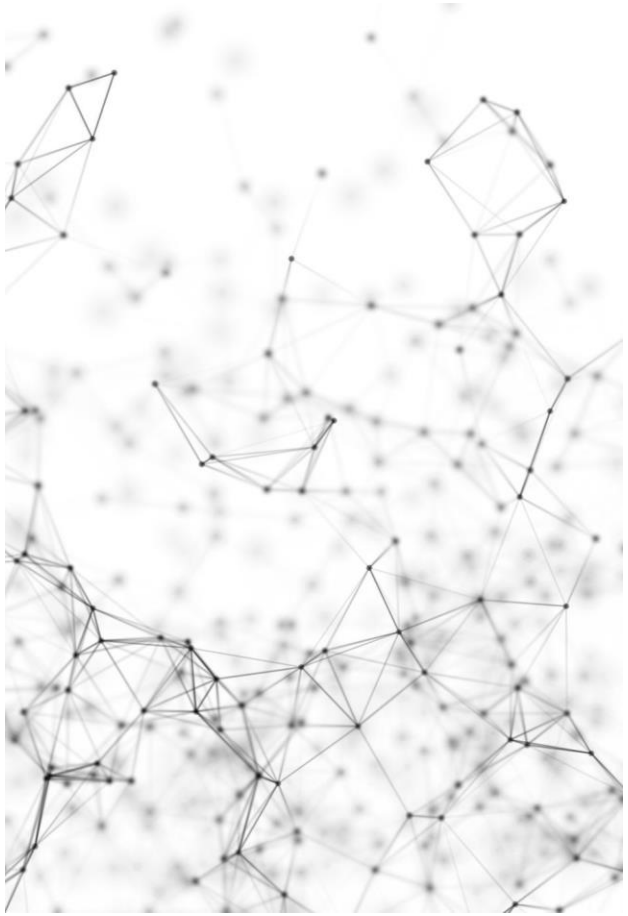


Hiring process analytics

By : Vishal Singh Sangral

Project Overview

As a data analyst at a multinational company, such as Google, the project involves analyzing the hiring process data to enhance insights. Tasks include handling missing data, combining columns for simplicity, detecting and deciding on outliers, and providing a data summary. Specific analytics tasks involve determining gender distribution in hires, calculating average salary, creating salary distribution intervals, visualizing departmental proportions, and representing position tiers graphically. The goal is to draw meaningful conclusions to improve the company's hiring process and decision-making.

Approach:

1. **Data Cleaning:** Address missing values by imputation or removal. Combine relevant columns for simplicity.
2. **Outlier Handling:** Identify outliers and decide whether to remove, replace, or keep them based on impact.
3. **Statistical Analysis:** Calculate gender distribution, average salary, and create salary intervals for better understanding.
4. **Visualization:** Utilize pie charts, bar graphs, or suitable visualizations to represent departmental proportions and position tiers.
5. **Insight Generation:** Summarize findings, identifying trends and patterns to enhance the hiring process.
6. **Recommendations:** Provide actionable recommendations for process improvement based on insights gained.

Excel

Tech Stach used

Z-Score for outlier detection

- Calculate the Z-score for each data point. The Z-score measures how many standard deviations a data point is from the mean.
  - Z-Score Formula: **=(A2 - Mean)/StandardDev**
- For example, if your data starts from A2, you can put the formula in B2 and drag it down to apply to all data points.
- Use conditional formatting to highlight values with Z-scores beyond a certain threshold as potential outliers.

application_id	Interview Date	Interview Time	Status	Gender	Department	Post Name	Offered Salary	Z SCORE
513166	05/01/14	22:53	Hired	Female	Operations Department	i1	200000	5.20
721792	07/24/14	12:58	Hired	Male	Sales Department	c5	400000	12.13
824459	07/30/14	1:32	Rejected	Don't want to say	Service Department	c9	300000	8.67

INSIGHT:

1. **Gender Distribution:** Understand the balance of male and female hires, identifying potential gender-related trends or biases.

2. **Average Salary:** Gain insight into the company's compensation structure, assisting in benchmarking and evaluating competitiveness.

3. **Salary Distribution:** Identify common salary ranges, helping in structuring compensation plans and ensuring fairness.

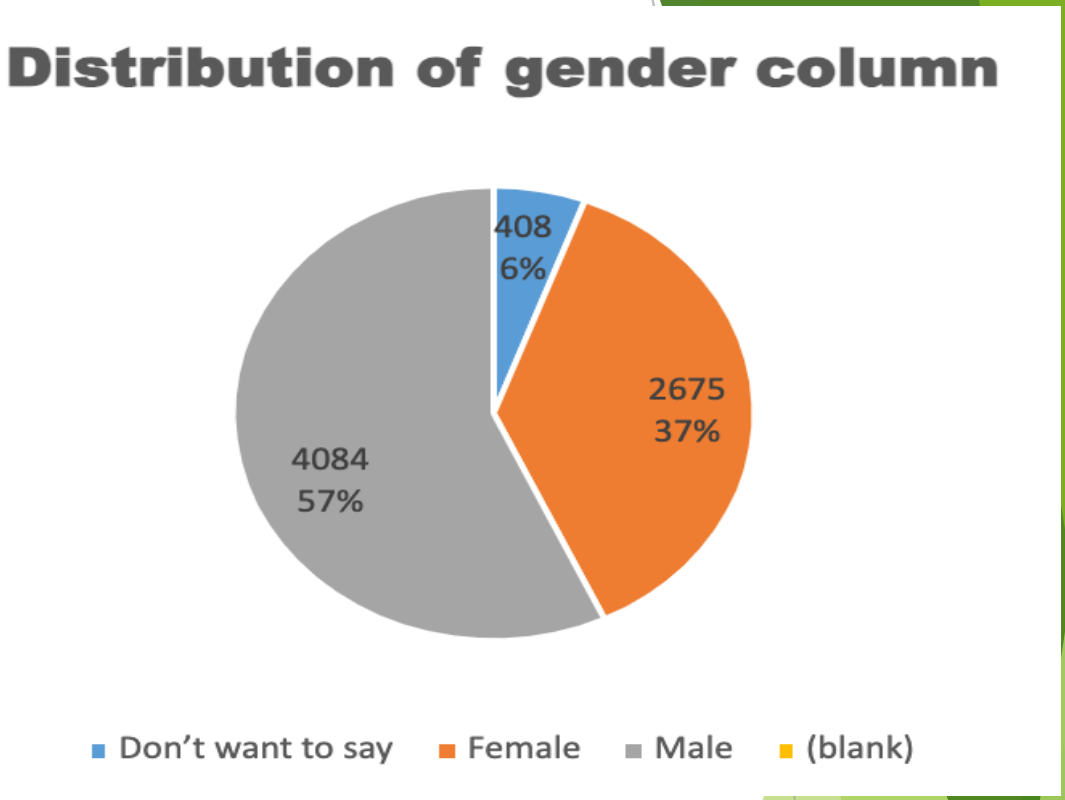
4. **Departmental Proportions:** Visualize the distribution of employees across different departments, aiding in resource allocation and organizational planning.

5. **Position Tiers:** Analyze the distribution of positions across various tiers, providing insights into the company's hierarchy and potential areas for career growth.

6. **Outlier Impact:** Assess the impact of outliers on various metrics, understanding whether extreme values significantly influence the analysis.

7. **Process Improvement Opportunities:** Based on the above insights, recommend strategies to enhance the hiring process, improve diversity, and optimize compensation structures for better organizational outcomes.

Gender	Count of Gender
Don’t want to say	408
Female	2675
Male	4084
(blank)	
Grand Total	**7167**



Hiring Analysis:

For **Null values** we replace the null values with "**Don't want to say" .**

Salary Analysis:

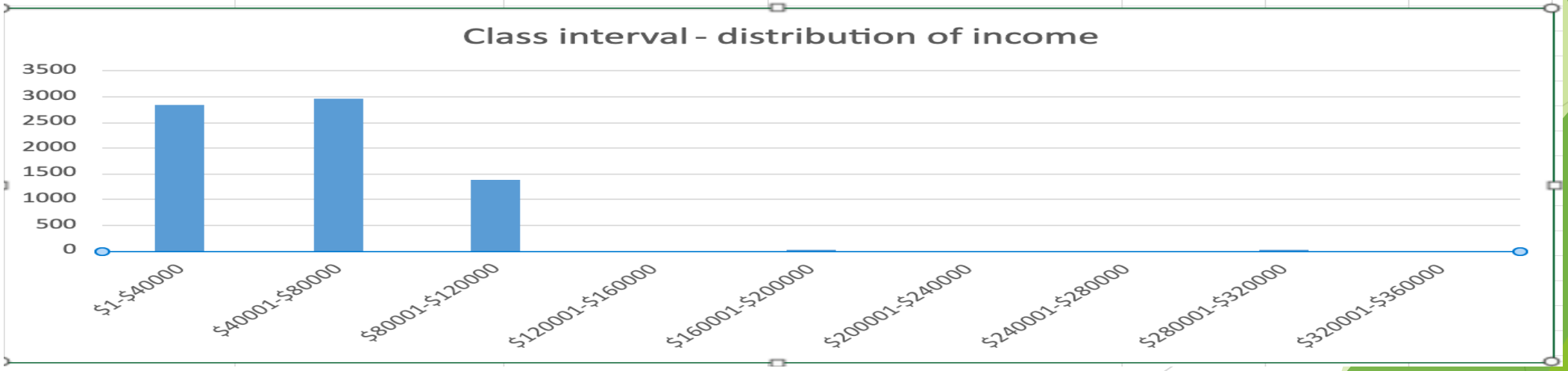
We have used a slicer to identify the hired or rejected person salary analysis.
In this analysis we are able to find the average salary of hired employee on the basis of gender as well as department classification as well

Average of Offered Salary	Department									
Gender	Finance Department	General Management	Human Resource Department	Marketing Department	Operations Department	Production Department	Purchase Department	Sales Department	Service Department	Grand Total
Don't want to say	55617.91667	53000.125	53465	50571.44444	50181.61739	55701	51728.28571	59716.75	47424.85897	50829.10791
Female	49160.90909	53231.03158	38456.38462	53850.16667	51134.19741	49996.43269	48950.48684	50690.02924	49626.6951	50421.35795
Male	34307.4	68477.5	53349.95349	49952.07874	49371.75218	47369.1875	48591.47368	52199.79522	50879.6	50127.93872
Grand Total	**48757.21023**	**54563.9292**	**47819.7**	**51253.30693**	**50086.34039**	**48954.06098**	**48996.5087**	**51977.00413**	**50236.14489**	**50285.38658**

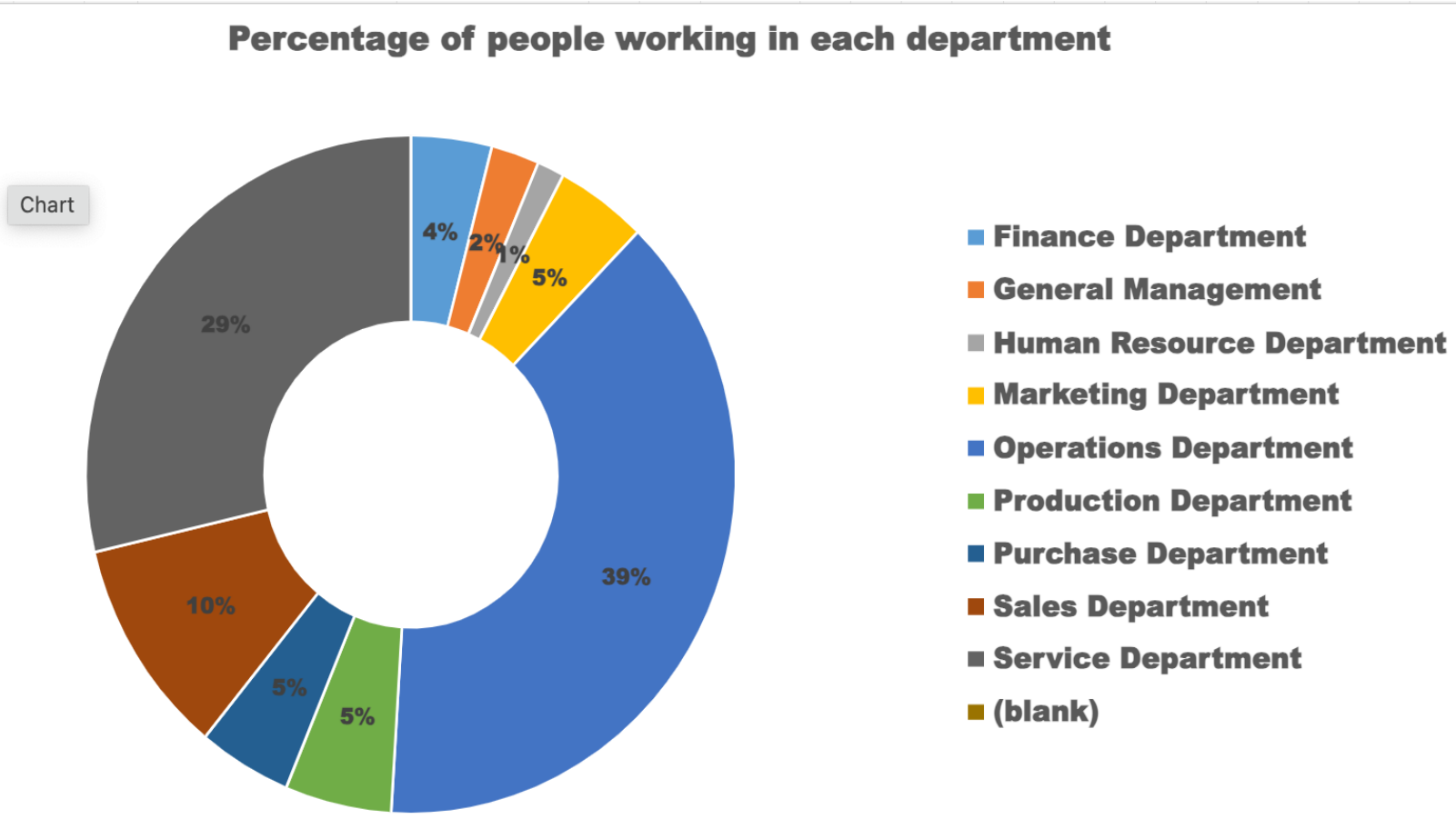
Salary Distribution:

WE CREATED HERE CLASS INTERVAL OF 40000 ,
WE CAN ALSO CREATE THE INTERVAL OF 10000, 20000, 30000 AND SO ON

LOWER LIMIT	UPPER LIMIT	Class interval	DISTRIBUTION of salary
$1	$40000	$1-$40000	2830
$40001	$80000	$40001-$80000	2963
$80001	$120000	$80001-$120000	1370
$120001	$160000	$120001-$160000	0
$160001	$200000	$160001-$200000	1
$200001	$240000	$200001-$240000	0
$240001	$280000	$240001-$280000	0
$280001	$320000	$280001-$320000	1
$320001	$360000	$320001-$360000	0

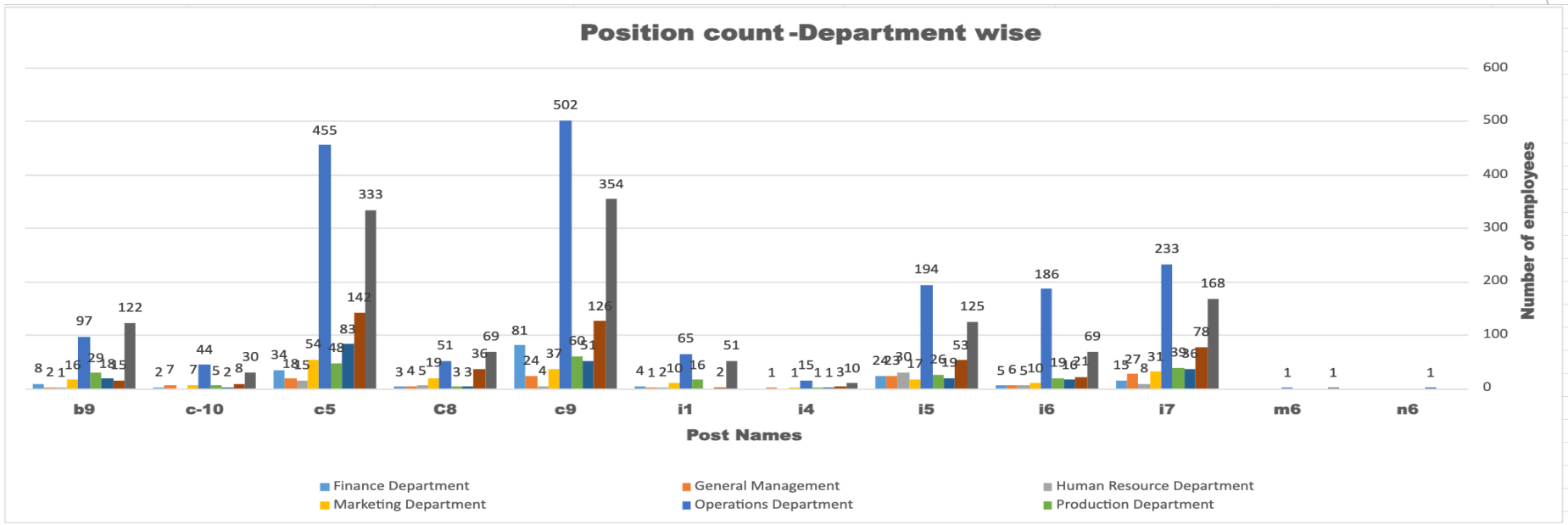


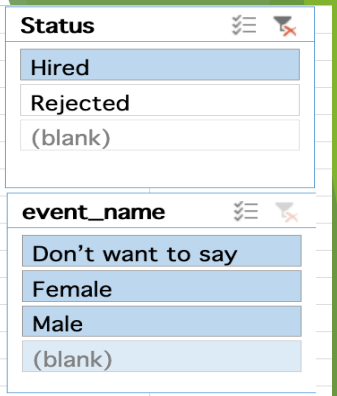
Departmental Analysis:



Department	Count of Department
Finance Department	288
General Management	172
Human Resource Department	97
Marketing Department	325
Operations Department	2771
Production Department	380
Purchase Department	333
Sales Department	746
Service Department	2055
(blank)	
Grand Total	**7167**

Position tier Analysis:





event_name	(All)

Count of Post Name	Department									
Post Name	Finance Department	General Management	Human Resource Department	Marketing Department	Operations Department	Production Department	Purchase Department	Sales Department	Service Department	Grand Total
b9	8	2	1	16	97	29	18	15	122	308
c-10	2	7		7	44	5	2	8	30	105
c5	34	18	15	54	455	48	83	142	333	1182
C8	3	4	5	19	51	3	3	36	69	193
c9	81	24	4	37	502	60	51	126	354	1239
i1	4	1	2	10	65	16		2	51	151
i4		1		1	15	1	1	3	10	32
i5	24	23	30	17	194	26	19	53	125	511
i6	5	6	5	10	186	19	16	21	69	337
i7	15	27	8	31	233	39	36	78	168	635
m6					1				1	2
n6							1			1
Grand Total	**176**	**113**	**70**	**202**	**1843**	**246**	**230**	**484**	**1332**	**4696**

Result

- Through this project, I successfully analyzed the hiring process data at the multinational company. By addressing missing data, handling outliers, and conducting statistical analyses, I gained valuable insights into various aspects:

- 1. **Gender Distribution:** I now understand the gender balance in hires, enabling the identification of potential gender-related trends or biases and supporting diversity initiatives.

- 2. **Average Salary and Distribution:** I calculated the average salary and created salary intervals, providing a comprehensive view of the company's compensation structure and helping in salary planning.

- 3. **Departmental and Position Tier Analysis:** Visualizing departmental proportions and position tiers allowed me to grasp the organizational structure and identify areas for career growth.

- 4. **Outlier Impact Assessment:** I assessed the impact of outliers on different metrics, understanding their influence on the overall analysis.

- 5. **Process Improvement Recommendations:** Based on these insights, I proposed actionable recommendations to enhance the hiring process, improve diversity, and optimize compensation strategies.

- This project significantly contributed to my understanding of hiring process analytics by allowing me to apply statistical methods, utilize Excel functions, and interpret visualizations. It provided hands-on experience in data cleaning, outlier handling, and deriving meaningful conclusions to drive informed decision-making in the hiring domain.