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import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import scipy.stats as stats

data = {
    "Age": [23, 45, 31, 35, 52, 46, 38, 29, 41, 50, 34, 48, 36, 44, 39, 28, 32, 47],
    "BodyFat": [14.2, 25.5, 18.9, 20.1, 29.4, 27.2, 21.8, 15.3, 24.5, 30.1,
                19.6, 28.7, 22.3, 26.8, 23.1, 16.4, 18.7, 27.9]
}

df = pd.DataFrame(data)

print("Descriptive Statistics:")
for column in df.columns:
    print(f"\n{column}:")
    print(f"  Mean: {df[column].mean():.2f}")
    print(f"  Median: {df[column].median():.2f}")
    print(f"  Standard Deviation: {df[column].std():.2f}")

plt.figure(figsize=(10, 4))

plt.subplot(1, 2, 1)
sns.boxplot(y=df["Age"], color="skyblue")
plt.title("Boxplot of Age")

plt.subplot(1, 2, 2)
sns.boxplot(y=df["BodyFat"], color="salmon")
plt.title("Boxplot of Body Fat %")

plt.tight_layout()
plt.show()

plt.figure(figsize=(6, 5))
sns.scatterplot(x="Age", y="BodyFat", data=df, color="green")
plt.title("Scatter Plot: Age vs Body Fat %")
plt.xlabel("Age")
plt.ylabel("Body Fat %")
plt.grid(True)
plt.show()

plt.figure(figsize=(6, 5))
stats.probplot(df["Age"], dist="norm", plot=plt)
plt.title("Q-Q Plot for Age")
plt.grid(True)
plt.show()

plt.figure(figsize=(6, 5))
stats.probplot(df["BodyFat"], dist="norm", plot=plt)
plt.title("Q-Q Plot for Body Fat %")
plt.grid(True)
plt.show()

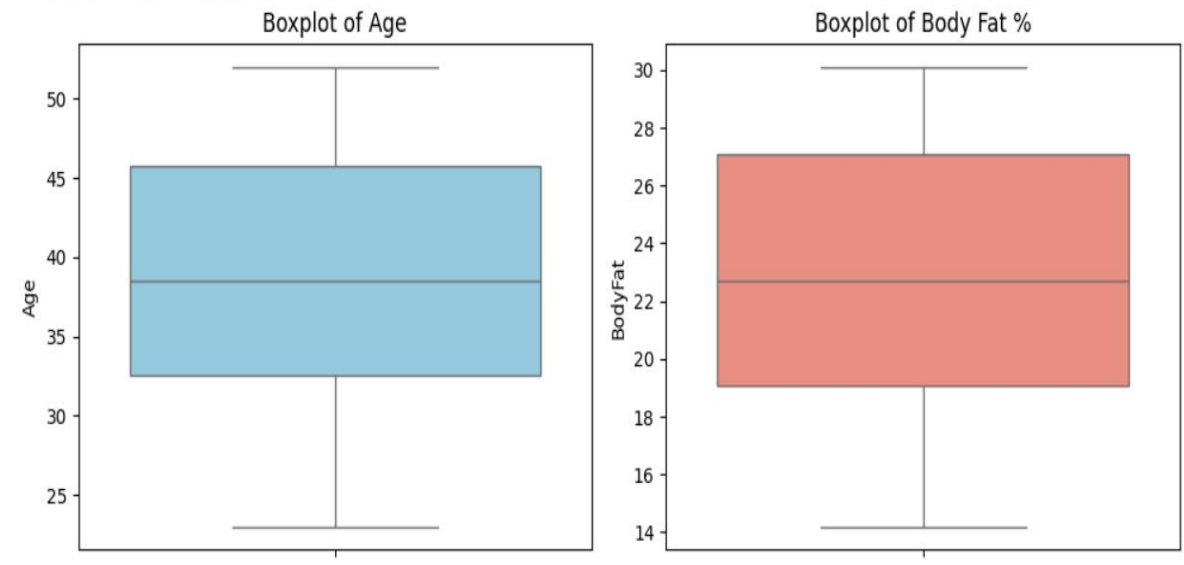
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OUTPUT

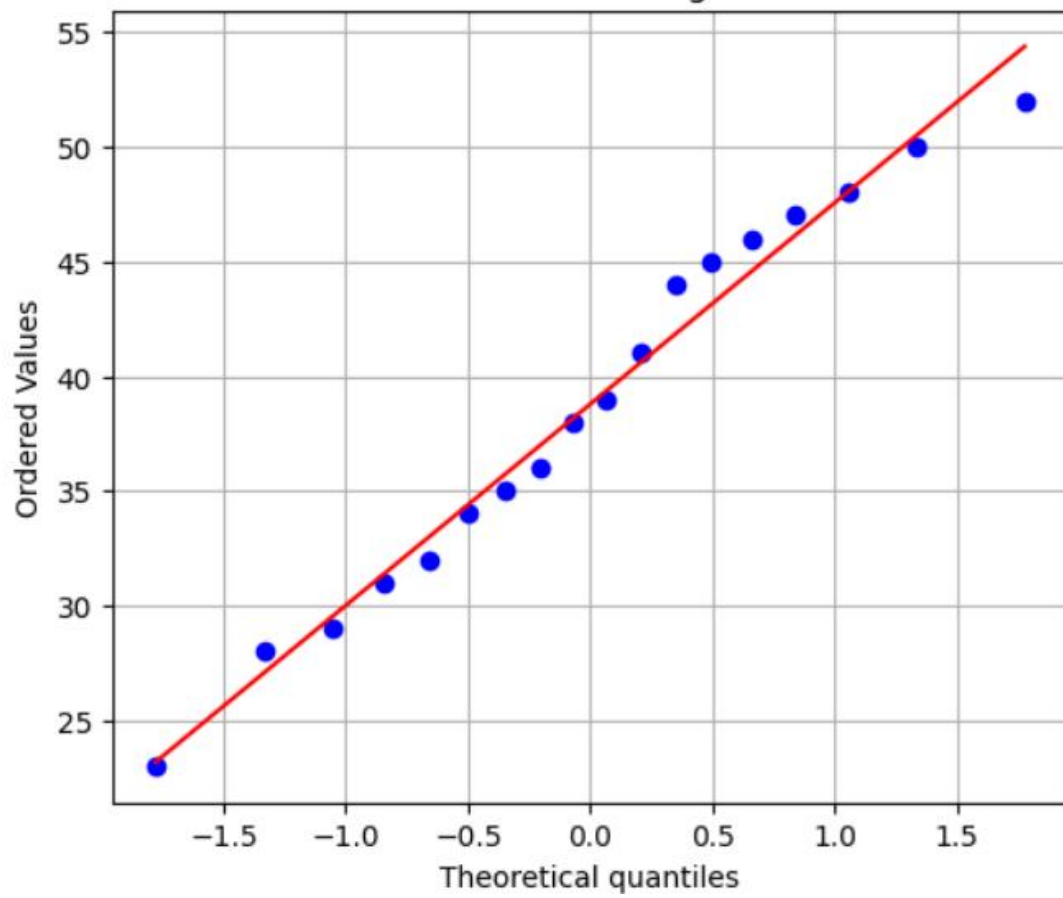
Descriptive Statistics:

Age:
Mean: 38.78
Median: 38.50
Standard Deviation: 8.36

BodyFat:
Mean: 22.81
Median: 22.70
Standard Deviation: 5.00



Q-Q Plot for Age



Q-Q Plot for Body Fat %

