A. Task 1: Exploratory Data Analysis (EDA) and Business Insights

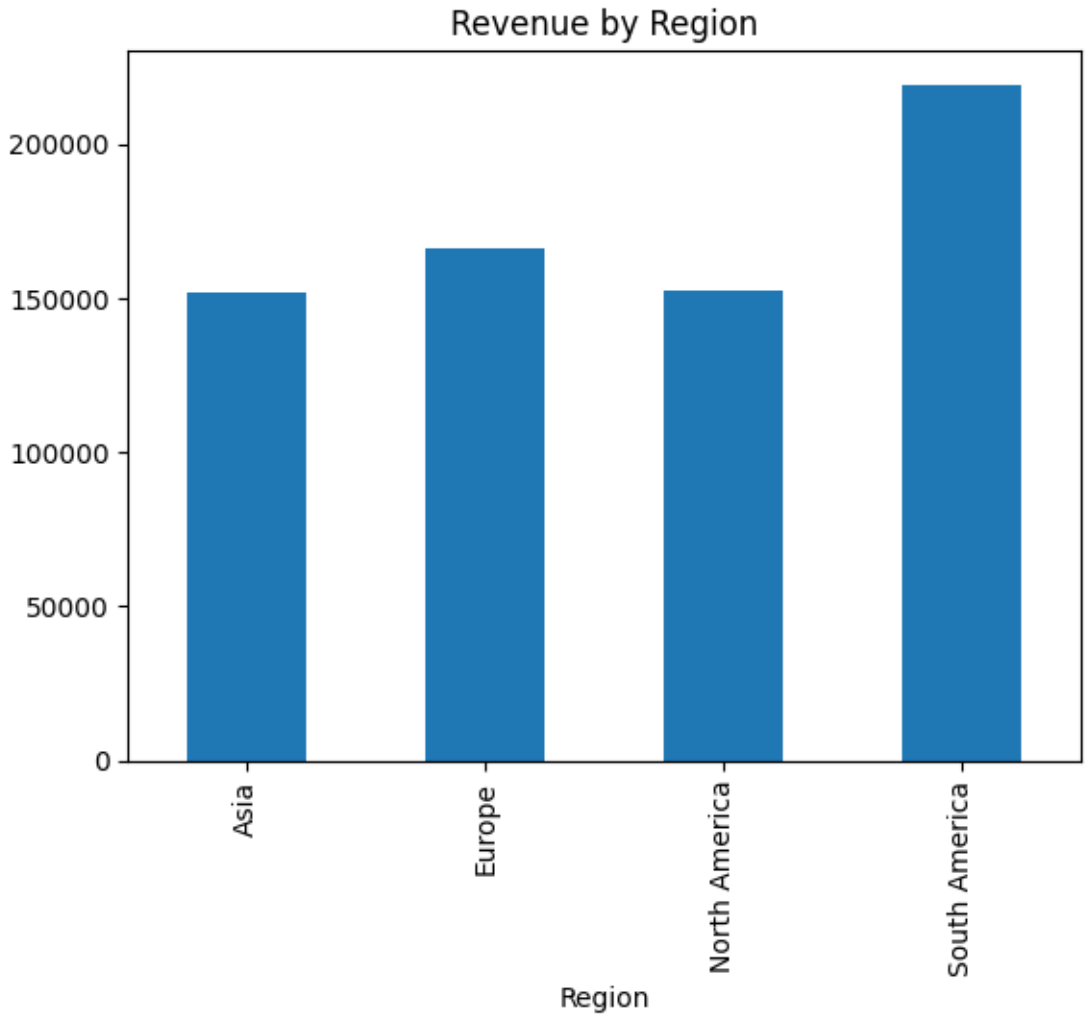
I. Perform EDA on the provided dataset:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn.preprocessing import StandardScaler
from sklearn.cluster import KMeans
from sklearn.metrics import davies_bouldin_score
from sklearn.metrics.pairwise import cosine_similarity
from google.colab import files
uploaded = files.upload()
customers = pd.read_csv('Customers.csv')
products = pd.read_csv('Products.csv')
transactions = pd.read_csv('Transactions.csv')
print(transactions.columns)
transactions = pd.read_csv('Transactions.csv')
customers = pd.read_csv('Customers.csv')

# Merge to include Region
transactions = transactions.merge(customers[['CustomerID', 'Region']], on='CustomerID', how='left')

# Group by Region
revenue_by_region = transactions.groupby('Region')['TotalValue'].sum()
revenue_by_region.plot(kind='bar')
plt.title('Revenue by Region')
plt.show()
```

- **Selecting the datasets files:**

```
 Upload widget is only available when the cell has been executed in the current browser session. Please rerun
this cell to enable.
Saving Customers.csv to Customers (3).csv
Saving Products.csv to Products (3).csv
Saving Transactions.csv to Transactions (3).csv
Index(['TransactionID', 'CustomerID', 'ProductID', 'TransactionDate',
       'Quantity', 'TotalValue', 'Price'],
      dtype='object')
```

- **Output:**



- **Other Improvements for further use:**

1. **Check for Missing Values:**
   print(transactions.isnull().sum())

   Output:

TransactionID	0
CustomerID	0
ProductID	0
TransactionDate	0
Quantity	0
TotalValue	0
Price	0
Region	0
dtype:	int64

2. **Convert Dates to Datetime:**
   transactions['TransactionDate'] = pd.to_datetime(transactions['TransactionDate']

3. **Enhance Visualization:**

```
revenue_by_region.plot(kind='bar', color='skyblue')
plt.title('Revenue by Region')
plt.xlabel('Region')
plt.ylabel('Total Revenue')
plt.xticks(rotation=45)
plt.show()
```

Output: