In [1]:

```
import pandas as pd

# Load the uploaded dataset
file_path = "Flyzy Flight Cancellation - Sheet1.csv"
df = pd.read_csv(file_path)

# Display the first few rows and summary info
df.head(), df.info()
```

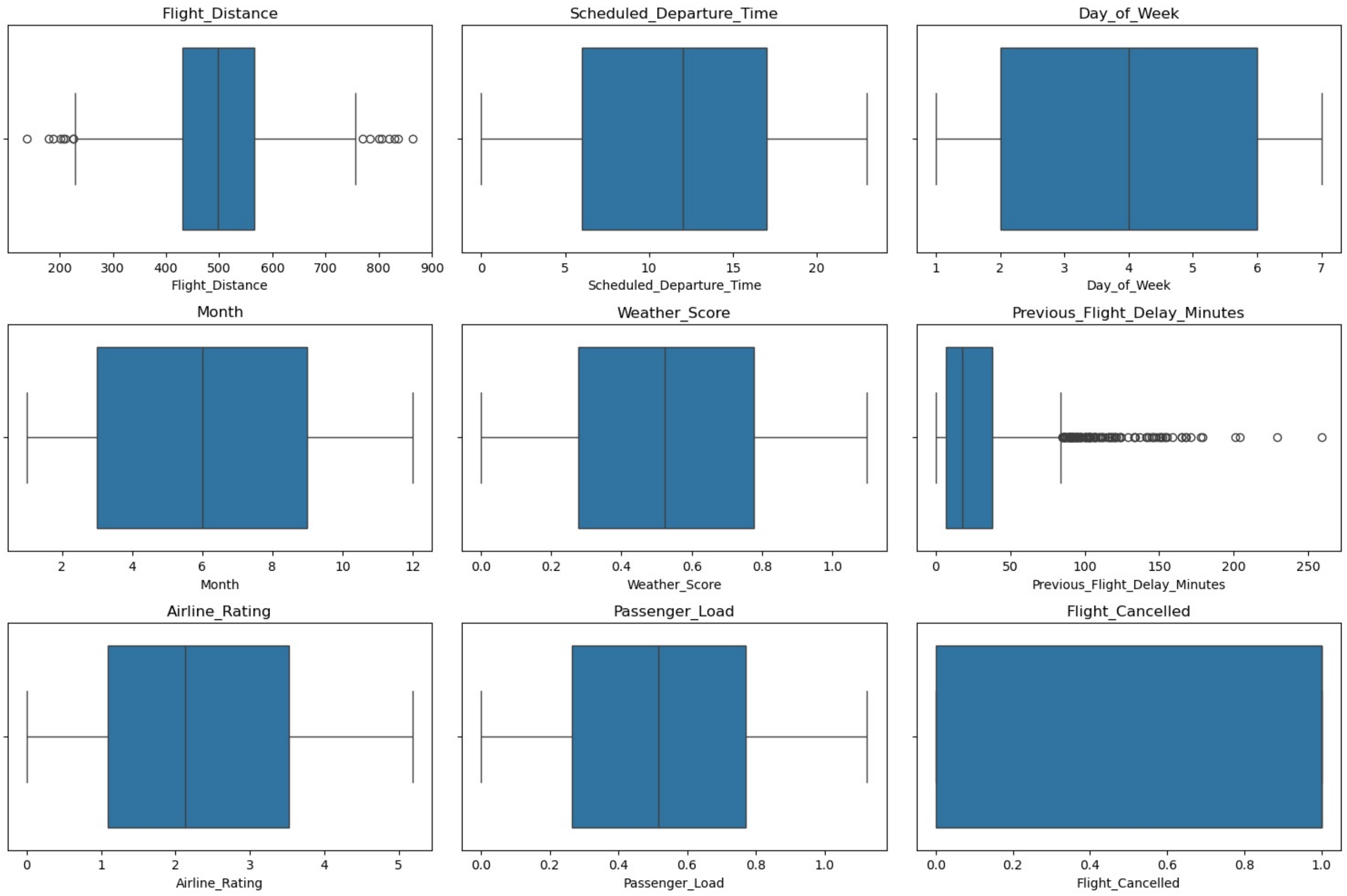
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 3000 entries, 0 to 2999
Data columns (total 14 columns):
 #   Column                        Non-Null Count  Dtype  
---  ------                        --------------  -----  
 0   Flight ID                     3000 non-null   int64  
 1   Airline                       3000 non-null   object 
 2   Flight_Distance               3000 non-null   int64  
 3   Origin_Airport                3000 non-null   object 
 4   Destination_Airport           3000 non-null   object 
 5   Scheduled_Departure_Time      3000 non-null   int64  
 6   Day_of_Week                   3000 non-null   int64  
 7   Month                         3000 non-null   int64  
 8   Airplane_Type                 3000 non-null   object 
 9   Weather_Score                 3000 non-null   float64
 10  Previous_Flight_Delay_Minutes 3000 non-null   float64
 11  Airline_Rating                3000 non-null   float64
 12  Passenger_Load                3000 non-null   float64
 13  Flight_Cancelled              3000 non-null   int64  
dtypes: float64(4), int64(6), object(4)
memory usage: 328.3+ KB
```

Out[1]:

```
(   Flight ID    Airline  Flight_Distance Origin_Airport Destination_Airport  \
 0    7319483  Airline D              475      Airport 3           Airport 2   
 1    4791965  Airline E              538      Airport 5           Airport 4   
 2    2991718  Airline C              565      Airport 1           Airport 2   
 3    4220106  Airline E              658      Airport 5           Airport 3   
 4    2263008  Airline E              566      Airport 2           Airport 2   

    Scheduled_Departure_Time  Day_of_Week  Month Airplane_Type  Weather_Score  \
 0                         4            6      1        Type C       0.225122   
 1                        12            1      6        Type B       0.060346   
 2                        17            3      9        Type C       0.093920   
 3                         1            1      8        Type B       0.656750   
 4                        19            7     12        Type E       0.505211   

    Previous_Flight_Delay_Minutes  Airline_Rating  Passenger_Load  \
 0                            5.0        2.151974        0.477202   
 1                           68.0        1.600779        0.159718   
 2                           18.0        4.406848        0.256803   
 3                           13.0        0.998757        0.504077   
 4                            4.0        3.806206        0.019638   

    Flight_Cancelled  
 0                 0  
 1                 1  
 2                 0  
 3                 1  
 4                 0  ,
 None)
```

In [2]:

```
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
from scipy.stats import zscore

# Select numeric columns for outlier detection
numeric_cols = df.select_dtypes(include=[np.number]).columns.tolist()
numeric_cols.remove("Flight ID")  # Exclude ID column

# Compute Z-scores
z_scores = np.abs(zscore(df[numeric_cols]))
outliers = (z_scores > 3)

# Count outliers per column
outlier_counts = outliers.sum(axis=0)

# Visualize outliers with boxplots
plt.figure(figsize=(15, 10))
for i, col in enumerate(numeric_cols, 1):
    plt.subplot(3, 3, i)
    sns.boxplot(x=df[col])
    plt.title(col)
plt.tight_layout()
plt.show()

outlier_counts
```



```
Out[2]: Flight_Distance                 10
        Scheduled_Departure_Time         0
        Day_of_Week                      0
        Month                            0
        Weather_Score                    0
        Previous_Flight_Delay_Minutes   51
        Airline_Rating                   0
        Passenger_Load                   0
        Flight_Cancelled                 0
        dtype: int64
```

```
In [ ]:
```

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