

TASK-1 (Performing Visualization using a bar chart for continuous distribution)

PROGRAM:

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

# Generate synthetic dataset
np.random.seed(0)
ages = np.random.randint(1, 100, 1000) # Generate 1000 random ages
between 1 and 100
genders = np.random.choice(['Male', 'Female'], 1000) # Randomly assign
genders

# Create DataFrame
df = pd.DataFrame({
    'Age': ages,
    'Gender': genders
})

# Plotting the distribution of ages
plt.figure(figsize=(10, 5))
plt.hist(df['Age'], bins=20, color='skyblue', edgecolor='black')
plt.title('Age Distribution')
plt.xlabel('Age')
plt.ylabel('Frequency')
plt.grid(True)
plt.show()

# Plotting the distribution of genders
plt.figure(figsize=(10, 5))
gender_counts = df['Gender'].value_counts()
plt.bar(gender_counts.index, gender_counts.values, color=['blue',
'pink'], edgecolor='black')
plt.title('Gender Distribution')
plt.xlabel('Gender')
plt.ylabel('Frequency')
plt.show()
```