USE CASE

Develop an application to perform Plotting Probabilities Using Matplotlib

AIM:

To develop a Python application that visualizes probabilities of events using Matplotlib, helping users understand how probabilities are distributed.

ALGORITHM

1.Start

2.Import Libraries: Use matplotlib.pyplot for plotting and numpy for calculations.

3.Define Events: Decide the experiment (e.g., coin toss, dice roll).

4.Calculate Probabilities: For each possible outcome, compute its probability.

5.Plot Probabilities: Use bar chart or pie chart to display probabilities.

6.Display Plot: Show the graph with proper labels and title.

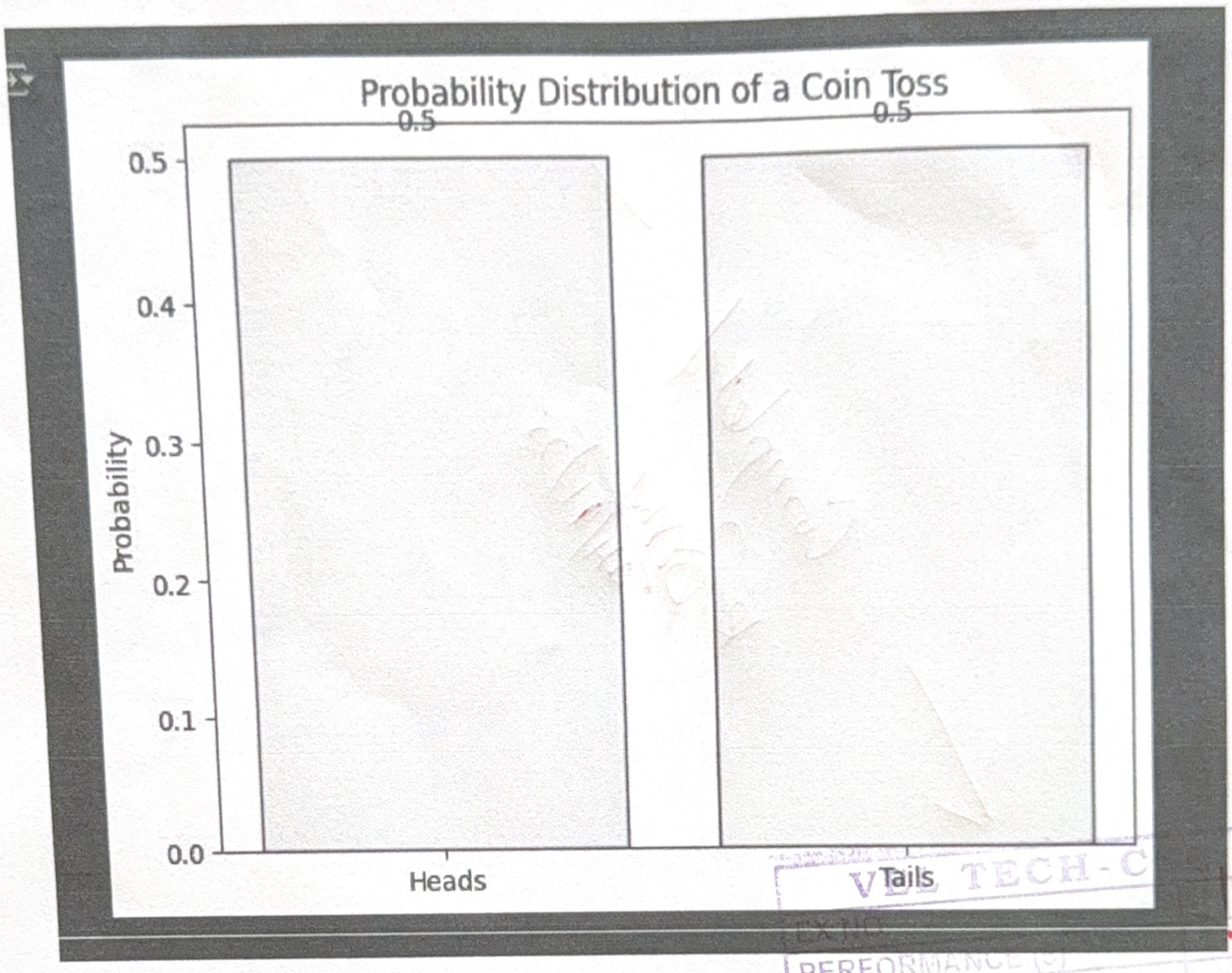
7.End

PROGRAM

```
import matplotlib.pyplot as plt

outcomes = ["Heads", "Tails"]

probabilities = [0.5, 0.5]

plt.bar(outcomes, probabilities, color='lightgreen', edgecolor='black')

plt.title("Probability Distribution of a Coin Toss")

plt.ylabel("Probability")
```

```
for i, prob in enumerate(probabilities):
    plt.text(i, prob + 0.02, str(prob), ha='center')

plt.show()
```

OUTPUT:



PERFORMANCE (5)	5
RESULT AND ANALYSIS (5)	5
VIVA VOCE (5)	5
RECORD (5)	5
TOTAL (20)	20
SIGN WITH DATE	20/10/25

RESULT : Thus , the Python program that visualizes probabilities of events using Matplotlib has been executed successfully.