

9.	24/09/25	Implement Exceptions and		
		Exception Handling in python		
10.	24/09/25	Use the Matplotlib Module for		
		Plotting in Python		
11.	08/10/25	Use the Tkinter Module for UI		
		design		
12.	08/10/25	Simulate gaming concepts Using		
		pygame		

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15/10/25

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Task-10. Matplotlib module for plotting in Python

Aim: To analyze the performance of students in different subjects using various charts (Line, Bar and Pie) with the help matplotlib in python.

Algorithm

1. Start the program
2. Import the matplotlib and numpy libraries.
3. Create a dataset for 5 students and their marks in 3 subjects (math, science, english).
4. Line chart:
 - Plot marks of all students for each subject
 - Add title, labels, legend and grid.
5. Bar chart:
 - Calculate average marks for each subject
 - Plot a bar chart comparing the averages.
6. Pie Chart:
 - Select one student
 - Plot a pie chart showing the percentages of marks in each subject.
 - Add all chart using plt.show().
7. End the program.

Program

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

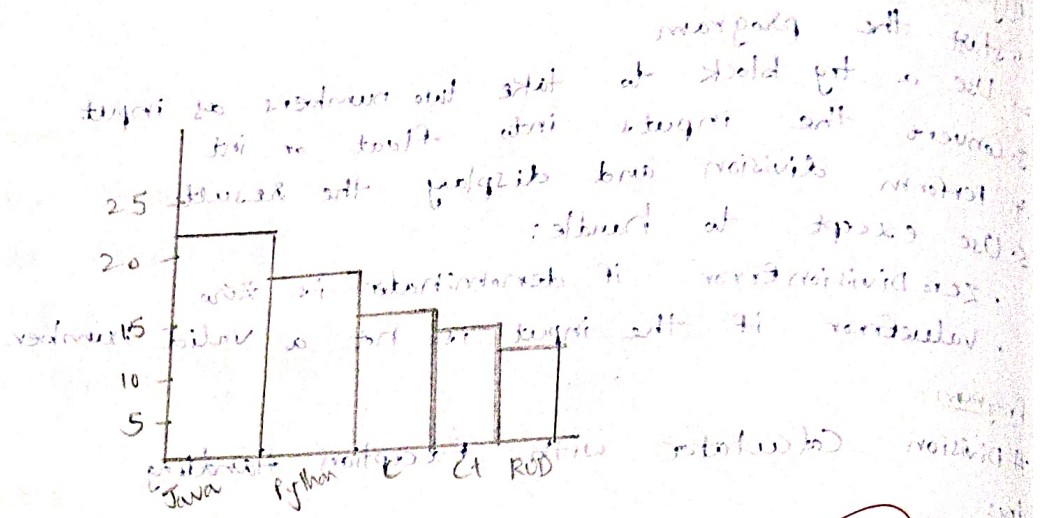
# Data
Students = ['S1', 'S2', 'S3', 'S4', 'S5']
Maths = [85, 78, 92, 70, 90]
Science = [80, 75, 85, 68, 90]
English = [78, 82, 88, 72, 85]

plt.figure(figsize=(10, 6))

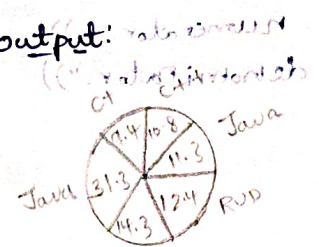
plt.plot(Students, Maths, marker='o', label='Maths')
plt.plot(Students, Science, marker='o', label='Science')
plt.plot(Students, English, marker='o', label='English')

plt.plot(Students, performance in different subjects')
```


the following program will compare and print a list of
 activities and priorities for students and
 their future goals.



Sample output:



(Note: Percentages may vary slightly due to rounding.)

Activity	Priority
Learning a new language	High
Working on a project	Medium
Reading a book	Low
Attending a conference	High
Networking	Medium
Writing a blog	Low
Teaching others	High
Contributing to open source	Medium
Building a portfolio	High
Applying for jobs	High

the following program will compare and print a list of
 activities and priorities for students and
 their future goals.

Input:

Students: s1, s2, s3, s4, s5

Subjects: Maths, Science, English

Marks:

Maths = [85, 78, 92, 70, 88]

Science = [80, 75, 85, 68, 90]

English = [78, 82, 88, 72, 85]

Output:

- Line Chart: Marks of all 3 students across the 3 subjects
- Bar chart: Comparison of average marks per subject
- Pie chart: Distribution of marks across subjects for

Student 1.

[22, 27, 28, 25, 22] = Maths

[20, 10, 10, 10, 20] = Science

[10, 20, 20, 20, 10] = English

[20, 20, 20, 20, 20] = Average

(10, 20) = 25% (10) = 25%

(20, 20) = 25% (20) = 25%

(10, 20) = 25% (10) = 25%

(20, 20) = 25% (20) = 25%

(10, 20) = 25% (10) = 25%


```

plt.xlabel('students')
plt.xlabel('Marks')
plt.legend()
plt.grid(True)
plt.show()
avg-marks = (np.mean(maths), np.mean(science), np.mean(english))
subjects = ['maths', 'science', 'english']
plt.figure(figsize=(8,5))
plt.bar(subjects, avg-marks, color=['blue', 'green', 'orange'])
plt.title('Average marks of each subject')
plt.xlabel('subjects')
plt.ylabel('Average marks')
plt.grid(axis='y')
plt.show()
student1-marks = [maths[0], science[0], english[0]]
plt.figure(figsize=(6,6))
plt.pie(student-marks, label=students, output =
plt.title('percentage of marks for students:')
plt.show()

```

VEL TECH-CSE	
EX NO.	10
PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	20
DATE WITH DATE	15/10/25

Result:-

The program successfully visualized the students performance using matplotlib module.

15/10/25