

Netaji Subhas University of Technology



AI Hardware and Tools Unit - 3

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POWER-BI - Power BI is a collection of software services, apps, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights. Your data might be an Excel spreadsheet, or a collection of cloud-based and on-premises hybrid data warehouses. Power BI lets you easily connect to your data sources, visualize and discover what's important, and share that with anyone or everyone you want.

PROJECT AIM - Utilizing PowerBI library to develop a project on data visualization and analytics. To perform this given task we are going to analyze the reasons for the leaving of employees from a company(attrition) from our dataset and will plot various charts to visualize it down.

OUR APPROACH- 1. Get the dataset in csv format.
2. Perform preprocessing on the dataset to remove all the null

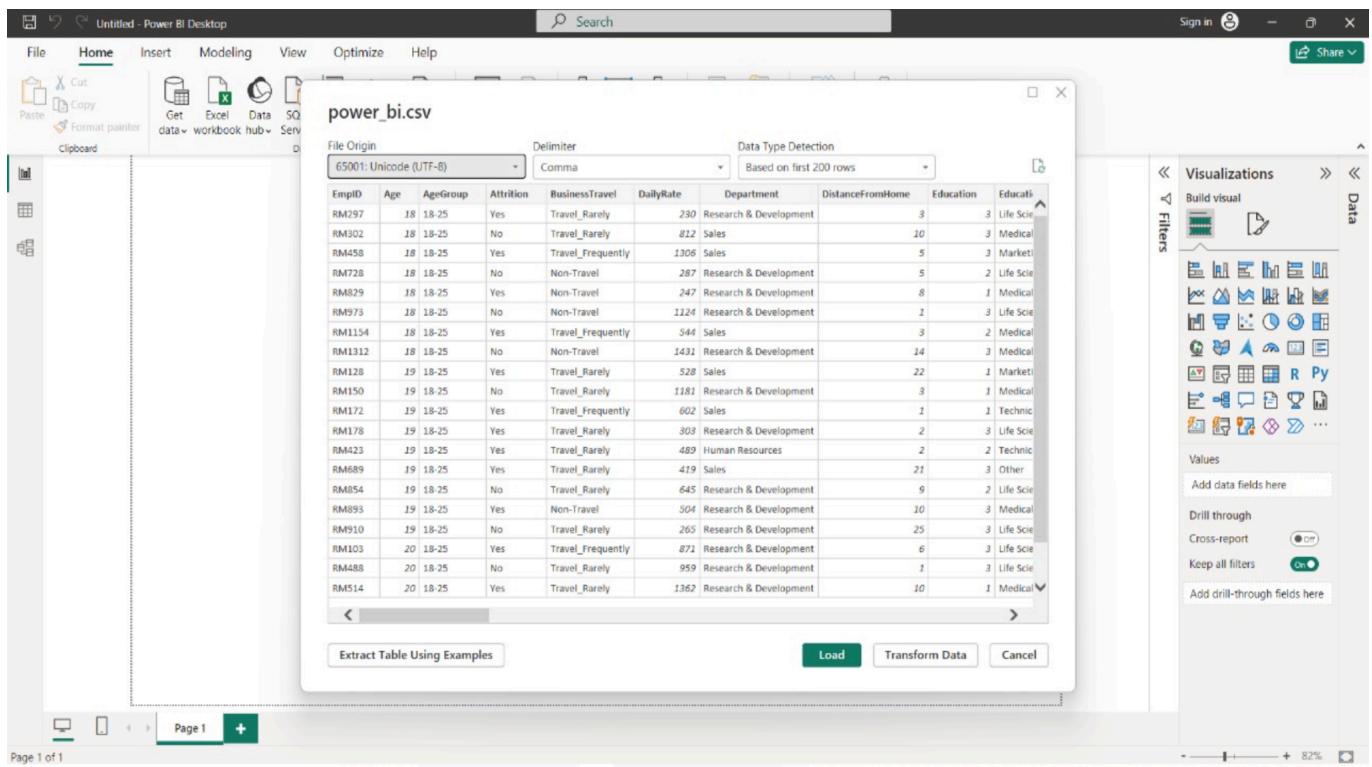
and duplicate values.

3. Visualize and analyze the data using the built -in Power Query editor in Power-bi.

Dataset Used - For our project we have used the “HR_Analytics.csv” dataset available on kaggle. It consists of columns like Employee Id,Age,Age Group,Attrition,Department etc.

Procedure

1.Importing data in Power-bi - Load the dataset into your workspace



2. Perform Data Cleaning and Preprocessing -

Our aim here is to resolve inconsistencies, unexpected or null values, and data quality issues. We apply it in our dataset by selecting all columns in Power Query editor and then removing duplicates with given command to remove all employ ids with duplicate values.

3. KPI(Key Performance Index) Cards Generation

- A Key Performance Indicator (KPI) is a visual cue that communicates the amount of progress made toward a measurable goal. We visualize these cues using the kpi cards available in the Power Query library. Different cards are -

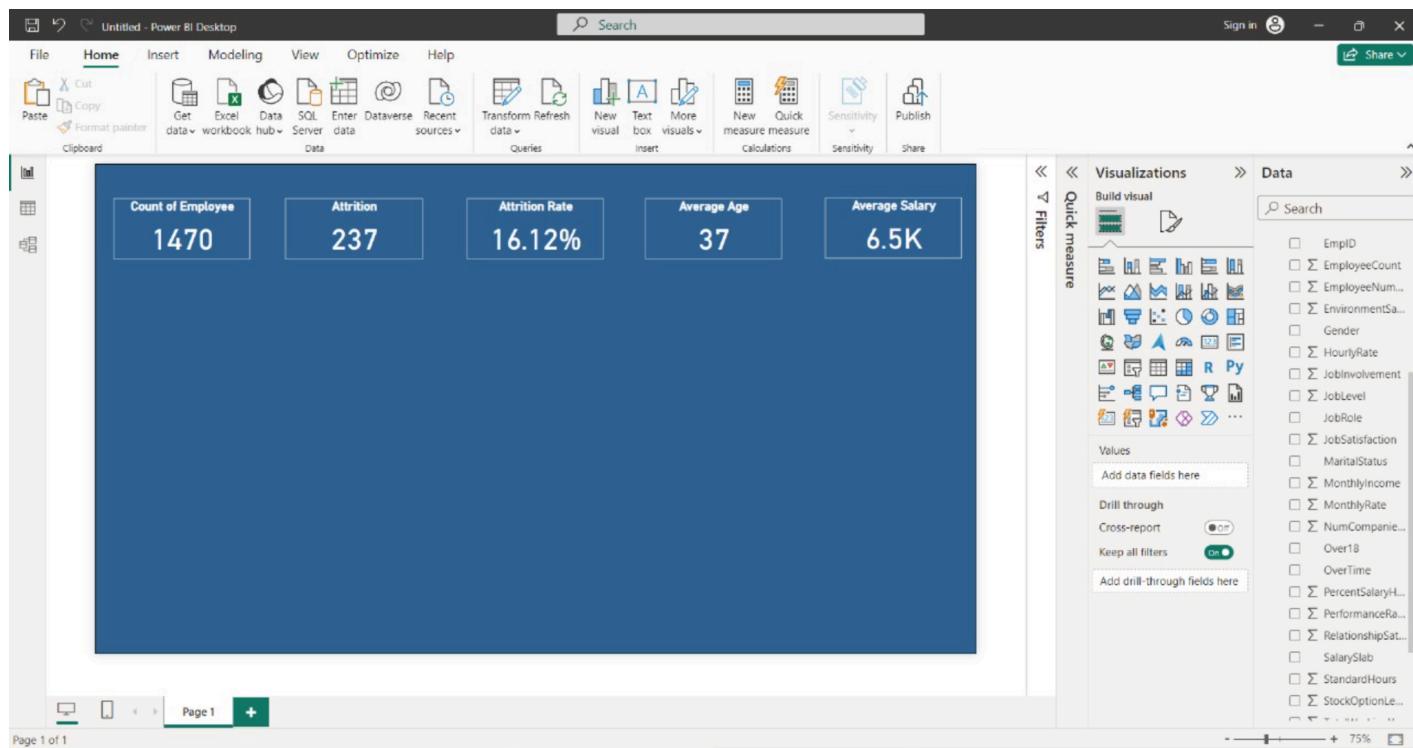
1. Count of Employees - Number of Employees in the company.

2. Attrition - Number of Employees who have left the company.

3. Attrition Rate - It is the ratio of Total Attrition by Count of Employees

4. Average age - It denotes the average age of the employees present in the company.

5. Average Salary - It represents the average salary of the employees present in the company.



4. Making Power-bi dashboard Charts and Tables

- Following are the description of various charts and tables we visualized below :-

- 1. Attrition By Education** - It is a donut chart depicting the education qualifications of the employees who left the company. The values are denoted in percentages.
- 2. Attrition By age** - We plotted a stacked column chart and Area chart representing the frequency of age groups of various employees who left the company .i.e attrition. The age groups are from 26 and above.
- 3. Job Satisfaction** - We used a table for this representation. We used “Job Role” and “Attrition” columns for this. It will denote how much an employee liked that particular job. The lower the job satisfaction score the less employees liked the job making the probability of leaving that job more.
- 4. Attrition By Salary Slab** - We plot stacked column charts to represent how many employees left for a particular salary slab. It represented that the employees with salaries around 5,000 have left the most.
- 5. Attribution by Job Role** - It represents the leaving rate for specific jobs by the employees.

HR ANALYTICS DASHBOARD

Count of Employees: 1470

Attrition: 237

Attrition Rate: 16.12%

Average Age: 37

Average Salary: 6.5K

Attrition By Gender: Male 130, Female 87

Attrition By Education:

Education	Percentage
Medical	27%
Marketing	19%
Life Sciences	38%
Technical Degree	14%
Other	3%

Attrition By Age:

Age Group	Sum of AttritionCount
26-35	116
18-25	44
36-45	43
46-55	28
55+	8

Job Satisfaction:

JobRole	1	2	3	4	Total
Healthcare Representative	2	2	1	4	9
Human Resources	5	2	3	2	12
Laboratory Technician	3	2	1	1	6
Manager	1	2	1	1	5
Manufacturing Director	2	2	4	2	10
Research Director	0	1	1	0	2
Research Scientist	13	10	15	6	47
Sales Executive	14	9	11	4	37
Sales Representative	7	5	9	3	33
Total	66	46	73	52	237

Attrition By Salary Slab:

Salary Slab	Sum of AttritionCount
26.91 - 34.43	3
34.43 - 42.95	7
42.95 - 51.47	8
51.47 - 60.00	2
60.00 - 68.52	2
68.52 - 77.04	0
77.04 - 85.56	1
85.56 - 94.08	29
94.08 - 102.60	1
102.60 - 111.12	1
111.12 - 120.64	1
120.64 - 129.16	9
129.16 - 137.68	10
137.68 - 146.20	0
146.20 - 154.72	43
154.72 - 163.24	84
163.24 - 171.76	25
171.76 - 180.28	6
180.28 - 188.80	5
188.80 - 197.32	1
197.32 - 205.84	0
205.84 - 214.36	55
Upto 5k	84

Attrition By Job Role:

JobRole	Sum of AttritionCount
Laboratory Tech...	62
Sales Executive	57
Research Scien...	47
Sales Represe...	33
Human Resourc...	12
Manufacturing D...	10
Healthcare Rep...	9

Attrition By Age:

Year At Company	Sum of AttritionCount
0	18
1	60
2	19
3	19
4	18
5	18
6	18
7	18
8	18
9	18
10	18
11	18
12	18
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100	18

Data

- Attrition
- AttritionCount
- AttritionRate
- BusinessTravel
- Department
- DistancefromHome
- Education
- EducationField
- EmployeeCount
- EmployeeNum...
- EnvironmentS...
- Gender
- HourlyRate
- JobInvolvement
- JobLevel
- JobRole
- JobSatisfaction
- MaritalStatus
- MonthlyIncome