INTERNSHIP BY PSYLIQ

HR DATA ANALYSIS

PAVAN PANDHARE

HR DATA ANALYSIS

Department
All

Gender
All

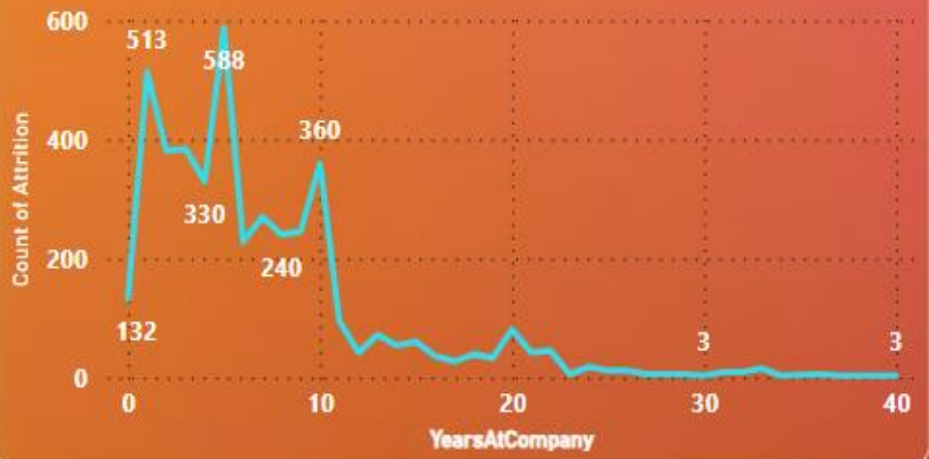
Age
18 — 60

JobLevel
1 — 5

Education
1 — 5

4410	4.12	65029.31	15.21
Total Employee	Average_year_with_cu...	Average MonthlyIncome	Average Salary Hike%

Employee Attrition Over The Years

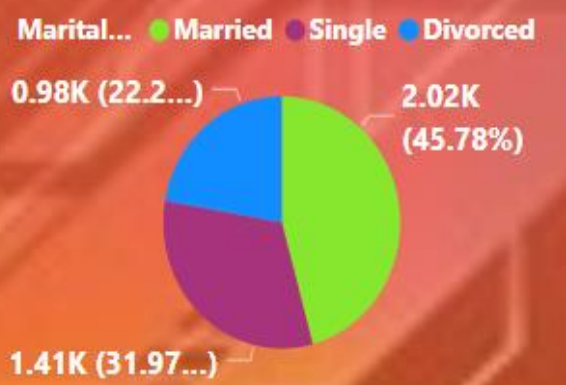


Average of MonthlyIncome by JobRole

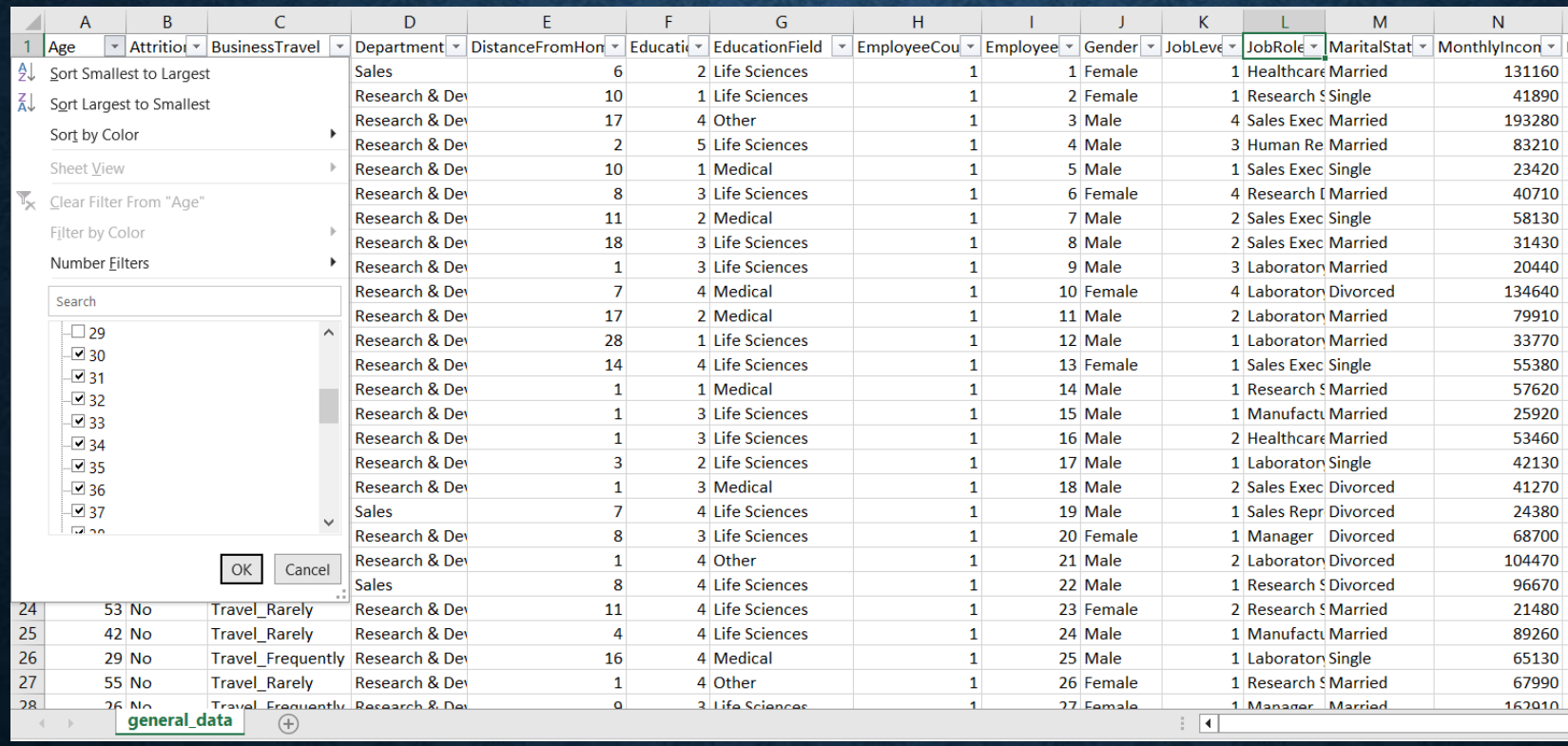
EmployeeID	Sum of MonthlyIncome
386	199990
1856	199990
3326	199990
942	199730
2412	199730
3882	199730
Total	286779270

Count of Employee by BusinessTravel

Count of Employee by MaritalStatus



- Q1. Using Excel, how would you filter the dataset to only show employees aged 30 and above?



- 2. Create a pivot table to summarize the average Monthly Income by Job Role

Job Roles	Average of MonthlyIncome
Healthcare Representative	60983.74046
Human Resources	58528.07692
Laboratory Technician	66314.05405
Manager	63395.88235
Manufacturing Director	69183.72414
Research Director	65473.125
Research Scientist	64975.68493
Sales Executive	65186.68712
Sales Representative	65370.96386
Grand Total	**65029.31293**

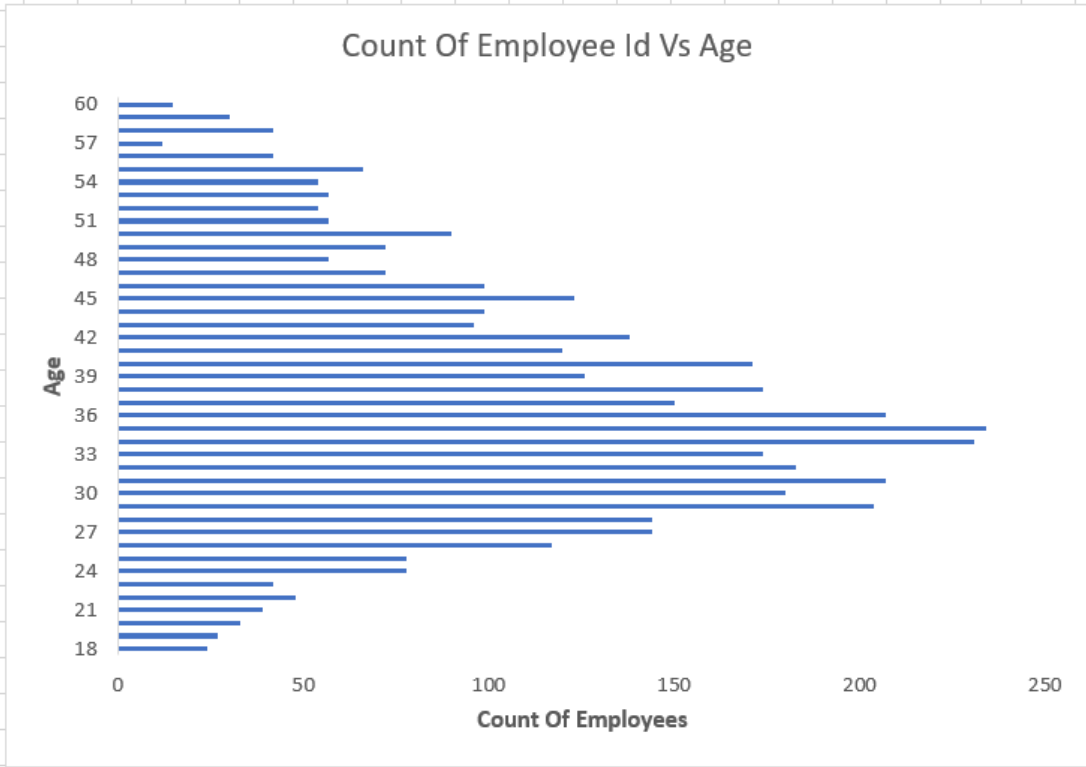
- 3. Apply conditional formatting to highlight employees with Monthly Income above the company's average income.

EmployeeID	MonthlyIncome	Environme	JobSatisfa	WorkLifeBalance
1	131160	3	4	2
2	41890	3	2	4
3	193280	2	2	1
4	83210	4	4	3
5	23420	4	1	3
6	40710	3	2	2
7	58130	1	3	1
8	31430	1	2	3
9	20440	2	4	3
10	134640	2	1	3
11	79910	3	4	3
12	33770	NA	4	3
13	55380	4	1	3
14	57620	1	2	2
15	25920	4	4	2
16	53460	3	4	4
17	42130	4	3	4
18	41270	1	4	3
19	24380	2	2	2
20	68700	1	1	3
21	104470	3	2	1
22	96670	1	2	2
23	21480	3	3	2
24	89260	2	3	3
25	65130	2	4	2
26	67990	2	4	3
27	162910	1	1	3
28	27050	4	4	3

employee_survey_data

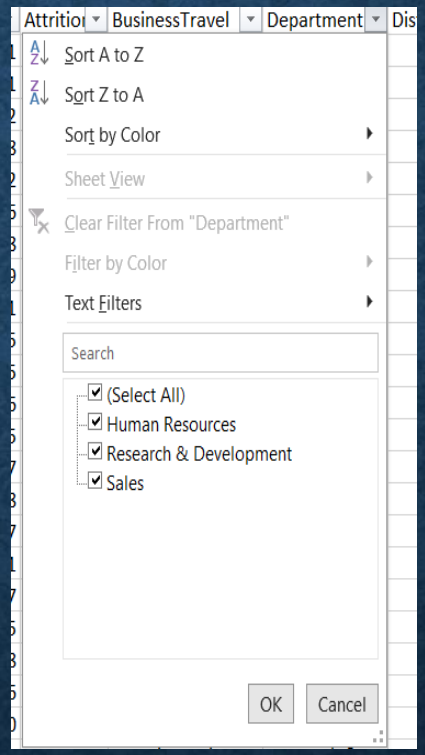
- 4. Create a bar chart in Excel to visualize the distribution of employee ages.

Age	Count of EmployeeID
18	24
19	27
20	33
21	39
22	48
23	42
24	78
25	78
26	117
27	144
28	144
29	204
30	180
31	207
32	183
33	174
34	231
35	234
36	207
37	150
38	174
39	126
40	171
41	120
42	138
43	96

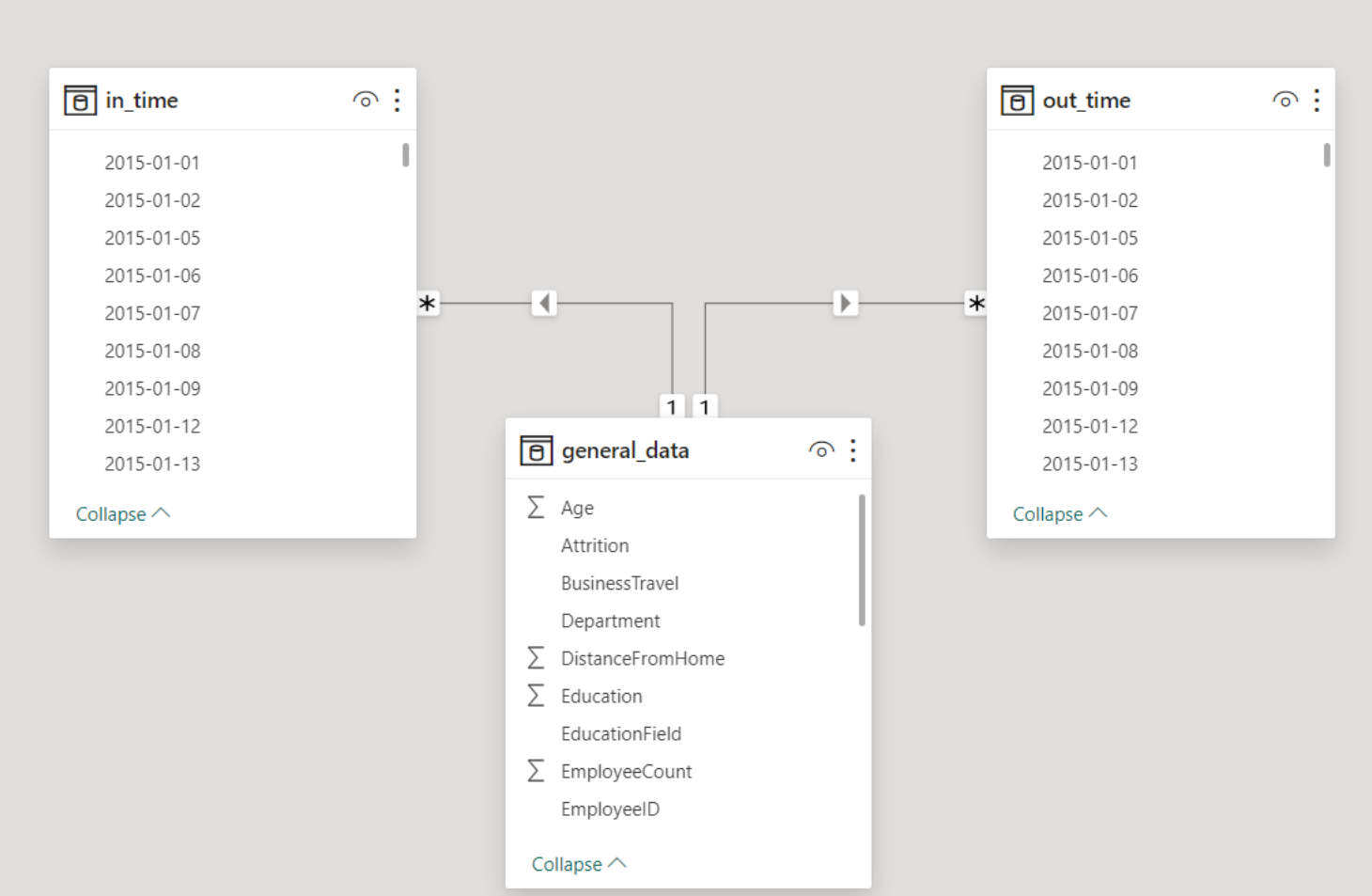


- 5. Identify and clean any missing or inconsistent data in the "Department" column.

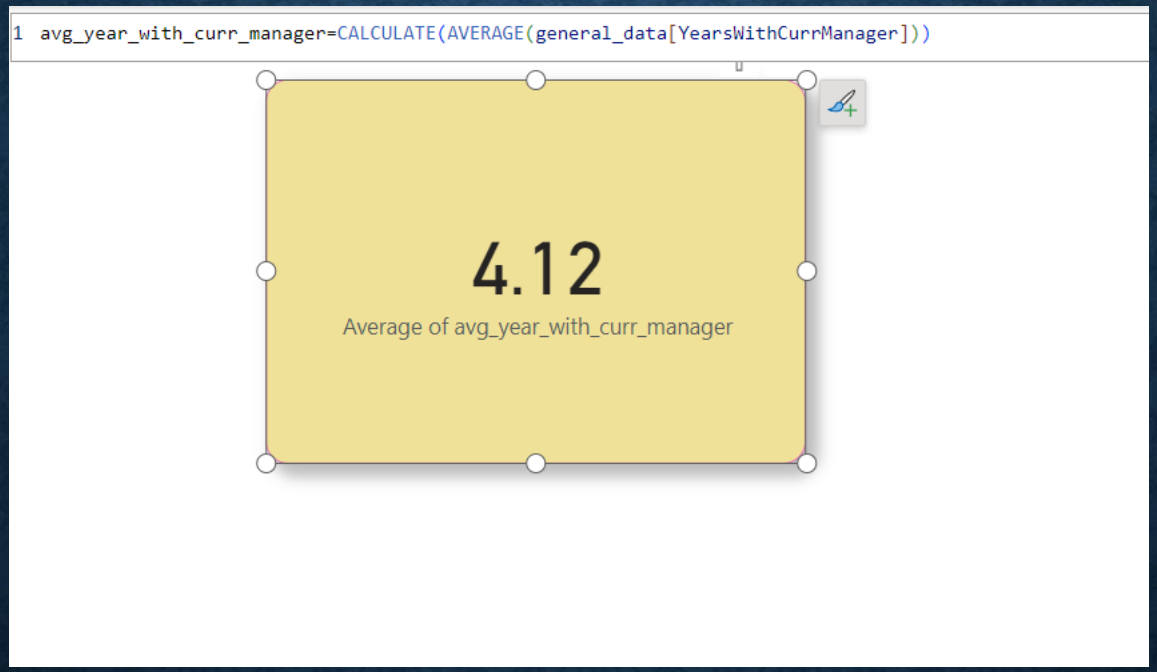
By checking the Department column, it seems that the column data is consistent, clean and doesn't have any missing data.



- 6. In Power BI, establish a relationship between the "EmployeeID" in the employee data and the "EmployeeID" in the time tracking data



- 7. Using DAX, create a calculated column that calculates the average years an employee has spent with their current manager.



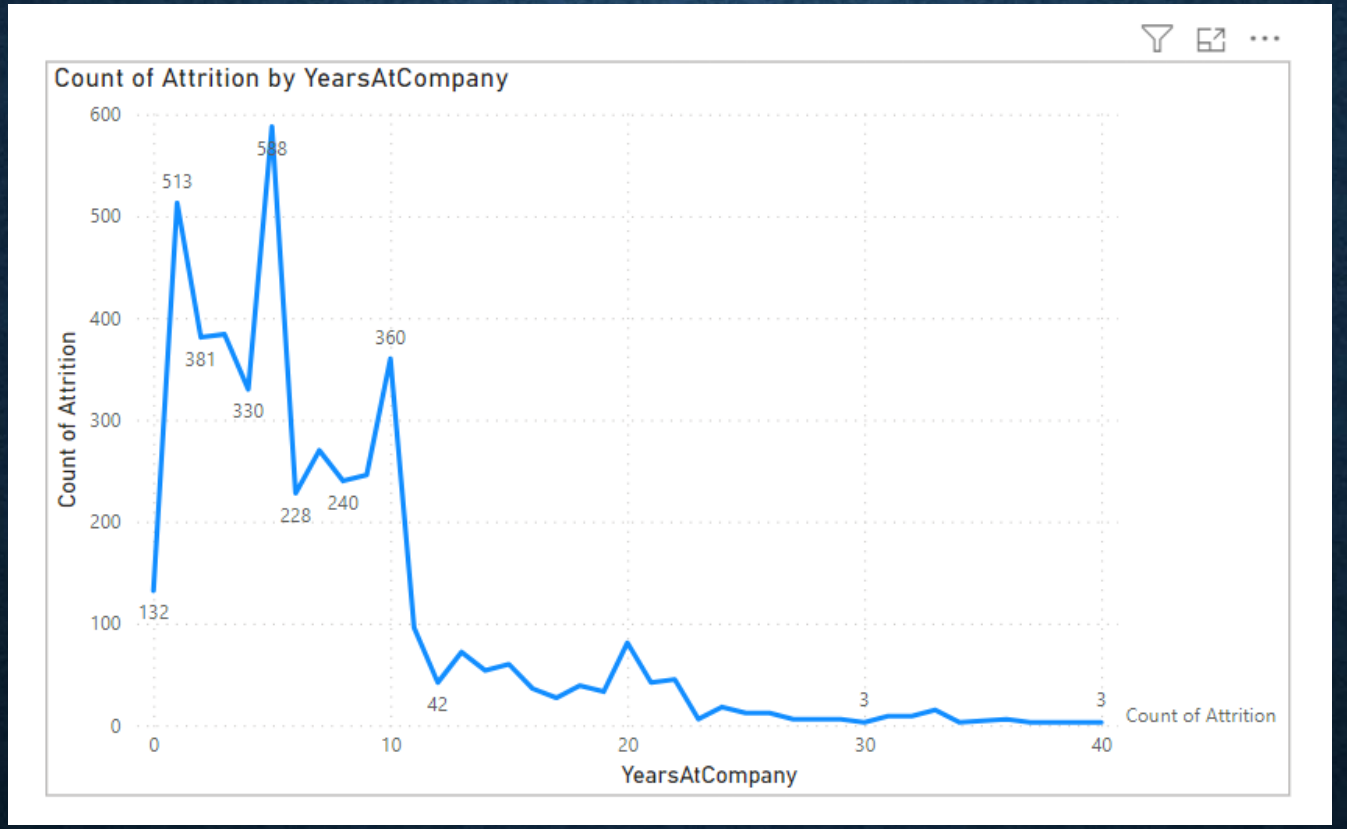
- 8. Using Excel, create a pivot table that displays the count of employees in each Marital Status category, segmented by Department

Count of EmployeeID	Column Labels			
Row Labels	Human Resources	Research & Development	Sales	Grand Total
Divorced	21	621	339	981
Married	96	1350	573	2019
Single	72	912	426	1410
Grand Total	**189**	**2883**	**1338**	**4410**

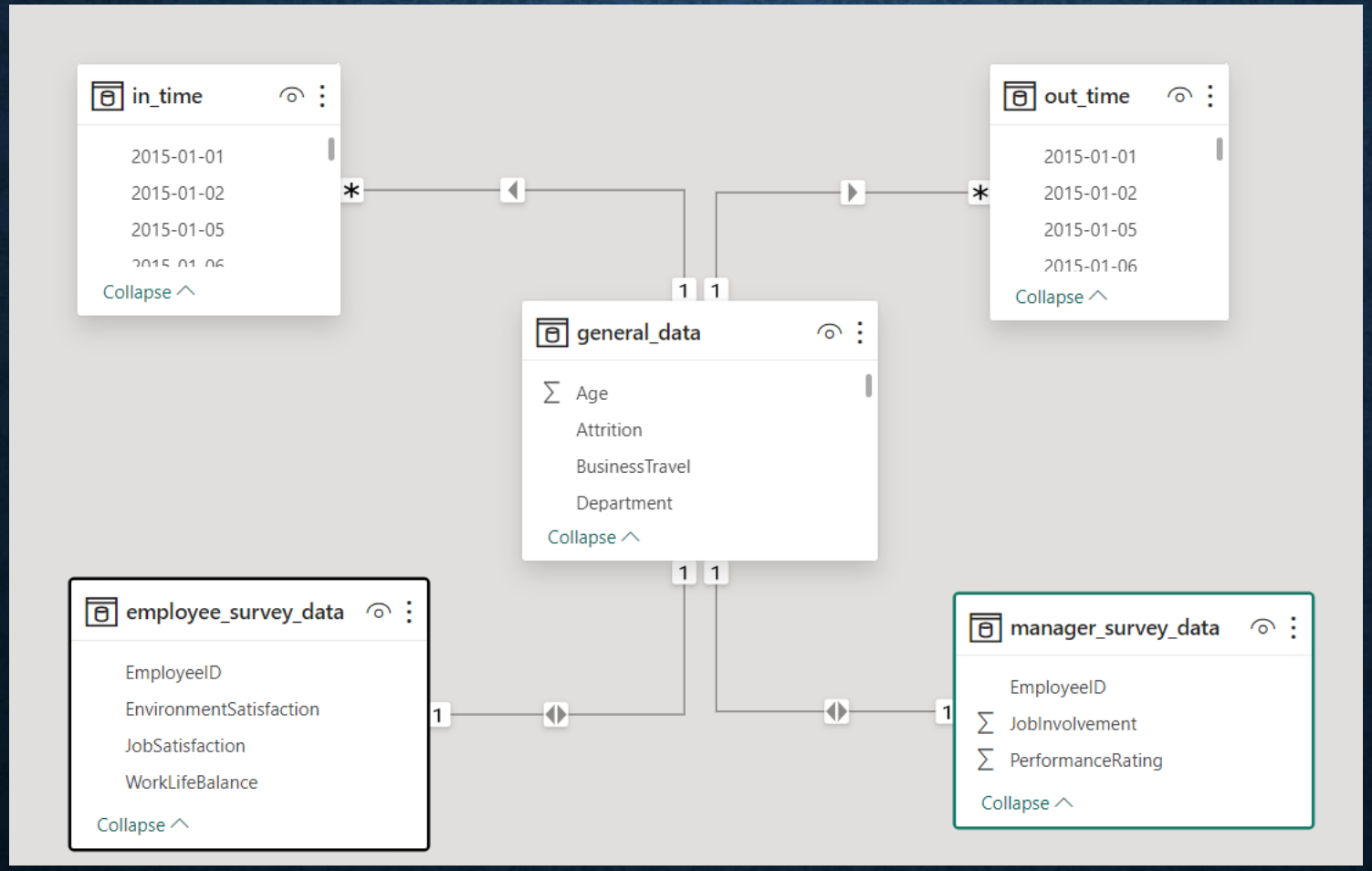
- 9. Apply conditional formatting to highlight employees with both above average Monthly Income and above-average Job Satisfaction.

A	B	C
EmployeeID	MonthlyIncome	JobSatisfaction
1	131160	4
2	41890	2
3	193280	2
4	83210	4
5	23420	1
6	40710	2
7	58130	3
8	31430	2
9	20440	4
10	134640	1
11	79910	4
12	33770	4
13	55380	1
14	57620	2
15	25920	4
16	53460	4
17	42130	3
18	41270	4
19	24380	2
20	68700	1
21	104470	2
22	96670	2
23	21480	3
24	89260	3
25	65130	4
26	67990	4
27	162910	1
28	27050	4

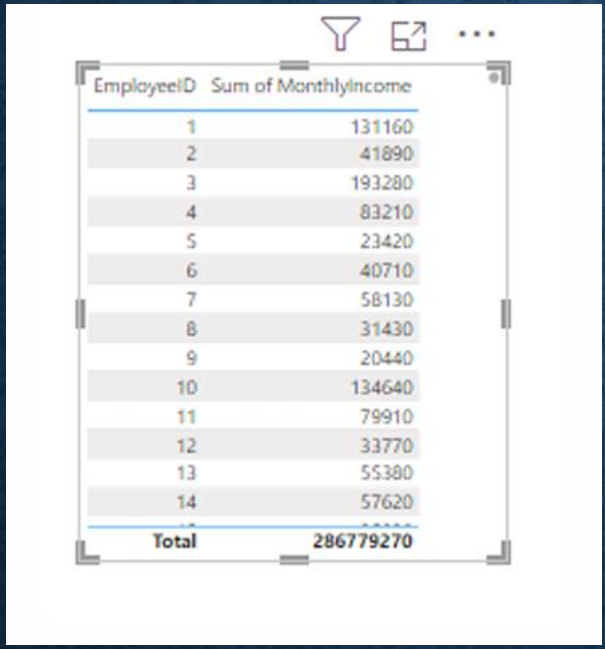
- 10. In Power BI, create a line chart that visualizes the trend of Employee Attrition over the years.



- 11. Describe how you would create a star schema for this dataset, explaining the benefits of doing so.

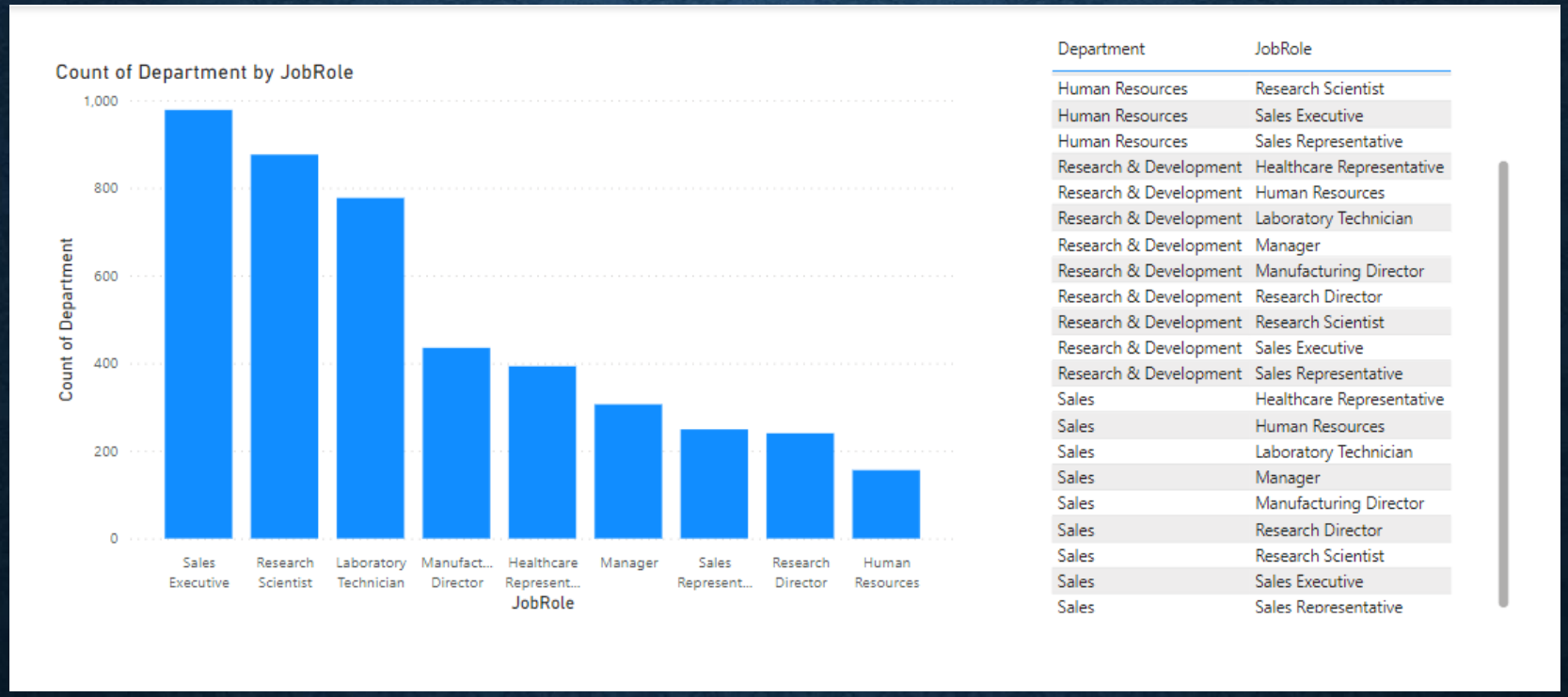


- 12. Using DAX, calculate the rolling 3-month average of Monthly Income for each employee.



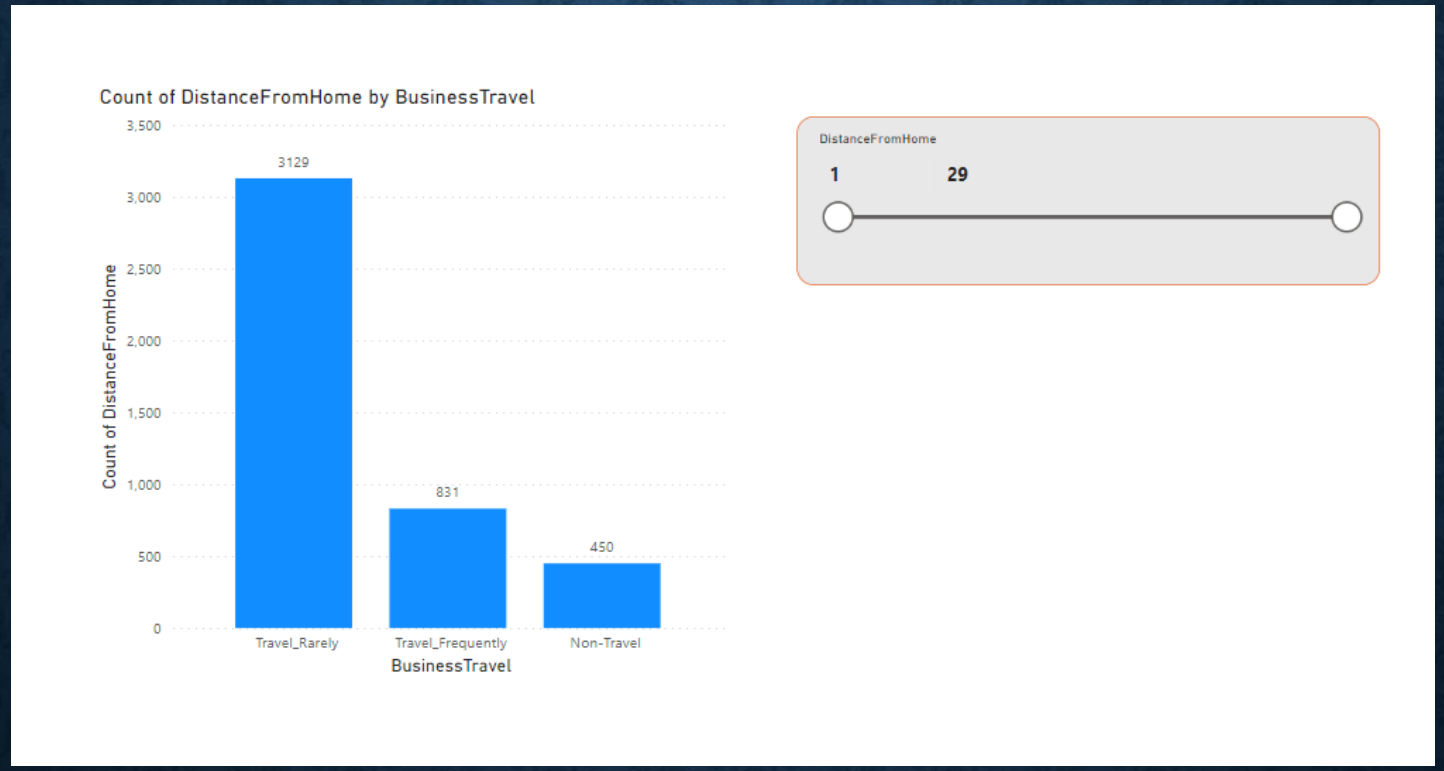
EmployeeID	Sum of MonthlyIncome
1	131160
2	41890
3	193280
4	83210
5	23420
6	40710
7	58130
8	31430
9	20440
10	134640
11	79910
12	33770
13	55380
14	57620
Total	**286779270**

- 13. Create a hierarchy in Power BI that allows users to drill down from Department to Job Role to further narrow their analysis



Department	JobRole
Human Resources	Research Scientist
Human Resources	Sales Executive
Human Resources	Sales Representative
Research & Development	Healthcare Representative
Research & Development	Human Resources
Research & Development	Laboratory Technician
Research & Development	Manager
Research & Development	Manufacturing Director
Research & Development	Research Director
Research & Development	Research Scientist
Research & Development	Sales Executive
Research & Development	Sales Representative
Sales	Healthcare Representative
Sales	Human Resources
Sales	Laboratory Technician
Sales	Manager
Sales	Manufacturing Director
Sales	Research Director
Sales	Research Scientist
Sales	Sales Executive
Sales	Sales Representative

- 14. How can you set up parameterized queries in Power BI to allow users to filter data based on the Distance from Home column?



- 15. In Excel, calculate the total Monthly Income for each Department, considering only the employees with a Job Level greater than or equal to 3.

Sum of MonthlyIncome	Column Labels			
Row Labels	3	4	5	Grand Total
Human Resources	1648500	754800	855840	3259140
Research & Development	28117740	15277290	10107870	53502900
Sales	11792400	8753070	2428860	22974330
Grand Total	**41558640**	**24785160**	**13392570**	**79736370**

- 16. Explain how to perform a What-If analysis in Excel to understand the impact of a 10% increase in Percent Salary Hike on Monthly Income.

N	O
MonthlyIncome	10% hike monthaly incom
131160	144276
41890	46079
193280	212608
83210	91531
23420	25762
40710	44781
58130	63943
31430	34573
20440	22484
134640	148104
79910	87901
33770	37147
55380	60918
57620	63382
25920	28512
53460	58806
42130	46343
41270	45397
24380	26818
68700	75570
104470	114917
96670	106337
21480	23628
89260	98186
65130	71643
67990	74789
162910	179201
27050	29755

17. Verify If The Data Adheres To A Predefined Schema. What Actions Would You Take If You Find Inconsistencies?

- Verifying if data adheres to a predefined schema involves checking whether the actual data in a dataset aligns with the expected structure and rules outlined in the predefined schema.
- There is 'EmployeeID' label missing in the 'in-time' and 'out-time' data.
- It is very important to address these inconsistencies in the data files and check if data profiling is done carefully and the data is validated correctly.
- The dataset would then conform to the predefined schema following the resolution of all identified inconsistencies and the implementation of necessary data quality measures.