```
import pandas as pd
import matplotlib.pyplot as plt
```

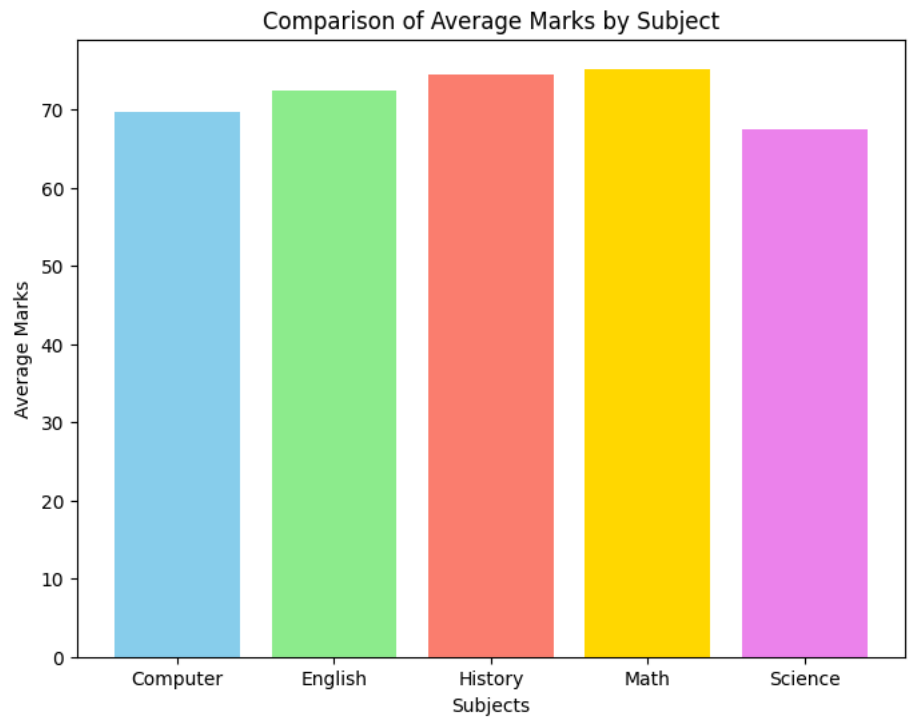
```
# Load dataset
df = pd.read_csv("/content/student_marks .csv")

# Display first few rows
print(df.head())
```

```
    Student   Subject  Marks
0  Student1      Math     78
1  Student1   Science     91
2  Student1   English     68
3  Student1   History     54
4  Student1  Computer     82
```

```
# Group by Subject and calculate mean
avg_marks = df.groupby("Subject")["Marks"].mean().reset_index()

print("Average Marks per Subject:")
print(avg_marks)
```

```
Average Marks per Subject:
    Subject  Marks
0  Computer   69.7
1   English   72.5
2   History   74.5
3      Math   75.2
4   Science   67.4
```

```
plt.figure(figsize=(8,6))
plt.bar(avg_marks["Subject"], avg_marks["Marks"],
        color=['skyblue','lightgreen','salmon','gold','violet'])

# Add labels & title
plt.xlabel("Subjects")
plt.ylabel("Average Marks")
plt.title("Comparison of Average Marks by Subject")

# Show chart
plt.show()
```




```
toughest = avg_marks.loc[avg_marks["Marks"].idxmin()]
easiest = avg_marks.loc[avg_marks["Marks"].idxmax()]

print("📉 Toughest Subject:", toughest["Subject"], "with average marks", toughest["Marks"])
```

```
print("📈 Easiest Subject:", easiest["Subject"], "with average marks", easiest["Marks"])
```

```
📉 Toughest Subject: Science with average marks 67.4
📈 Easiest Subject: Math with average marks 75.2
```

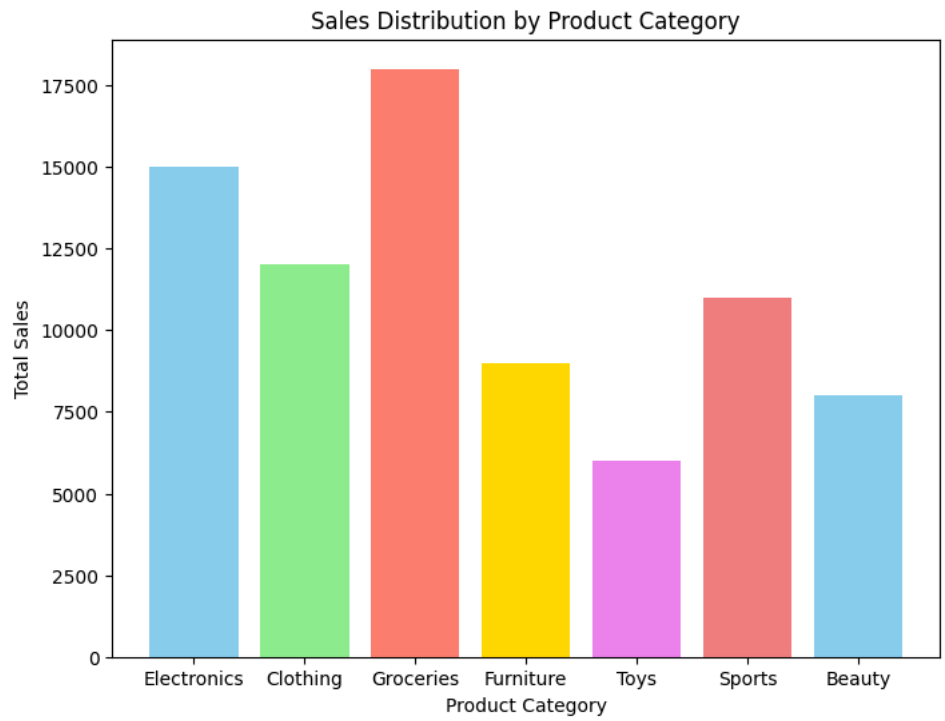
2)Create a Bar Chart Using Matplotlib

```
import pandas as pd
import matplotlib.pyplot as plt
```

```
# Load dataset
df = pd.read_csv("sales_category.csv")

# Display first few rows
print(df.head())
```

```
      Category  Sales
0  Electronics  15000
1     Clothing  12000
2    Groceries  18000
3    Furniture   9000
4         Toys   6000
```

```
# Plot bar chart
plt.figure(figsize=(8,6))
plt.bar(df['Category'], df['Sales'],
        color=['skyblue','lightgreen','salmon','gold','violet','lightcoral'])

# Add labels and title
plt.xlabel("Product Category")
plt.ylabel("Total Sales")
plt.title("Sales Distribution by Product Category")

# Show plot
plt.show()
```




```
# Find the category with maximum sales
best_category = df.loc[df['Sales'].idxmax()]

print("🏆 Best-Selling Category:", best_category['Category'],
      "with sales of", best_category['Sales'])
```

```
🏆 Best-Selling Category: Groceries with sales of 18000
```