```
import matplotlib.pyplot as plt
import seaborn as sns
import pandas as pd
import numpy as np
from sklearn.preprocessing import StandardScaler
import io

# Generate synthetic retail data
data = {
    'CustomerID': range(1, 201),
    'Annual Income': np.random.randint(15000, 120000, 200),
    'Spending Score': np.random.randint(1, 100, 200)
}
df = pd.DataFrame(data)

# Data Preprocessing
# 1. Check for missing values
missing_summary = df.isnull().sum()

# 2. Standardize features
scaler = StandardScaler()
df[['Annual Income', 'Spending Score']] = scaler.fit_transform(df[['Annual Income', 'Spending
Score']])

# 3. Show summary statistics after standardization
summary_stats = df[['Annual Income', 'Spending Score']].describe()

# 4. Visualize standardized features
df_melted = df.melt(id_vars='CustomerID', value_vars=['Annual Income', 'Spending Score'],
var_name='Feature', value_name='Value')
plt.figure(figsize=(8, 5))
sns.histplot(data=df_melted, x='Value', hue='Feature', element='step', stat='density',
common_norm=False)
plt.title('Distribution of Standardized Features')
plt.tight_layout()
img_buf = io.BytesIO()
plt.savefig(img_buf, format='png')
plt.close()
img_buf.seek(0)
```