PROJECT TITLE: HIRING PROCESS ANALYTICS FOR A MULTINATIONAL COMPANY

BY : SHREYAS REDDY KANTHAREDDY

- **Problem statement:**
  - Analyze the hiring process data of a multinational company to identify patterns, trends, and insights that can help optimize the hiring process, improve decision-making, and enhance overall recruitment efficiency.
  - As a business analyst there are multiple operations to be performed to know the trends in the data and get the insights from the results.

APPROACH

Handling Missing Data: There were no duplicates as such. The quality of data is very good.

Outlier Detection and Removal: Used box plot to know the outliers in the data set. It was best to remove the outliers from the data.

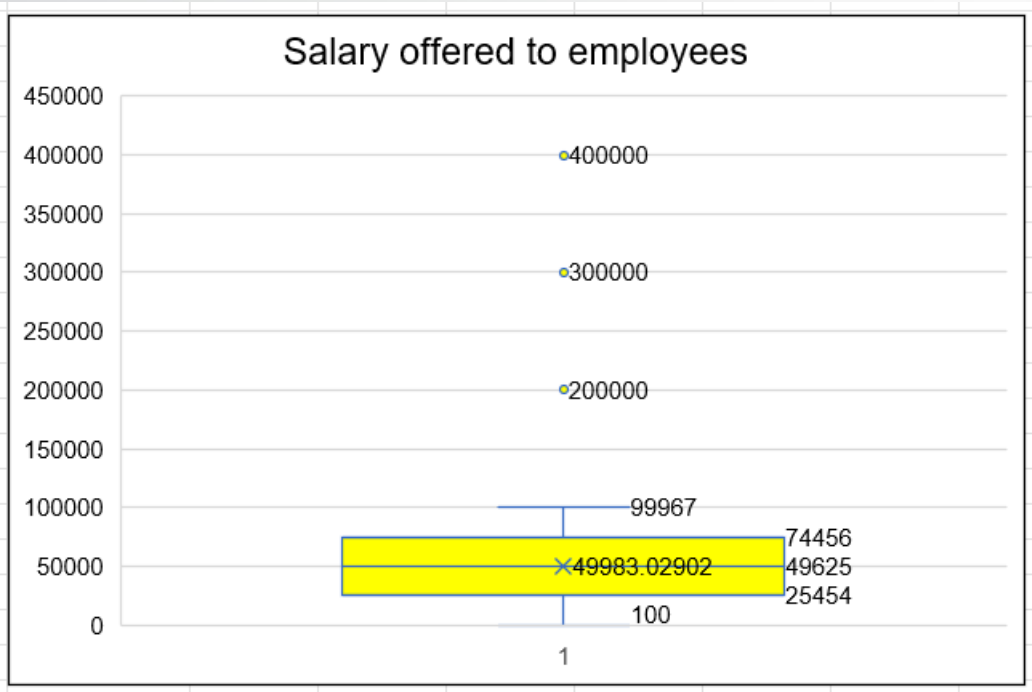
Data Summary: Calculated all the key statistical measures such as averages, mean, median, quartile 1, quartile 3, IQR, salary distributions, and even the outliers.

Visualization: Created various charts/graphs to each task to represent the output visually for better understanding.

Insight Generation: Insights have been given to each task.

Finding and eliminating outliers in the data set:

It is seen that there are three outliers i.e. 200000,300000,400000. In event name there are values under don't want to say to be precise 394 in numbers. If we remove those values, there will be skewness in the results. Only the outliers is been removed. And there is a value missing in salary column. Since it is negligible, I will be retaining it.



Mean/Average	**49878.3318**	
St Deviation	**28353.64864**	
Q1	**25452.75**	
Q3	**74396.75**	
IQR	**48944**	
Min	**100**	
Max	**99967**	
Finding Outliers using IQR		
Lower Boundary	Q1-(1.5*IQR)	**-47963.25**
Higher Boundary	Q3+(1.5*IQR)	**147812.75**

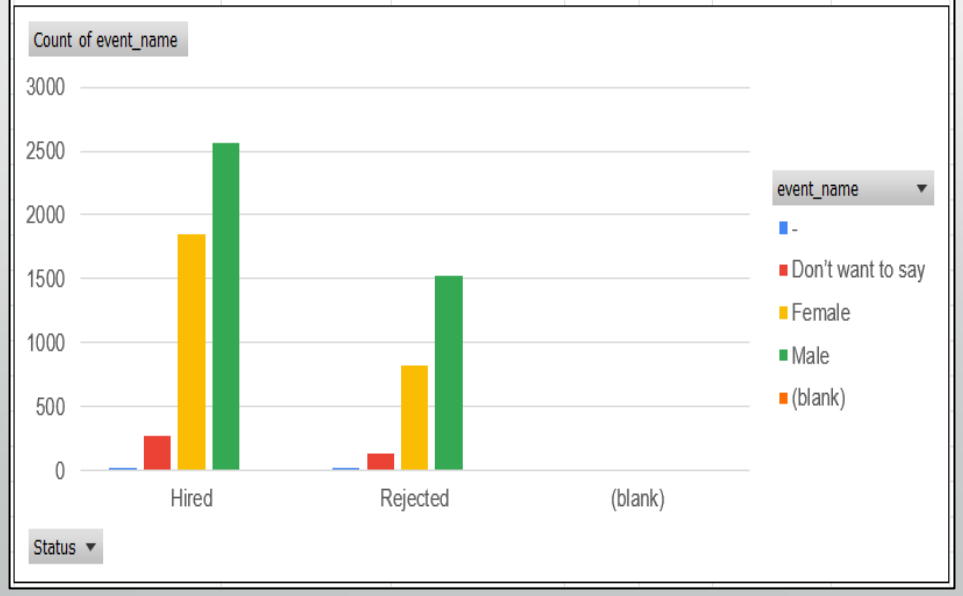
Outliers:
200000
300000
400000

A. Hiring Analysis: Determine the gender distribution of hires. How many males and females have been hired by the company?

Insights:

- A pivot table is used to analyze the gender distribution of hires.
- Column chart is been used to visualize this task.
- 1854 females and 2562 males have been hired out of 7165.
- I have retained two more values i.e. ‘don’t want to say’ and ‘-’ so that the results won’t be skewed later in different tasks.

Count of event_name	Column Labels					
Status	-	Don’t want to say	Female	Male	(blank)	Grand Total
Hired	10	268	1854	2562		4694
Rejected	5	125	819	1522		2471
(blank)						
Grand Total	**15**	**393**	**2673**	**4084**		**7165**



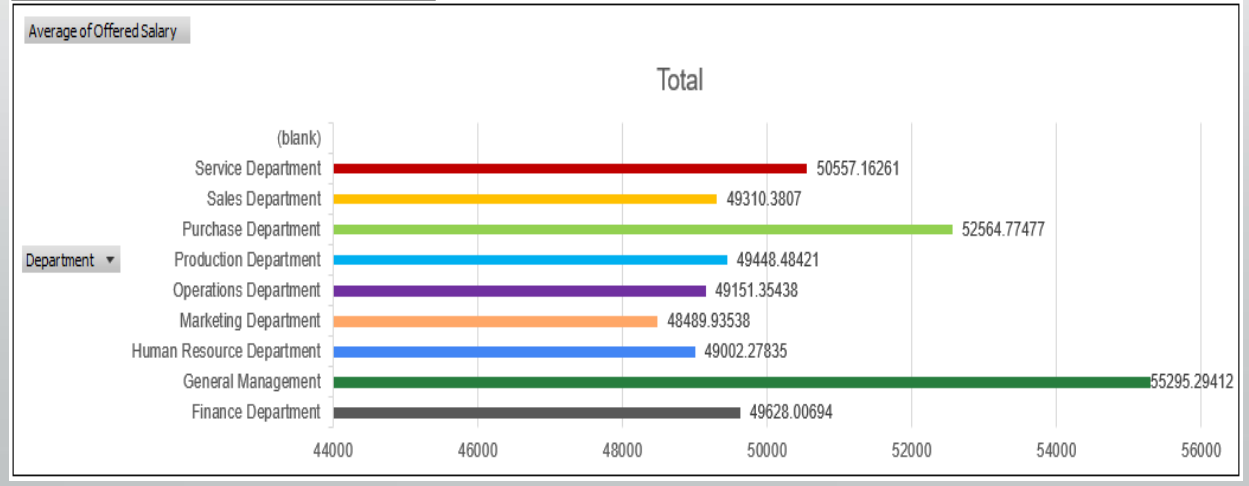
B. Salary Analysis: What is the average salary offered by this company?

Insights:

- Average salary for each department is calculated using a pivot table.
- General management department has the highest average salary with 55295 followed by purchase department with 52565.
- The overall average salary of the company is 49878.
- Bar chart is used to visualize the data.

Department	Average of Offered Salary
Finance Department	49628.00694
General Management	55295.29412
Human Resource Department	49002.27835
Marketing Department	48489.93538
Operations Department	49151.35438
Production Department	49448.48421
Purchase Department	52564.77477
Sales Department	49310.3807
Service Department	50557.16261
(blank)	
Grand Total	**49878.3318**

Average Salary	49878.33



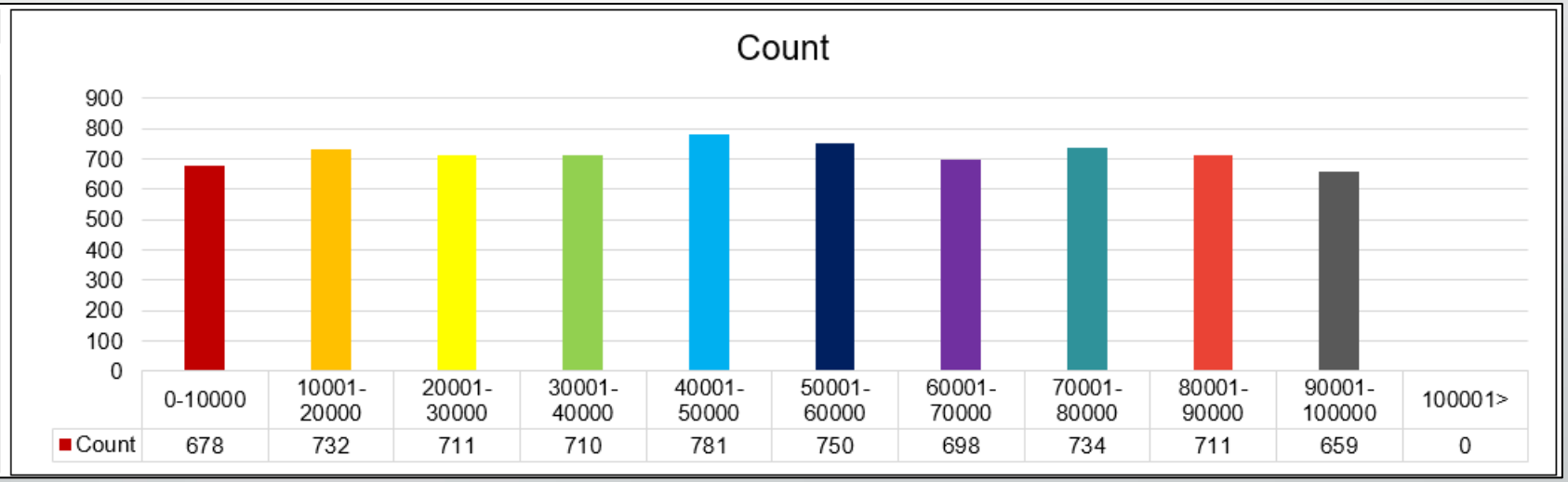
C. Salary Distribution: Create class intervals for the salaries in the company. This will help you understand the salary distribution.

Insights:

- COUNTIFS is the formula used to count the employees who falls under the salary range.
- Salary range between 40000-50000 has the highest employee count of 781 and the range between 90000-100000 has the least employee count of 659.
- A column chart is used to visualize the result.

Class Intervals for Salary

Salary Range	Count
0-10000	678
10001-20000	732
20001-30000	711
30001-40000	710
40001-50000	781
50001-60000	750
60001-70000	698
70001-80000	734
80001-90000	711
90001-100000	659
100001>	0

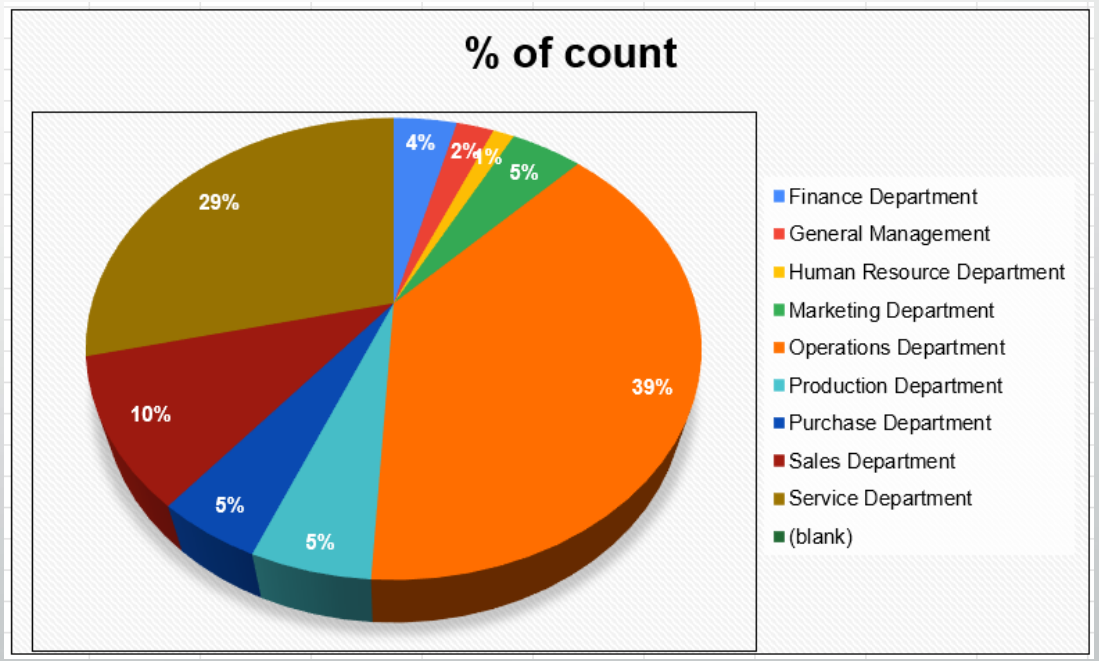


D. Departmental Analysis: Use a pie chart, bar graph, or any other suitable visualization to show the proportion of people working in different departments.

Insights:

- Pivot table is used to show the proportion of people working in different departments.
- Operations department has the highest count of employees with 38.84%(2771), and HR department has the least number of employees with 1.45%(97).
- To visualize the data which is in percentage, a pie chart is used for better understanding.

Departments	Count	% of count
Finance Department	288	3.94%
General Management	170	2.24%
Human Resource Department	97	1.45%
Marketing Department	325	4.55%
Operations Department	2771	38.84%
Production Department	380	5.39%
Purchase Department	333	4.53%
Sales Department	747	10.42%
Service Department	2054	28.66%
(blank)		0.00%
Grand Total	**7165**	**100.00%**

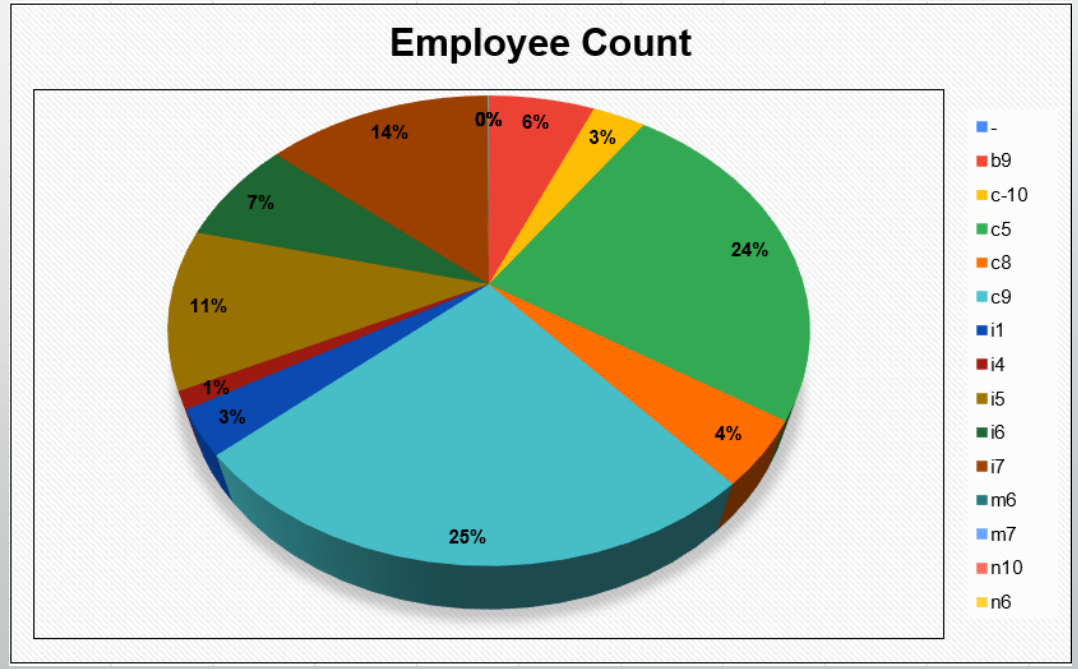


E. Position Tier Analysis: Use a chart or graph to represent the different position tiers within the company. This will help you understand the distribution of positions across different tiers.

Insights:

- To understand different position tiers within a company.
- Pivot table is used to get the employee count in different positions across the company.
- C9 and C5 positions have the most employee count of 1792 and 1747, respectively. Which covers almost 50% of the company strength.
- m7, n10, n6, and n9 positions have the least employee count.

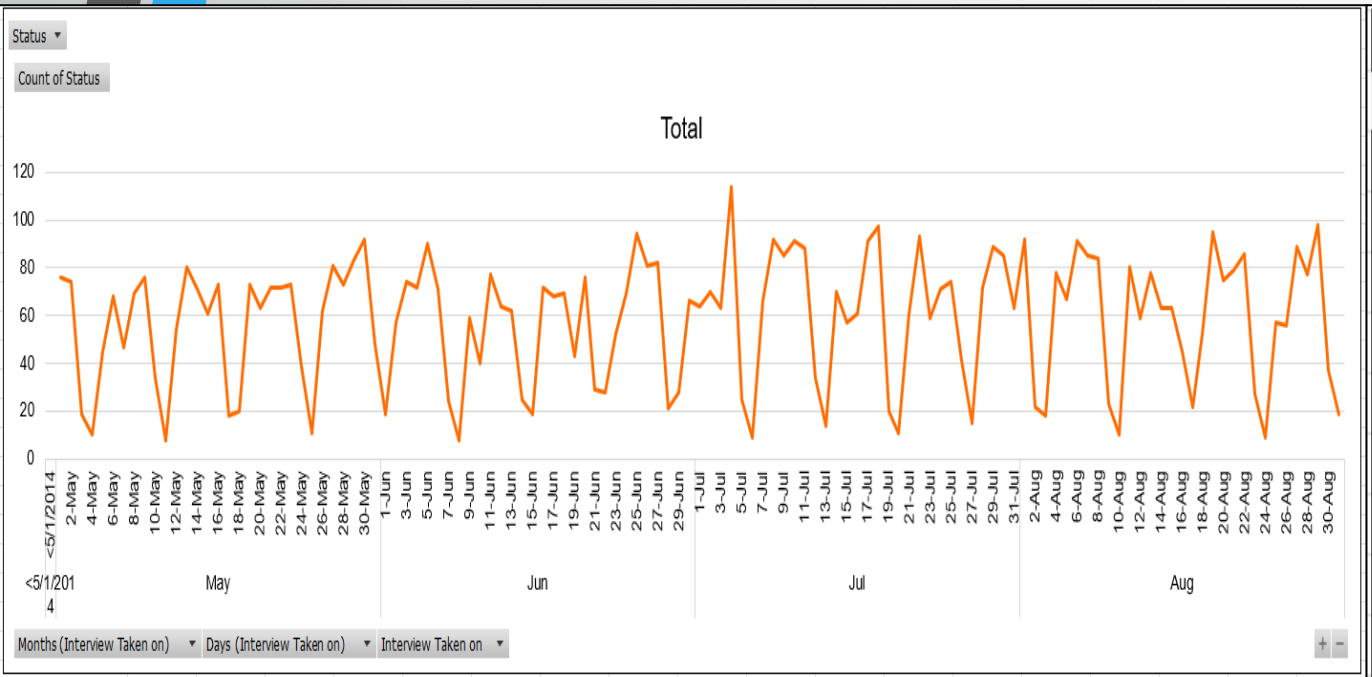
Position	Employee Count	% of count
-	1	0.01%
b9	462	6.36%
c-10	232	3.21%
c5	1747	24.18%
c8	320	4.53%
c9	1792	25.13%
i1	222	3.27%
i4	87	1.19%
i5	787	11.06%
i6	527	7.20%
i7	981	13.75%
m6	3	0.04%
m7	1	0.02%
n10	1	0.01%
n6	1	0.02%
n9	1	0.01%
(blank)		0.00%
Grand Total	**7165**	**100.00%**



F. Interview Time Analysis: Analyze the data to identify any trends related to the date or time of the interviews. Are there specific periods when hiring rates are higher or lower?

Insights:

- For this task I have used two different methods for knowing the trend.
- I have used a pivot table to know the trend using line graph. It shows the number of interviews taken on each day of the month.
- The second method is used, to know the hiring and rejection patterns on each day and month. COUNTIFS function used to calculate the patterns.
- Fridays and Thursdays have both the metrics(most number of hiring and rejections)



2. Finding out hiring and rejection patterns according to days and months

Day	Hired	% of hiring	Rejected	% of rejection
Monday	714	15.21%	362	14.65%
Tuesday	792	16.87%	423	17.12%
Wednesday	836	17.81%	432	17.48%
Thursday	853	18.17%	469	18.98%
Friday	950	20.24%	525	21.25%
Saturday	360	7.67%	171	6.92%
Sunday	189	4.03%	89	3.60%
Total	**4694**		**2471**	

Month	Hired	% of hiring	Rejected	% of rejection
May	1094	23.31%	651	26.35%
June	1078	22.97%	561	22.70%
July	1295	27.59%	650	26.31%
August	1227	26.14%	609	24.65%
Total	**4694**		**2471**	

Task G, I: Interview Metrics Analysis, Departmental Hiring Trends Comparison

Metrics:

1. Number of interviews taken by each department for each position.

Status: (All)

Count of application_id	Column Label																
Departments	-	b9	c-10	c5	c8	c9	i1	i4	i5	i6	i7	m6	m7	n10	n6	n9	(blank)	Grand Total
Finance Department		13	4	68	4	107	9	3	41	12	27							288
General Management		2	10	29	7	39	1		31	9	42							170
Human Resource Department		2	2	21	6	7	2		42	6	9							97
Marketing Department		28	18	74	26	70	13	1	30	15	50							325
Operations Department		158	99	671	98	711	94	38	272	278	351	1						2771
Production Department		40	8	79	8	87	28	3	37	26	64							380
Purchase Department		22	5	107	4	74	2	3	36	23	55				1	1		333
Sales Department	1	28	23	216	48	175	2	10	88	43	113							747
Service Department		169	63	482	119	522	71	29	210	115	270	2	1	1				2054
(blank)																		
Grand Total	**1**	**462**	**232**	**1747**	**320**	**1792**	**222**	**87**	**787**	**527**	**981**	**3**	**1**	**1**	**1**	**1**		**7165**

2. Finding out hiring and rejection patterns according to days and months

Day	Hired	% of hiring	Rejected	% of rejection
Monday	714	15.21%	362	14.65%
Tuesday	792	16.87%	423	17.12%
Wednesday	836	17.81%	432	17.48%
Thursday	853	18.17%	469	18.98%
Friday	950	20.24%	525	21.25%
Saturday	360	7.67%	171	6.92%
Sunday	189	4.03%	89	3.60%
Total	**4694**		**2471**	

Month	Hired	% of hiring	Rejected	% of rejection
May	1094	23.31%	651	26.35%
June	1078	22.97%	561	22.70%
July	1295	27.59%	650	26.31%
August	1227	26.14%	609	24.65%
Total	**4694**		**2471**	

3. Hiring rate in percentage.

Total number of interviews	7165
Hired	4694
Hiring percentage	**65.51%**

4. Rejection rate in percentage.

Total number of interviews	7165
Rejected	2471
Rejection percentage	**34.49%**

5. Number of candidates who are hired for each department

Departments	Hired
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
Total	**4694**

6. Number of candidates who are rejected for each department

Departments	Rejected
Finance Department	112
General Management	59
Human Resource Department	27
Marketing Department	123
Operations Department	928
Production Department	134
Purchase Department	103
Sales Department	262
Service Department	723
Total	**2471**

7. Number of candidates who are hired for position

Position	Hired	% of hiring
b9	307	6.54%
c-10	105	2.24%
c5	1182	25.19%
c8	193	4.11%
c9	1239	26.40%
i1	151	3.22%
i4	31	0.66%
i5	511	10.89%
i6	337	7.18%
i7	634	13.51%
m6	2	0.04%
m7	0	0.00%
n10	0	0.00%
n6	1	0.02%
n9	0	0.00%
Total	**4693**	

8. Number of candidates who are rejected for position

Position	Hired	% of hiring
b9	155	6.27%
c-10	127	5.14%
c5	565	22.87%
c8	127	5.14%
c9	553	22.38%
i1	71	2.87%
i4	56	2.27%
i5	276	11.17%
i6	190	7.69%
i7	347	14.04%
m6	1	0.04%
m7	1	0.04%
n10	1	0.04%
n6	0	0.00%
n9	1	0.04%
Total	**2471**	

THANK YOU