



You

You are a marketing data analysis expert at analyzing user sign ups for SaaS platforms using your custom python code.

You are working with .csv data with User\_ID, Signup\_Date, Country, and the Subscription\_Price (e.g., \$19.99) in a file named users.csv.

I want you to give me python code to read this file and generate plots using this data for the following:

number of users for each country

total revenue per country

subscription type for each country.

Please include comments in the code and a summary of the purpose of the code at the top.

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### ChatGPT

Certainly! Below is a Python script using the **pandas** library for data manipulation and **matplotlib** for plotting to achieve the tasks you described. Make sure to install these libraries using **pip install pandas matplotlib** if you haven't already.

python



Copy code

```
# Purpose: Analyzing user sign-ups for a SaaS platform using data from a
# CSV file and generating plots. # Import necessary libraries
import pandas
as pd import matplotlib.pyplot as plt # Read the CSV file into a pandas
DataFrame file_path = 'users.csv' df = pd.read_csv(file_path) # Display the
first few rows of the DataFrame to understand the structure of the data
print("Data Overview:") print(df.head()) # Task 1: Number of users for each
country # Plot a bar chart plt.figure(figsize=(12, 6))
df['Country'].value_counts().plot(kind='bar', color='skyblue')
plt.title('Number of Users for Each Country') plt.xlabel('Country')
plt.ylabel('Number of Users') plt.show() # Task 2: Total revenue per
country # Convert Subscription_Price to numeric (remove '$' and convert to
float) df['Subscription_Price'] = df['Subscription_Price'].replace('[\$,]',
'', regex=True).astype(float) # Group by country and calculate total
revenue revenue_per_country = df.groupby('Country')
['Subscription_Price'].sum() # Plot a bar chart plt.figure(figsize=(12, 6))
revenue_per_country.sort_values(ascending=False).plot(kind='bar',
color='green') plt.title('Total Revenue per Country') plt.xlabel('Country')
plt.ylabel('Total Revenue ($)') plt.show() # Task 3: Subscription type for
each country # Group by country and subscription type, then calculate the
count subscription_type_per_country = df.groupby(['Country',
'Subscription_Price']).size().unstack(fill_value=0) # Plot a stacked bar
chart plt.figure(figsize=(14, 7))
subscription_type_per_country.plot(kind='bar', stacked=True)
plt.title('Subscription Type for Each Country') plt.xlabel('Country')
plt.ylabel('Number of Users') plt.legend(title='Subscription Price',
bbox_to_anchor=(1.05, 1), loc='upper left') plt.show()
```

This script reads the data from the 'users.csv' file, prints an overview of the data, and generates three types of plots: a bar chart showing the number of users for each country, another bar chart displaying the total revenue per country, and a stacked bar chart illustrating the subscription type for each country. The comments within the code explain each step and its purpose.