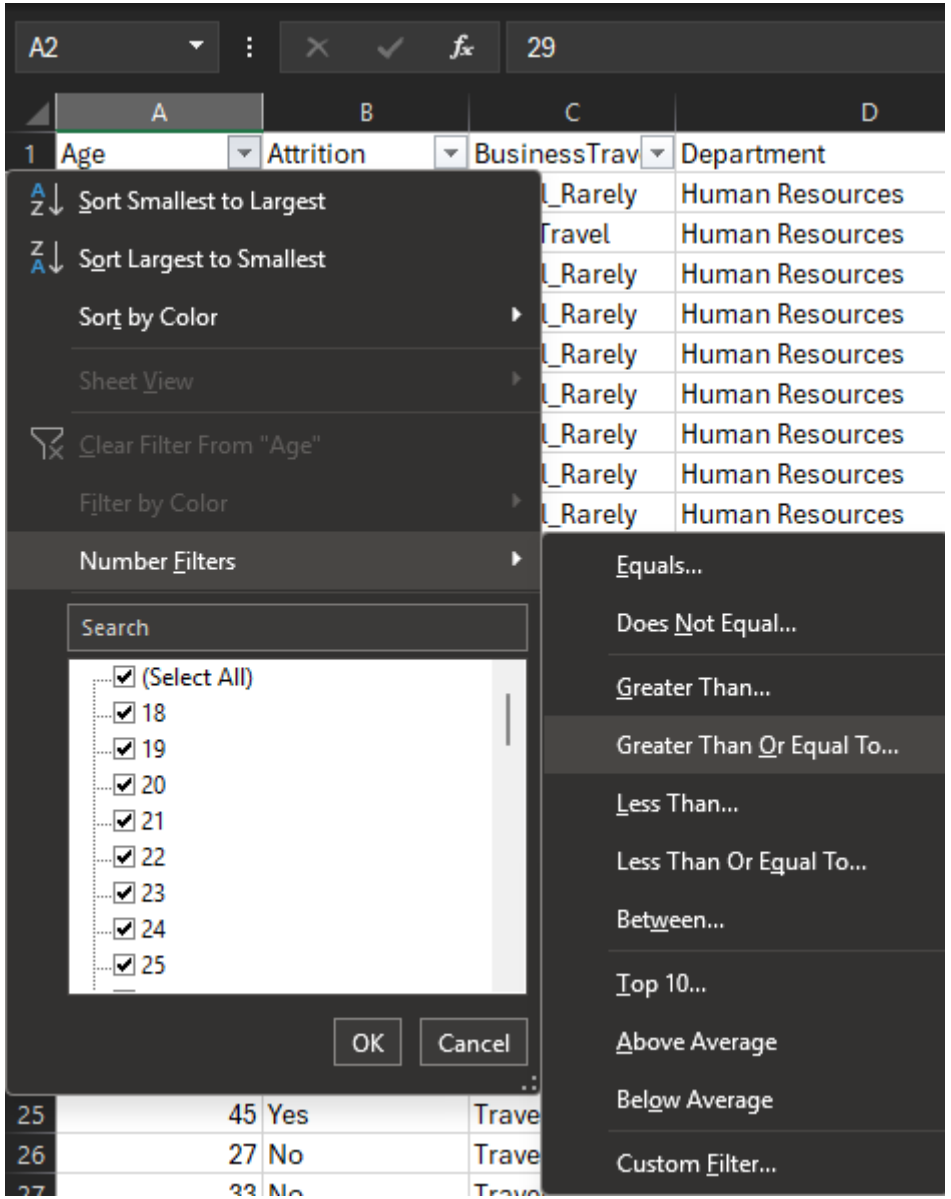
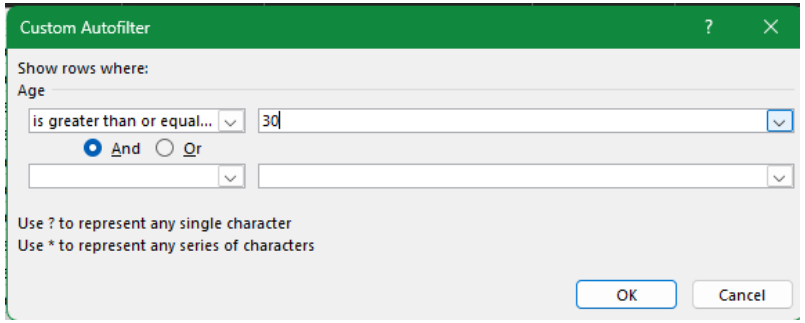
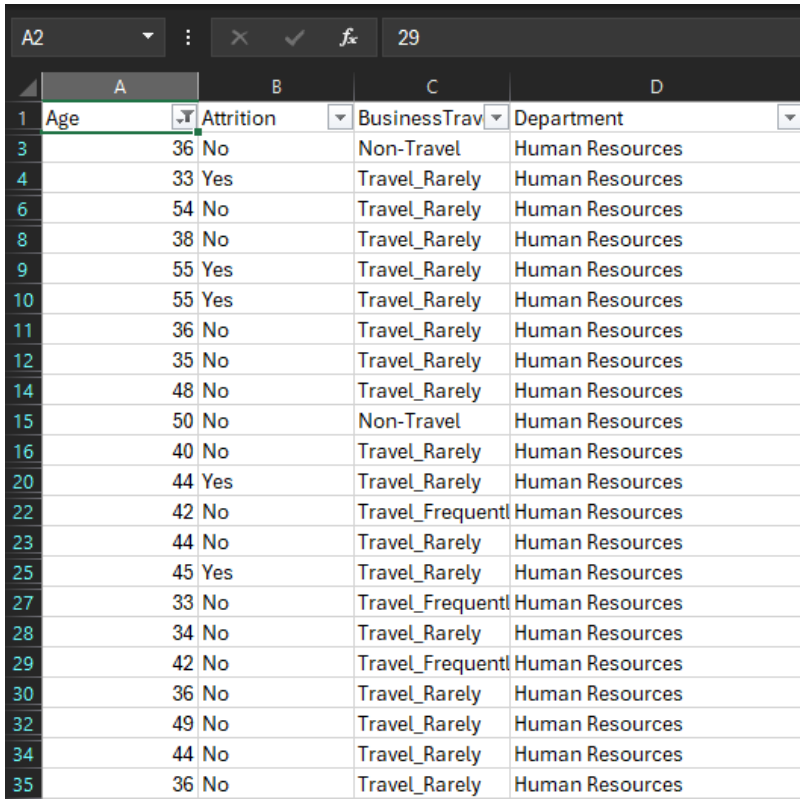
1. Using Excel, how would you filter the dataset to only show employees aged 30 and above?

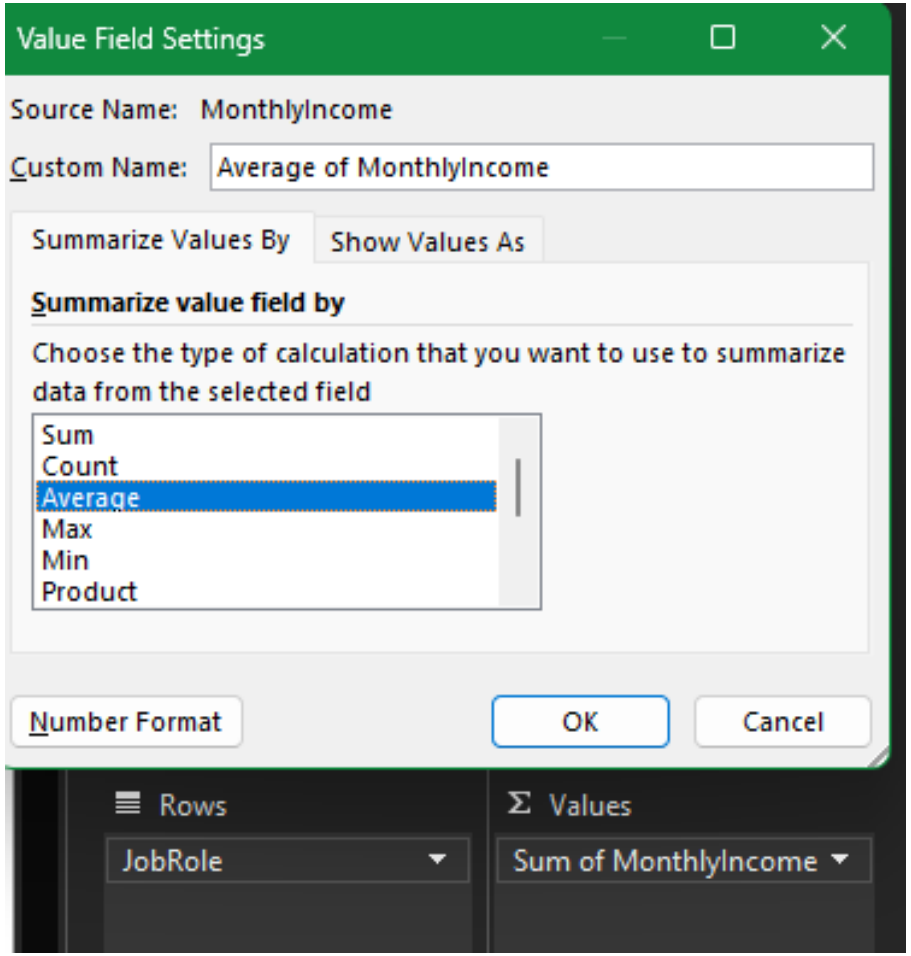






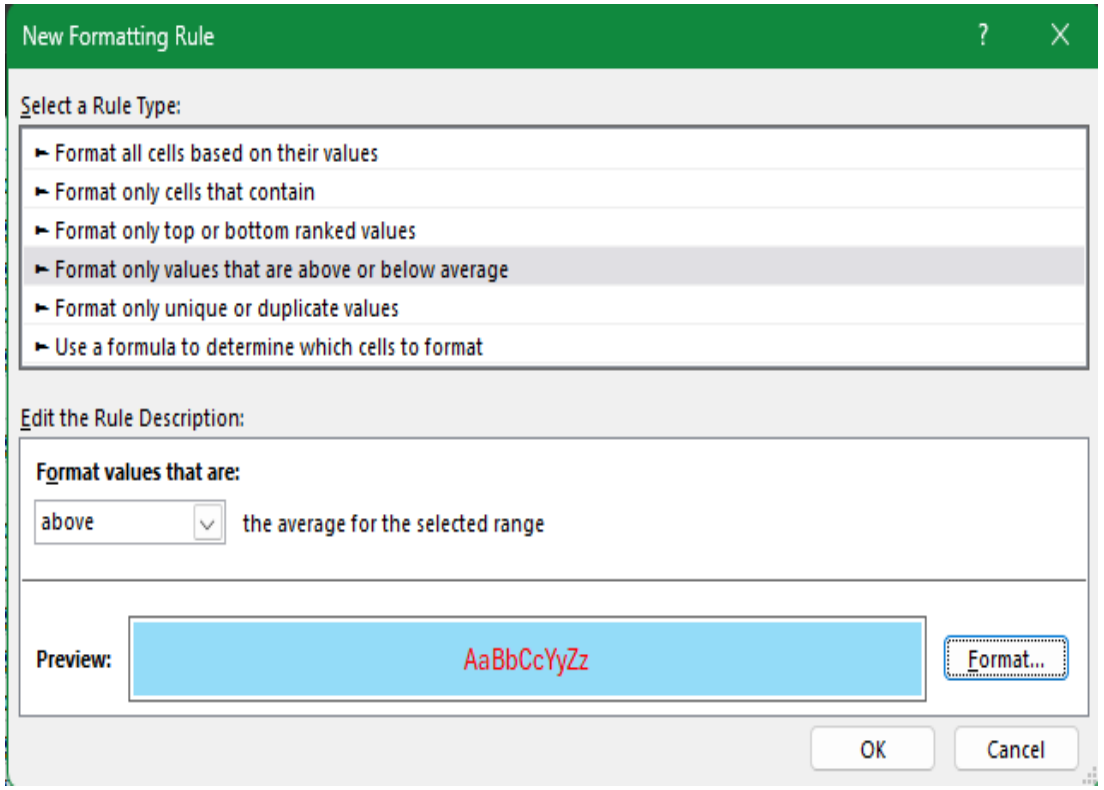
	Age	Attrition	BusinessTrav	Department
3	36	No	Non-Travel	Human Resources
4	33	Yes	Travel_Rarely	Human Resources
6	54	No	Travel_Rarely	Human Resources
8	38	No	Travel_Rarely	Human Resources
9	55	Yes	Travel_Rarely	Human Resources
10	55	Yes	Travel_Rarely	Human Resources
11	36	No	Travel_Rarely	Human Resources
12	35	No	Travel_Rarely	Human Resources
14	48	No	Travel_Rarely	Human Resources
15	50	No	Non-Travel	Human Resources
16	40	No	Travel_Rarely	Human Resources
20	44	Yes	Travel_Rarely	Human Resources
22	42	No	Travel_Frequentl	Human Resources
23	44	No	Travel_Rarely	Human Resources
25	45	Yes	Travel_Rarely	Human Resources
27	33	No	Travel_Frequentl	Human Resources
28	34	No	Travel_Rarely	Human Resources
29	42	No	Travel_Frequentl	Human Resources
30	36	No	Travel_Rarely	Human Resources
32	49	No	Travel_Rarely	Human Resources
34	44	No	Travel_Rarely	Human Resources
35	36	No	Travel_Rarely	Human Resources

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



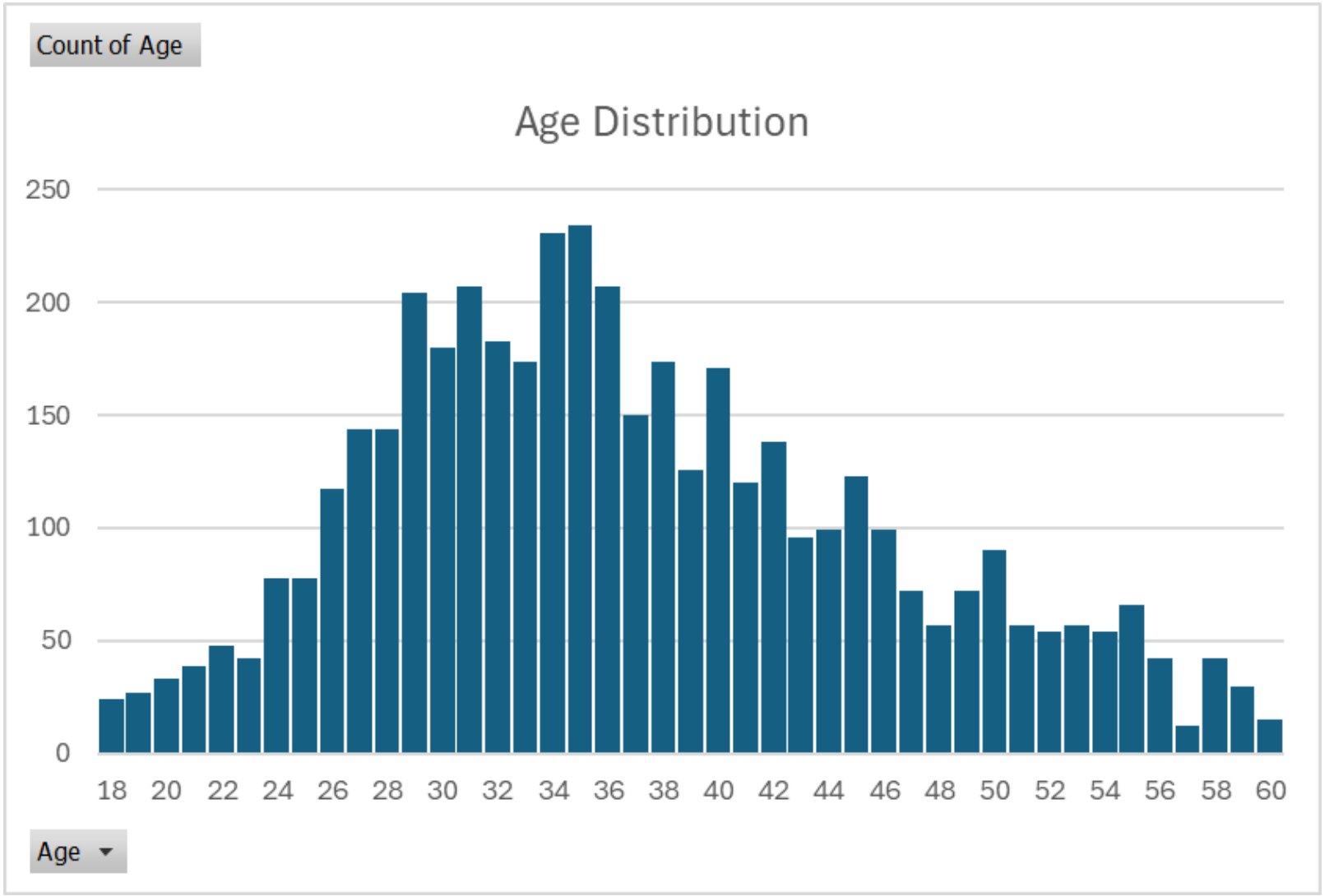
Row Labels	Average of MonthlyIncome
Healthcare Representative	60983.74046
Human Resources	58528.07692
Laboratory Technician	66314.05405
Manager	63395.88235
Manufacturing Director	69183.72414
Research Director	65473.125
Research Scientist	64975.68493
Sales Executive	65186.68712
Sales Representative	65370.96386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

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



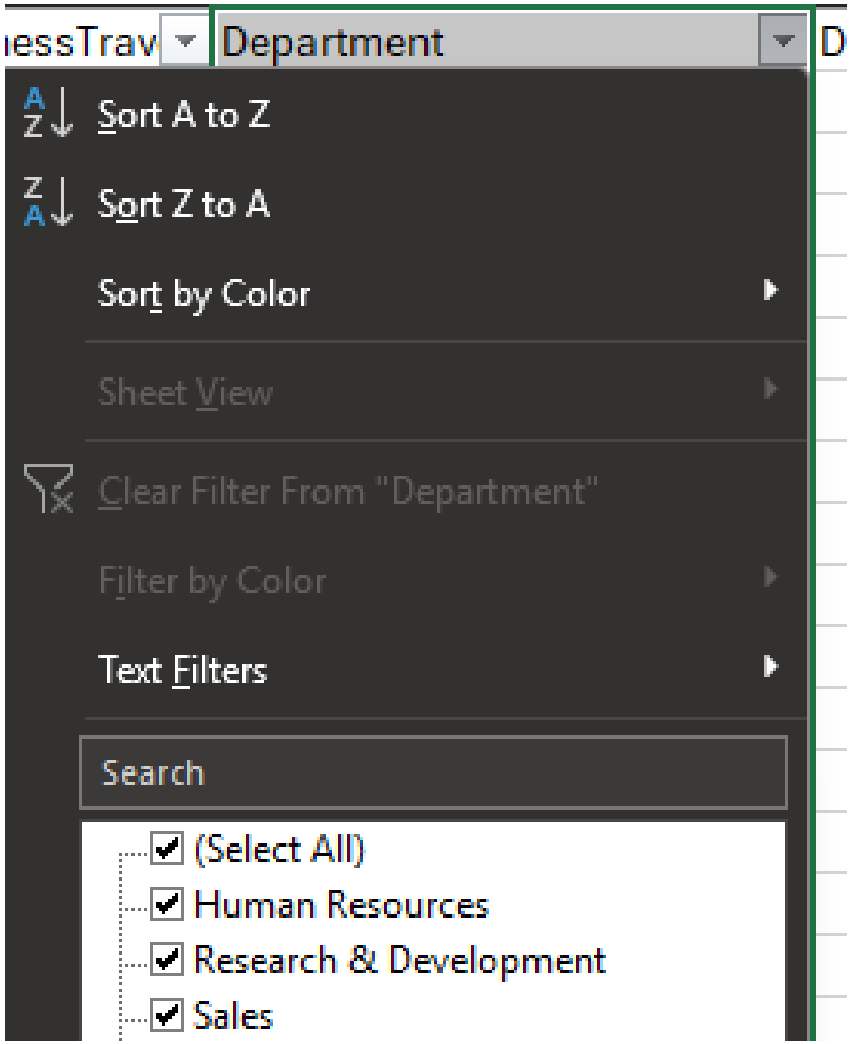
N
MonthlyIncome
25870
24320
55610
53730
63230
86330
20140
74280
43190
79180
136750
27230
45540
36880
24550
63470
82680
67810
45580
28860
106480
76320
68110
43060
66320

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

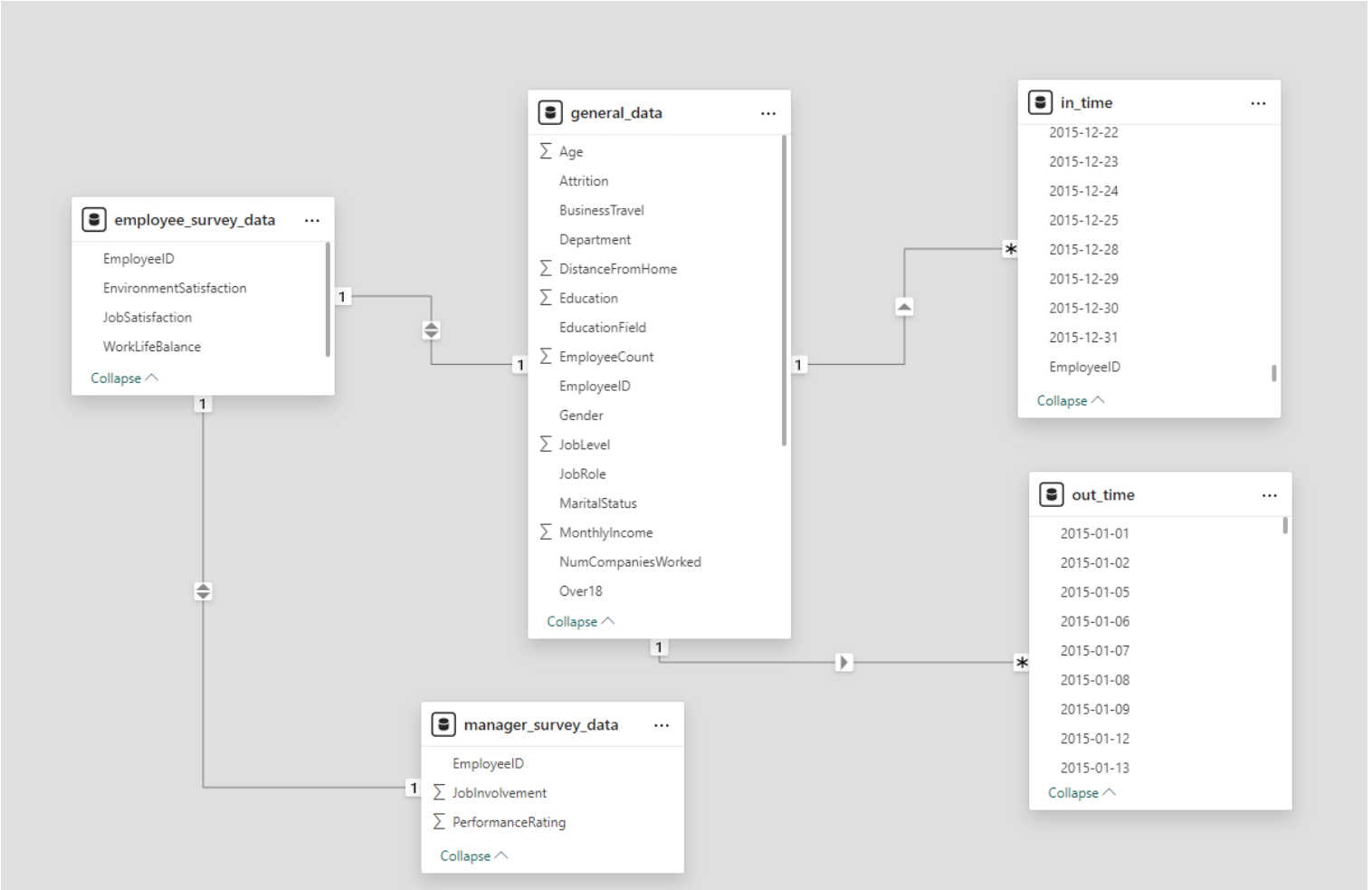


5. Identify and clean any missing or inconsistent data in the "Department" column.

There are No missing values or inconsistent data in the Department column.

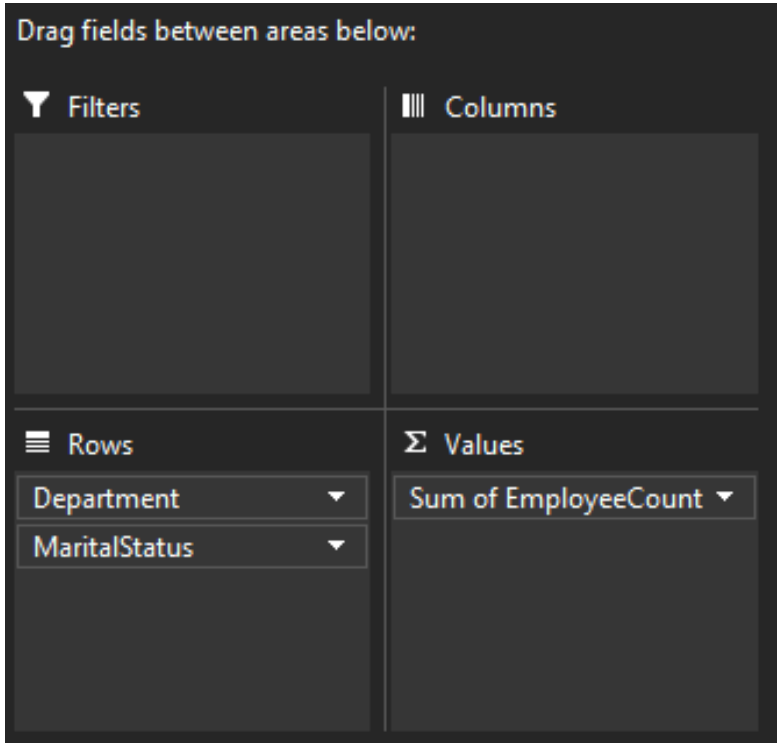


In Power BI, establish a relationship between the "EmployeeID" in the employee data and the "EmployeeID" in the time tracking data.



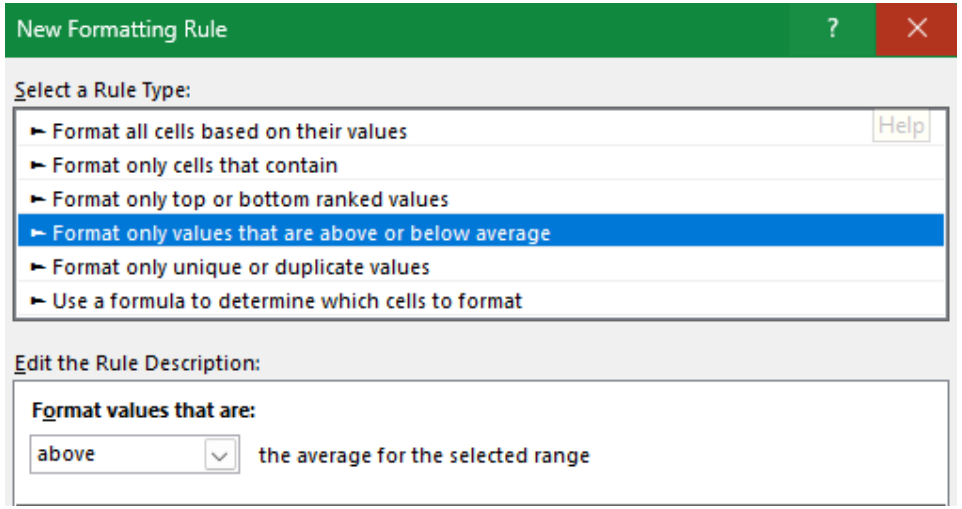
7. Using DAX, create a calculated column that calculates the average years an employee has spent with their current manager.

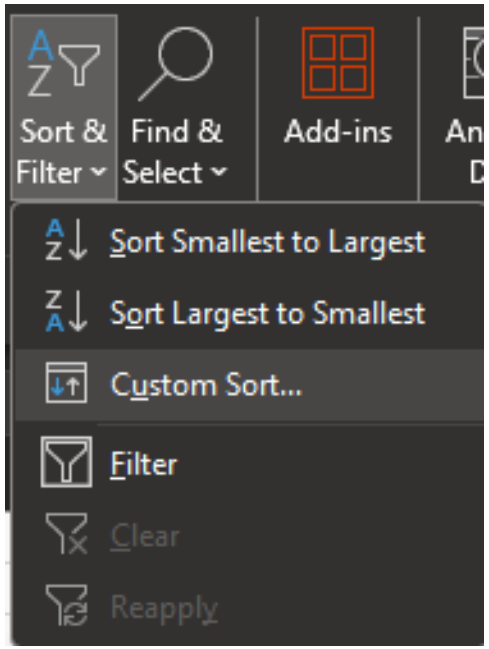
Using Excel, create a pivot table that displays the count of employees in each Marital Status category, segmented by Department.

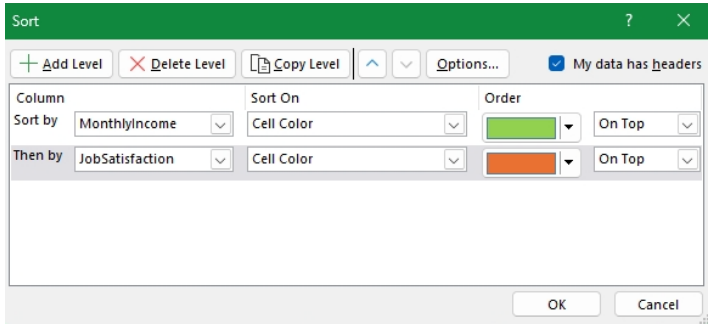


Row Labels	Sum of EmployeeCount
Human Resources	**189**
Divorced	21
Married	96
Single	72
Research & Development	**2883**
Divorced	621
Married	1350
Single	912
Sales	**1338**
Divorced	339
Married	573
Single	426
Grand Total	**4410**

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

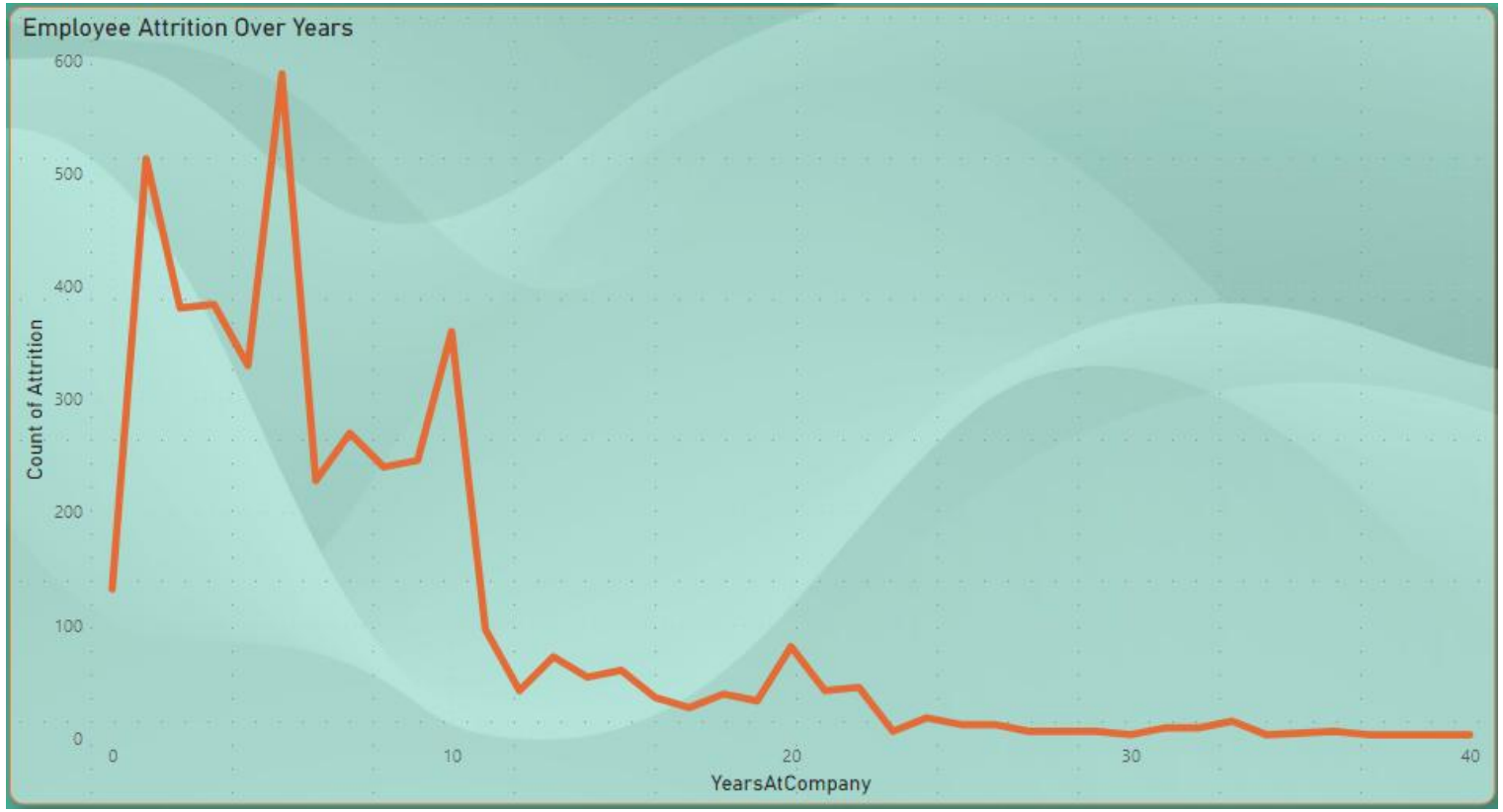


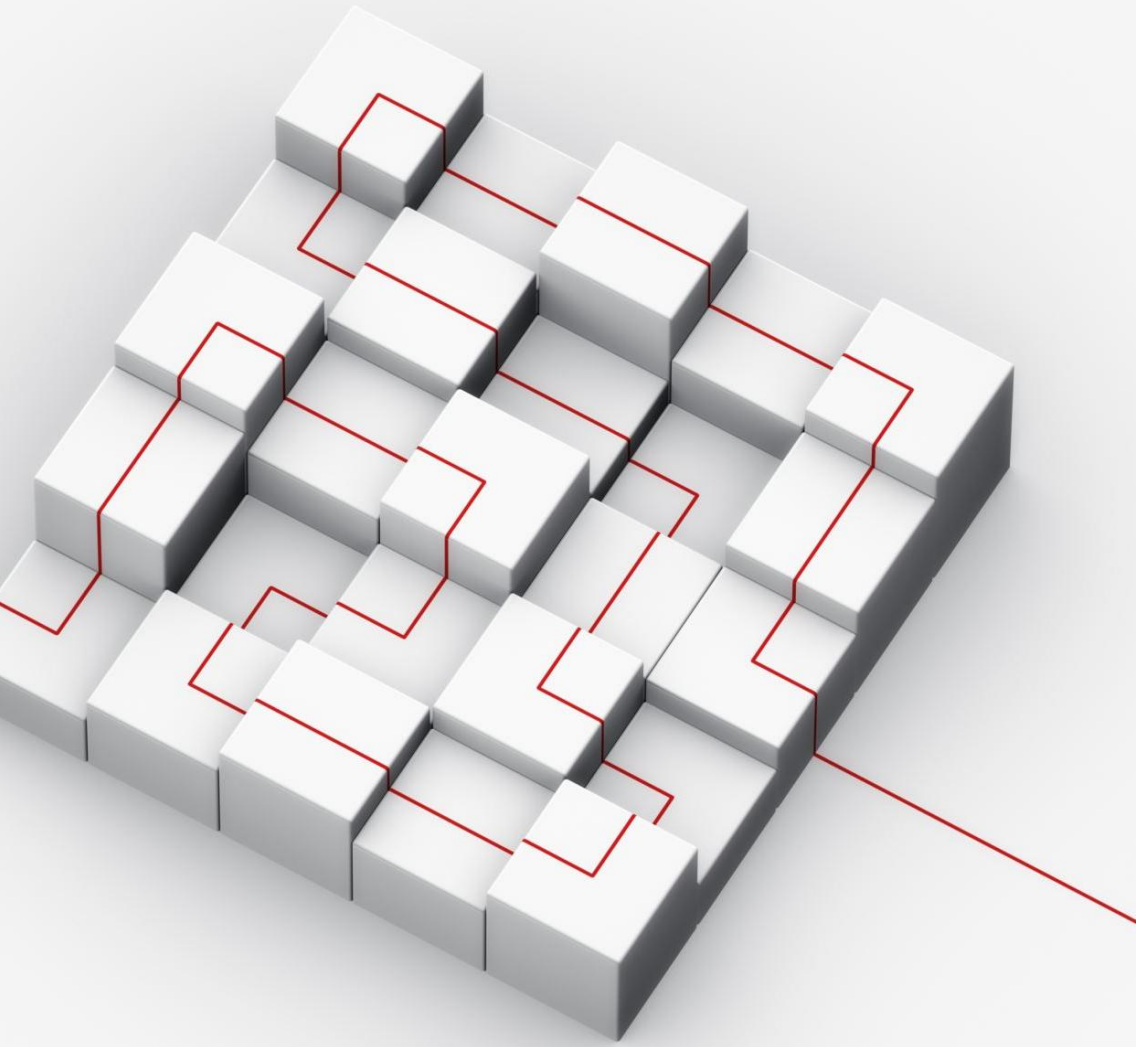




E	F
JobSatisfaction	MonthlyIncome
4	131160
4	83210
4	79910
3	89260
4	65130
4	67990
3	103330
4	96370
4	157870
4	99070
3	73140
3	97130
4	171740
4	133480
4	65830
4	81030
3	68340
3	98540
3	191610
4	98880
3	86280
4	66670
3	96790
4	104480
3	196360
4	86330

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.

Steps to Create star schema for this dataset:

- Import all the tables
- Load all the table.
- Go to the Model view section
- Take General_data as central query.
- Establish relationship with employee_survey_data, in_time, out_time,manager_survey.

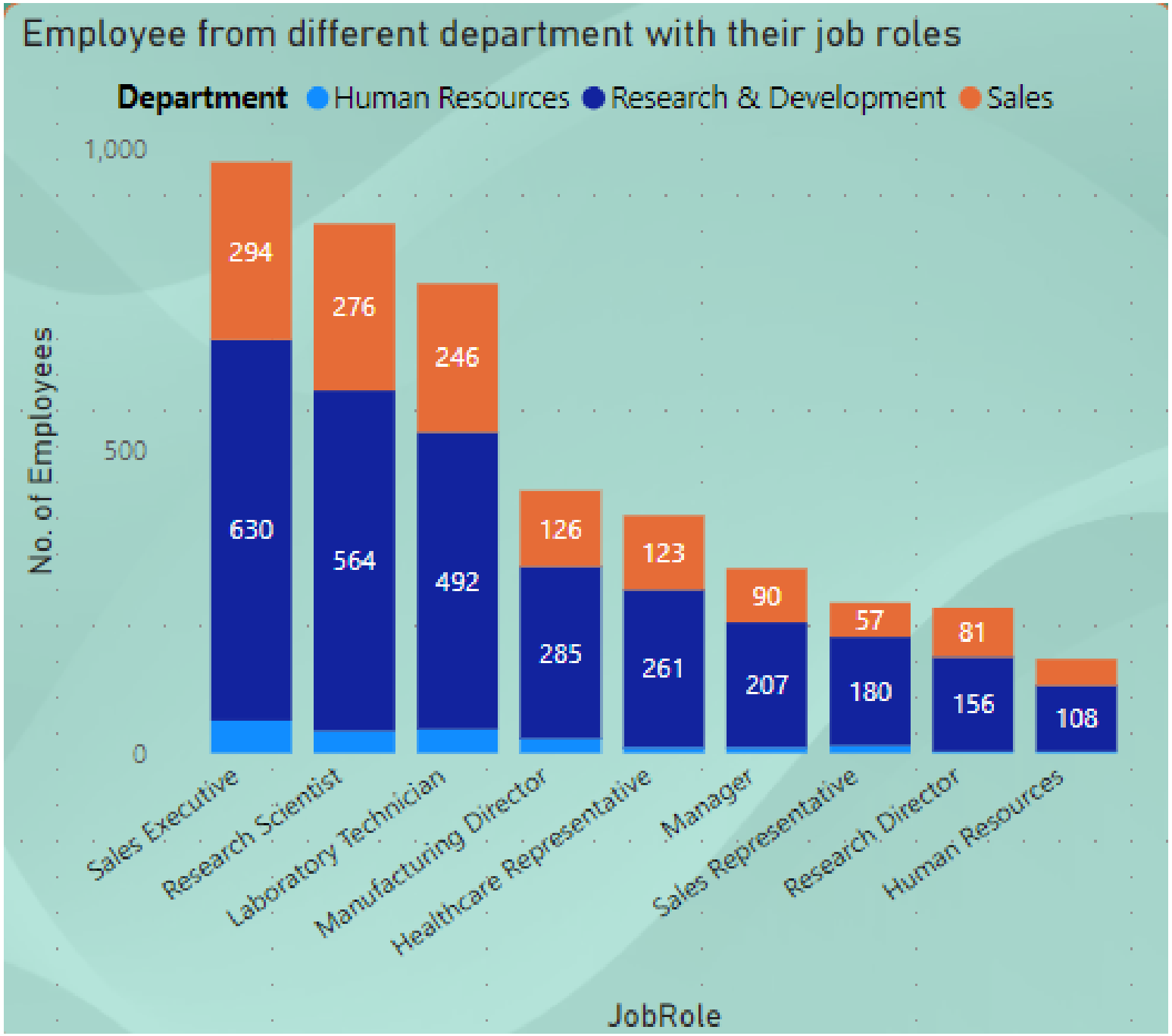
Benefits :

- Simple and easy-to understand structure
- Better Performance for analytical queries
- Fewer joins to access data

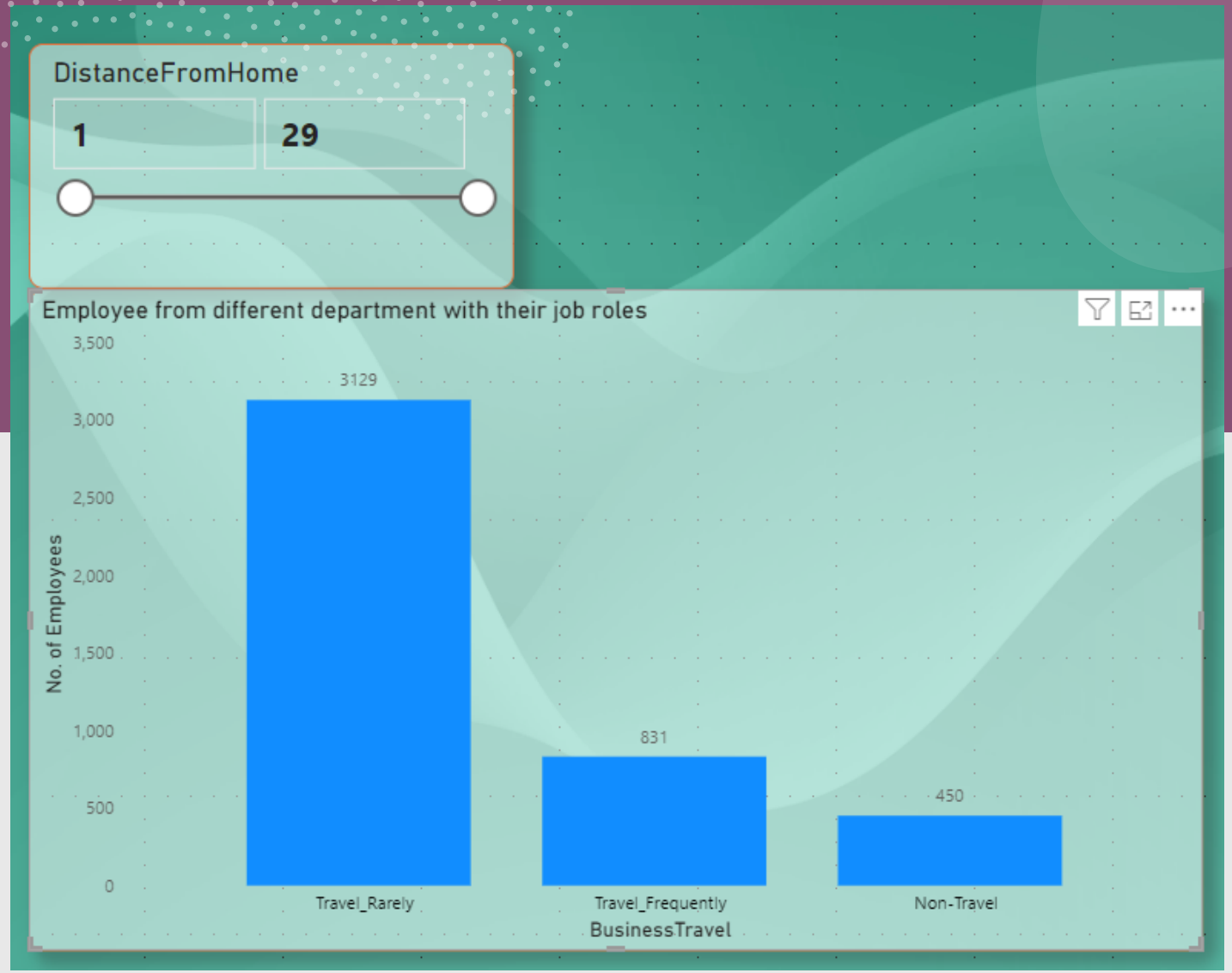
12. Using DAX, calculate the rolling 3-month average of Monthly Income for each employee.

```
Rolling 3-Month Average =
CALCULATE(
AVERAGE(general_data'[Monthly Income]),
DATESINPERIOD(
‘general_data'[Date],
LASTDATE(‘general_data'[Date]),
-3,
MONTH ) )
```

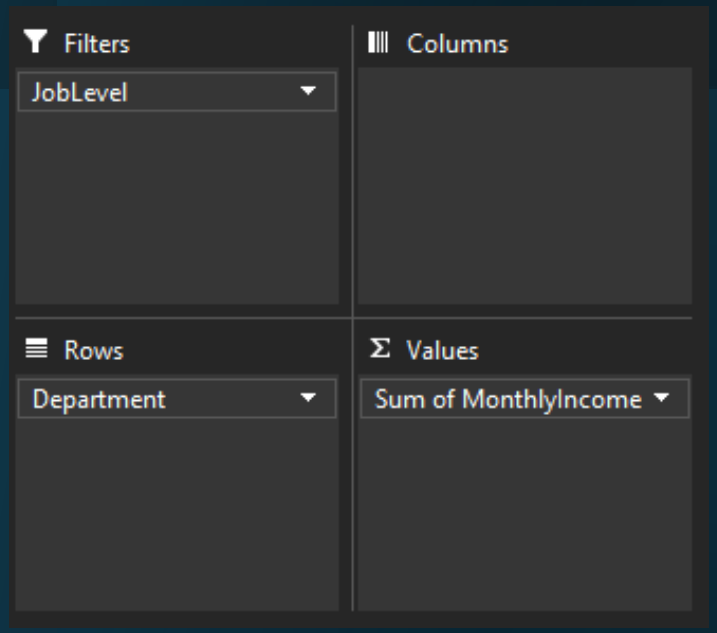
13. Create a hierarchy in Power BI that allows users to drill down from Department to Job Role to further narrow their analysis.

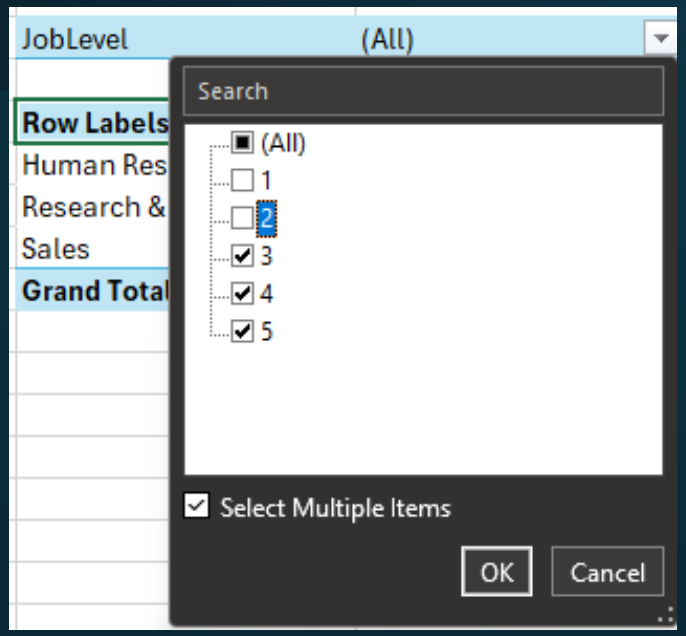


14. How can you set up parameterized queries in Power BI to allow users to filter data based on the Distance from Home column?



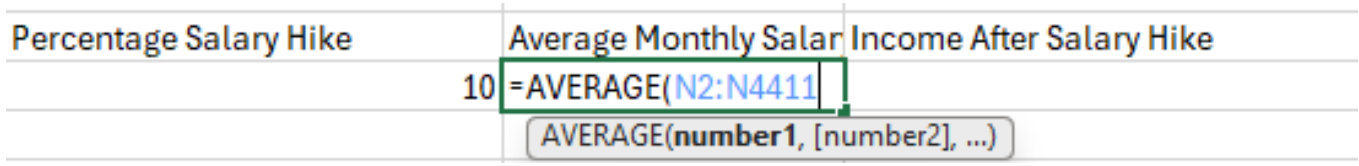
15. In Excel, calculate the total Monthly Income for each Department, considering only the employees with a Job Level greater than or equal to 3.

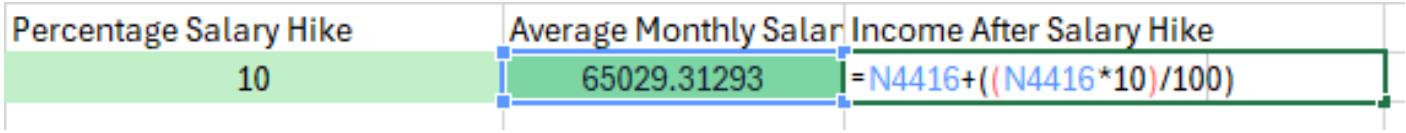




JobLevel	(Multiple Items)
Row Labels	**Sum of MonthlyIncome**
Human Resources	3259140
Research & Development	53502900
Sales	22974330
Grand Total	**79736370**

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





17. Verify if the data adheres to a predefined schema. What actions would you take if you find inconsistencies?

- To verify if the data adheres to a predefined schema we need to first understand the business rules to make sure that our relations, tables, columns and data types are the correct ones.

- In the case I find inconsistencies, I would correct some of them manually, and others using a software process to clean my data , communicate my findings with the interested parts and actualize the schema if necessary.