Hiring Process Analysis

A sample project using MS Excel

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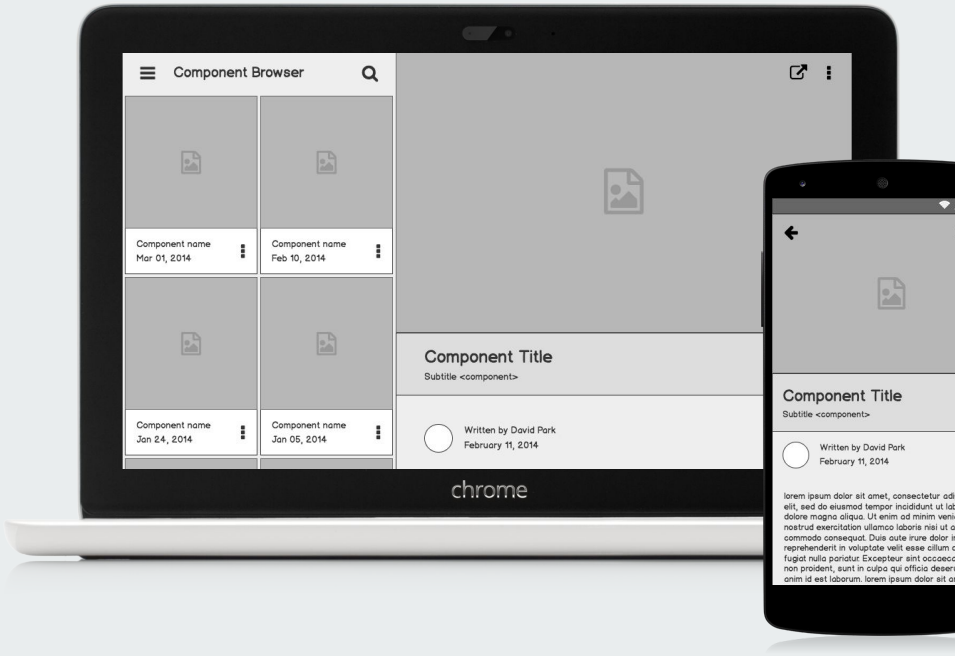


Outline

Project Description

Draw insights out of historical data for hiring department to work upon.

Hiring process is the fundamental and the most important function of a company. Here, the MNCs get to know about the major underlying trends about the hiring process. Trends such as: number of rejections, number of interviews, types of jobs, vacancies etc. are important for a company to analyse before hiring freshers or any other individual.

Setting Metrics / Goals

To answer the 5 questions:

1. Hiring: Process of intaking of people into an organization for different kinds of positions, including genders.
2. Average Salary: Adding all the salaries for a select group of employees and then dividing the sum by the number of employees in the group.
3. Class Intervals: The class interval is the difference between the upper class limit and the lower class limit.
4. Charts and Plots: This is one of the most important part of analysis to visualize the data.
5. Charts: Use different charts and graphs to perform the task representing the data.

Approach and tools used

Approach

1. Data saved in MS Excel & converted into a table
2. Data cleaned: Outliers, blanks & duplicates
3. Pivot Tables were created to get aggregations
4. Pivot Charts were created to visualise insights

Tools used

- **Statistics - Dealing with outliers**

  IQR and Z-scores methods

- **MS Excel**

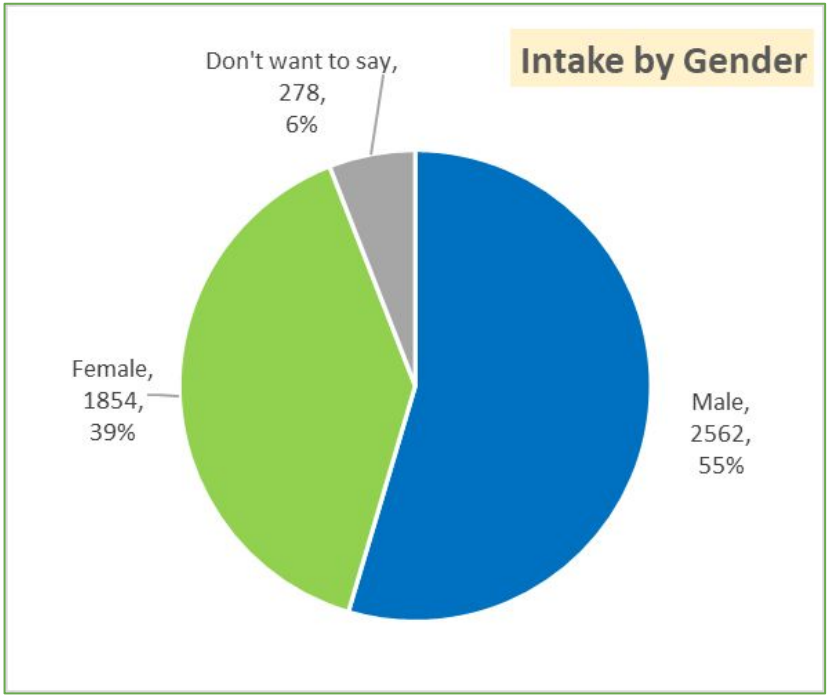
  Formulas, Pivot Tables & Charts

Task 1:

Hiring: Process of intaking of people into an organization for different kinds of positions.

Your task:
How many males and females are Hired?

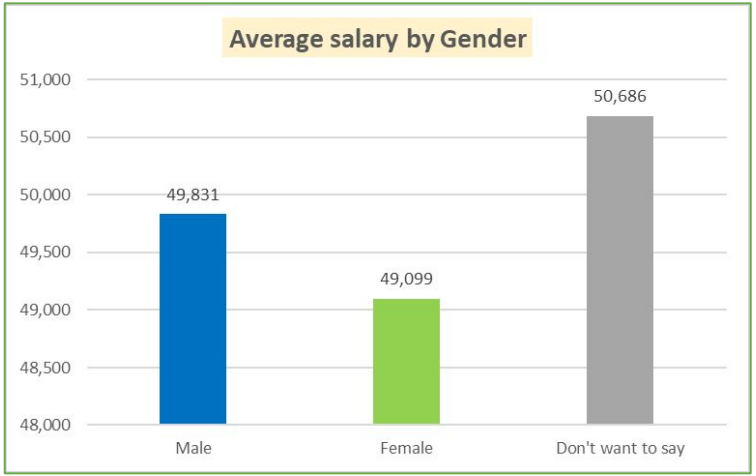
Genders	Count of Intake
Male	2562
Female	1854
Don't want to say	278
Grand Total	**4694**

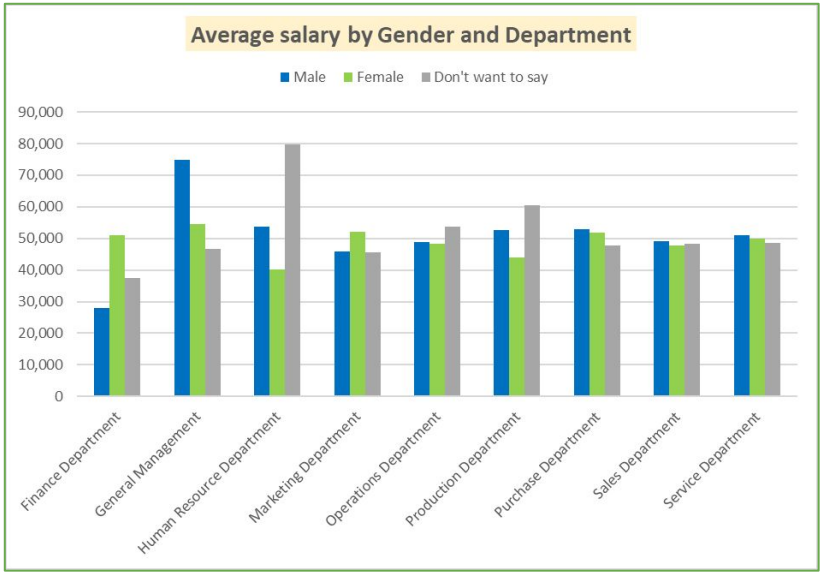


Task 2:

Average Salary: Adding all the salaries for a select group of employees and then dividing the sum by the number of employees in the group.

Your task:
What is the average salary offered in this company?





Task 3:

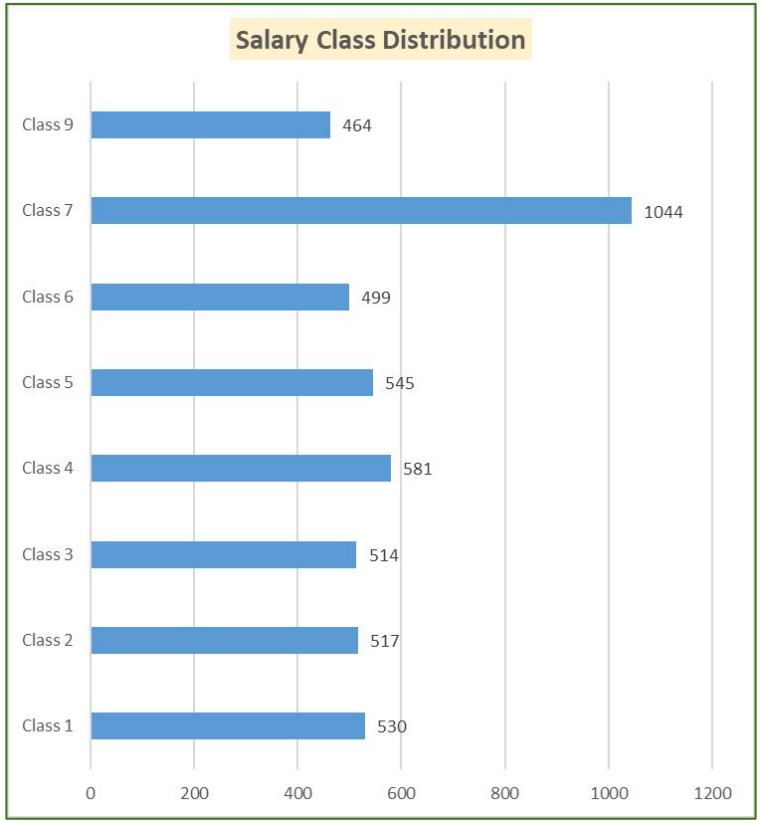
Class Intervals: The class interval is the difference between the upper class limit and the lower class limit.

Your task:
Draw the class intervals for salary in the company?

number of bins	9
Class width	11019

Class_width
=ROUNDUP((MAX(Salary_Column) - MIN(Salary_Column)) / Num_of_bins, 0)

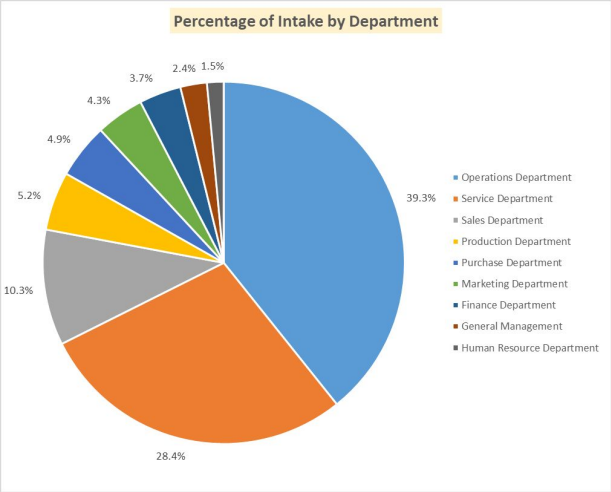
Class 1	11,819.00
Class 2	22,838.00
Class 3	33,857.00
Class 4	44,876.00
Class 5	55,895.00
Class 6	66,914.00
Class 7	77,933.00
Class 8	88,952.00
Class 9	99,971.00
Class 10	110,990.00



Task 4:

Charts and Plots: This is one of the most important part of analysis to visualize the data.

Your task:
Draw Pie Chart / Bar Graph (or any other graph) to show proportion of people working different department?

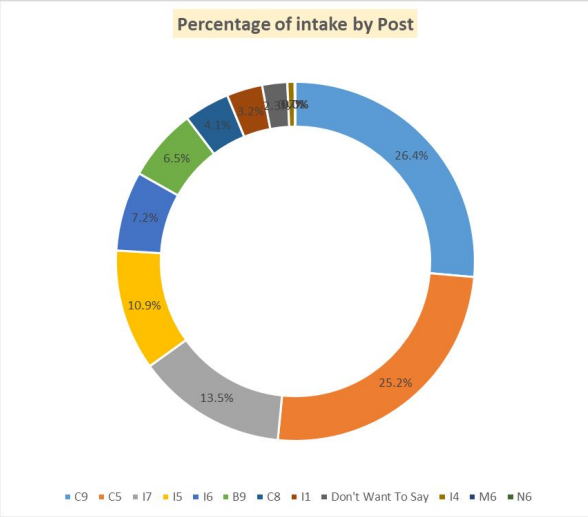


Departments	Percentage of Intake
Operations Department	39.26%
Service Department	28.36%
Sales Department	10.33%
Production Department	5.24%
Purchase Department	4.90%
Marketing Department	4.30%
Finance Department	3.75%
General Management	2.36%
Human Resource Department	1.49%
Grand Total	**100.00%**

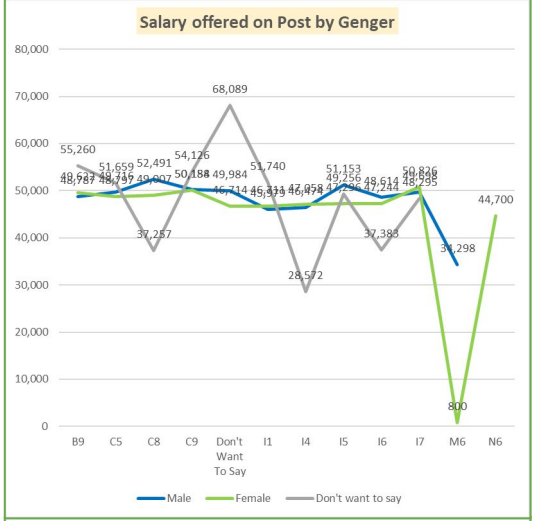
Task 5:

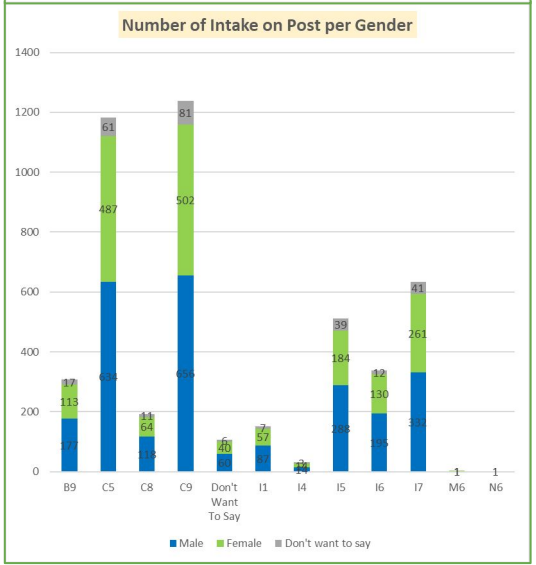
Charts: Use different charts and graphs to perform the task representing the data.

Your task:
Represent different post tiers using chart/graph?



Post name	Count of Intake
C9	26.4%
C5	25.2%
I7	13.5%
I5	10.9%
I6	7.2%
B9	6.5%
C8	4.1%
I1	3.2%
Don't Want To Say	2.3%
I4	0.7%
M6	0.0%
N6	0.0%
Grand Total	**100.0%**





Interesting knowledge points & formulas

Detecting outliers

There are several ways to detecting outliers:

1. **IQR method (Interquartile range)**
   - Calculate **Q1 (25th percentile)** and **Q3 (75th percentile)**.
   - Compute **IQR = Q3 - Q1**.
   - Define **lower bound = Q1 - 1.5 * IQR** and **upper bound = Q3 + 1.5 * IQR**.
   - Any salary outside this range is considered an outlier.
2. **Z-Scores method**
   - Calculate the **mean** (μ) and **standard deviation** (σ).
   - Compute **Z-score** for each salary:

$$Z = \frac{\text{Salary} - \mu}{\sigma}$$

   - Salaries with **|Z| > 2** (or another chosen threshold) are outliers.

Determining class intervals

There are several ways to determine class intervals, but Sturges' Rule is commonly used:

If normally a number between 5 to 10 is not sufficient, this Sturges' Rule can come to play:

$$\text{Number of Classes} = 1 + 3.3 \log(\text{Total Salaries})$$

$$\text{Class Width} = \frac{\text{Max Salary} - \text{Min Salary}}{\text{Number of Classes}}$$

Example formula in Excel:

```
=IF(A2 <= MIN(G:G) + $B$2, "Class 1",
  IF(A2 <= MIN(G:G) + 2 * $B$2, "Class 2",
  IF(A2 <= MIN(G:G) + 3 * $B$2, "Class 3",
  ...)))
```

Assumptions

This analysis aims to answer questions from the data user.

Communications between data generators and data users are key to data analysis.

References

Source of dataset from Google:
https://docs.google.com/spreadsheets/d/1gAq5sK8L2e7rCP0O0KaNo7gqx6tfnVOk/edit?usp=sharing&ouid=109356424617551323871&rtpof=true&sd=true)

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