```
import pandas as pd

# Create dataset
data = {'Marks': [35, 67, 89, 45, 72, 90, 55, 60]}
df = pd.DataFrame(data)

# Equal Width Binning (3 bins)
df['Equal_Width_Bins'] = pd.cut(df['Marks'], bins=3)

print(df)
```

```
   Marks  Equal_Width_Bins
0     35  (34.945, 53.333]
1     67  (53.333, 71.667]
2     89    (71.667, 90.0]
3     45  (34.945, 53.333]
4     72    (71.667, 90.0]
5     90    (71.667, 90.0]
6     55  (53.333, 71.667]
7     60  (53.333, 71.667]
```

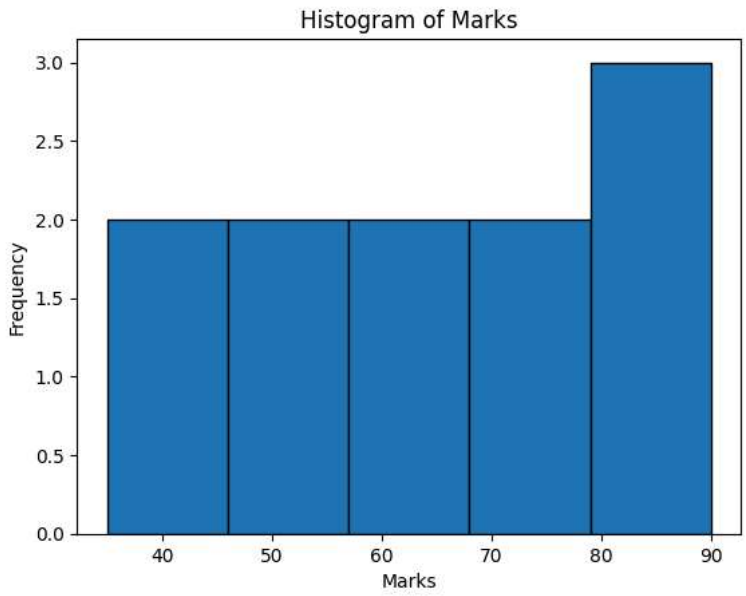
```
import pandas as pd

data = {'Marks': [35, 67, 89, 45, 72, 90, 55, 60]}
df = pd.DataFrame(data)

# Equal Frequency Binning (3 bins)
df['Equal_Freq_Bins'] = pd.qcut(df['Marks'], q=3)

print(df)
```

```
   Marks   Equal_Freq_Bins
0     35  (34.999, 56.667]
1     67  (56.667, 70.333]
2     89    (70.333, 90.0]
3     45  (34.999, 56.667]
4     72    (70.333, 90.0]
5     90    (70.333, 90.0]
6     55  (34.999, 56.667]
7     60  (56.667, 70.333]
```

```
bins = [0, 40, 60, 80, 100]
labels = ['Poor', 'Average', 'Good', 'Excellent']

df['Grade'] = pd.cut(df['Marks'], bins=bins, labels=labels)

print(df)
```

```
   Marks   Equal_Freq_Bins      Grade
0     35  (34.999, 56.667]       Poor
1     67  (56.667, 70.333]       Good
2     89    (70.333, 90.0]  Excellent
3     45  (34.999, 56.667]    Average
4     72    (70.333, 90.0]       Good
5     90    (70.333, 90.0]  Excellent
6     55  (34.999, 56.667]    Average
7     60  (56.667, 70.333]    Average
```

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

# Dataset
marks = [35, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90]
df = pd.DataFrame({'Marks': marks})

# Draw Histogram
plt.hist(df['Marks'], bins=5, edgecolor='black')
plt.title("Histogram of Marks")
plt.xlabel("Marks")
plt.ylabel("Frequency")
plt.show()
```




```
bins = [30, 45, 60, 75, 90, 100]
labels = ['Very Low', 'Low', 'Medium', 'High', 'Very High']

df['Category'] = pd.cut(df['Marks'], bins=bins, labels=labels)

print(df)
```

```
    Marks  Category
0      35  Very Low
1      45  Very Low
2      50       Low
3      55       Low
4      60       Low
5      65    Medium
6      70    Medium
7      75    Medium
8      80      High
9      85      High
10     90      High
```

Start coding or generate with AI.