

# **Health Care Exploration**

## **1.Introduction:**

Healthcare data exploration is an essential process in medical research and patient care, as it helps identify key trends and relationships among various health parameters. This report focuses on analyzing patient data, including age, blood pressure, sugar levels, and weight, to gain insights into potential correlations and patterns. This analysis can contribute to early disease detection, better treatment plans, and overall improvements in patient health outcomes.

## **2.Methodology:**

The methodology for this analysis involves a structured approach to exploring healthcare data. The first step was to extract patient information from an image and convert it into a tabular format using the Pandas library. The dataset includes key attributes such as Age, Blood Pressure, Sugar Level, and Weight. Once the data was structured, exploratory data analysis was performed to detect patterns, anomalies, and trends within the dataset. Visualization techniques were then applied using Matplotlib and Seaborn to illustrate relationships between variables. Scatter plots were used to examine

correlations, histograms to analyze the distribution of sugar levels, and pair plots to identify overall trends in the dataset. This systematic methodology ensures an effective and data-driven exploration of healthcare trends.

### 3.Code typed:

```
import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns


# Creating the DataFrame

data = {

    "PatientID": list(range(1, 21)),

    "Age": [44, 39, 49, 58, 35, 129, 46, 28, 45, 60, 41, 48, 58, 43, 176, 70, 48, 123, 147, 56],

    "BloodPressure": [118, 109, 149, 121, 109, 95, 132, 93, 145, 197, 143, 141, 93, 133, 176, 193, 135, 123, 147, 119],

    "SugarLevel": [87.89249, 177.3218, 144.1483, 90.3554, 126.4218, 25.27311, 146.6077, 109.755, 103.1938, 192.7264, 180.5788, 181.9725, 181.7836, 133.3857, 87.00503, 193.2728, 135.9393, 83.3004, 125.484, 160.7159],

    "Weight": [105.568, 105.7034, 77.78707, 115.2448, 70.38379, 119.0504, 62.17752, 81.79226, 94.63737, 131.5947, 103.5847, 61.45498, 50.68483, 113.1866, 84.93858, 77.71504, 106.576, 83.3004, 74.08194, 111.8657]

}


df = pd.DataFrame(data)
```

```
# Plotting Age vs Blood Pressure
```

```
plt.figure(figsize=(8,5))
```

```
sns.scatterplot(x=df['Age'], y=df['BloodPressure'], color='blue')
```

```
plt.title('Age vs Blood Pressure')
```

```
plt.xlabel('Age')
```

```
plt.ylabel('Blood Pressure')
```

```
plt.show()
```

```
# Plotting Sugar Level Distribution
```

```
plt.figure(figsize=(8,5))
```

```
sns.histplot(df['SugarLevel'], bins=10, kde=True, color='green')
```

```
plt.title('Sugar Level Distribution')
```

```
plt.xlabel('Sugar Level')
```

```
plt.ylabel('Count')
```

```
plt.show()
```

```
# Plotting Weight vs Sugar Level
```

```
plt.figure(figsize=(8,5))
```

```
sns.scatterplot(x=df['Weight'], y=df['SugarLevel'], color='red')
```

```
plt.title('Weight vs Sugar Level')
```

```
plt.xlabel('Weight')
```

```
plt.ylabel('Sugar Level')
```

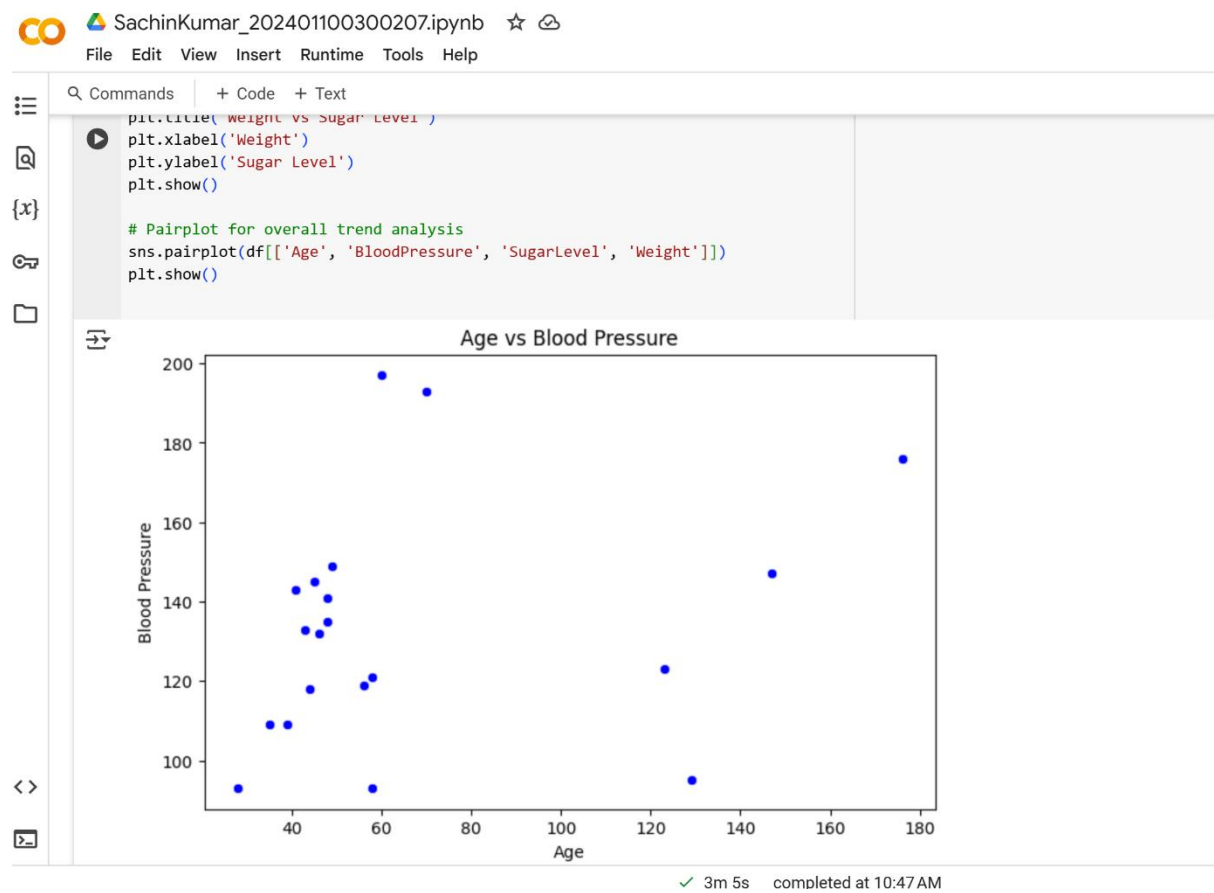
```
plt.show()
```

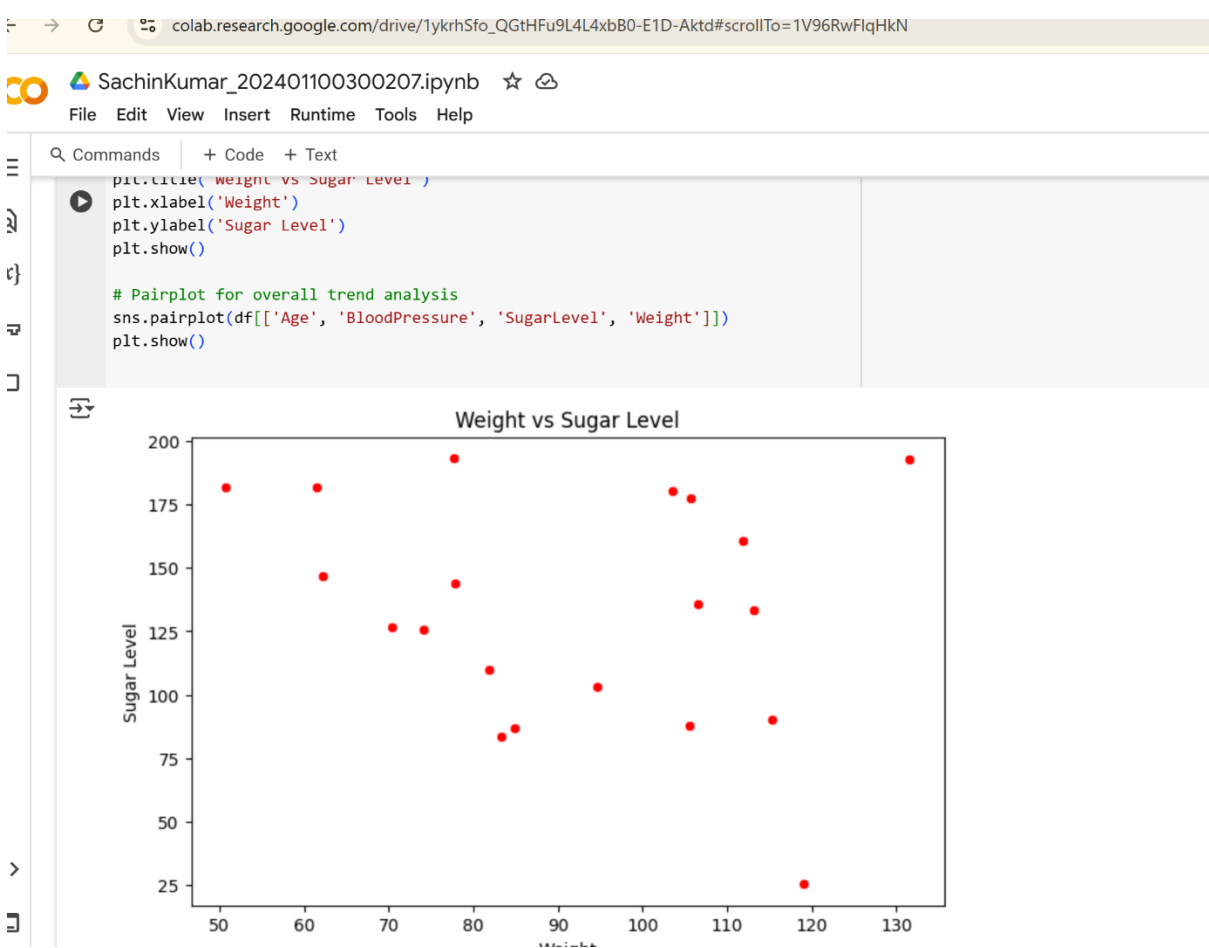
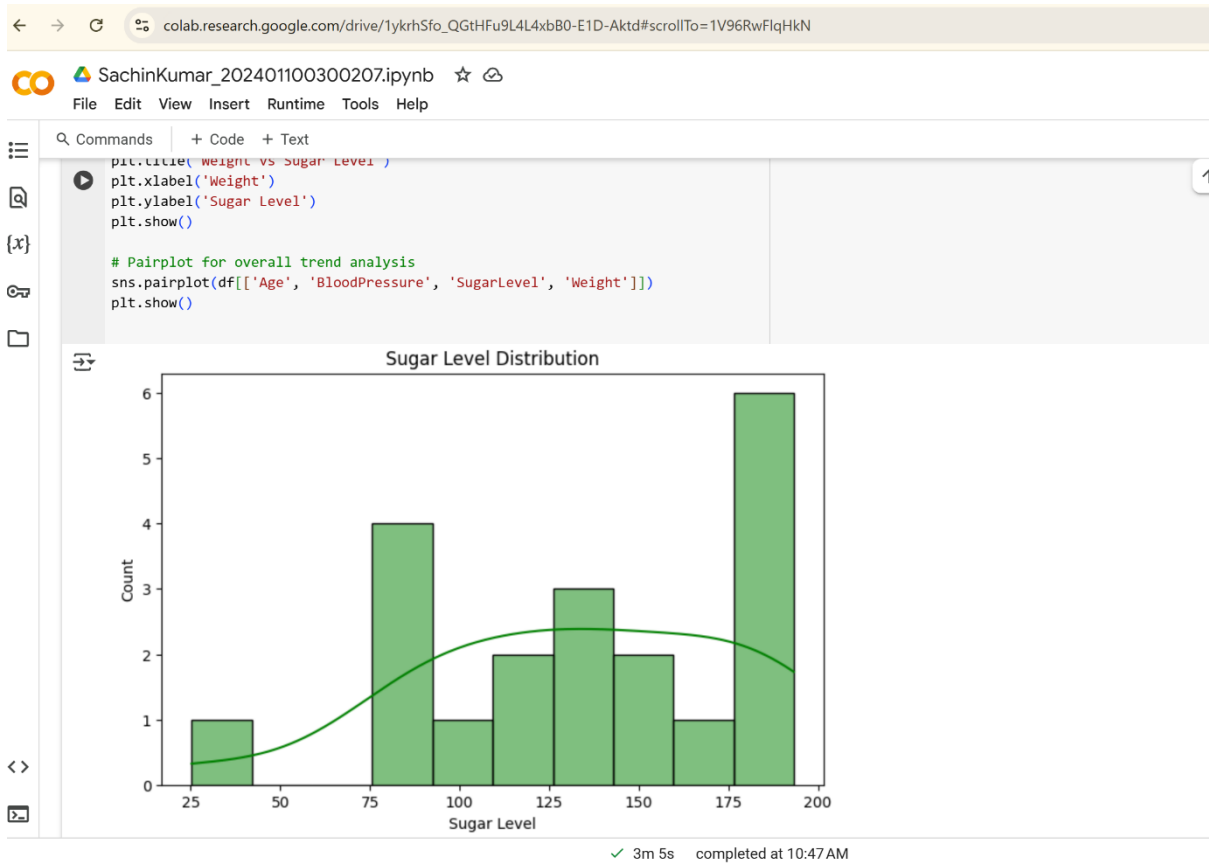
```
# Pairplot for overall trend analysis
```

```
sns.pairplot(df[['Age', 'BloodPressure', 'SugarLevel', 'Weight']])
```

```
plt.show()
```

## 4.Screenshots:





Commands + Code + Text

```
plt.title('Weight vs Sugar Level')
plt.xlabel('Weight')
plt.ylabel('Sugar Level')
plt.show()

# Pairplot for overall trend analysis
sns.pairplot(df[['Age', 'BloodPressure', 'SugarLevel', 'Weight']])
plt.show()
```

