based on ‘Store location’ and ‘Store setting’: -

If 0<TAP<35000, then records should be in red color

If 35000<=TAP<60000, then records should be in yellow color

If TAP>=60000, then records should be in Blue color

2.   **Matrix Visualization**–Create Matrix Visualization to showthe amount spent on Outdoor sports across different ages and ‘Store setting’. Do the color formatting for the amount spent in total outdoor sports.

3.   **Funnel chart**–Create a Funnel chart to show Total amountof purchase by ‘Store setting’. Show the data labels as Percentage of First.

4.   **Pie chart**–Show the total amount of purchase by different ‘Store location’ for Suburban ‘Store setting’ only. **Hint:** Use Filter context

5.  a) **Scatter plot** - Video games purchase and Outdoor sports spent across the different ages.

      b) **Sand dance plot** - Indoor sports and Video games spent across the different age groups.

6.   Restrict data access for the given users in User mapping table. **For ex**. Mani deals with Rural area only. so she should be able to view the data which belongs to Rural only, not urban and suburban data.

7.   Publish the report on Power BI cloud service and Design the Master Dashboard consisting of Funnel chart and scatter plots. Then create a schedule refresh for six times in every 4 hours for the Dashboard in a day.

8.   **Use Q&A feature of Power BI**–

a)   To show average age of students

b)   Donut chart for total amount of purchases by ‘Store location’

**We have given "Student Survey" Excel Data. The data consists of following tables:**

 Student Survey

 User Mappings

**Task 1) Tabular Visualization:**

In this task, we format Total Amount of Purchase (TAP) based on Store Location and Store Setting using the following condition:

 If 0<TAP<35000, then records should be in red color

 If 35000<=TAP<60000, then records should be in yellow color

 If TAP>=60000, then records should be in Blue color

To do this task:

step 1) Go to **Report View**, Select **Table**visual under **Visualizations**pane.

Select the visual on the screen to implement below steps:

step 2) Drag and drop "Store Location", "Store Setting" and "Total Amount of Purchases" columns to **Values**field under **Fields**section of **Visualizations**pane

step 3) Go to **Format**section of **Visualizations**pane and click on **Conditional Formatting**option

and select "Total Amount of Purchases" from the dropdown list.

step 4) Drag **Background color**slider option to**on**

step 5) Click on **Advanced controls**option

step 6) Then a window pop ups which allows us to format background color of "Total Amount of Purchases" by Rules.

Select**Format by**type as **Rules**and gives the rules(conditions) as per the requirement and click on ok.

Graphical user interface, application, table

Description automatically generated

**Then the tabular visual looks like below:**

Table

Description automatically generated

**Task 2) Matrix Visualization:**

In this task,  we create Matrix Visualization to show the amount spent on Outdoor sports across different ages and ‘Store setting’. Do the color formatting for the amount spent in total outdoor sports.

To do this task:

step 1) Go to **Report View**, Select **Matrix**visual under **Visualizations**pane.

Select the visual on the screen to implement below steps:

step 2) Under **Fields**section of Visualizations pane.

 Drag and drop "Age" to Rows field

 Drag and drop "Store Setting" to Columns field (if you want subtotals of amount spent in terms of store type ) or else simply leave this field empty

 Drag and drop "OutDoor SportKits" to Values field.

step 3)  Go to **Format**section of **Visualizations**pane and click on **Conditional Formatting**option and select "OutDoor SportKits" from the dropdown list.

step 4) Drag **Background color**slider option to**on**

step 5) Click on **Advanced controls**option

step 6) Then a window pop ups which allows us to format background color of "OutDoor SportKits" by Color scale.

Select**Format by**type as **Color scale**and select the Minimum and Maximum values color types to format the amount spent in terms of color from lowest to highest. Click on ok.

Graphical user interface, application, Word

Description automatically generated

**The matrix visuals I created are shown below:**

Table

Description automatically generated

Insight: Age group 20 spent more on outdoor sports

**Task 3) Funnel Chart Visualization:**

In this task, we create a Funnel chart to show Total amount of purchase by ‘Store setting’.  We need to show the data labels as Percentage of First.

To do this task:

step 1)  Go to **Report View**, Select **Funnel**visual under **Visualizations**pane.

Select the visual on the screen to implement below steps:

step 2) Under **Fields**section of Visualizations pane.

 Drag and drop "Store Setting" to Group field.

 Drag and drop "Total Amount of Purchases" to Values field.

step 3) Go to **Format**section of **Visualizations**pane and turn**Data Labels**option to on.

select **Label style**as **Percent of first**from the dropdown list.

**Then the Funnel Chart visual looks like below:**

Chart, funnel chart

Description automatically generated

Insight: Majority of purchases made in Suburban store types

**Task 4) Pie Chart Visualization:**

In this task, we need to show the total amount of purchase by different ‘Store location’ for Suburban ‘Store setting’ only using filter context.

To do this:

  Go to **Report View**, Select **Pie chart**visual under **Visualizations**pane.

Drag and drop the fields under Pie chart "Fields" section and use "filter on this visual" under Filters section as shown below:

Graphical user interface, application

Description automatically generated

**Then the Pie chart visual looks like below:**

Chart, pie chart

Description automatically generated

Insight: Seattle store location brings more purchases and the least is New York

**Task 5) a) Scatter plot**

**b) Sand dance plot**

In this task,

**a) We need to create scatter plot to show Video games purchase and Outdoor sports spent across the different ages.**

To do this:

Go to **Report View**, Select **Scatter chart**visual under **Visualizations**pane.

Under **Fields** section,

 Drag and drop "Age" to Details field

 Drag and drop "OutDoor SportKits" to X-axis

 Drag and drop "VideoGames" to Y-axis

**The scatter chart looks like below:**

Chart, scatter chart

Description automatically generated

Insight: Age group 8 made more purchases on both Video Games and OutDoor Sports

**b) We need to create Sand dance plot to show Indoor sports and Video games spent across the different age groups.**

To do this task:

We need to import custom visual on clicking Get more visuals in Visualizations pane.

Search for sand dance and click on Add to import the visual.

Graphical user interface, text, application, email

Description automatically generated

Select the visual on the screen and fill the x-axis, y-axis, color by and sort by fields

Graphical user interface, application

Description automatically generated

Here I selected Chart Type as stacks.

**The Sand dance visual which I created is shown below:**

Chart, scatter chart, bubble chart

Description automatically generated

Insight: Age group 12 spent more on video games and age group 20 spent more on indoor sports.

**Task 6) Restrict data access for the given users in User mapping table. For ex. Mani deals with Rural area only. so she should be able to view the data which belongs to Rural only, not urban and suburban data.**

Lets create a table visual with Store Setting, Store Location and Total Amount of Purchases.

Table

Description automatically generated

Lets deal with roles:

 Mani deals with Rural only.

 Nani deals with Urban only.

 Nitin deals with Suburb only.

 Ashok deals with Rural only.

To restrict access according to assigned roles:

Click on **Manage roles**under **Modeling** section.

Manage roles window pop ups and we need to click on **Create**option

Name it as "Mani" ,select "Student Survey" table option then click on the three dots and select **add filters**and select "Store Setting".

Then substitute the**Value** as "Rural" and click on **Save**.

To test the role. click on**View as**under **Modeling** section.

Table

Description automatically generated

Similarly, we can create and test other roles in this task.

**Task 7) Publish the report on Power BI cloud service and Design the Master Dashboard consisting of Funnel chart and scatter plots. Then create a schedule refresh for six times in every 4 hours for the Dashboard in a day.**

To publish the report, Go to **Home**section in power bi desktop and click on **Publish**which is on the top right side.

Now, a window with the name "Publish to Power BI" appears, select workspace of your choice.

In my case, I selected "Spend" workspace which I have created previously in my power bi service account.

**Dashboard:**

Graphical user interface

Description automatically generated

**To schedule refresh in power bi service:**

Under Workspaces, Go to **Spend**workspace, Under **Datasets**click on the **. . .**dots beside dataset name and select**Schedule refresh**option.

It navigates you to **Gateway connection**where if you don't have **On-premises data gateway application** installed then click on **install now**then once it is installed sign in with your credentials  at power bi desktop level and again sign in back  to power bi service.

Edit **Data Source Credentials**and choose **privacy level setting**for this data source as **private.**

Now, go to**Scheduled Refresh**and give the times as per requirement:

Graphical user interface, text, application

Description automatically generated

**Task 8) Use Q&A feature of Power BI –**

**a)   To show average age of students**

**b)   Donut chart for total amount of purchases by ‘Store location’**

you can simply double click in the report view or can select Q&A option from Visualization pane.

Q&A feature is used as shown below:

Graphical user interface, application

Description automatically generated

a) Insight: Average age is around 14 years  
b) Insight: New York store location generates high purchase (26.11% )  
                      While Boston store location generates low purchase (22.81%)

**You can view my demo on this project reports and dashboard using below link:**