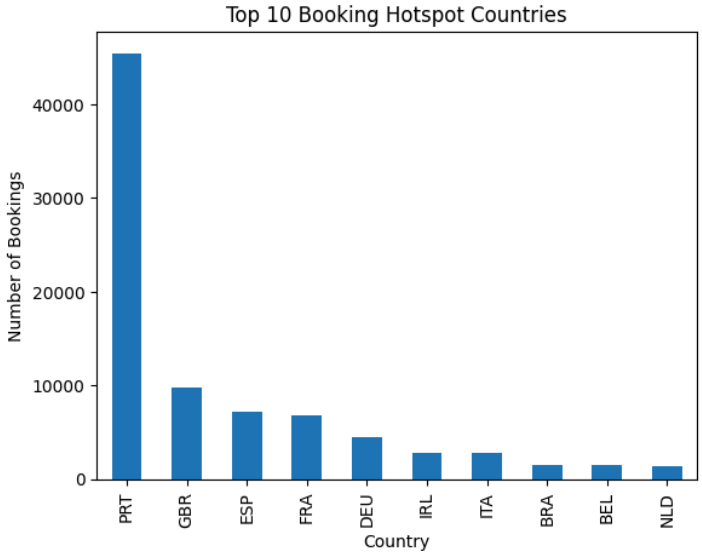
Task no 5

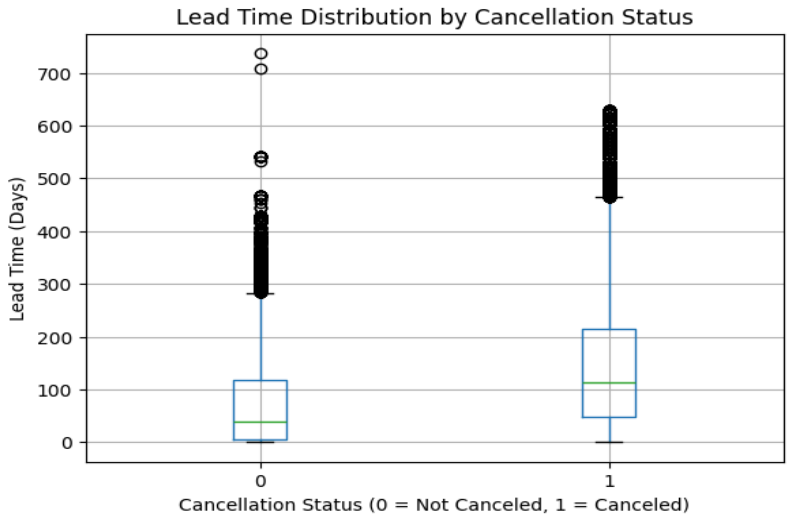
Task-05 Analyze traffic accident data to identify patterns related to road conditions, weather, and time of day. Visualize accident hotspots and contributing factors.

```
import matplotlib.pyplot as plt

plt.figure()
data['country'].value_counts().head(10).plot(kind='bar')
plt.xlabel('Country')
plt.ylabel('Number of Bookings')
plt.title('Top 10 Booking Hotspot Countries')
plt.show()
```




```
plt.figure()
data.boxplot(column='lead_time', by='is_canceled')
plt.xlabel('Cancellation Status (0 = Not Canceled, 1 = Canceled)')
plt.ylabel('Lead Time (Days)')
plt.title('Lead Time Distribution by Cancellation Status')
plt.suptitle('')
plt.show()
```



```python
import matplotlib.pyplot as plt
import pandas as pd
num_data = data[[
    'lead_time',
    'adr',
    'stays_in_week_nights',
    'stays_in_weekend_nights',
    'previous_cancellations',
    'booking_changes',
    'total_of_special_requests',
    'is_canceled'
]]
corr = num_data.corr()
plt.figure()
plt.imshow(corr)
plt.colorbar()
plt.xticks(range(len(corr.columns)), corr.columns, rotation=90)
plt.yticks(range(len(corr.columns)), corr.columns)
plt.title('Correlation Heatmap of Booking Factors')
plt.show()
```