```
import pandas as pd
# Load the dataset
data = pd.read_csv('/content/Customertravel.csv')
# Check for missing values and basic statistics
data.info()
data.describe(include='all')
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 954 entries, 0 to 953
Data columns (total 7 columns):
 #   Column                      Non-Null Count  Dtype
---  ------                      --------------  -----
 0   Age                         954 non-null    int64
 1   FrequentFlyer               954 non-null    object
 2   AnnualIncomeClass           954 non-null    object
 3   ServicesOpted               954 non-null    int64
 4   AccountSyncedToSocialMedia  954 non-null    object
 5   BookedHotelOrNot            954 non-null    object
 6   Target                      954 non-null    int64
dtypes: int64(3), object(4)
memory usage: 52.3+ KB
```

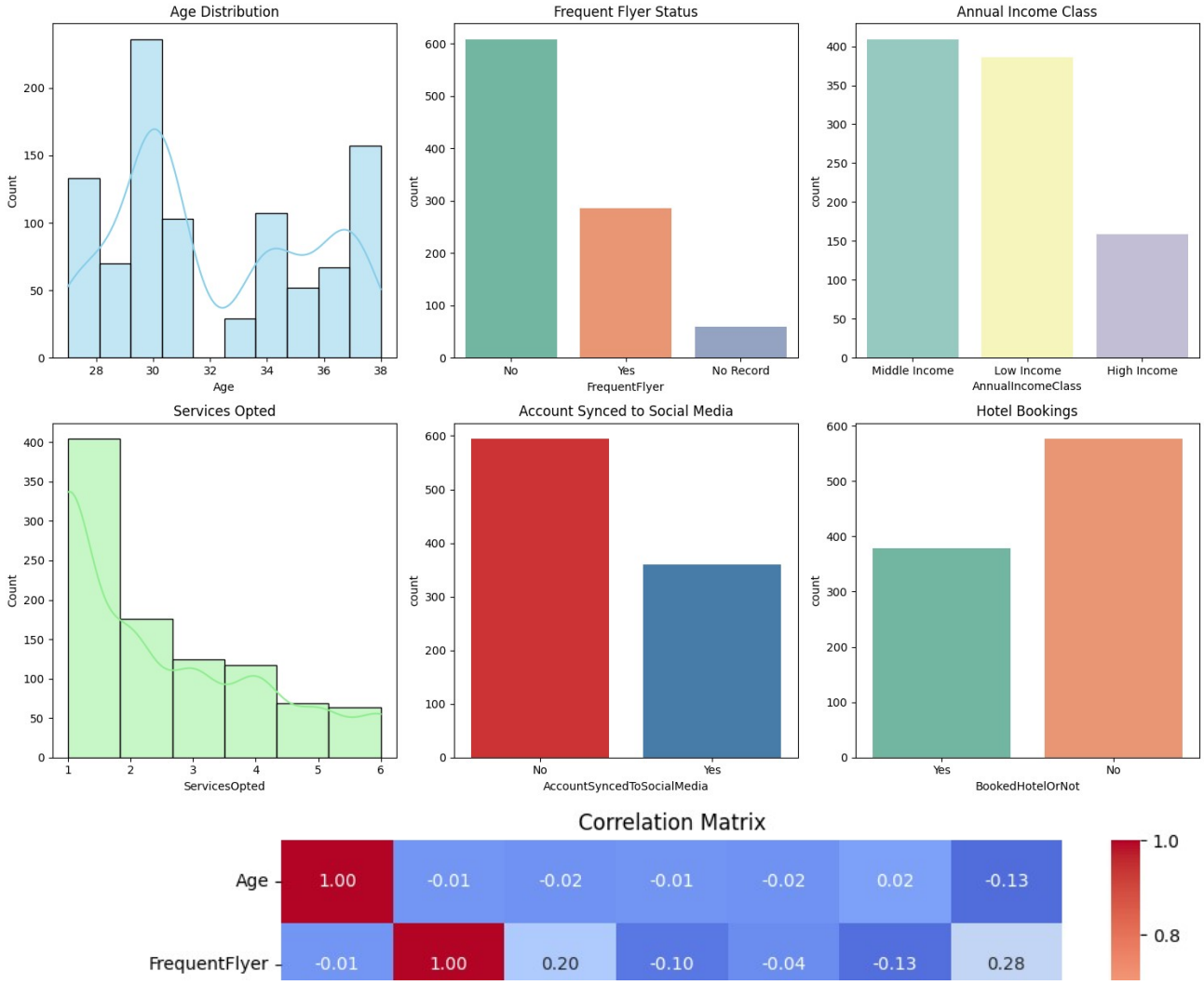
	Age	FrequentFlyer	AnnualIncomeClass	ServicesOpted	AccountSyncedToS
count	954.000000	954	954	954.000000	
unique	NaN	3	3	NaN	
top	NaN	No	Middle Income	NaN	
freq	NaN	608	409	NaN	
mean	32.109015	NaN	NaN	2.437107	
std	3.337388	NaN	NaN	1.606233	
min	27.000000	NaN	NaN	1.000000	
25%	30.000000	NaN	NaN	1.000000	
50%	31.000000	NaN	NaN	2.000000	
75%	35.000000	NaN	NaN	4.000000	
max	38.000000	NaN	NaN	6.000000	

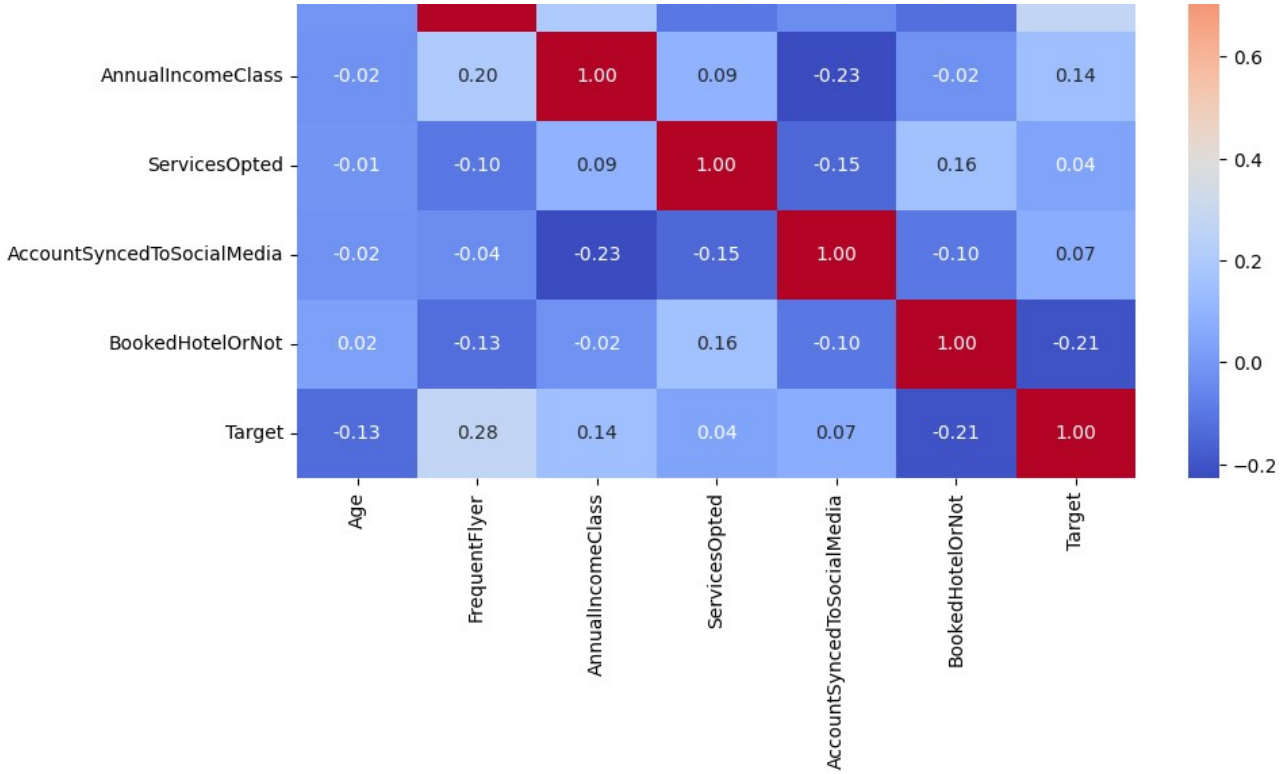
```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# Load the dataset
file_path = '/content/Customertravel.csv'  # Update with your file path
```

```
data = pd.read_csv(file_path)

# Set up the visualizations
plt.figure(figsize=(15, 10))

# Age Distribution
plt.subplot(2, 3, 1)
sns.histplot(data['Age'], kde=True, bins=10, color='skyblue')
plt.title('Age Distribution')

# Frequent Flyer Status
plt.subplot(2, 3, 2)
sns.countplot(data=data, x='FrequentFlyer', palette='Set2')
plt.title('Frequent Flyer Status')

# Annual Income Class
plt.subplot(2, 3, 3)
sns.countplot(data=data, x='AnnualIncomeClass', palette='Set3')
plt.title('Annual Income Class')

# Services Opted
plt.subplot(2, 3, 4)
sns.histplot(data['ServicesOpted'], kde=True, bins=6, color='lightgreen')
plt.title('Services Opted')

# Account Synced to Social Media
plt.subplot(2, 3, 5)
sns.countplot(data=data, x='AccountSyncedToSocialMedia', palette='Set1')
plt.title('Account Synced to Social Media')

# Hotel Bookings
plt.subplot(2, 3, 6)
sns.countplot(data=data, x='BookedHotelOrNot', palette='Set2')
plt.title('Hotel Bookings')

plt.tight_layout()
plt.show()

# Convert categorical variables to numerical for correlation analysis
data_encoded = data.copy()
data_encoded['FrequentFlyer'] = data_encoded['FrequentFlyer'].map({'No': 0, 'Yes': 1, 'N
data_encoded['AnnualIncomeClass'] = data_encoded['AnnualIncomeClass'].map({'Low Income':
data_encoded['AccountSyncedToSocialMedia'] = data_encoded['AccountSyncedToSocialMedia'].
data_encoded['BookedHotelOrNot'] = data_encoded['BookedHotelOrNot'].map({'No': 0, 'Yes':

# Correlation matrix
corr_matrix = data_encoded.corr()

# Plot the correlation heatmap
plt.figure(figsize=(10, 6))
```

```
sns.heatmap(corr_matrix, annot=True, cmap='coolwarm', fmt='.2f')
plt.title('Correlation Matrix')
plt.show()
```

```
<ipython-input-5-7d1898ef308d>:19: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14

  sns.countplot(data=data, x='FrequentFlyer', palette='Set2')
<ipython-input-5-7d1898ef308d>:24: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14

  sns.countplot(data=data, x='AnnualIncomeClass', palette='Set3')
<ipython-input-5-7d1898ef308d>:34: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14

  sns.countplot(data=data, x='AccountSyncedToSocialMedia', palette='Set1')
<ipython-input-5-7d1898ef308d>:39: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14

  sns.countplot(data=data, x='BookedHotelOrNot', palette='Set2')
```




AnnualIncomeClass
ServicesOpted
AccountSyncedToSocialMedia
BookedHotelOrNot
Target
-0.02 0.20 1.00 0.09 -0.23 -0.02 0.14
-0.01 -0.10 0.09 1.00 -0.15 0.16 0.04
-0.02 -0.04 -0.23 -0.15 1.00 -0.10 0.07
0.02 -0.13 -0.02 0.16 -0.10 1.00 -0.21
-0.13 0.28 0.14 0.04 0.07 -0.21 1.00
Age
FrequentFlyer
AnnualIncomeClass
ServicesOpted
AccountSyncedToSocialMedia
BookedHotelOrNot
Target
0.6
0.4
0.2
0.0
−0.2