Practical No : 01

Aim : To calculate basic statistical descriptions of a dataset and visualize the results.

Software Used : IDLE

Theory :

Dataset : File name (heights_weights.csv)

```
id,height,weight
1,170,65
2,165,70
3,180,80
4,175,75
5,160,55
6,155,50
7,190,90
8,185,85
9,170,68
10,175,72
```

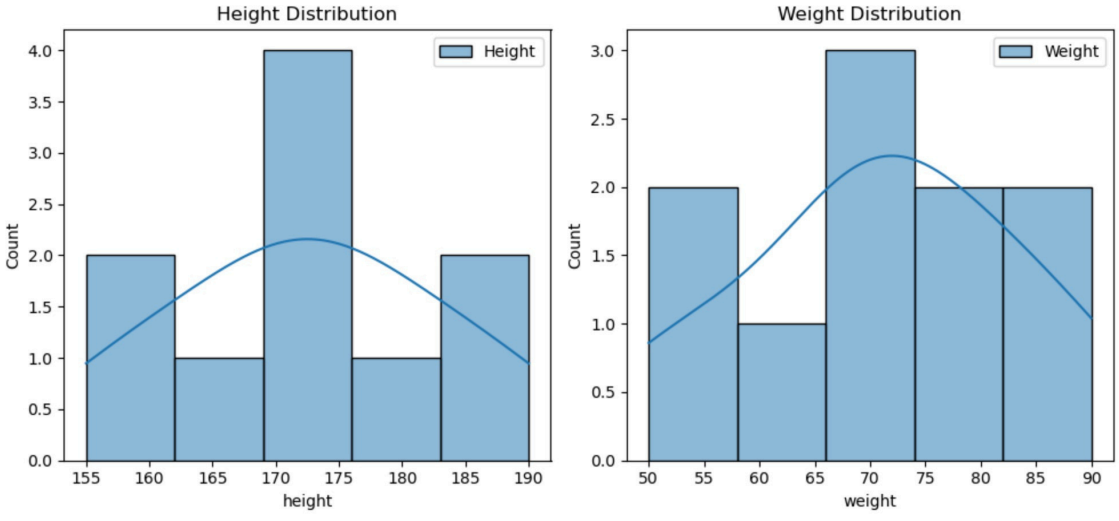
Code :

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


# Load dataset
df = pd.read_csv('heights_weights.csv')

# Basic Statistical Descriptions
mean_height = df['height'].mean()
median_height = df['height'].median()
```

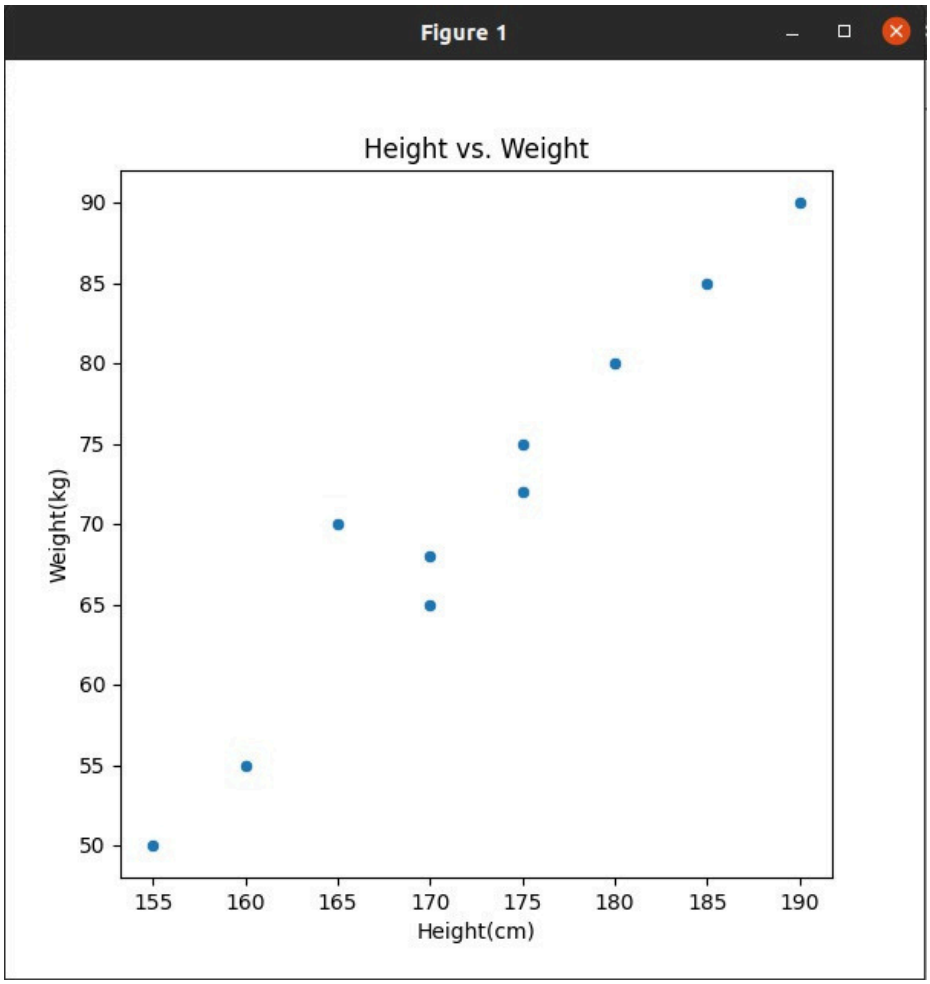
```
median_height = df['height'].median()
std_height = df['height'].std()
mean_weight = df['weight'].mean()
median_weight = df['weight'].median()
std_weight = df['weight'].std()

print(f"Mean Height: {mean_height}")
print(f"Median Height: {median_height}")
print(f"Standard Deviation of Height: {std_height}")
print(f"Mean Weight: {mean_weight}")
print(f"Median Weight: {median_weight}")
print(f"Standard Deviation of Weight: {std_weight}")
# Data Visualization # Histogram
plt.figure(figsize=(10, 5))
plt.subplot(1, 2, 1)
sns.histplot(df['height'], kde=True)
plt.title('Height Distribution')
plt.legend(hist1.patches, ["Height"])
plt.subplot(1, 2, 2) sns.histplot(df['weight'],
kde=True)
plt.title('Weight Distribution')
plt.legend(hist2.patches, ["Weight"])

plt.suptitle('Sarthak Bante [07]')


plt.tight_layout()
plt.show()
# Scatter Plot plt.figure(figsize=(6, 6))
sns.scatterplot(x='height', y='weight', data=df)
plt.title('Height vs. Weight')
plt.xlabel('Height (cm)')
plt.ylabel('Weight (kg)')
plt.show()
```

Result :

Sarthak Bante [07]



```
Mean Height: 172.50
Median Height: 172.50
Standard Deviation of Height: 10.87
Mean Weight: 71.00
Median Weight: 71.00
Standard Deviation of Weight: 12.46
```



Conclusion : In this practical, we have perform to calculate basic statistical descriptions of a dataset and visualize the results.