

HIRING DATA ANALYSIS

PROJECT 4

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Project Description

The Hiring Data Project

This project allows us to take on the role of a data analyst at a multinational company. The task involves analyzing the company's hiring process data and drawing meaningful insights from it. The hiring process is a critical function for any company, and understanding trends such as the number of rejections, interviews, job types, and vacancies can provide valuable insights for the hiring department.

The project leverages our knowledge of statistics and Excel to extract and interpret important conclusions about the company's hiring process. The analysis covers various aspects, including salary trends, salary distribution, departmental insights, and position-tier analysis.

Approach

We approach this project with the mindset of an analyst, utilizing our skills to derive meaningful insights from the data.

- 1. Data Cleaning:**
The first task is to understand and clean the dataset by removing blanks and outliers. Proper data preparation ensures accurate and reliable analysis.
- 2. Data Understanding:**
Before performing any specific tasks, we thoroughly study the dataset to gain a deeper understanding. This helps us make informed decisions during the analysis phase.
- 3. Excel Implementation:**
Excel provides various tools and methods for analysis. We use formulas for certain tasks and pivot tables for others to explore the data efficiently.

The ultimate goal of this project is to draw meaningful insights from a large dataset, providing valuable recommendations for improving the hiring process.

Tech-Stack Used

MS excel

MS word



Insights

The analysis of the hiring process revealed the following key findings and trends:

1. Gender Distribution

- **Hires:** Out of 4,419 hires, 1,856 were female, and 2,563 were male. This indicates a higher hiring rate for males compared to females.
- **Rejections:** The rejection rate also follows a similar pattern, with 1,522 males rejected compared to 819 females.
- **Overall:** Males constitute approximately 60.4% (4,085) of the total candidates evaluated, while females make up 39.6% (2,675). This highlights a potential gender imbalance in the hiring process that may warrant further investigation.

2. Salary Analysis

- **Average Salary:** The overall average salary offered is 49,919.64, indicating the company's median pay range.
- **Department-Wise Insights:**
 - The General Management department offers the highest average salary at 57,152.33, which could indicate the strategic importance of these roles.
 - The Marketing Department offers the lowest average salary at 48,489.94, suggesting that these roles may require less specialized skills or responsibilities compared to others.
 - Other departments, such as Finance, Service, and Purchase, are near or slightly above the overall average.

3. Departmental Analysis

- The largest workforce is employed in the Operations Department (2,771 employees), followed by the Service Department (2,055). Together, they account for a significant portion of the company's workforce.
- Marketing and Purchase Departments also have a notable representation but are smaller compared to Operations and Service.
- The Human Resources Department has the fewest employees (97), likely because it is a supporting function with a smaller scope.

General Observations

- The data suggests a focus on operational efficiency, with most employees allocated to Operations and Service, which are likely the company's core functions.
- There is room for improvement in gender diversity, as males dominate both hiring and overall workforce representation.

- **Departments offering higher average salaries, such as General Management and Purchase, likely focus on critical decision-making roles that directly impact business outcomes.**

Result

During this project, I analyzed a CSV dataset, cleaned it, and performed various operations. This project helped me visualize the process of data analysis and draw accurate conclusions. It further honed my Excel skills, including concepts like pivot tables and statistical formulas. Additionally, it enhanced my understanding of using various types of graphs effectively.

Handling Missing Data

AutoSave On Statistics (1) - Saved to this PC

File Home Insert Draw Page Layout Formulas Data Review View Help Acrobat

Clipboard Paste Cut Copy Paste Formulas

Go To Special ? X

Select

- ☐ Blanks
- ☐ Formulas
- ☐ Numbers
- ☐ Text
- ☐ Logicals
- ☐ Errors
- ☒ Formulas
- ☐ Current region
- ☐ Current array
- ☐ Objects
- ☐ All levels
- ☐ Direct only
- ☐ All levels
- ☐ Visible cells only
- ☐ Conditional formats
- ☐ Data validation
- ☐ All
- ☐ Same

OK Cancel

| application_id | event_name | Department | Post Name | Offered Salary | |
|----------------|--------------------------|-----------------------|-----------------------|----------------|--------|
| 38 | Male | Service Department | c8 | 56553 | |
| 90 | Female | Service Department | c5 | 22075 | |
| 17 | Male | Service Department | c5 | 70069 | |
| 42 | Female | Operations Department | i4 | 3207 | |
| 25 | Male | Operations Department | i4 | 29668 | |
| 28 | Male | Sales Department | - | 85914 | |
| 95 | Male | Sales Department | i7 | 69904 | |
| 8 | Male | Sales Department | i7 | 11758 | |
| 75 | Female | Service Department | i4 | 15156 | |
| 434547 | 5/2/2014 13:11 Rejected | Male | Service Department | i4 | 40515 |
| 518854 | 5/1/2014 9:00 Rejected | Male | Service Department | n10 | 26990 |
| 649039 | 5/7/2014 10:48 Hired | Female | Service Department | b9 | 200000 |
| 199526 | 5/7/2014 10:50 Hired | Male | Service Department | b9 | 86787 |
| 539803 | 5/15/2014 9:31 Hired | Male | Finance Department | b9 | 2308 |
| 191009 | 5/9/2014 12:48 Hired | Female | Service Department | i7 | 56688 |
| 195323 | 5/9/2014 12:48 Hired | - | Service Department | i7 | 81757 |
| 51318 | 5/2/2014 8:07 Hired | Male | Service Department | i5 | 15134 |
| 742283 | 5/2/2014 8:11 Rejected | - | Service Department | i5 | 100 |
| 513166 | 5/1/2014 22:53 Hired | Female | Operations Department | i1 | 73579 |
| 791372 | 5/1/2014 22:54 Rejected | Male | Operations Department | i1 | 50351 |
| 47857 | 5/1/2014 22:55 Rejected | Female | Operations Department | i1 | 38462 |
| 834101 | 5/1/2014 22:53 Rejected | Don't want to say | Operations Department | i1 | 82510 |
| 985008 | 5/1/2014 9:41 Rejected | Male | Service Department | i6 | 52554 |
| 891568 | 5/1/2014 16:28 Hired | Female | Operations Department | i7 | 3423 |
| 935899 | 5/10/2014 14:17 Rejected | Male | Service Department | i1 | 88744 |
| 780839 | 5/10/2014 14:18 Hired | Female | Service Department | i1 | 70979 |
| 851764 | 5/1/2014 16:01 Rejected | Male | Operations Department | i6 | 99574 |
| 202821 | 5/1/2014 16:01 Hired | Male | Operations Department | i6 | 52176 |
| 969924 | 5/1/2014 11:47 Rejected | Male | Finance Department | i1 | 61432 |
| 765579 | 5/1/2014 9:26 Rejected | Male | Sales Department | i4 | 87884 |
| 924976 | 5/1/2014 9:26 Rejected | Male | Sales Department | i4 | 56229 |
| 896164 | 5/1/2014 17:21 Hired | Don't want to say | Production Department | i7 | 37947 |
| 600625 | 5/2/2014 18:21 Rejected | Male | Service Department | c5 | 88057 |
| 692533 | 5/2/2014 18:23 Hired | Male | Service Department | c5 | 72843 |
| 894276 | 5/2/2014 11:47 Rejected | Male | Operations Department | i4 | 84513 |
| 121909 | 5/2/2014 12:21 Rejected | Male | Operations Department | i4 | 23129 |
| 176467 | 5/2/2014 12:21 Rejected | Male | Operations Department | i4 | 72304 |

Sheet1

Average: 200158.4519 Count: 50182 Sum: 4304007191

4:23 1/13/4

The screenshot shows the Microsoft Excel interface with the 'Go To Special' dialog box open. The dialog is configured with the following settings:

- Select:**
 - ☒ Formulas
 - ☒ Row differences
- Options:**
 - ☐ Constants
 - ☐ Numbers
 - ☐ Text
 - ☐ Logicals
 - ☐ Errors
 - ☐ Blanks
 - ☐ Current region
 - ☐ Current array
 - ☐ Objects
- Advanced Options:**
 - ☐ Column differences
 - ☐ Dependents
 - ☐ All levels
 - ☐ Last cell
 - ☐ Visible cells only
 - ☐ Conditional formats
 - ☐ Data validation
 - ☐ All
 - ☐ Same

The background spreadsheet displays data with columns labeled A through Q. The data includes gender (Female/Male), dates (e.g., 5/7/2014, 5/8/2014), status (Rejected, Hired), department names (e.g., Service Department, Operations Department, Finance Department), and numerical values (e.g., 45288, 46980, 25621).

| Department | Post Name | Offered Salary |
|------------------------------------|-----------------------|----------------|
| Accounting Department | Accountant | 56553 |
| Accounting Department | Clerk | 22075 |
| Accounting Department | Manager | 70069 |
| Administrative Services Department | Secretary | 3207 |
| Administrative Services Department | Assistant Manager | 29668 |
| Business Development Department | Executive Assistant | 85914 |
| Business Development Department | Marketing Specialist | 69904 |
| Business Development Department | Sales Representative | 11758 |
| Customer Service Department | Customer Support | 15156 |
| Customer Service Department | Product Specialist | 49515 |
| Customer Service Department | Team Lead | 26990 |
| Finance Department | Analyst | 200000 |
| Finance Department | Controller | 86787 |
| Human Resources Department | Recruiter | 2308 |
| Human Resources Department | Talent Acquisition | 56688 |
| Human Resources Department | HR Manager | 81757 |
| Information Technology Department | IT Support | 15134 |
| Information Technology Department | Systems Administrator | 100 |
| Operations Department | Warehouse Worker | 73579 |
| Operations Department | Forklift Operator | 50351 |

| | | | | | | |
|--|--------|--|--|--|--|--|
| | 79081 | | | | | |
| | 81726 | | | | | |
| | 3947 | | | | | |
| | 46160 | | | | | |
| | 95960 | | | | | |
| | 46109 | | | | | |
| | 300000 | | | | | |
| | 98589 | | | | | |
| | 72477 | | | | | |
| | 14815 | | | | | |
| | 19732 | | | | | |
| | 76350 | | | | | |
| | 28912 | | | | | |
| | 81226 | | | | | |
| | 75131 | | | | | |

A. 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?

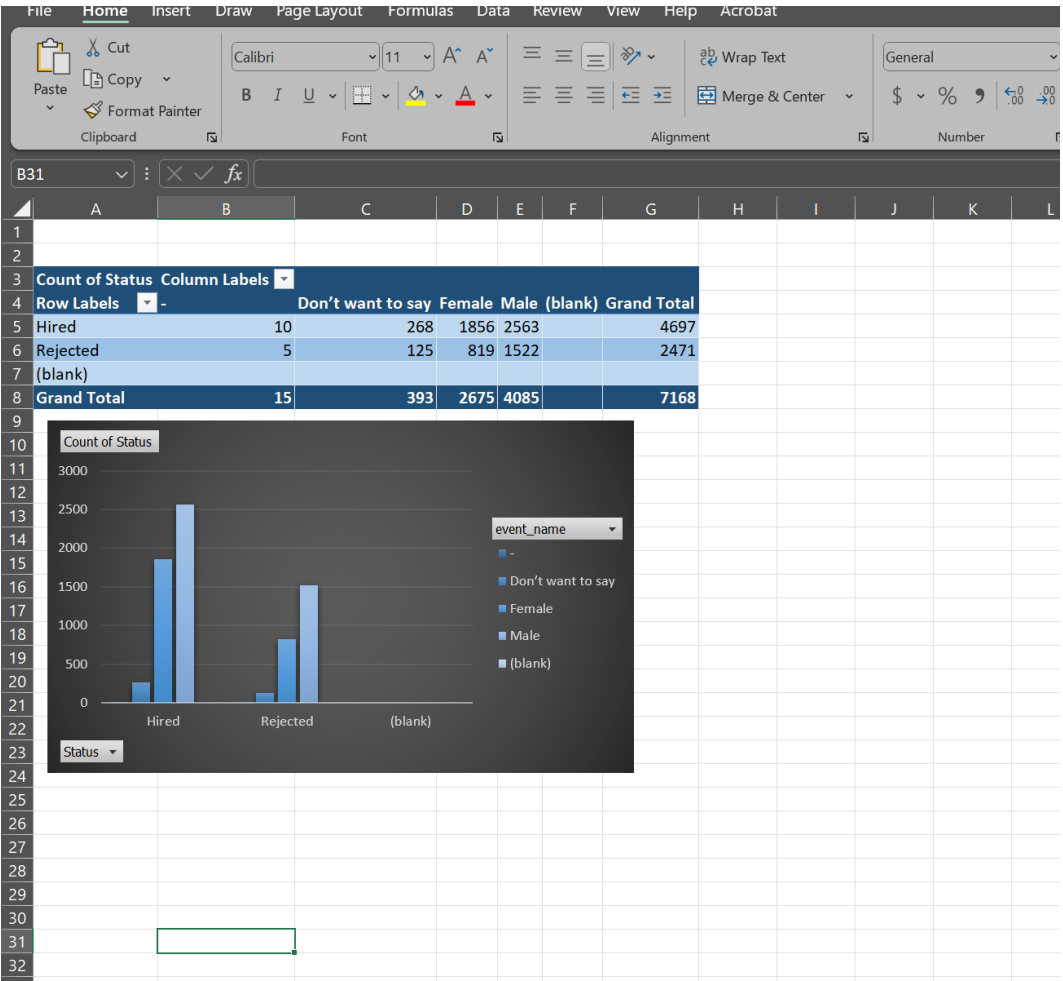
The screenshot shows an Excel spreadsheet with a PivotTable summarizing hiring data. The PivotTable is located in the range B3:D8. The PivotTable Fields task pane is open on the right side of the window, showing the available fields and the current PivotTable layout.

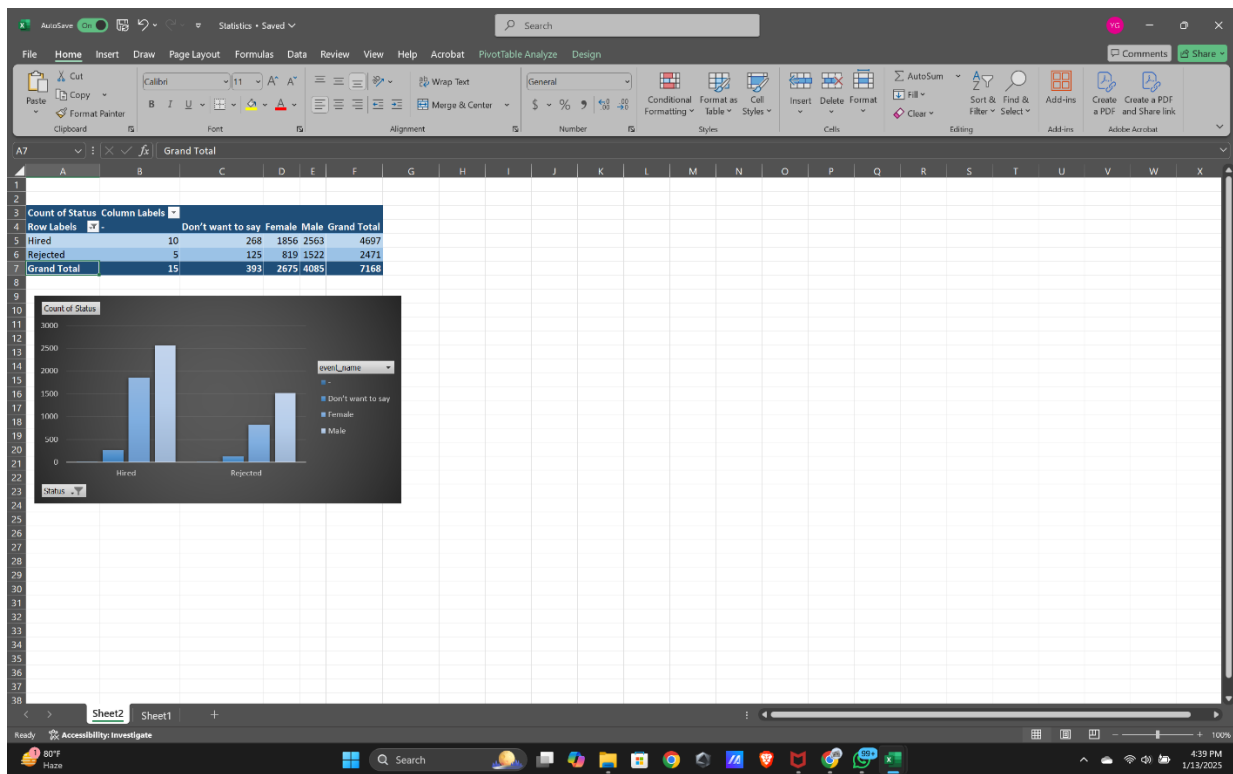
PivotTable Data:

| Count of Status | Column Labels | |
|-----------------|-------------------|---------|
| Hired | Don't want to say | Female |
| Rejected | Male | (blank) |
| Grand Total | | |

PivotTable Fields Task Pane:

- Choose fields to add to report:
- Fields: application_id, interview_taken_on, Status, event_name, Department, Post Name, Offered Salary, Days Interview Taken out, Months Interview Taken out, More tables...
- Drag fields between areas below:
- Filters: (empty)
- Columns: event_name
- Rows: Status
- Values: Count of Status
- Enter Layout Update: (button)





B. 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.

The screenshot shows the Microsoft Excel interface with a PivotTable and the 'Value Field Settings' dialog box open. The PivotTable is located in the range A3:D13 and summarizes the 'Offered Salary' by 'Department'. The 'Value Field Settings' dialog box is open, showing the 'Summarize value field by' dropdown set to 'Average'. The 'PivotTable Fields' task pane on the right shows the fields 'Department' and 'Offered Salary' added to the report.

Value Field Settings

Source Name: Offered Salary
Custom Name: Average of Offered Salary

Summarize Values By: Show Values As

Summarize value field by
Choose the type of calculation that you want to use to summarize data from the selected field

- Sum
- Count
- Average
- Max
- Min
- Product

Number Format: OK Cancel

PivotTable Fields

Choose fields to add to report

Search

- ☐ application_id
- ☐ Interview Taken on
- ☐ Status
- ☐ event_name
- ☒ Department
- ☐ Post Name
- ☒ Offered Salary
- ☐ Field1

More Tables...

Drag fields between areas below:

Filters

Columns

Rows

Department

Values

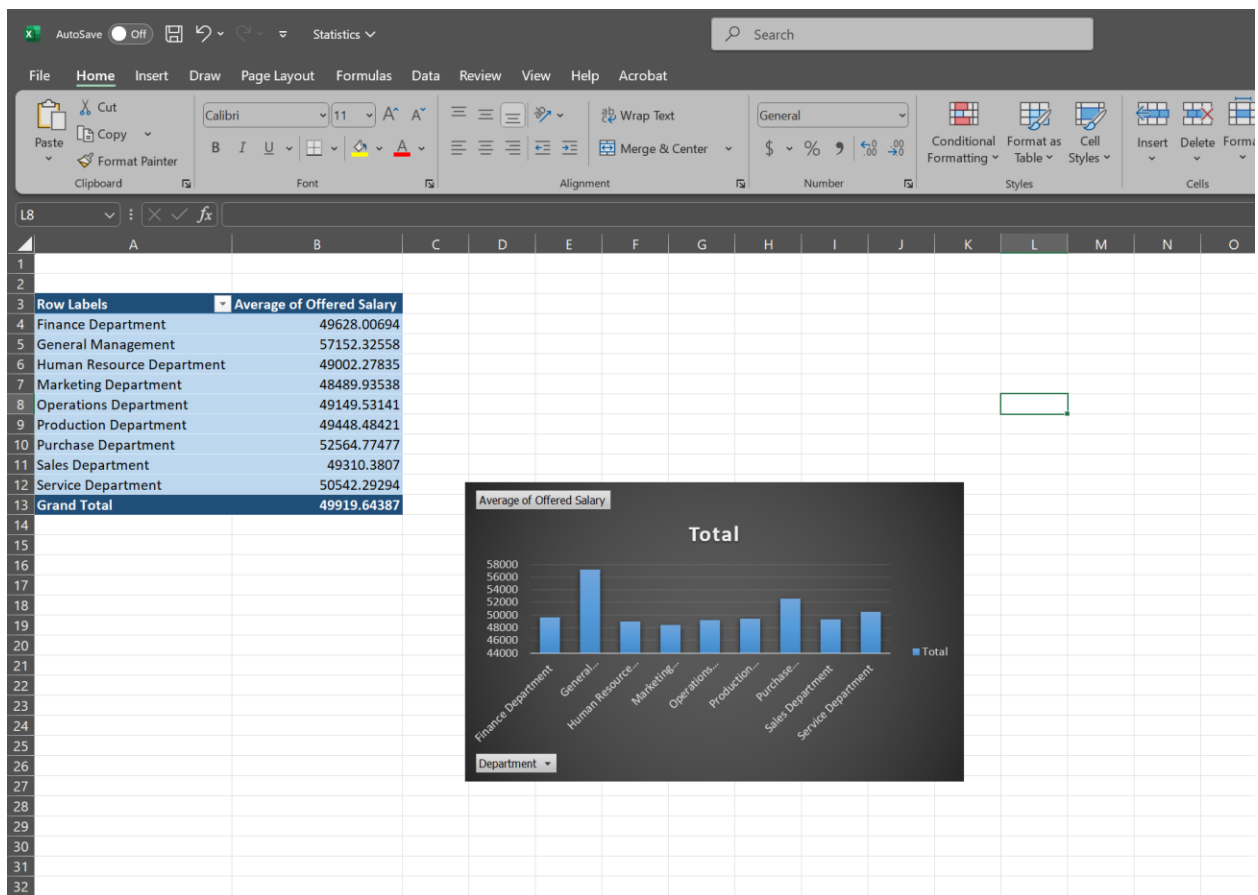
Count of Offered Salary

Defer Layout Update Update

Sheet2 Sheet3 Sheet1

Ready Accessibility: Investigate

1:28 PM

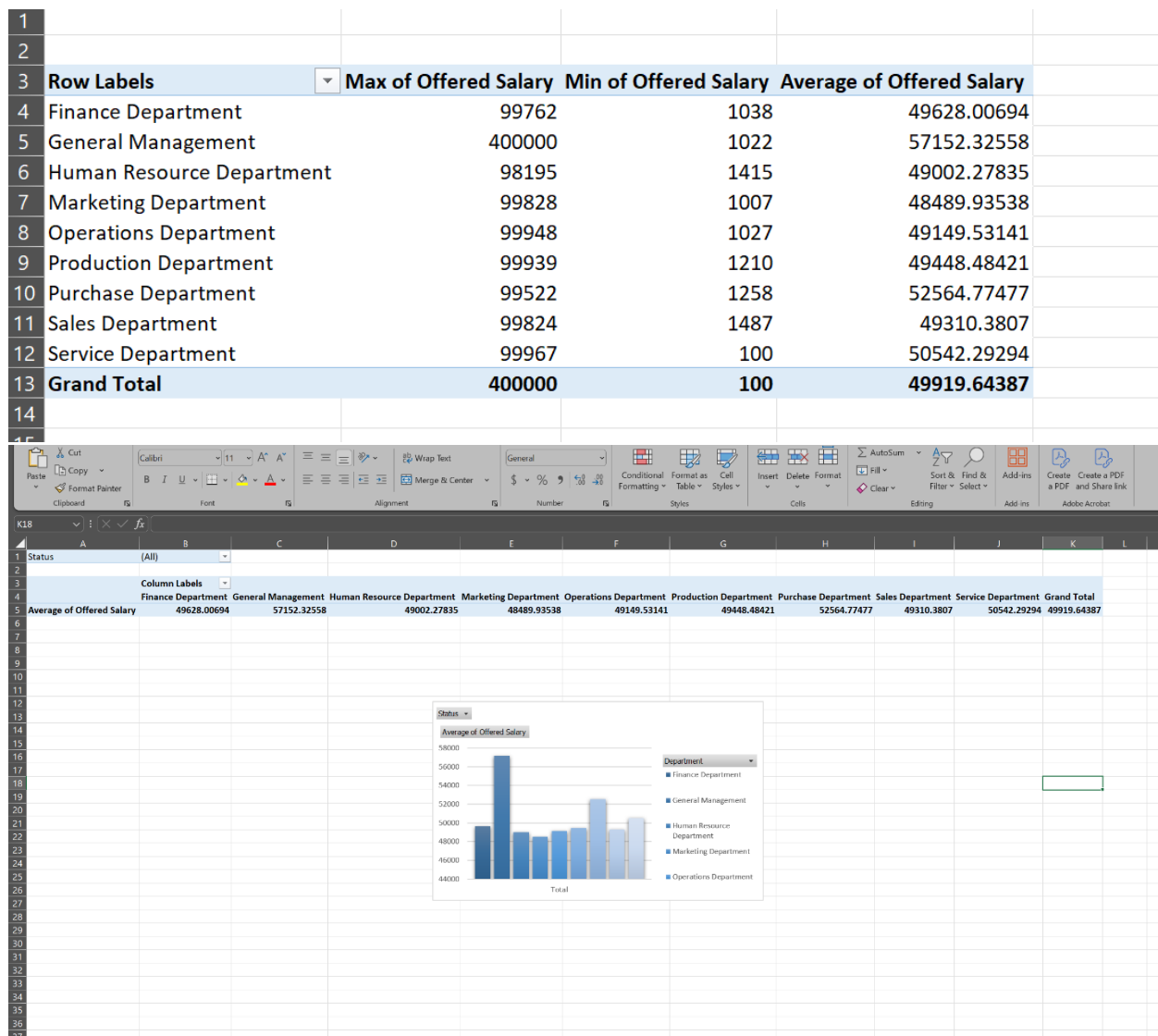


C. Salary Distribution: Class intervals represent ranges of values, in this case, salary ranges. The class interval is the difference between the upper and lower limits of a class.

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

We can use pivot table function to categorize the salary on the basis of the dept.

It can also help us to analyze min and max salary per dept



We can also do hi using pivot and formulas-

Example-

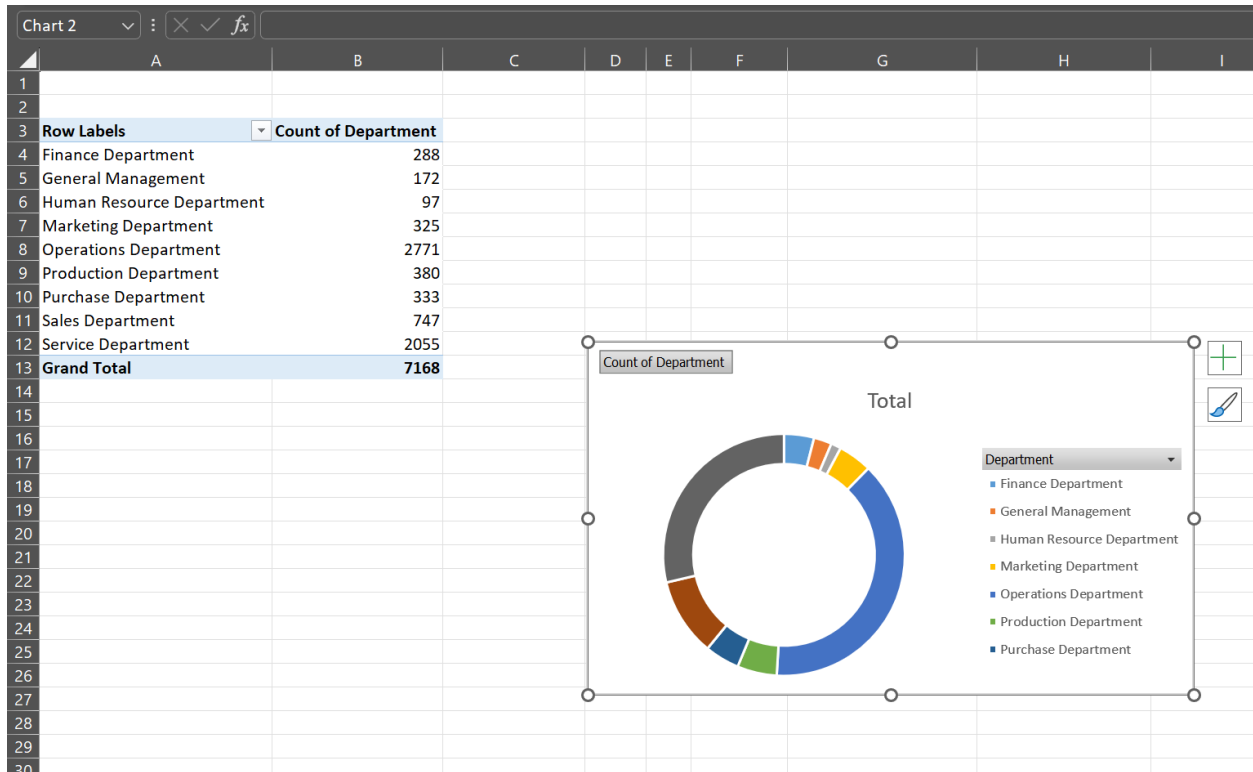
The screenshot shows an Excel spreadsheet with a pivot table. The pivot table is located in the range D13:F16. The pivot table has one row label, 'min', and one column label, 'max'. The data is summarized for the 'Service Department'.

| Row Labels | min |
|------------|----------|
| max | 99967 |
| AVG | 50589.65 |

The spreadsheet also shows a list of department numbers in column A, ranging from 100 to 3134. The pivot table is filtered by 'Service Department'.

D. 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.

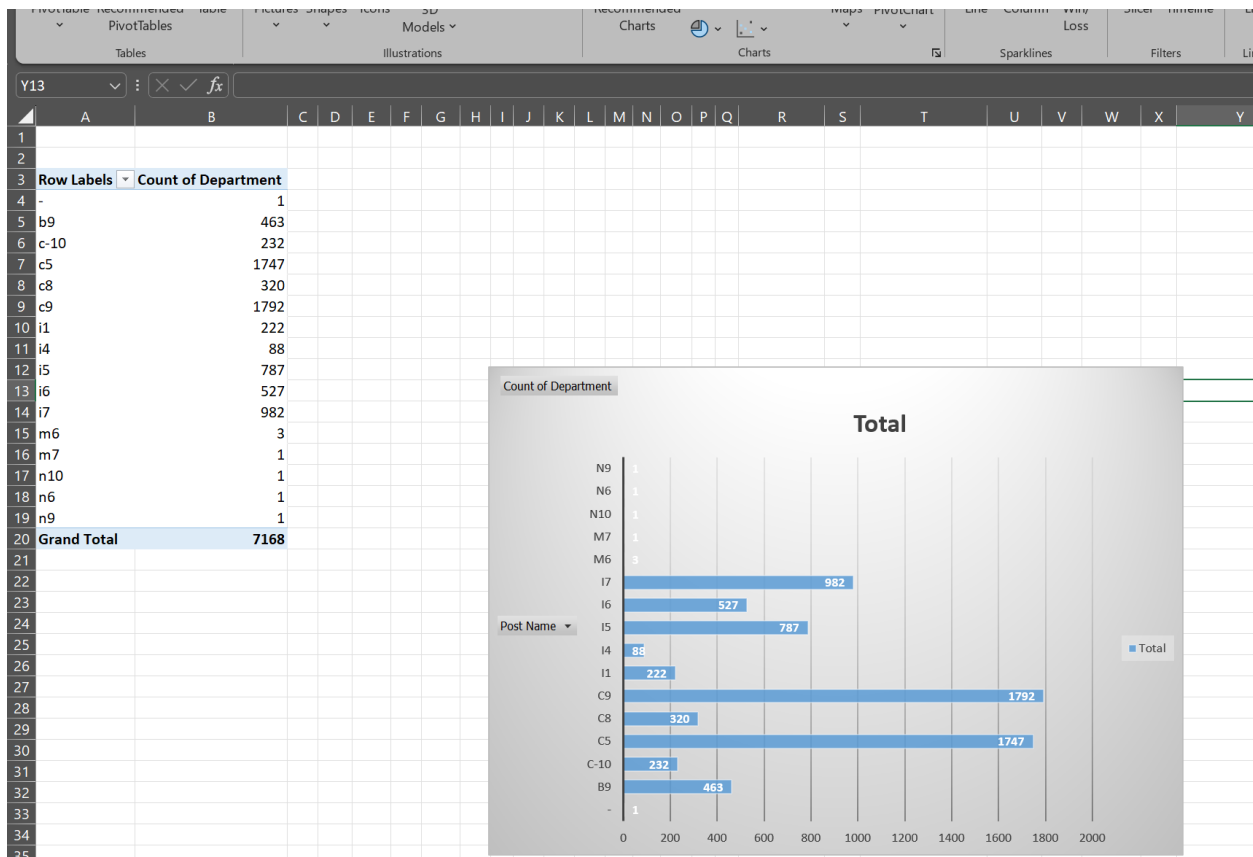


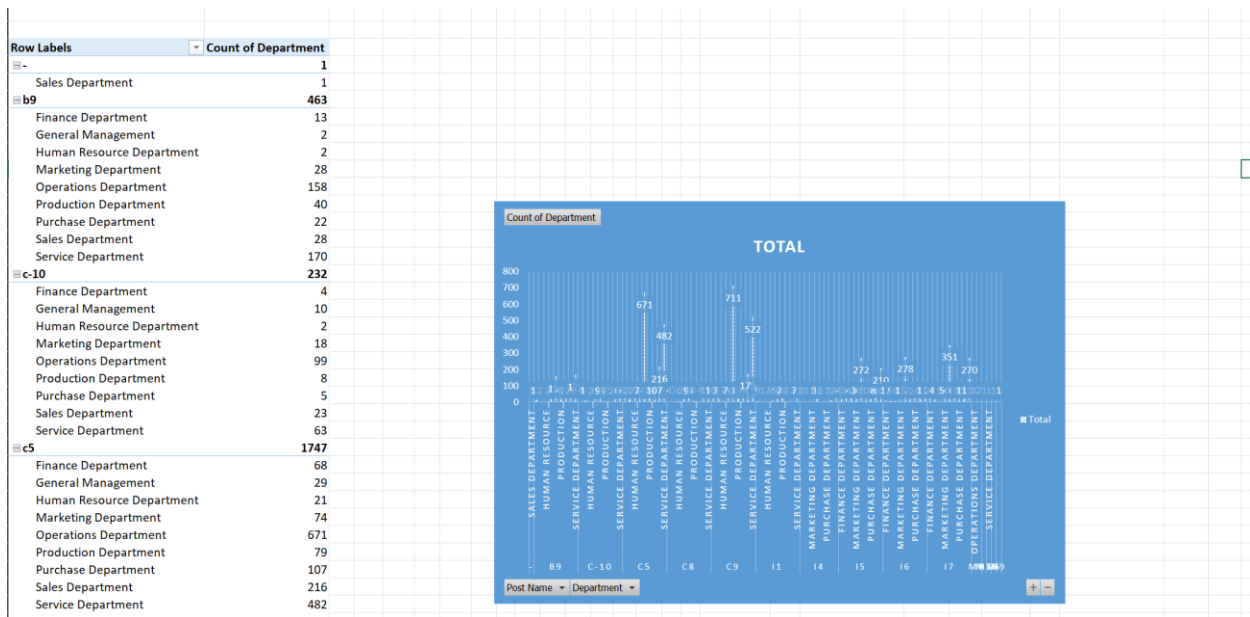
This pie chart shows no of people working in various dept.

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

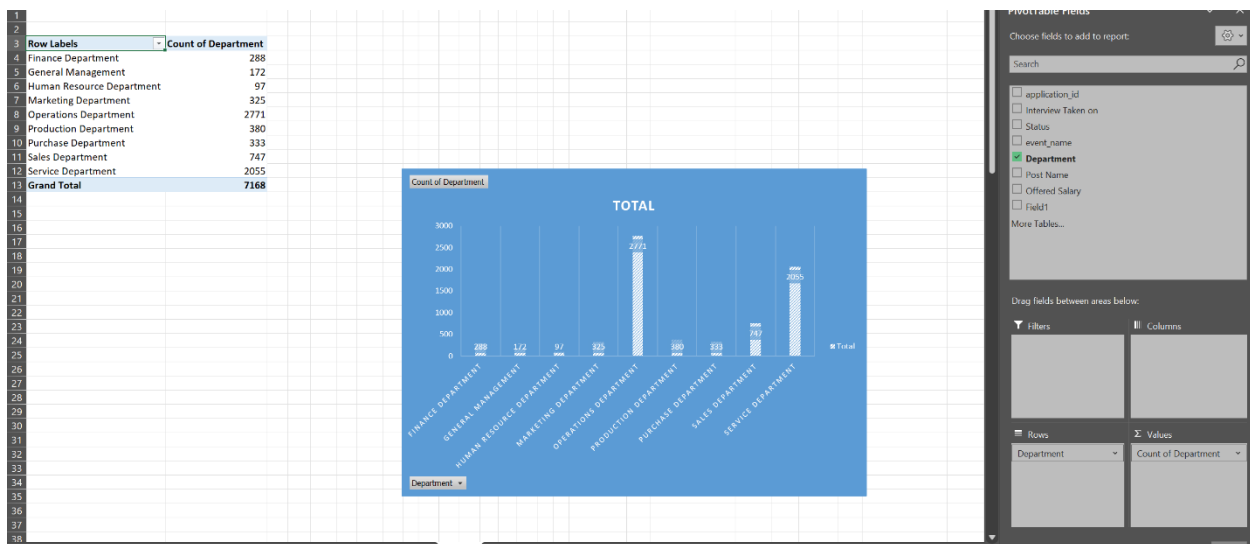
Your Task: Use a chart or graph to represent the different position tiers within the company. This will help you understand the distribution of positions across different tiers.

According to tiers





According to dept and respective tiers



According to dept

LINKS

[https://docs.google.com/spreadsheets/d/10 -
n2ppZNCy8NU5CfLOeknkqWGXVnf4e/edit?usp=sharing&oid=108286913145936487778&rtpof=true&s
d=true](https://docs.google.com/spreadsheets/d/10-n2ppZNCy8NU5CfLOeknkqWGXVnf4e/edit?usp=sharing&oid=108286913145936487778&rtpof=true&sd=true)