

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

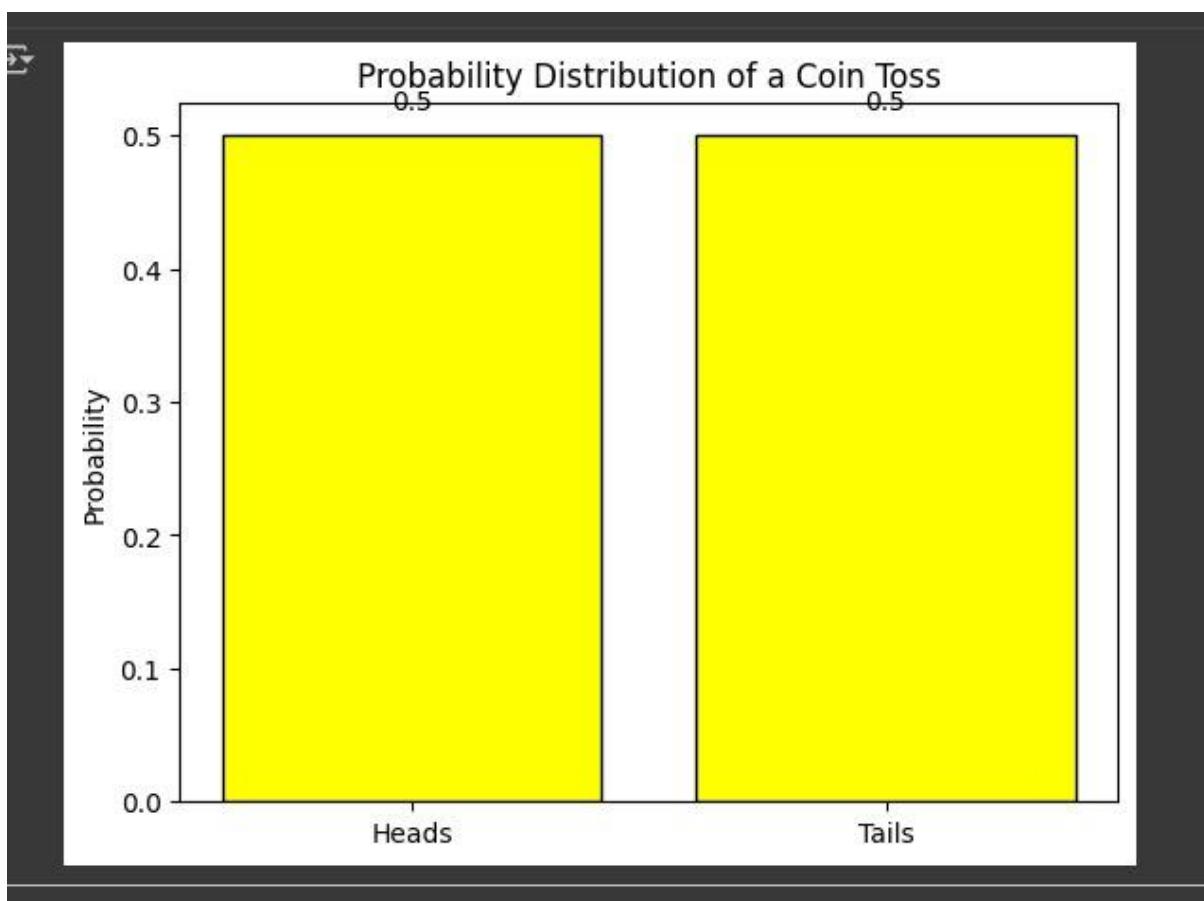
- 1.Start
- 2.Import Libraries: Use matplotlib.pyplot for plotting and numpy for calculations.
- 3.Define Events: Decide the experiment (e.g., coin toss, dice roll).
- 4.Calculate Probabilities: For each possible outcome, compute its probability.
- 5.Plot Probabilities: Use bar chart or pie chart to 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:



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

