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NAAC GRADE A+ ACCREDITED UNIVERSITY

Experiment No. 2.2

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Branch: MCA
Section/Group: MCD-1/ Grp B
Semester: I
Date of Performance: 07th Nov 22
Subject Name: Python Programming
Subject Code: 22CAH-645

1. **Aim/Overview of the practical:**

   A. Write a python program to generate a simple bar graph using matplotlib. The graph should be properly labelled.

   B. Write a python program to generate Pie-chart using matplotlib. The graph should be properly labelled.

   C. Write a Python program to plot the function y = x2 using the matplotlib libraries.

2. **Code for experiment/practical:**

A.

```
import numpy as np
import matplotlib.pyplot as plt

# data to plot
marks_john = [90, 55, 40, 65]
marks_sam = [85, 62, 54, 20]

# create plot
fig, ax = plt.subplots()
bar_width = 0.35
X = np.arange(4)

p1 = plt.bar(X, marks_john, bar_width, color='b',
label='Lucky')

# The bar of second plot starts where the first bar ends
p2 = plt.bar(X + bar_width, marks_sam, bar_width,
color='g',
label='Rishav')

plt.xlabel('Subject')
plt.ylabel('Scores')
plt.title('Scores in each subject')
plt.xticks(X + (bar_width/2) , ("English", "Science",
"Sports", "History"))
plt.legend()
```

```
plt.tight_layout()
plt.show()
```

B.

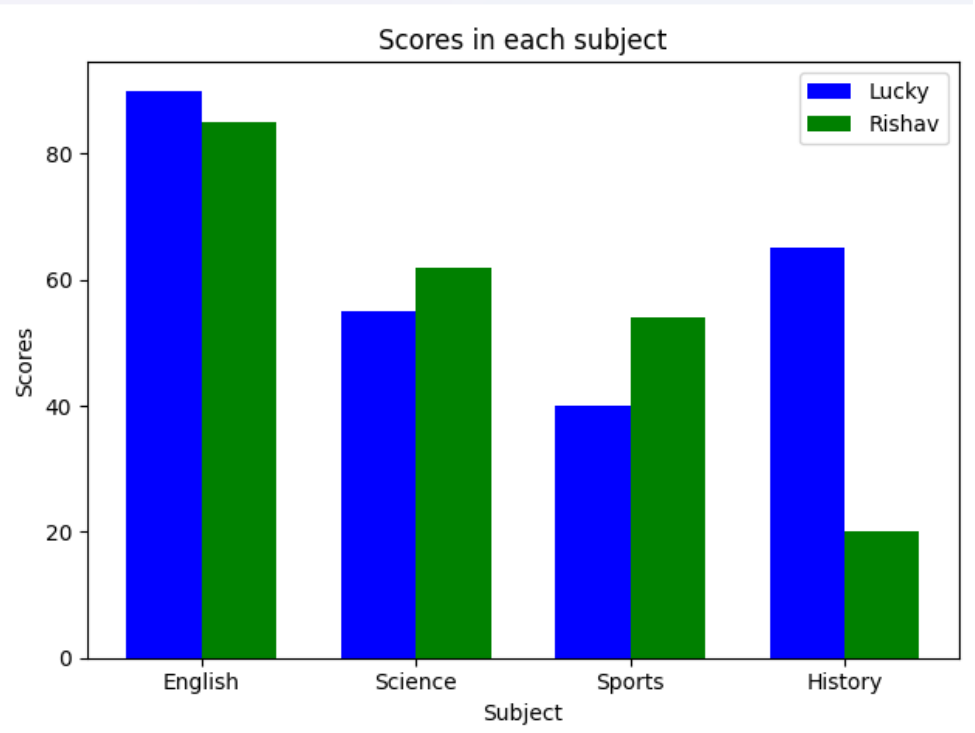
```
import matplotlib.pyplot as plt

# Data to plot
labels = 'Lucky', 'Jesu', 'Rishav', 'Shika'
sizes = [215, 130, 245, 210]
colors = ['gold', 'yellowgreen', 'lightcoral', 'lightskyblue']
explode = (0.1, 0, 0, 0)  # explode 1st slice

# Plot
plt.pie(sizes, explode=explode, labels=labels, colors=colors,
autopct='%1.1f%%', shadow=True, startangle=140)

plt.axis('equal')
plt.show()
```

C.

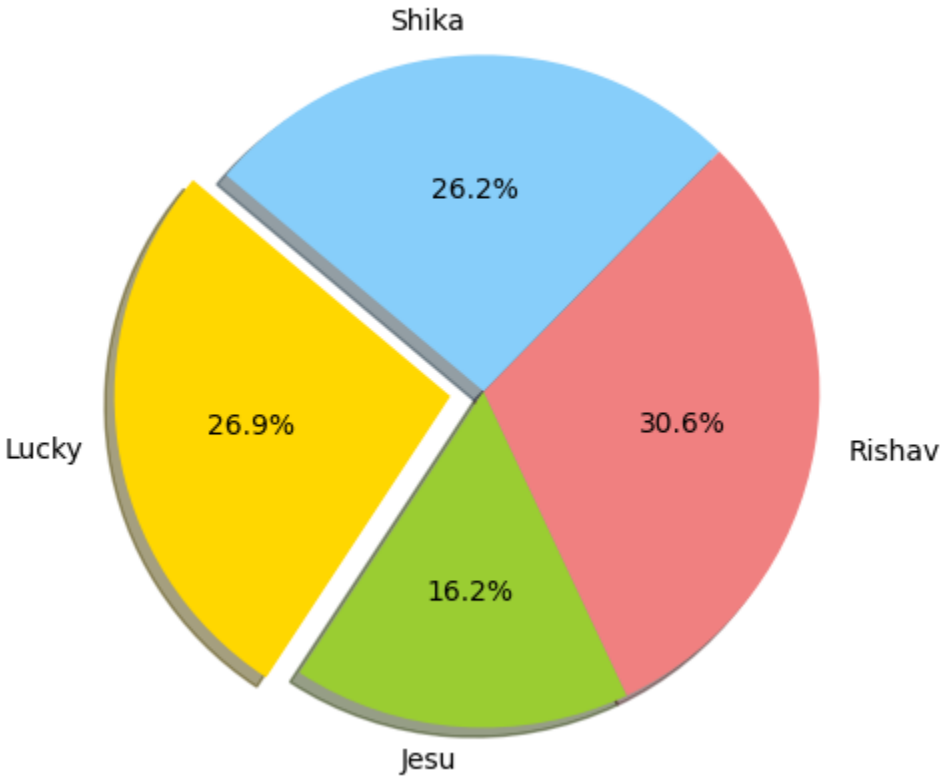
```
import matplotlib.pyplot as plt
x_cords = range(-50,50)
y_cords = [x*x for x in x_cords]

plt.plot(x_cords, y_cords)
plt.show()
```

3. Output:

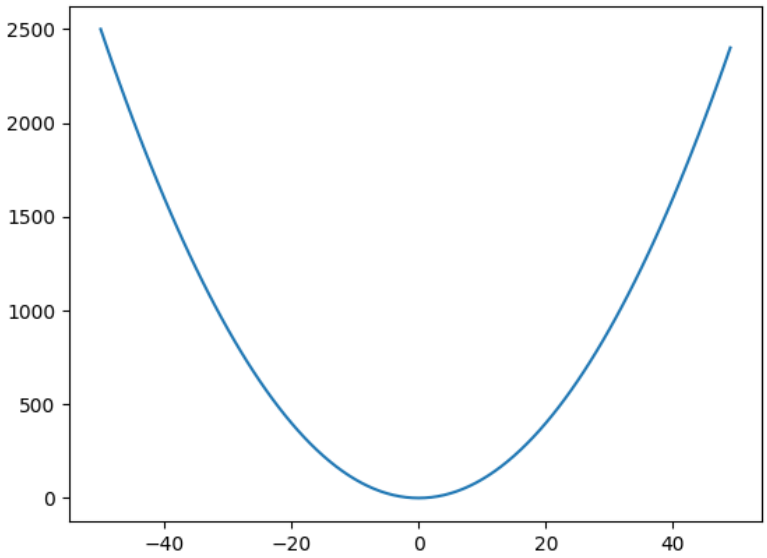
A.



B.


Shika
26.2%
Lucky
26.9%
30.6%
Rishav
16.2%
Jesu

C.


2500
2000
1500
1000
500
0
−40
−20
0
20
40

********** THE END **********