

## ✓ CASE STUDY 5

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import pandas as pd
import matplotlib.pyplot as plt

# Read the Excel file
file_path = 'Marks_secC.xlsx' # Make sure this file is in your working directory
df = pd.read_excel(file_path)

# Extract relevant columns and rename them
df = df[['Unnamed: 1', 'Unnamed: 6']]
df.columns = ['Student Name', 'Marks']

# Calculate percentage (Maximum marks = 15)
df['Percentage'] = (df['Marks'] / 15) * 100

# Categorize students
greater_75 = df[df['Percentage'] > 75]
between_60_75 = df[(df['Percentage'] >= 60) & (df['Percentage'] <= 75)]
less_60 = df[df['Percentage'] < 60]

# Print categorized students
print("\nStudents with > 75% marks:")
print(greater_75)

print("\nStudents with 60% to 75% marks:")
print(between_60_75)

print("\nStudents with < 60% marks:")
print(less_60)

# Plot Histogram
plt.figure(figsize=(7, 5))
plt.hist(df['Percentage'], bins=range(0, 101, 5), edgecolor='black', color='blue')
plt.xlabel('Percentage')
plt.ylabel('Number of Students')
plt.title('Histogram Plot')
plt.show()

# Plot Scatter Plot
plt.figure(figsize=(10, 5))
plt.scatter(df['Student Name'], df['Percentage'], color='blue', edgecolor='black')
plt.xlabel('Students')
plt.ylabel('Percentage')
plt.title('Scatter Plot')
plt.xticks(rotation=90)
plt.show()
```



Students with > 75% marks:

	Student Name	Marks	Percentage
2	SUMIT SINGH	13.0	86.666667
5	TANISH	12.1	80.666667
16	SHAAD ALI	13.0	86.666667
27	SHAURYA PRATAP SINGH	12.0	80.000000
28	SAKSHAM GUPTA	14.1	94.000000
31	SAURABH KESHARI	15.0	100.000000
35	YUGRATNA	13.0	86.666667
45	SOUMYA GOYAL	14.0	93.333333
50	VIDHI GOYAL	15.0	100.000000
54	UDAY PRATAP SINGH	13.0	86.666667
58	SHARIQUE AHMED	14.0	93.333333
59	SUHANI PAREEK	15.0	100.000000
66	SHIV SHARMA	12.0	80.000000

Students with 60% to 75% marks:

	Student Name	Marks	Percentage
1	UJJWAL MISHRA	11.00	73.333333
4	SHIVA YADAV	9.00	60.000000
11	SHUBHAM PATEL	10.20	68.000000
24	UTSAV KUNAL SINGH	11.00	73.333333
30	YASHRAJ SINGH	10.30	68.666667
32	VIVEK KUMAR	10.00	66.666667
33	SAKSHAM AGARWAL	11.00	73.333333
40	SHREEJA KASHYAP	10.40	69.333333
41	VIDHIKA SINGH	11.18	74.533333
43	YATHARTH MALVIYA	10.40	69.333333
49	UJJAWAL SINGH	9.00	60.000000
51	SHUBH AWASTHI	9.20	61.333333

Students with < 60% marks:

	Student Name	Marks	Percentage
0	SHIKHA SINGH	7.00	46.666667
3	SUKHVEER SINGH YADAV	8.10	54.000000
6	Suman Yadav	5.00	33.333333
7	SHIVAM YADAV	4.90	32.666667
8	SHUBH RAGHAV	6.30	42.000000
9	SAURABH DIXIT	6.10	40.666667
10	SMRITY SHARMA	7.00	46.666667
12	SRISHTI SINGH	5.10	34.000000
13	SHRADDHA TIWARI	7.00	46.666667
14	VANSH GAUTAM	7.50	50.000000
15	SHIVANSH VERMA	3.40	22.666667
17	SOMVEER	7.00	46.666667
18	SATWIK SRIVASTAVA	8.10	54.000000
19	RISHI RAJ	6.40	42.666667
20	VARUN PAL	8.20	54.666667
21	SANJAY KUMAR GUPTA	3.00	20.000000
22	SHREYA	7.00	46.666667
23	SUMIT KUMAR MANDAL	7.00	46.666667
25	SANIYA	7.60	50.666667
26	VIVEK KUMAR	3.00	20.000000
29	VANSHIKA	4.00	26.666667
34	VANSH VARSHNEY	7.00	46.666667
36	SURYA PRAKASH	8.00	53.333333
37	SHIVAM SINGH	6.00	40.000000
38	SHIVAM SINGH	4.00	26.666667
39	UTKARSH KUMAR	8.30	55.333333
42	SHREYASVI SRIVASTAVA	2.20	14.666667
44	SIDDHANT RAGHUVANSHI	5.00	33.333333
46	SHWETA BHARTI	5.00	33.333333
47	SARTHAK GOYAL	4.00	26.666667
48	SHIVAM SINGH	6.00	40.000000
52	SUMIT YAGYASAINI	8.50	56.666667
53	RUDRA DEV MUDGAL	8.20	54.666667
55	TANNU SHARMA	2.00	13.333333
56	SHREE JAISWAL	8.60	57.333333
57	VISHAL TYAGI	7.00	46.666667
60	SHILPI KUMARI	3.00	20.000000
61	YASH PANDEY	6.30	42.000000
62	SIDDHI KUMARI	8.10	54.000000
63	SHREYA SHUKLA	5.32	35.466667
64	YASHVI TOMAR	4.00	26.666667
65	SANDBH DIXIT	2.00	13.333333



