Question18:

18. Suppose a hospital tested the age and body fat data for 18 randomly selected adults with the

following result.

\*Question:\*·

Calculate the mean, median and standard deviation of age and %fat using Pandas.

· Draw the boxplots for age and %fat.

· Draw a scatter plot and a q-q plot based on these two variables

Answer:

import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns

import scipy.stats as stats

csv\_path = r"C:\Users\jampa\Downloads\age\_fat\_percentage.csv"

df = pd.read\_csv(csv\_path)

print("Mean:\n", df.mean())

print("\nMedian:\n", df.median())

print("\nStandard Deviation:\n", df.std())

fig, axes = plt.subplots(2, 2, figsize=(12, 10))

# Boxplots

sns.boxplot(y=df["age"], ax=axes[0, 0])

axes[0, 0].set\_title("Boxplot of Age")

sns.boxplot(y=df["fat\_pct"], ax=axes[0, 1])

axes[0, 1].set\_title("Boxplot of Body Fat Percentage")

# Scatter plot

sns.scatterplot(x=df["age"], y=df["fat\_pct"], ax=axes[1, 0])

axes[1, 0].set\_title("Scatter Plot of Age vs Body Fat Percentage")

axes[1, 0].set\_xlabel("Age")

axes[1, 0].set\_ylabel("Body Fat Percentage")

# Q-Q Plot

stats.probplot(df["fat\_pct"], dist="norm", plot=axes[1, 1])

axes[1, 1].set\_title("Q-Q Plot of Body Fat Percentage")

plt.tight\_layout()

plt.show()

Output:



