import pandas as pd

import numpy as np

import seaborn as sns

import matplotlib.pyplot as plt

# Load dataset

url = r"C:\Users\Rutuja Habib\Downloads\Academic\_performance.csv"

df = pd.read\_csv(url)

# Display the dataset

print(df)

# Step 1: Scanning for NULL values

print("The Missing Values:")

print(df.isnull().sum())

# Step 2: Filling missing values

df['Age'] = df['Age'].fillna(df['Age'].median())

df['Logical\_Reasoning'] = df['Logical\_Reasoning'].fillna(df['Logical\_Reasoning'].mean())

df['Quantitative\_Analysis'] = df['Quantitative\_Analysis'].fillna(df['Quantitative\_Analysis'].mean())

df['Comprehension'] = df['Comprehension'].fillna(df['Comprehension'].mean())

print("\nAfter filling in the NULL values:")

print(df)

print("\nMissing Values After Filling:")

print(df.isnull().sum())

# Step 3: Creating boxplots for numeric columns to detect outliers

print("\nOutlier Detection:")

for column in ['Age', 'Logical\_Reasoning', 'Quantitative\_Analysis', 'Comprehension']:

sns.boxplot(x=df[column])

plt.title(f'Boxplot of {column}')

plt.show()