Hiring Process Analytics

Project Overview:

In this project, we will analyze the hiring process data of a multinational company. The goal is to uncover key insights related to hiring trends, salary distribution, and departmental composition. By leveraging data analytics techniques in Excel, we will clean, organize, and visualize the data to support better hiring decisions.

Objectives:

- **Understand Hiring Trends:** Analyze gender distribution and hiring patterns.
- **Salary Insights:** Determine the average salary and study salary distribution across different levels.
- **Departmental Overview:** Visualize the number of employees across various departments.
- **Position Tier Analysis:** Identify how different job positions are structured within the company.

Project by – Alokk Joshi

Approach to Hiring Process Data Analysis

In this project, I will follow a structured approach to analyze the hiring data effectively.

First, I will clean and prepare the dataset by handling any missing values and inconsistencies to ensure accuracy. Then, I will organize the data in a way that simplifies analysis and helps identify key patterns.

Next, I will focus on extracting insights related to hiring trends, salary distribution, and departmental composition. I will categorize and summarize the data to understand gender distribution, salary averages, and the structure of different job positions within the company.

To make the insights more understandable, I will use visual representations such as charts and graphs.

Finally, I will interpret the findings and highlight important trends that can help improve the hiring process. This structured approach will ensure that the analysis is clear, data-driven, and useful for decision-making.

Software used for the project

MS Excel 2021

I used Excel 2021 for this project because it provided easy-to-use tools for data analysis. The built-in formulas like **AVERAGEIF, COUNTIFS**, and IF statements helped me analyze hiring trends and salary distribution efficiently. **Pivot Tables** made it simple to summarize large amounts of data without manual effort.

Also, Excel's charting options allowed me to create visual reports, making the insights clearer and more presentable.

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Cleaning the data

First, we need to clean the data on various parameters

The detailed cleaning steps have been included in project 4 excel file → Cleaning sheet

One of the major steps of cleaning the data was tracing the outliers and managing them

I did it with Z Score method and found 3 of them and decided to delete them as they were quite big on salary figures

Status	event_name	Department	Post Name	Offered Salary	Z score	Column2
Hired	Female	Service Department	b9	200000	5.20	Outl
Hired	Female	General Management	i4	400000	12.13	Outl
Hired	Male	General Management	i7	300000	8.67	Outl

After deleting the outliers, we have total 1765 rows against 1768 of original dataset

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Task 1

Hiring Analysis: The hiring process involves bringing new individuals into the organization for various roles.

Your Task: Determine the gender distribution of hires. How many males and females have been hired by the company?

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Count has been found with countifs() as well as Pivot table as shown below

Count of Total Males and Females Hired

Males Hired	2562
Females Hiired	1854

<--- with countifs formula

Status	Hired

Event Name	Total Count
Don't want to say	278
Female	1854
Male	2562

<--- with Pivot Table

We can draw additional data on Rejected condition as well

Count of Total Males and Females Rejected

Males Rejected	1522
Females Rejected	819

<--- with countifs formula

Status	Rejected

Event Name	Total Count
Don't want to say	130
Female	819
Male	1522

<--- with Pivot Table

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We also have the hiring count relative to their timeline

Status	Hired
Hiring Timeline	**Hired Count**
⊞ May	1094
⊞ Jun	1078
⊞ Jul	1295
⊞ Aug	1227
Grand Total	**4694**

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Task 2

Salary Analysis: The average salary is calculated by adding up the salaries of a group of employees and then dividing the total by the number of employees.

Your Task: What is the average salary offered by this company? Use Excel functions to calculate this.

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Department wise average salary offered has been Calculated with pivot table as well as Averageif() function

Department wise average salary offered

Departments	Average Salary Offered
Finance Department	49628.01
General Management	55295.29
Human Resource Department	49002.28
Marketing Department	48489.94
Operations Department	49151.35
Production Department	49448.48
Purchase Department	52564.77
Sales Department	49310.81
Service Department	50557.16

With Pivot Table

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With Averageif() function

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Task 3

Salary Distribution: Class intervals represent ranges of values, in this case, salary ranges. The class interval is the difference between the upper and lower limits of a class.

Your Task: Create class intervals for the salaries in the company. This will help you understand the salary distribution.

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For this first, we need to identify certain major of centers as below within salary column
And them move ahead to find the class interval for salary as below

Class intervals have been decided based on the min and max salary-offered range (100 – 99967)

Mean	49878.30
Median	49625
Mode	72843
Min	100
Max	99967

Class Interval	Frequency	C. Frequency
20000	1410	1410
40000	1421	2831
60000	1532	4363
80000	1432	5795
100000	1370	7165

Skew	0.013181923

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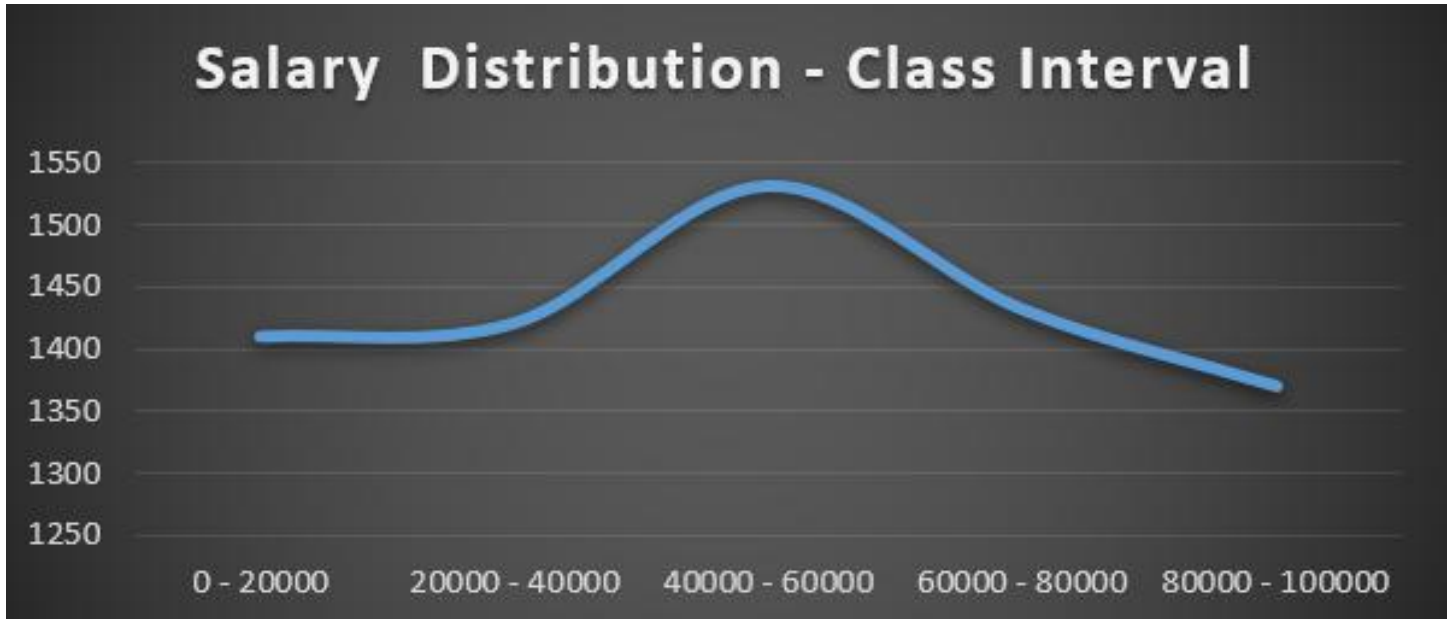

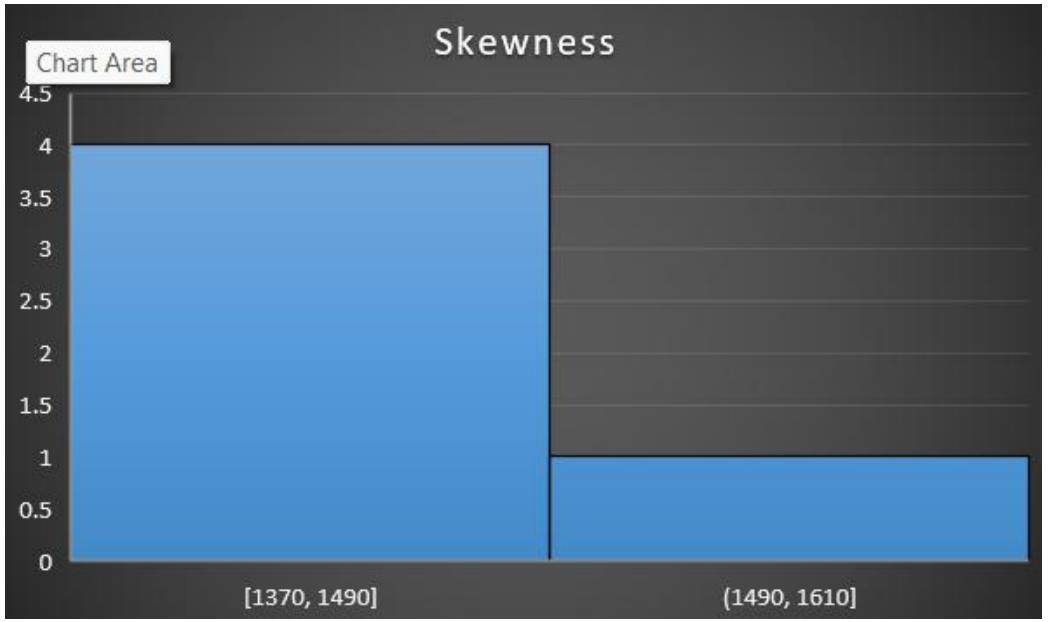

It shows that maximum salary offered range is between 40000 and 60000

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Task 4

Departmental Analysis: Visualizing data through charts and plots is a crucial part of data analysis.

Your Task: Use a pie chart, bar graph, or any other suitable visualization to show the proportion of people working in different departments.

For this we will use pivot table and identify how many employees are working in different departments respectively

We will do it only for the employees who have been hired and working in one or the other department

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Here is the number of hired employees working in each department

Status	Hired
Department	**No of Employees**
Finance Department	176
General Management	111
Human Resource Department	70
Marketing Department	202
Operations Department	1843
Production Department	246
Purchase Department	230
Sales Department	485
Service Department	1331
Grand Total	**4694**

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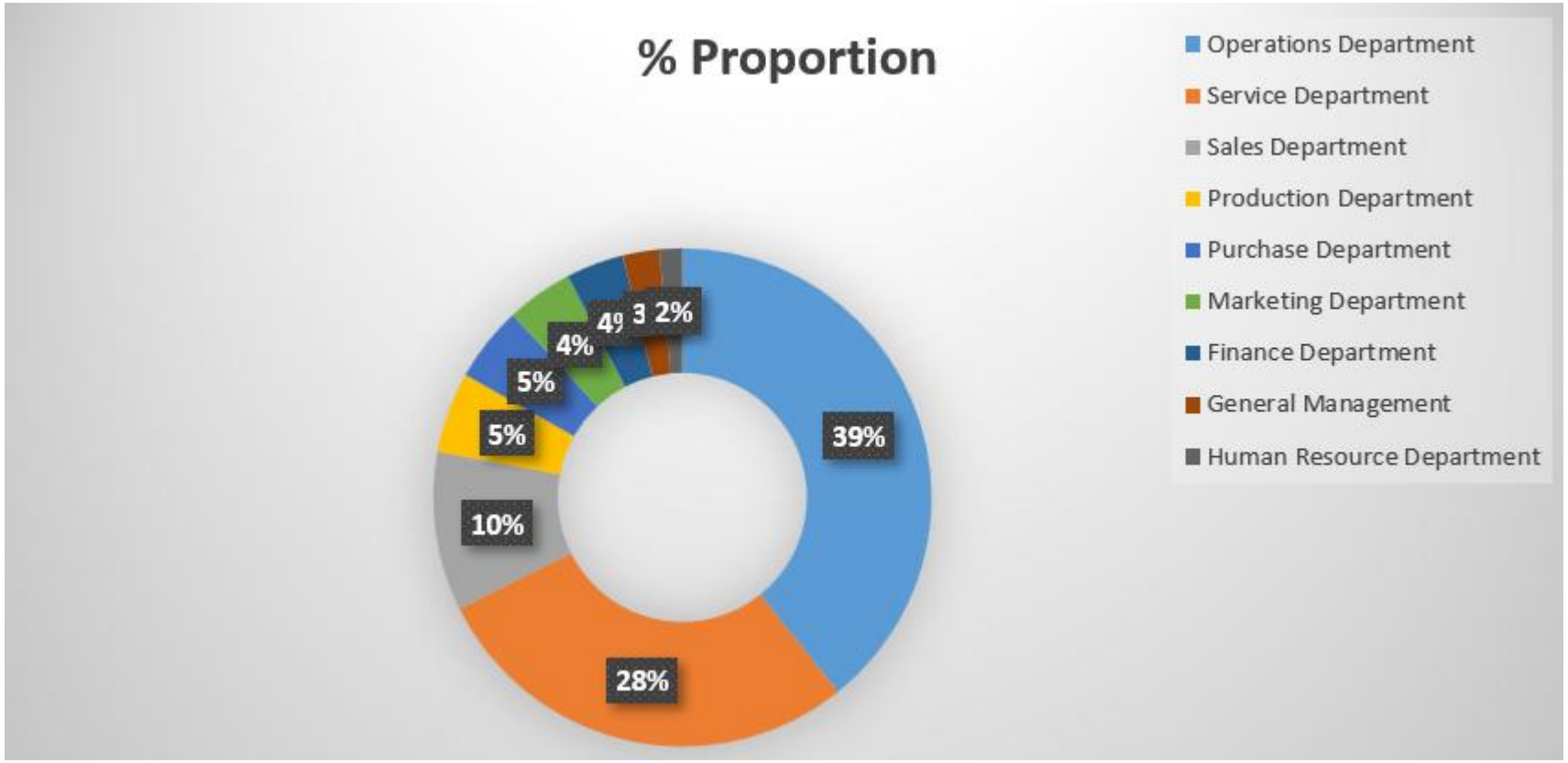
Department	% Proportion
Operations Department	39.26%
Service Department	28.36%
Sales Department	10.33%
Production Department	5.24%
Purchase Department	4.90%
Marketing Department	4.30%
Finance Department	3.75%
General Management	2.36%
Human Resource Department	1.49%



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Here are interesting insights from the above analysis

- Operations (39.26%) and Service (28.36%) dominate hiring, making up 67.62% of total hires, indicating a focus on operational efficiency and customer service.
- Sales Department (10.33%) sees moderate hiring, likely reflecting a stable workforce with controlled turnover.
- Production (5.24%), Purchase (4.90%), and Marketing (4.30%) have lower hiring rates, suggesting these departments require specialized or fewer employees.
- Finance (3.75%), General Management (2.36%), and HR (1.49%) have minimal new hires, likely due to stability and lower workforce needs in support functions.
- The hiring trend indicates a workforce strategy prioritizing frontline operations over strategic or support roles.
- Further analysis of retention rates, department performance, and salary distribution could provide deeper insights into hiring trends.

Task 5

Position Tier Analysis: Different positions within a company often have different tiers or levels.

Your Task: Use a chart or graph to represent the different position tiers within the company. This will help you understand the distribution of positions across different tiers.

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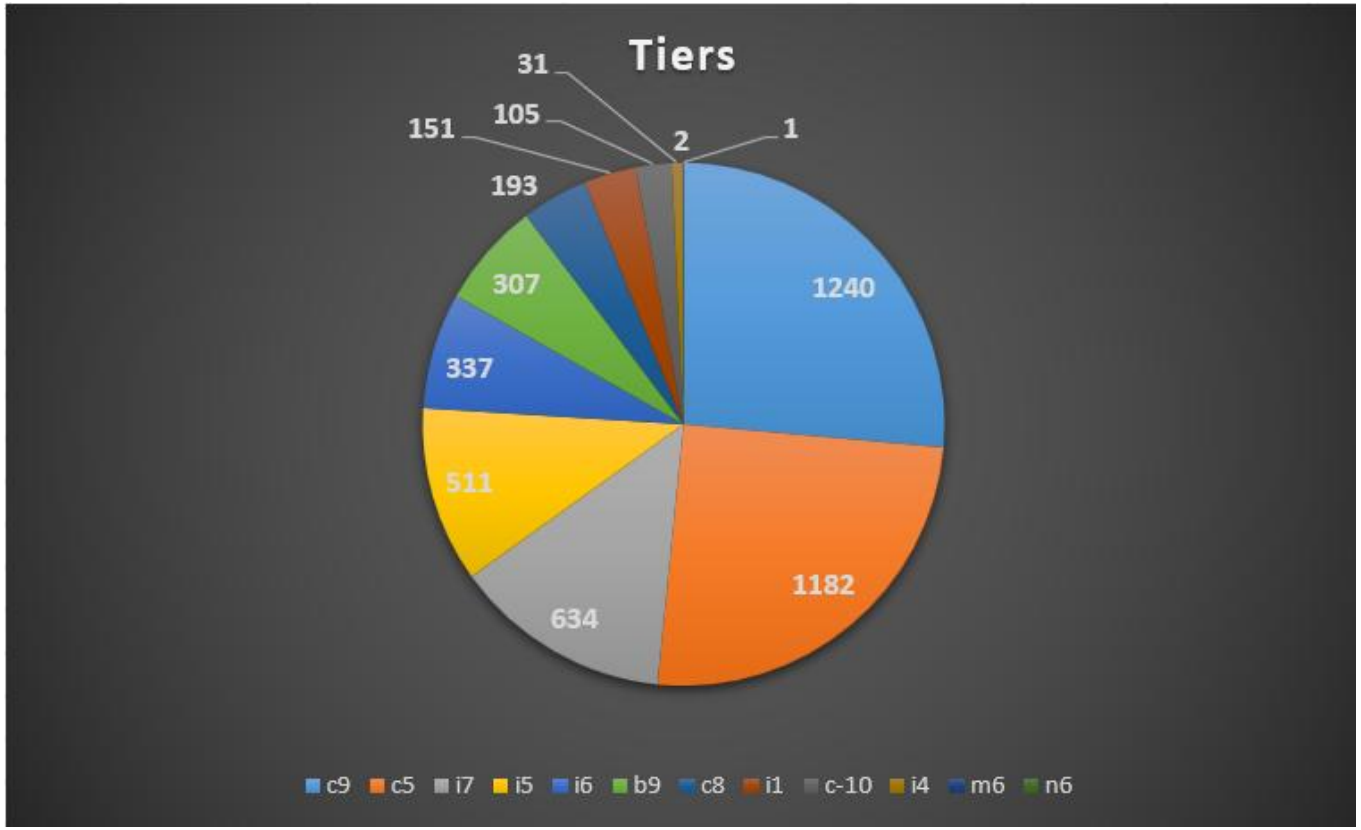
Tiers	Count
c9	1240
c5	1182
i7	634
i5	511
i6	337
b9	307
c8	193
i1	151
c-10	105
i4	31
m6	2
n6	1

Here is the account of all the tiers within the company across departments (for Hired Employees)



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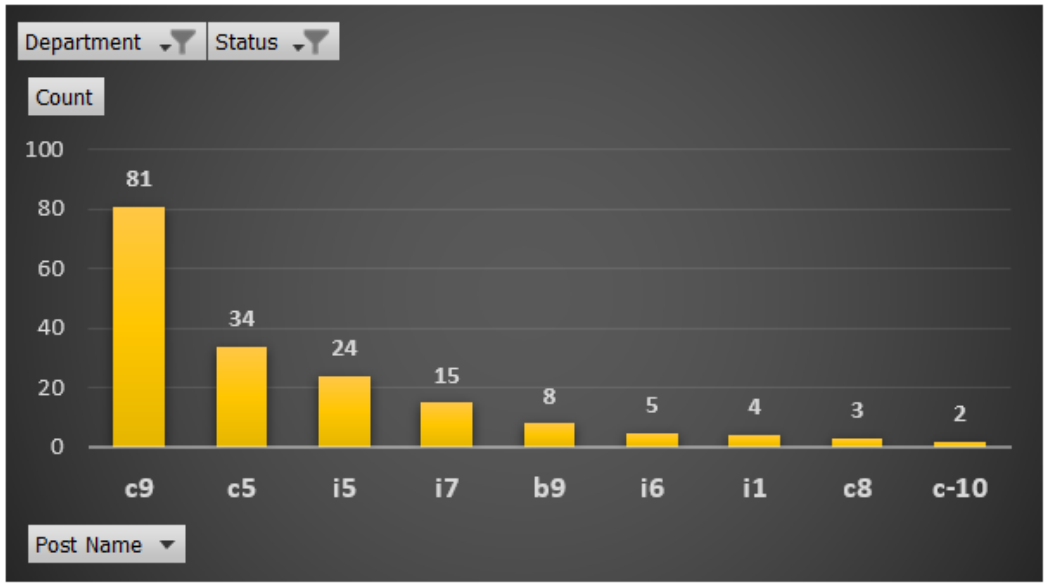
We can see the tiers department wise as well

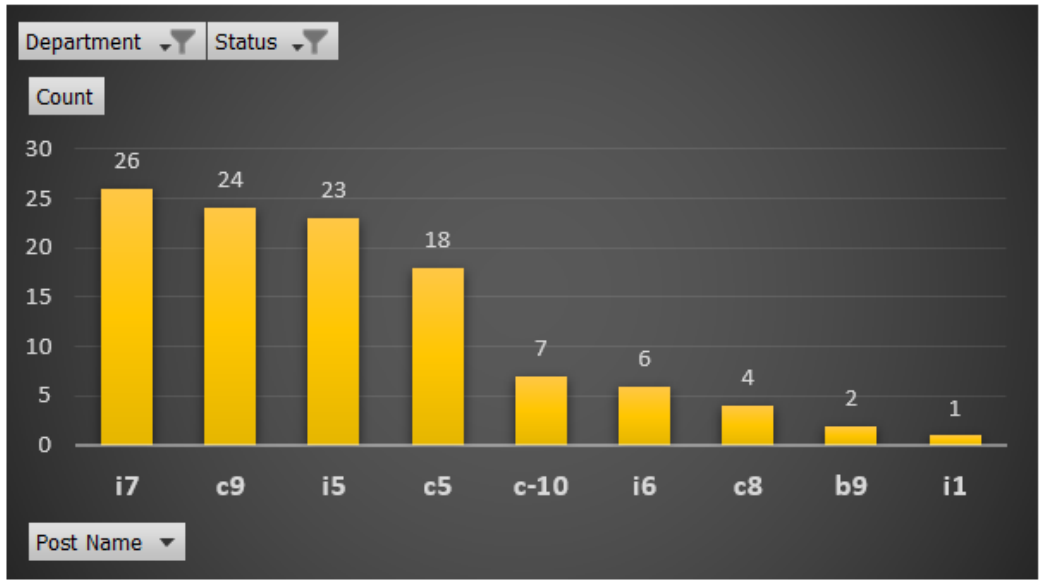
Department	Finance Department
Status	Hired

Tier	Count
c9	81
c5	34
i5	24
i7	15
b9	8
i6	5
i1	4
c8	3
c-10	2
Grand Total	**176**



Department	General Management
Status	Hired

Tier	Count
i7	26
c9	24
i5	23
c5	18
c-10	7
i6	6
c8	4
b9	2
i1	1
Grand Total	**111**



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Key Insights from the project

Operations and Service Dominate Hiring:

The Operations Department (39.26%) and Service Department (28.36%) together make up 67.62% of total hires, reflecting a strong emphasis on operational efficiency and customer service.

Moderate Hiring in Sales:

The Sales Department (10.33%) has a balanced workforce, likely indicating controlled turnover and a stable hiring trend.

Specialized Departments Have Fewer Hires:

Departments like Production (5.24%), Purchase (4.90%), and Marketing (4.30%) have lower hiring rates, suggesting these roles require specialized skills and fewer employees.

Minimal Hiring in Support Functions:

Finance (3.75%), General Management (2.36%), and HR (1.49%) have low hiring rates, possibly due to stability in leadership roles and lower workforce requirements.

Hiring Trends Indicate Workforce Priorities:

The focus is on frontline roles (Operations & Service) rather than strategic and support functions, indicating a priority on customer service and business operations.

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Outlier Removal Improved Data Accuracy:

Using the Z-score method, three salary outliers were removed, refining the data for more reliable salary insights.

Salary Distribution Shows Majority Between ₹40,000 – ₹60,000:

Salary class intervals reveal that the most common salary range is ₹40,000 - ₹60,000, forming the largest pay bracket in the organization.

Position Tier Analysis Indicates Hierarchical Structure:

Different departments have varied position tiers, with Operations and Service roles having more entry- and mid-level positions, while support functions have more stable senior roles.

Excel-Based Data Analysis Was Effective:

The study used COUNTIFS, AVERAGEIF, Pivot Tables, and Graphs to effectively analyze hiring trends, salary distribution, and departmental insights.

Further Analysis Can Improve Hiring Strategy:

Evaluating retention rates, salary progression, and department performance will provide a comprehensive understanding of hiring success.

My Key learnings from the project

Data Cleaning is Crucial:

Handling outliers and missing values improves accuracy and leads to better decision-making.

Hiring Strategy Reflects Business Priorities:

The high hiring rates in Operations & Service show that workforce allocation aligns with company goals.

Data Visualization Simplifies Complex Analysis:

Using bar charts, pie charts, and Pivot Tables makes patterns and trends clearer.

Salary Trends Can Indicate Workforce Planning:

Understanding salary distribution and class intervals helps in budgeting and compensation strategies.

Excel is a Powerful Tool for HR Analytics or any other segment:

Using formulas and Pivot Tables makes analyzing large datasets easier and more insightful.