EXPERIMENT – 5

PART – 1

Business Context:

EdX is an American massive open online course provider created by Harvard and MIT. It hosts online university-level courses in a wide range of disciplines to a worldwide student body, including some courses at no charge. The analytical team will do research in how people uses its platform.

As a Data Scientist, You are suppose to create a analytical report for academic year 2012-13. By Creating the following Dashboard for the director's to take further action for Next academic year.

AIM:

Create Dashboards using Power BI for the E-Learning Analysis with the following information:

- Create Academic Business Report - Summary
- Total learners.
- Number of courses offered.
- Course completion status (in %).
- Course Distribution across learners.
- Create Academic Business Report – Geographical.
- Create Academic Business Report - Learners Attributes.
- Create one on Age distribution & other on Qualification.

To fulfill the above given objectives we need to create business report in Power BI using the following steps:

- Import data from various sources.
- Use Power Query for data cleaning and transformation.
- Create relationships between tables.
- Filter and slice your data and use drill-down capabilities for deeper analysis.
- Build calculated columns and measures using DAX.
- Create different types of charts, tables and Use slicers and filters effectively.
- Design interactive dashboards.
- Analyze the data to identify meaningful insights and make data driven decisions.

Create Academic Business Report - Summary

Build calculated columns and measures using DAX:

Create measures :

- total_learners = DISTINCTCOUNT(edx[learner_id])
- no of courses offered =DISTINCTCOUNT(edx[course_id])
- Course completion status (in %).
- Course completion=0(False), course incompletion=1(True)
- Count of 0s = COUNTROWS(FILTER('edx', 'edx'[incomplete_flag] = 0))
- Total Count = COUNTROWS('edx')
- Percentage of 0s = DIVIDE([Count of 0s], [Total Count], 0) * 100
- COUNT OF LEARNER ID = COUNT(edx[learner_id])

The above given measures are to be created to fulfill the given requirements

Creating visuals:

- Total learners.
- Number of courses offered.
- Course completion status (in %).
- Course Distribution across learners.

Creating Academic Business Report – Geographical.

Create a calculated column :

- Count of learner id cal_col = count(edx[learner_id])

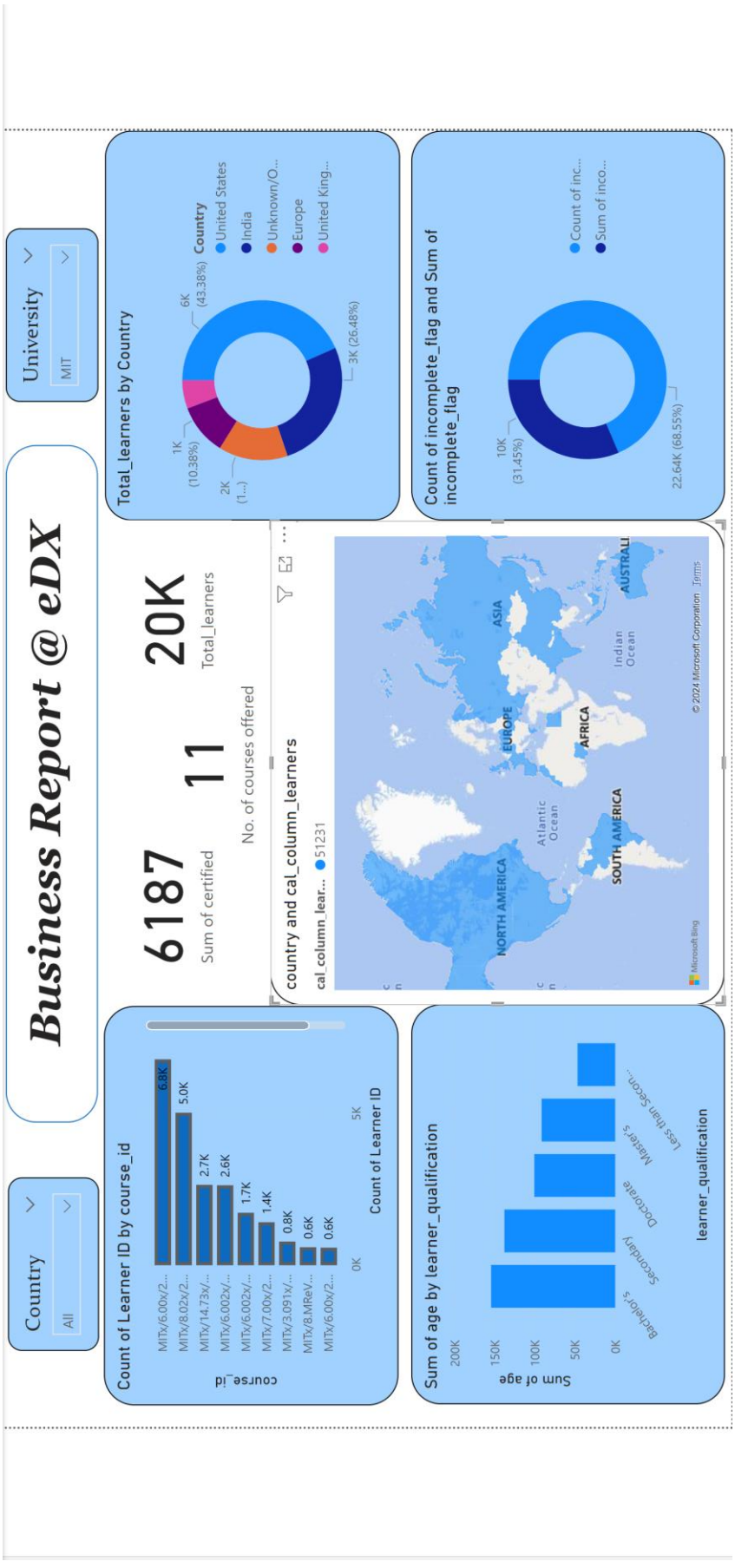
Creating visuals:

- Create a filled map or map and fill it with Country and the created calculated column

Create Academic Business Report - Learners Attributes(Age distribution).

Creating visuals:

- Create a bar chart with age of learner and Learner qualification


Business Report @ eDX
Country
All
University
MIT
6187
Sum of certified
11
No. of courses offered
20K
Total_learners
Total_learners by Country
Country
United States
India
Unknown/O...
Europe
United King...
6K (43.38%)
3K (26.48%)
2K (1...)
1K (10.38%)
Count of incomplete_flag and Sum of incomplete_flag
Count of inc...
Sum of inco...
10K (31.45%)
22.64K (68.55%)
Count of Learner ID by course_id
course_id
Count of Learner ID
6.8K
5.0K
2.7K
2.6K
1.7K
1.4K
0.8K
0.6K
0.6K
Sum of age by learner_qualification
Sum of age
learner_qualification
Bachelor's
Secondary
Doctorate
Master's
Less than Secon...
country and cal_column_learners
cal_column_lear...
51231
NORTH AMERICA
EUROPE
ASIA
AFRICA
SOUTH AMERICA
AUSTRALI
Atlantic Ocean
Indian Ocean
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PART - B

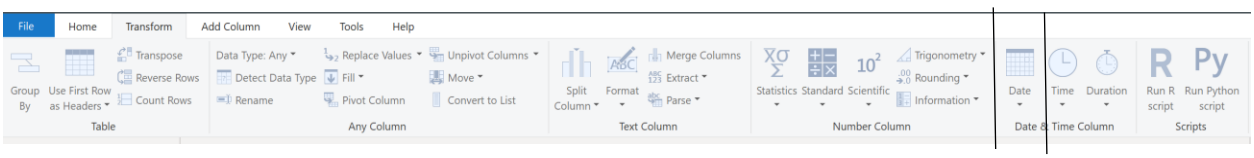
AIM: Create a dashboard to simplify the visualization of organizational training metrics, collaborating with HR professionals and training managers, as well as those involved in enhancing organizational learning through data-driven insights.

To perform the above given task we need to create Dashboard using Power BI for the learning and development with the following information:

- Create separate month column and separate name of month column for master data table and trainee records table in power query editor.
- Create a column in power query (i.e, sum of training hours) by using merge queries.
- Create relationships
- Create Business Report - Summary
- Calculate Count of training hrs for trainer.
- Calculate Count of training hrs for trainee.
- Calculate count of actual hours by department
- Create 5 meaning full visuals
- Draw meaning full insights.

Create separate month column and separate name of month column for master data table and trainee records table in power query editor.

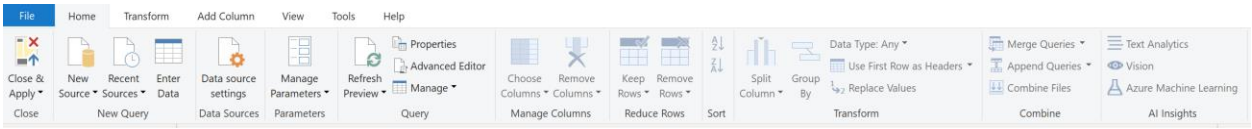
- Adding month column with the help of date column in trainee records table
- Select date column in trainee records table go to add column tab and
- Select date which is shown in image and select month there so the new column will be added that is month column.
- Similarly create name of month column.
- You need first 3 characters of month name i.e, jan
- Select that column (month name) and go to extract select first



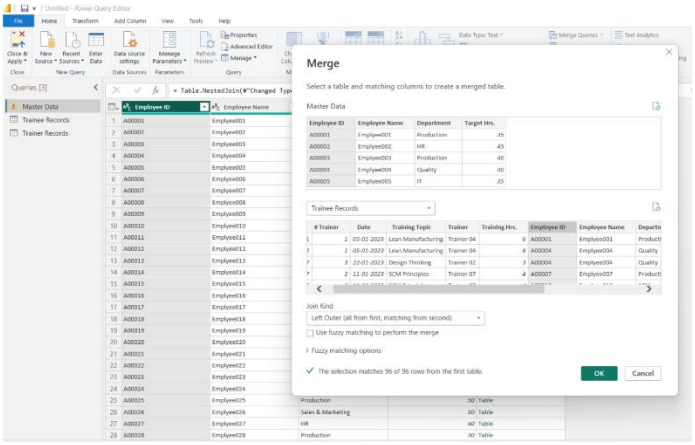
Or use a DAX Query to create a new column : Month = FORMAT([Date],"mmmm")

Month	Month Name
January	January
January	January
January	January
January	January
January	January
January	January
January	January
January	January
January	January
January	January
April	April
April	April
April	April
April	April
April	April
April	April
April	April
April	April

Create a column in power query (i.e, sum of training hours) by using merge queries.



Using merge queries ,



Merge columns of Master data table employee id column and trainee record table employee id column

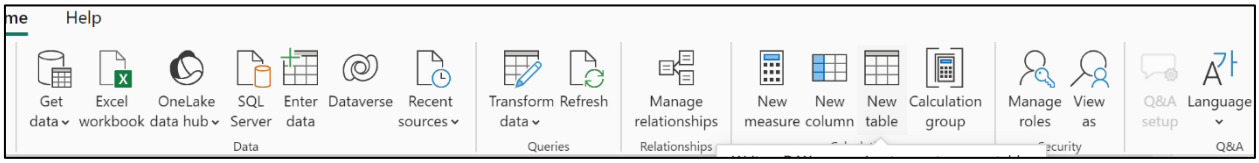
Then create the sum of training hours using aggregate functions

- Click on right icon of the column and select
- aggregate and click on sum of training hrs
- Rename to actual hours
- Change datatype
- Click and apply

Sum of Trainee Records.1.Training Hrs.
25
21
21
42
29
28
18
44
18
35
20

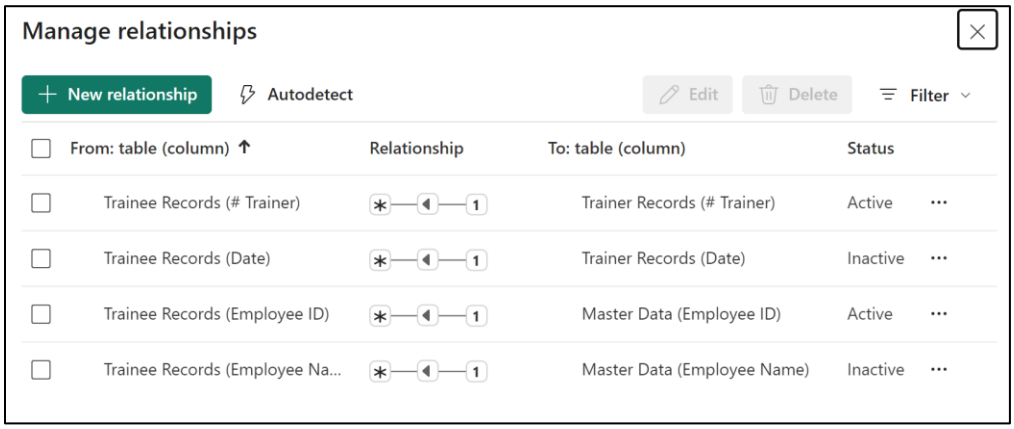
Create Relationships Between Tables

- *Objective:* To establish logical connections between different tables to enable comprehensive analysis.
- *Steps:*
- *Go to Model View:* Click on the "Model" icon on the left sidebar to view all imported tables.



- *Create Relationships:*
- *Drag and Drop:* Click on a field in one table and drag it to the corresponding field in another table to create a relationship.
- *Define Relationship*: The "Manage Relationships" dialog allows you to set up relationships manually. Here, specify the primary and foreign keys.
- *Cardinality and Cross-Filtering*:
- *Cardinality:* Define the type of relationship (one-to-many, many-to-one, many-to-many).
- *Cross-Filtering*: Set the direction of data filtering (single or both directions).
- Ensure that related fields have matching data types.

Establish the following relationships:



Create Different Types of Charts, Tables, and Use Slicers and Filters Effectively

Objective: To visualize data in various forms to communicate insights clearly.
Steps:
Add Visualizations:

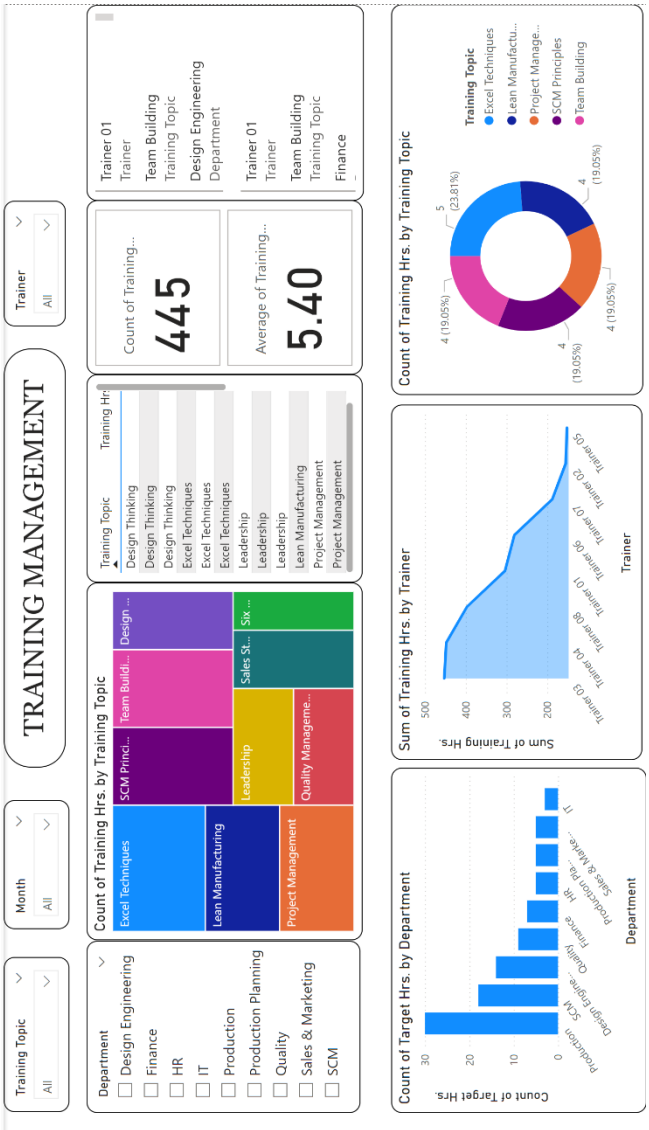
- *Select Visualization Type*: From the "Visualizations" pane, choose a chart type (e.g., bar chart, line chart, pie chart).
- *Drag Fields*: Drag and drop fields onto the visual to populate it with data.

Customize Visuals:

- *Format Visual:* Use the "Format" pane to customize the appearance of the visual (e.g., colors, labels, titles).
- *Add Legends and Tooltips:* Enhance visuals by adding legends and tooltips for better clarity.

Use Slicers and Filters:

- *Slicers:* Add slicers to allow users to filter data dynamically.
- *Filters:* Apply visual-level, page-level, or report-level filters as needed



Result :

Analyzed and presented comprehensive insights into sales, profit, orders, profit margin, and various comparisons.