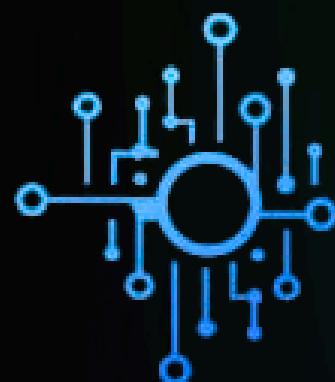


BI ANALYTICS - PROJECT

From Concept
to Completion



WHERE DATA
TRANSFORMS INTO VISION
BI ANALYTICS



Defining the Project Scope

Objectives

Go In Deep More with creative and charts that Describes best scenarios to the dataset(HR - Attrition)

Target Audience

We Make Analysis to The company To Reach a Clear Decision Make.

Constraints

Our Duration In The Project Is 4 Weeks, We Started the project with Commitment and Professionalism.



Assigning Roles and Responsibilities

Skillset

Apply Steps In Power Bi to Reach Out The Best Dashboard that Clarify The Dataset

Communication

Communicate Through Whatsapp Group and Online Meetings Through Google Meet.

Accountability

Define clear ownership for each task or role.



Establishing Communication Channels

01

Online Meetings

Plan meetings to discuss progress, address issues, and coordinate efforts.

02

Project Management Tools

Utilize tools like Power Bi for task management, progress tracking, and communication.

03

Instant Messaging

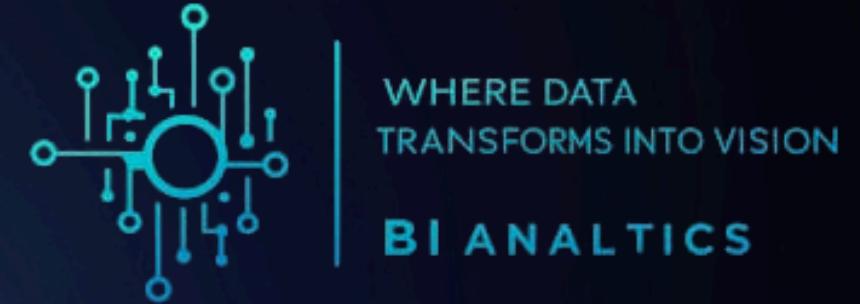
Use Whatsapp Group And Telegram To Communicate Faster And Brainstorming.

04

Email

Maintain a formal channel for documentation and shared information.





Developing the Project Timeline

Task	Date	Presented?	Responsible Person
Research and Planning	Week 1	Yes	Bi Team
Dashboard Creation	Week 2	Yes	Bi Team
Design and Development	Week 3	Yes	Bi Team

01

The Cleaning of Education

Based on the provided images, the data cleaning process involves several key steps: removing duplicate rows to ensure data uniqueness, adding conditional columns to categorize or transform data based on specific criteria (such as mapping numerical education levels to descriptive text like 'Below College', 'College', 'Bachelor's', etc.), and replacing values within columns to correct inconsistencies or standardize entries.

Add Conditional Column

Add a conditional column that is computed from the other columns or values.

New column name

Custom

	Column Name	Operator	Value ⓘ	Output ⓘ	...
If	Education	equals	ABC 123	1	Then ABC 123 Below College
Else If	Education	equals	ABC 123	2	Then ABC 123 College
Else If	Education	equals	ABC 123	3	Then ABC 123 Bachelor's
Else If	Education	equals	ABC 123	4	Then ABC 123 Master's
Else If	Education	equals	ABC 123	5	Then ABC 123 Doctorate

Add Clause

Else ⓘ

ABC 123

null

OK

C

02

The Cleaning of Age

Add Conditional Column

Add a conditional column that is computed from the other columns or values.

New column name

Age group

	Column Name	Operator	Value ⓘ	Output ⓘ	...
If	Age	is less than or equ...	ABC 123 ▾ 25	Then ABC 123 ▾ 18-25	
Else If	Age	is less than or equ...	ABC 123 ▾ 35	Then ABC 123 ▾ 26-36	
Else If	Age	is less than or equ...	ABC 123 ▾ 45	Then ABC 123 ▾ 37-45	
Else If	Age	is less than or equ...	ABC 123 ▾ 54	Then ABC 123 ▾ 46-55	
Else If	Age	is greater than or...	ABC 123 ▾ 55	Then ABC 123 ▾ 55	

Add Clause

Else ⓘ

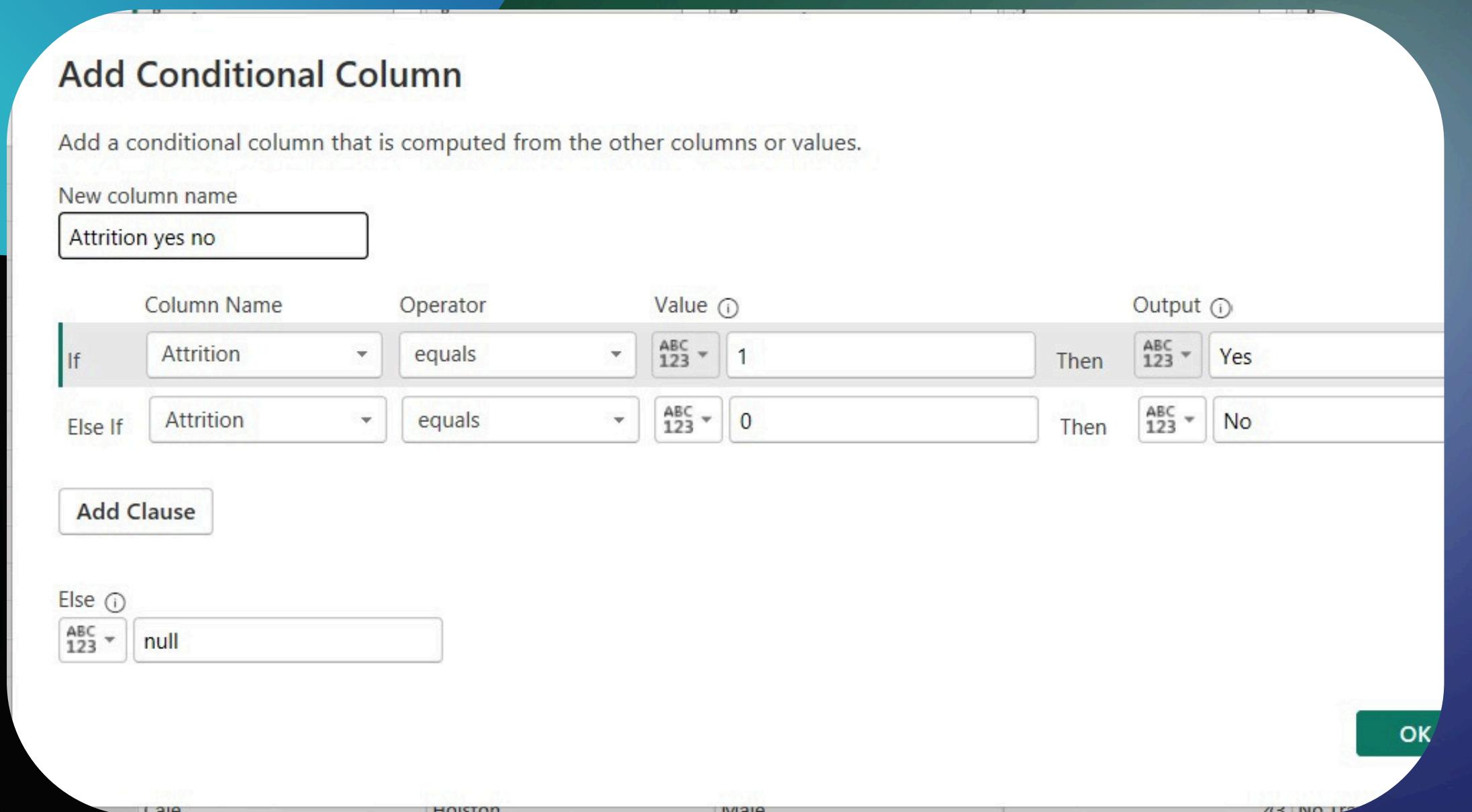
ABC 123

null

Based on the images provided, the data cleaning process involves several steps aimed at refining the dataset. These include removing duplicate entries to ensure data integrity, replacing values to correct inconsistencies or standardize data points, and adding conditional columns to create new categorical variables. Specifically, conditional columns are used to group numerical data like 'Education' and 'Age' into meaningful categories or ranges, enhancing the data's analytical utility.

03

The Cleaning of Attrition

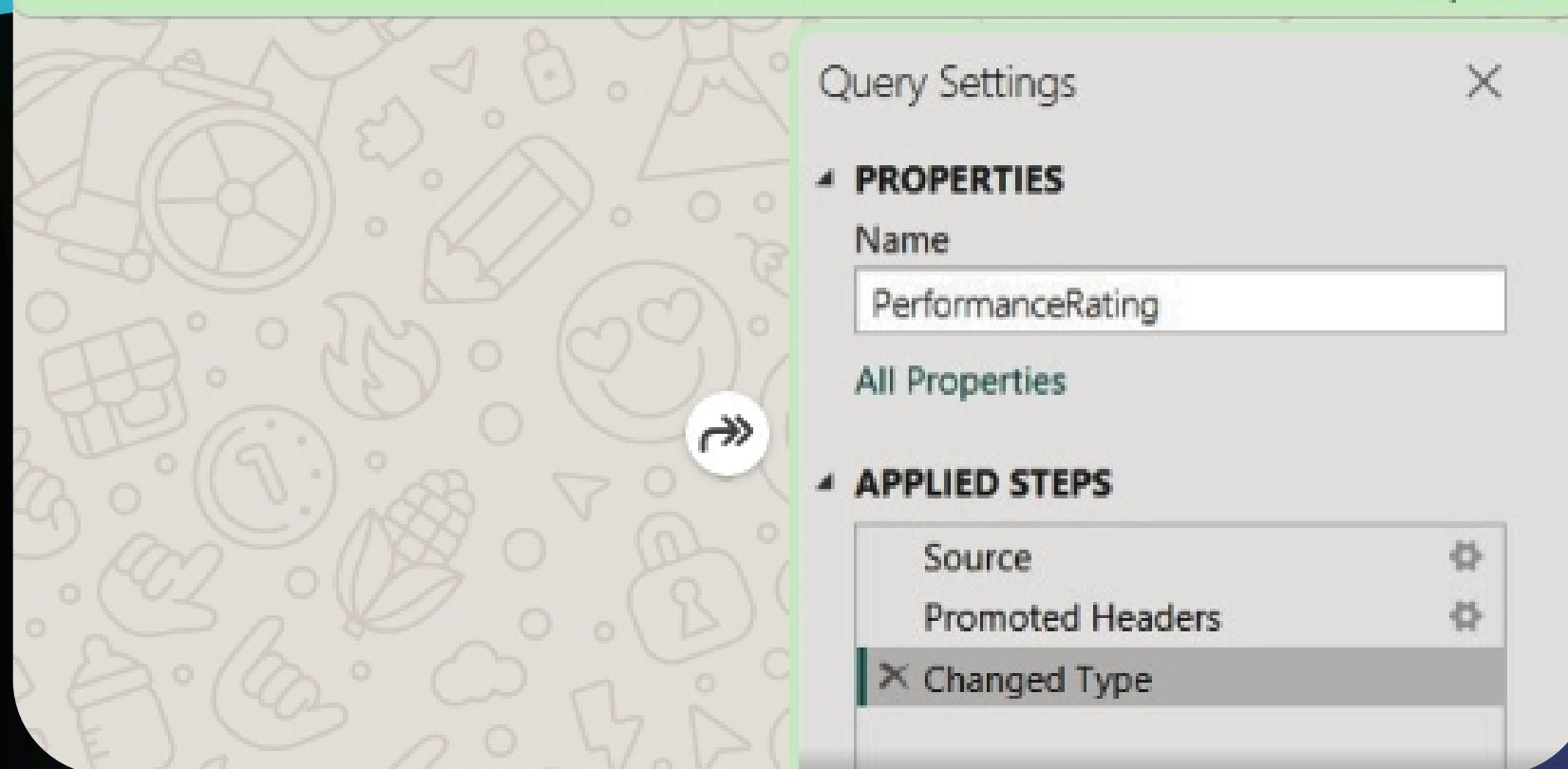


This image shows the "Add Conditional Column" dialog box in Power Query, a data transformation tool. This feature allows users to create a new column based on logical conditions applied to existing columns. In this specific example, a new column named "Attrition yes no" is being created. It maps the value 1 in the "Attrition" column to "Yes" and the value 0 to "No". Any other value in the "Attrition" column will result in a null value in the new column.

04

```
= Table.TransformColumnTypes(#"Promoted Headers",{{"PerformanceID",  
type text}, {"EmployeeID", type text}, {"ReviewDate", type date},  
{"EnvironmentSatisfaction", Int64.Type}, {"JobSatisfaction", Int64.Type},  
{"RelationshipSatisfaction", Int64.Type}, {"TrainingOpportunitiesWithinYear",  
Int64.Type}, {"TrainingOpportunitiesTaken", Int64.Type}, {"WorkLifeBalance",  
Int64.Type}, {"SelfRating", Int64.Type}, {"ManagerRating", Int64.Type}})
```

6:29 pm ✓✓



M Language for Performance

This image depicts a step in the data transformation process within Power Query, likely in a tool like Power BI or Excel. The top section displays M code, specifying the transformation of column types for a table, converting fields such as "PerformanceID", "EmployeeID", "ReviewDate", and various satisfaction and rating metrics to their appropriate data types (text, date, and Int64.Type). Below this, the Power Query Editor interface shows the "Query Settings" for a query named "PerformanceRating", highlighting the "Changed Type" step as one of the applied transformations after setting the data source and promoting headers.



05

Using DAX Codes In Dataset:

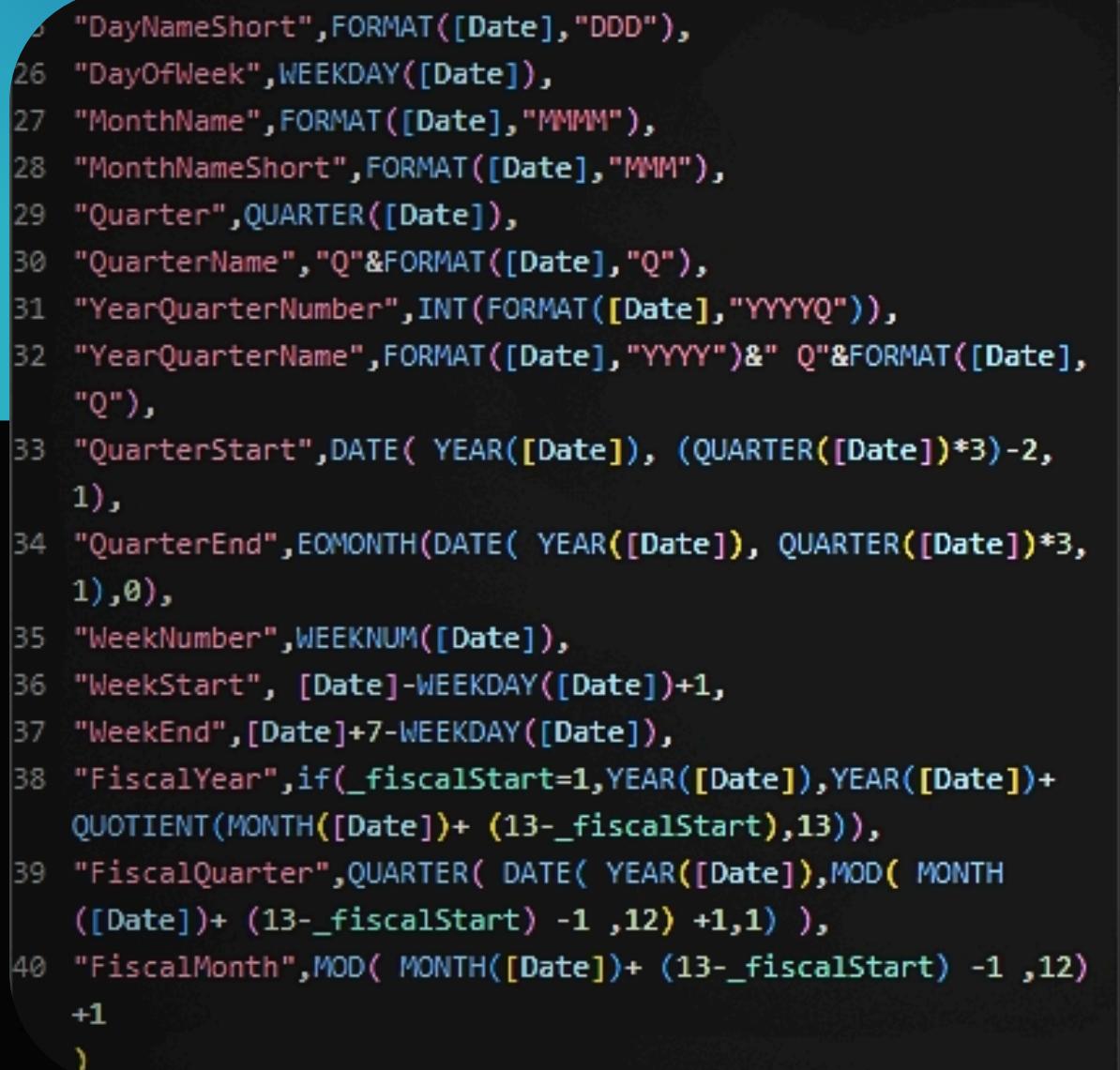
We have started applying DAX codes to the data file to obtain accurate results regarding the date, month, year, and day Related to the employees.

```
1 DimDate =
2 VAR _minYear = YEAR(MIN(DimEmployee[HireDate]))
3 VAR _maxYear = YEAR(MAX(DimEmployee[HireDate]))
4 VAR _fiscalStart = 4
5
6 RETURN
7 ADDCOLUMNS(
8     CALENDAR(
9         DATE(_minYear,1,1),
10        DATE(_maxYear,12,31)
11    ),
12 ),
13
14 "Year",YEAR([Date]),
15 "Year Start",DATE( YEAR([Date]),1,1),
16 "YearEnd",DATE( YEAR([Date]),12,31),
17 "MonthNumber",MONTH([Date]),
18 "MonthStart",DATE( YEAR([Date]), MONTH([Date]), 1),
19 "MonthEnd",EOMONTH([Date],0),
20 "DaysInMonth",DATEDIFF(DATE( YEAR([Date]), MONTH([Date])
21 1),EOMONTH([Date],0),DAY)+1,
22 "YearMonthNumber",INT(FORMAT([Date],"YYYYMM")),
23 "YearMonthName",FORMAT([Date],"YYYY-MMM"),
```

06

Using DAX Codes In Dataset:

We have started Applying DAX codes to the data file to obtain accurate results regarding the date, month, year, and day Related to the employees, here is the second photo of the codes that we used.



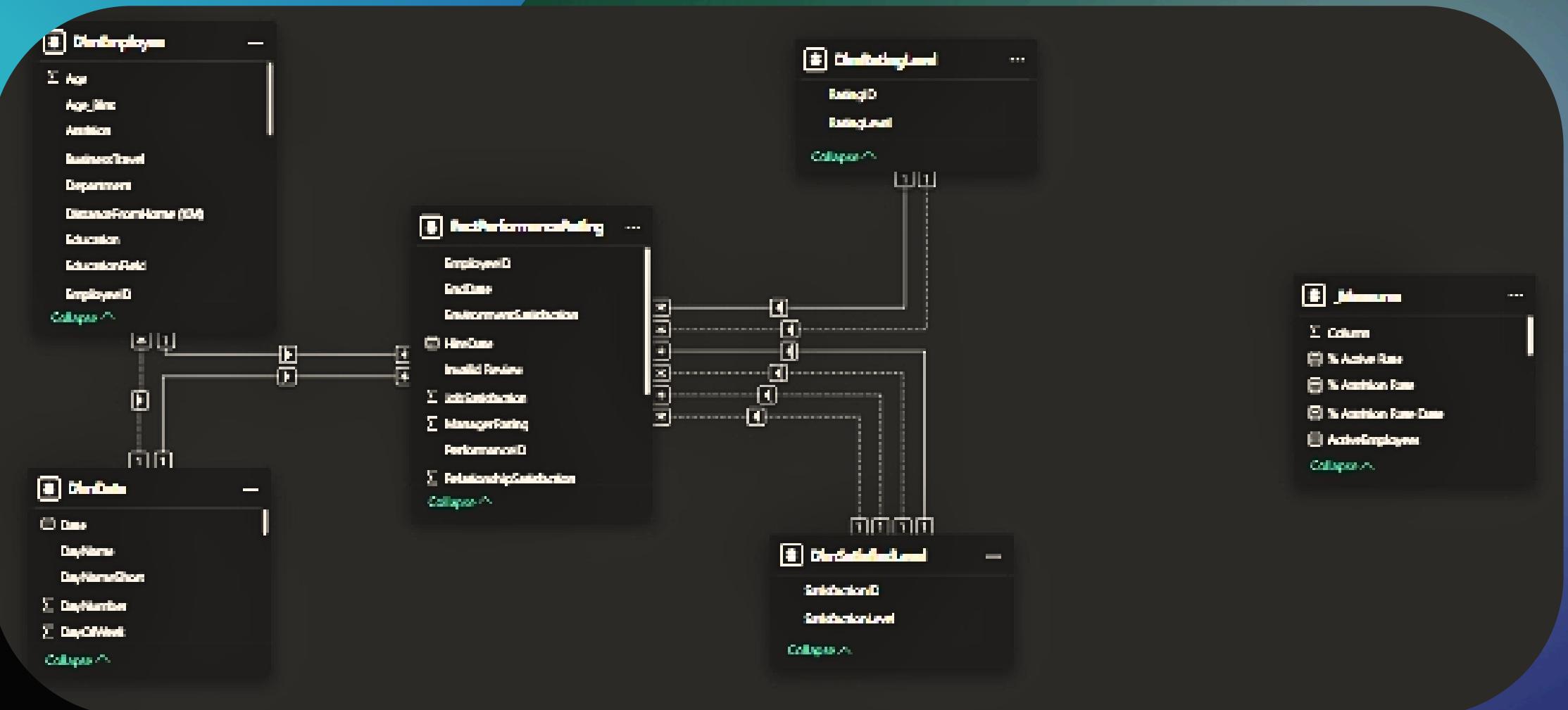
The screenshot shows the Power BI Data Model ribbon with the 'Tables' tab selected. A context menu is open over the 'DimDate' table, displaying options like 'Edit query', 'Delete', 'Add column', 'Add row', 'Add table', 'Import', 'New table', and 'New query'. The 'DimDate' table is listed under 'My tables'.

```
3 "DayNameShort",FORMAT([Date],"DDD"),
4 "DayOfWeek",WEEKDAY([Date]),
5 "MonthName",FORMAT([Date],"MMMM"),
6 "MonthNameShort",FORMAT([Date],"MMM"),
7 "Quarter",QUARTER([Date]),
8 "QuarterName","Q"&FORMAT([Date],"Q"),
9 "YearQuarterNumber",INT(FORMAT([Date],"YYYYQ")),
10 "YearQuarterName",FORMAT([Date],"YYYY")&" Q"&FORMAT([Date],
    "Q"),
11 "QuarterStart",DATE( YEAR([Date]), (QUARTER([Date])*3)-2,
    1),
12 "QuarterEnd",EOMONTH(DATE( YEAR([Date]), QUARTER([Date])*3,
    1),0),
13 "WeekNumber",WEEKNUM([Date]),
14 "WeekStart", [Date]-WEEKDAY([Date])+1,
15 "WeekEnd",[Date]+7-WEEKDAY([Date]),
16 "FiscalYear",if(_fiscalStart=1,YEAR([Date]),YEAR([Date])+
    QUOTIENT(MONTH([Date])+(13-_fiscalStart),13)),
17 "FiscalQuarter",QUARTER( DATE( YEAR([Date]),MOD( MONTH
    ([Date])+(13-_fiscalStart) -1 ,12) +1,1) ),
18 "FiscalMonth",MOD( MONTH([Date])+(13-_fiscalStart) -1 ,12)
    +1
)
```

07

Modeling

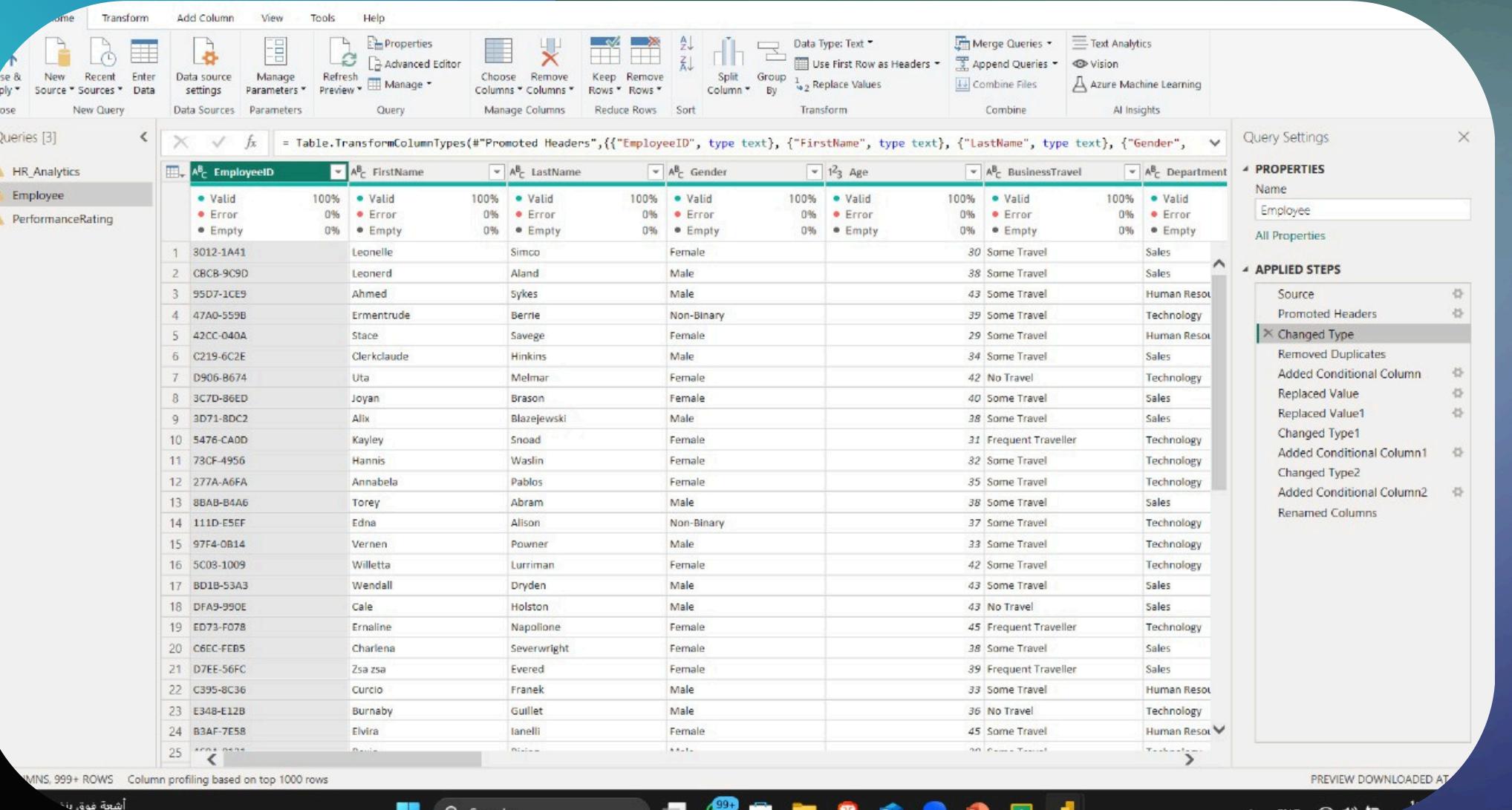
The model centers around a FactPerformanceRating table, which likely contains key performance indicators and satisfaction scores for employees. This table is linked to several dimension tables that provide context DimEmployees, DimEducationLevel, DimDate, DimSatisfactionLevel, and RatingLevel.



08

Applied Steps

The applied steps, as shown in the image, include connecting to a data source, promoting the first row to headers, changing the data type of columns, removing duplicate rows, adding conditional columns based on specific criteria, replacing values within columns, and finally renaming columns for clarity and ease of use.



The screenshot shows the Microsoft Power BI Data Editor interface. On the left, there's a sidebar with 'HR_Analytics', 'Employee', and 'PerformanceRating'. The main area displays a table with columns: EmployeeID, FirstName, LastName, Gender, Age, BusinessTravel, and Department. The 'Employee' query is selected, and the 'APPLIED STEPS' pane on the right lists the following steps:

- Source
- Promoted Headers
- Changed Type** (selected)
- Removed Duplicates
- Added Conditional Column
- Replaced Value
- Replaced Value1
- Changed Type1
- Added Conditional Column1
- Changed Type2
- Added Conditional Column2
- Renamed Columns

The preview pane shows the transformed data with columns: EmployeeID, FirstName, LastName, Gender, Age, BusinessTravel, and Department. The 'Employee' step has been renamed to 'Employee' in the properties pane.

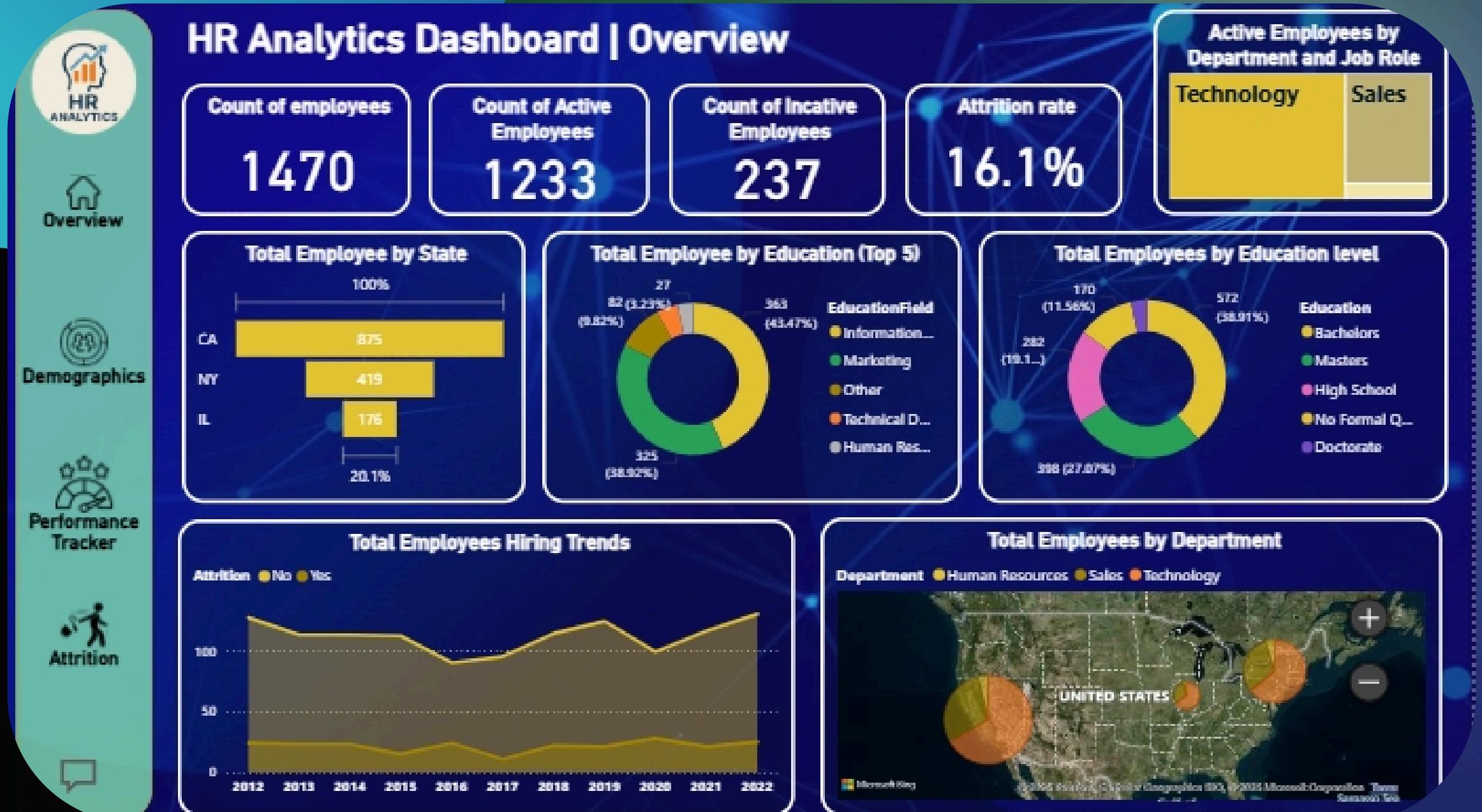


09

Dashboard

In essence, this dashboard offers a quick and visual understanding of the company's workforce size, activity, attrition, info map, hiring trends, and departmental distribution. It allows users to quickly grasp key HR indicators and identify potential areas for further investigation.

HR Analytics Dashboard | Overview



10

The Performance Tracker

Performance Tracker provides a detailed view of an individual employee's performance and satisfaction trends across multiple dimensions over a specific period. This allows for tracking progress, identifying areas of strength or concern, and potentially understanding the impact of different factors on performance and satisfaction.

HR Analytics Dashboard | Performance Tracker

Select employee

Start Date
09/07/2015

Last Review
04/14/2022

Count Review
5

Still Working

Job Satisfaction

Year	Score
2018	3
2019	3
2020	2
2021	1
2022	2

Relationship Satisfaction

Year	Score
2018	2
2019	4
2020	4
2021	2
2022	3

Self Rating

Year	Score
2018	4
2019	4
2020	4
2021	3
2022	4

Environment Satisfaction

Year	Score
2018	4
2019	4
2020	5
2021	2
2022	4

Work Life Balance

Year	Score
2018	4
2019	4
2020	4
2021	4
2022	3

Manager Rating

Year	Score
2018	4
2019	4
2020	4
2021	2
2022	3

Distance From Home (Km.)

38

Satisfaction Level	Satisfaction ID
Very Satisfied	5
Satisfied	4
Neutral	3
Dissatisfied	2

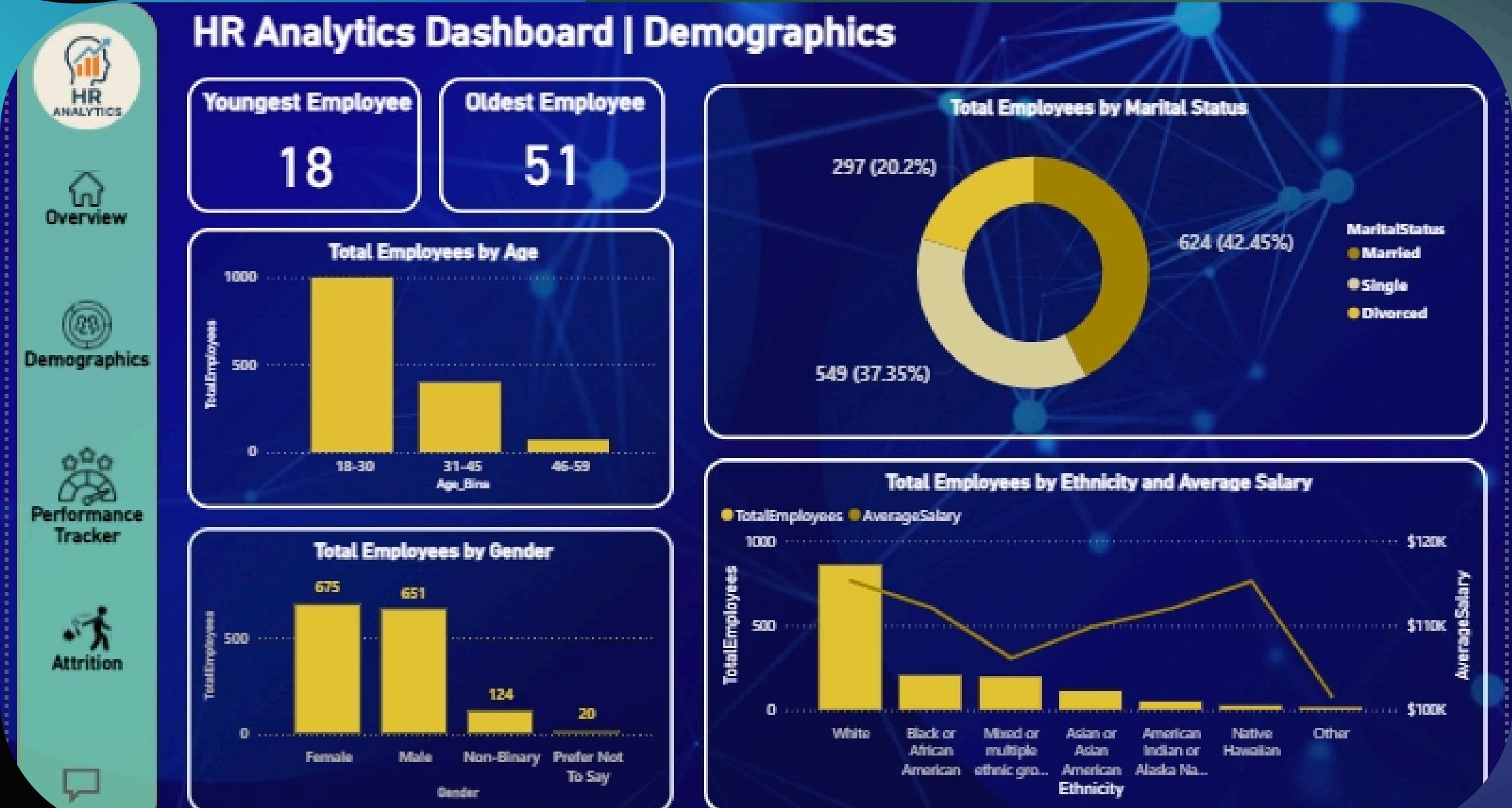
Rating Level	Rating ID
Above and Beyond	5
Exceeds Expectation	4
Meets Expectation	3
Needs Improvement	2



11

Demographics

The Demographics section provides a comprehensive overview of the employee population's composition in terms of age, marital status, gender, and ethnicity, while also incorporating salary information by ethnicity. This allows for understanding the diversity of the workforce and identifying potential demographic trends or disparities.





12

Attrition

The Attrition section provides a detailed analysis of employee turnover by examining various factors such as department, job role, travel frequency, overtime, hire date, and tenure. This allows the organization to identify potential root causes of attrition and develop targeted retention strategies.



Developing the Project Timeline

Skillset

Match tasks and responsibilities to individual strengths and expertise.

Communication

Establish clear channels for information sharing and coordination.

Accountability

Define clear ownership for each task or role.



Delegating and Collaborating

01

Task Allocation

Clearly assign responsibilities to team members.

02

Collaboration

Encourage teamwork, information sharing, and support among team members.

03

Feedback

Provide constructive feedback by the Instructor to ensure quality and alignment.



Addressing Challenges and Roadblocks

Problem Identification

Clearly identify the challenge and its impact on the project.

Brainstorming Solutions

Generate a range of possible solutions and evaluate their feasibility.

Action Plan

Implement the chosen solution and monitor its effectiveness.



Monitoring Progress and Adjusting

Deadlines

Track deadlines and ensure timely completion of tasks.

Milestones

Monitor progress towards key milestones.

Obstacles

At First we could not understand the data due to complicated details

Adjustments

Adapt the plan as needed to ensure project success, We Succeeded in Overcome this obstacles and understand the DATASET.



WHERE DATA
TRANSFORMS INTO VISION
BI ANALYTICS

Celebrating Achievements and Lessons Learned

01

Success

Acknowledge and celebrate the project's accomplishments.

02

Lessons Learned

Identify key takeaways and areas for improvement in future projects.



WHERE DATA
TRANSFORMS INTO VISION
BI ANALYTICS



THANK YOU!



WHERE DATA
TRANSFORMS INTO VISION
BI ANALYTICS