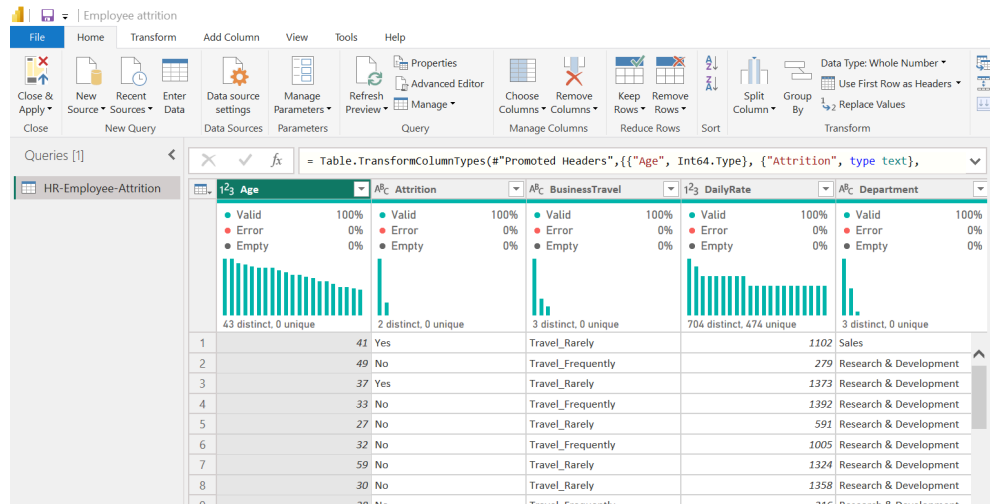# Mini Project - Employee Attrition

Data Preprocessing and Cleaning :

1. Checking the null values: As we can see in below screenshot there is no null values in the dataset

2. Removing the education column as we have educational field column
3. Renaming the employee number column to employee ID as it is unique identifier for employees
4. Environment satisfaction column is a numerical column first changing it's data type and it is transformed to categorical column for better understanding like '1'- Poor, '2'-Average, '3'- Good, '4'- Excellent. Some of the values is shown below

5. Transforming the Job involvement, Job satisfaction, Performance rating, Relationship satisfaction, Work life balance also in the same way as Environment satisfaction column.
6. Removing Over 18 column as it is not required for our analysis.

As our main goal is to analyse the dataset so I have converted few numerical columns into categorical columns.

Report building and analyzing

1. The total number of employees are 1470
2. Total employees left the company are 237
3. Total employees remaining are 1233
4. Employeee attrition rate is 16.12% in which the total number of males are 150 and females are 87

Some more Insights are

1. Around the age of 35 Count of attrition rate is highest and contributes to 5.31% of the total attrition.
2. People who travel rarely are more likely to attrition.
3. Males rate of attrition is more compared to females.
4. Life science educational field has more attrition of 37.55%
5. Coming to department Research and development is the one with more attrition of 133 Employees.

Job level: people in level 1 jobs are leaving so company should notice the performance of employees and should promote to next level for people who are doing well.

Job role: people in lab technicians role are the ones who are leaving the company.
Recommendation: Company should understand if there are any issues in the respected roles.

Environment satisfaction: people having poor environment satisfaction are more likely to attrition so company should focus on providing the healthy work environment

Recommendation: Company should run a survey by which they can understand the employees issues or concerns and can work towards it.

Over time : This is contributing so much for the attrition of almost 53% therefore this is one of the main factors of attrition.

Recommendation: The company should make sure that employees are working the expected amount of time and not much.

Years at the company: People with 0 and 1 years are the most people to leave the company contributing to almost 30% of attrition

Recommendations: Company should make some discussions to give the suitable opportunities to them

Years Since last promotion : People having average of 2 years with no promotion are leaving the company,

Recommendation: I would suggest the company to review the employees performance and give them the promotion

Years in job role: people in the same job role for upto 2-3 and with no promotion are leaving. Also, we see that people with 7 years in the same role are also leaving.

Recommendations: Managers or team lead should communicate with the members and understand if they are having any issues, there should be a good bond between them and often company should arrange team lunch/dinner to build a strong bond between them.