Model Deployment on Streamlit Cloud

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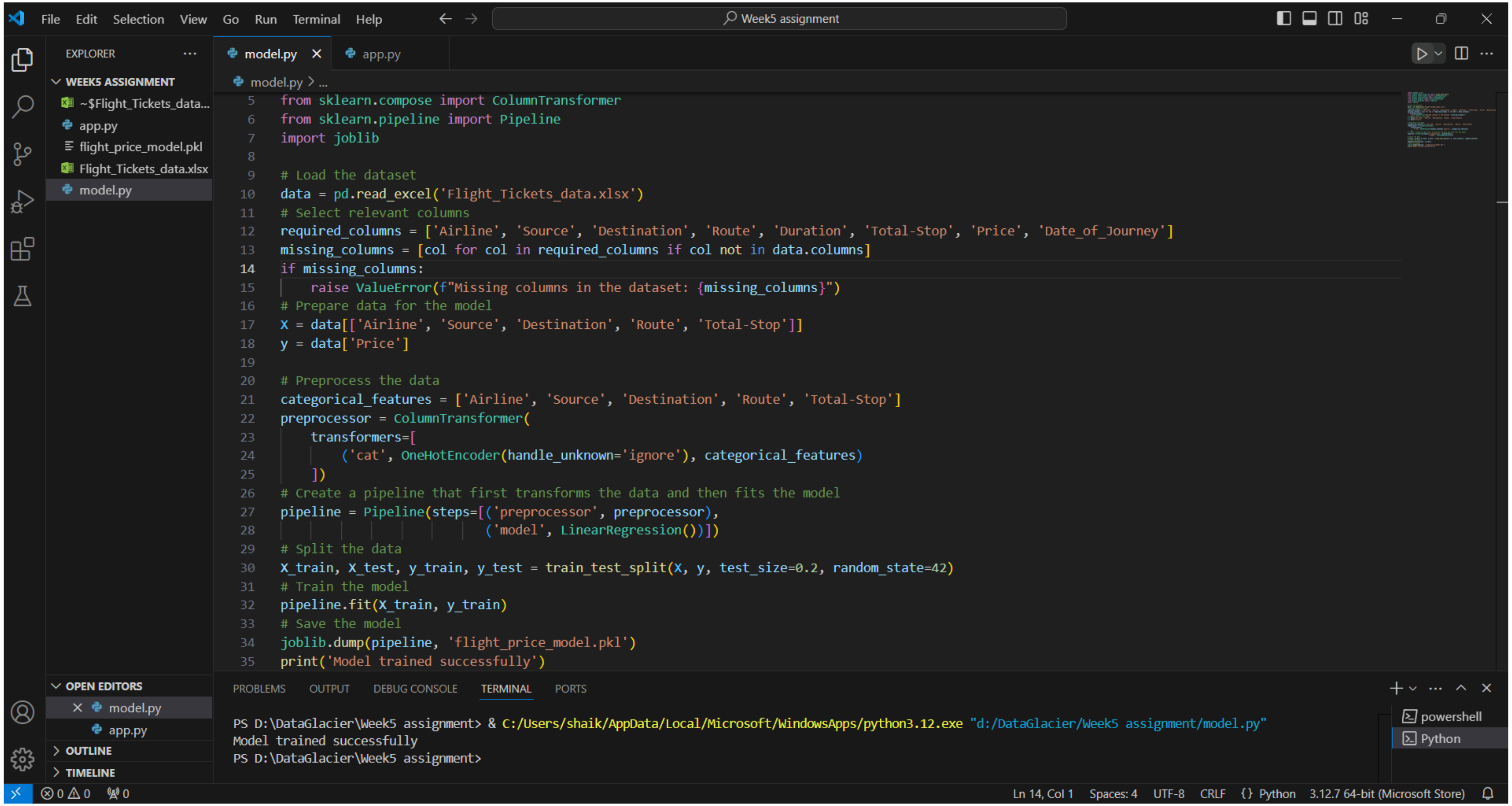
Submission to: Data Glacier

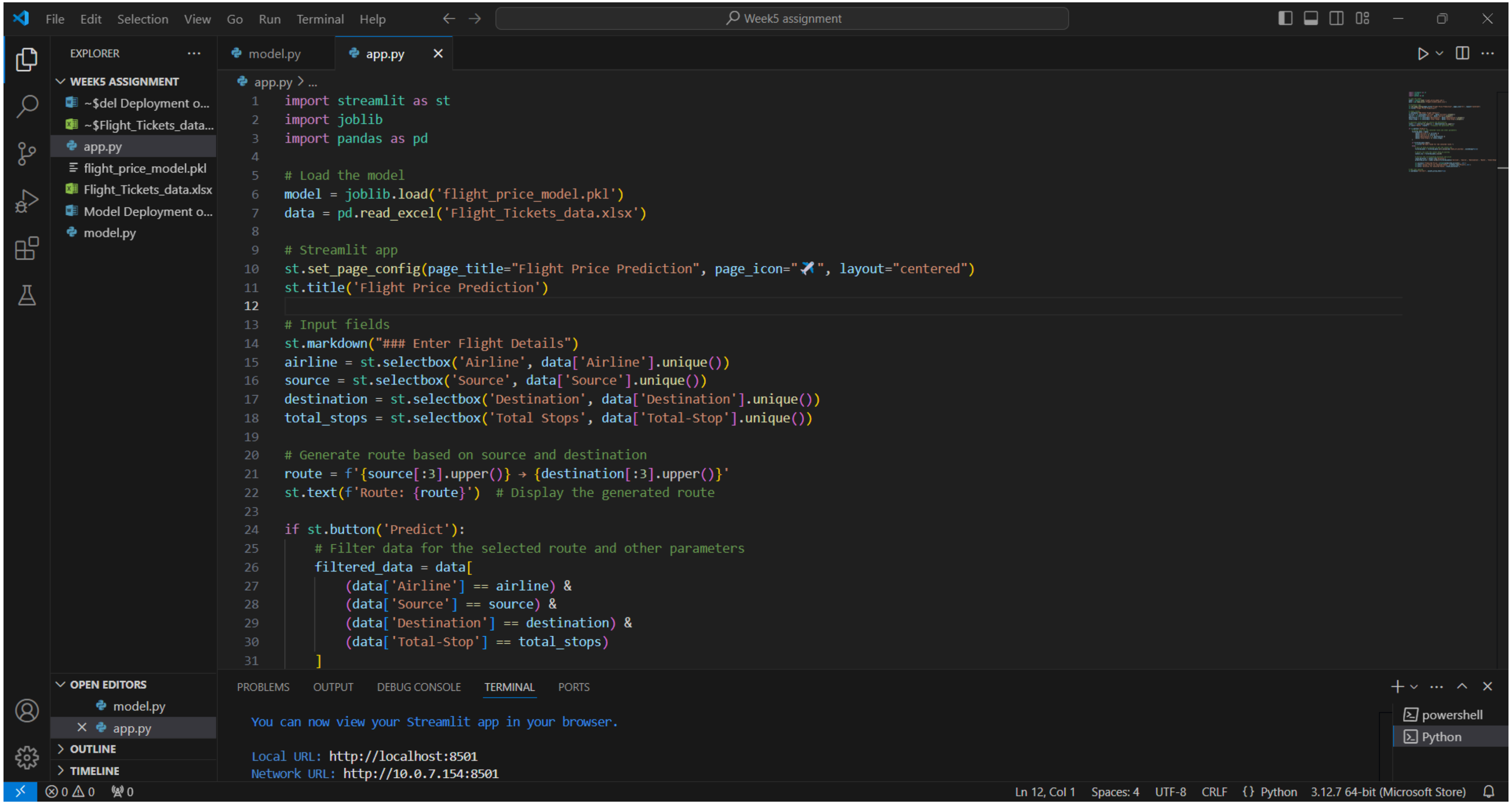
1. **Select Toy Data and Build the Model:** Here’s a simplified example using a toy dataset (Flight_Tickets_data.xlsx) for predicting a value (e.g., price).



```python
from sklearn.compose import ColumnTransformer
from sklearn.pipeline import Pipeline
import joblib

# Load the dataset
data = pd.read_excel('Flight_Tickets_data.xlsx')
# Select relevant columns
required_columns = ['Airline', 'Source', 'Destination', 'Route', 'Duration', 'Total-Stop', 'Price', 'Date_of_Journey']
missing_columns = [col for col in required_columns if col not in data.columns]
if missing_columns:
    raise ValueError(f"Missing columns in the dataset: {missing_columns}")
# Prepare data for the model
X = data[['Airline', 'Source', 'Destination', 'Route', 'Total-Stop']]
y = data['Price']

# Preprocess the data
categorical_features = ['Airline', 'Source', 'Destination', 'Route', 'Total-Stop']
preprocessor = ColumnTransformer(
    transformers=[
        ('cat', OneHotEncoder(handle_unknown='ignore'), categorical_features)
    ])
# Create a pipeline that first transforms the data and then fits the model
pipeline = Pipeline(steps=[('preprocessor', preprocessor),
                           ('model', LinearRegression())])
# Split the data
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
# Train the model
pipeline.fit(X_train, y_train)
# Save the model
joblib.dump(pipeline, 'flight_price_model.pkl')
print('Model trained successfully')
```

```
PS D:\DataGlacier\Week5 assignment> & C:/Users/shaik/AppData/Local/Microsoft/WindowsApps/python3.12.exe "d:/DataGlacier/Week5 assignment/model.py"
Model trained successfully
PS D:\DataGlacier\Week5 assignment>
```

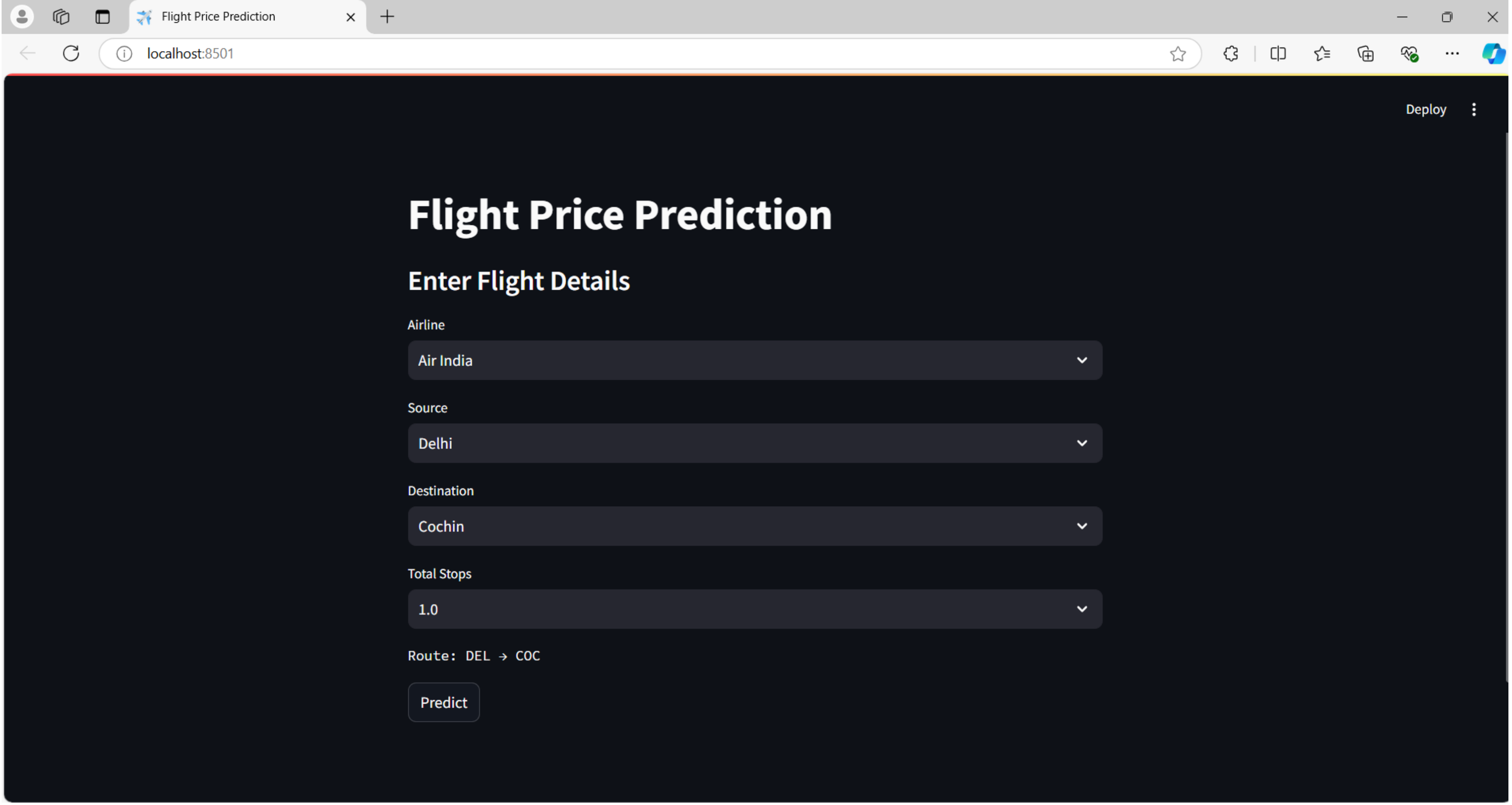
2. Create app.py for Model Deployment:



```python
import streamlit as st
import joblib
import pandas as pd

# Load the model
model = joblib.load('flight_price_model.pkl')
data = pd.read_excel('Flight_Tickets_data.xlsx')

# Streamlit app
st.set_page_config(page_title="Flight Price Prediction", page_icon="✈️", layout="centered")
st.title('Flight Price Prediction')

# Input fields
st.markdown("### Enter Flight Details")
airline = st.selectbox('Airline', data['Airline'].unique())
source = st.selectbox('Source', data['Source'].unique())
destination = st.selectbox('Destination', data['Destination'].unique())
total_stops = st.selectbox('Total Stops', data['Total-Stop'].unique())

# Generate route based on source and destination
route = f'{source[:3].upper()} → {destination[:3].upper()}'
st.text(f'Route: {route}')  # Display the generated route

if st.button('Predict'):
    # Filter data for the selected route and other parameters
    filtered_data = data[
        (data['Airline'] == airline) &
        (data['Source'] == source) &
        (data['Destination'] == destination) &
        (data['Total-Stop'] == total_stops)
    ]
```

```
  You can now view your Streamlit app in your browser.

  Local URL: http://localhost:8501
  Network URL: http://10.0.7.154:8501
```

3. Testing Deployment:



Flight Price Prediction

Enter Flight Details

Airline: Air India

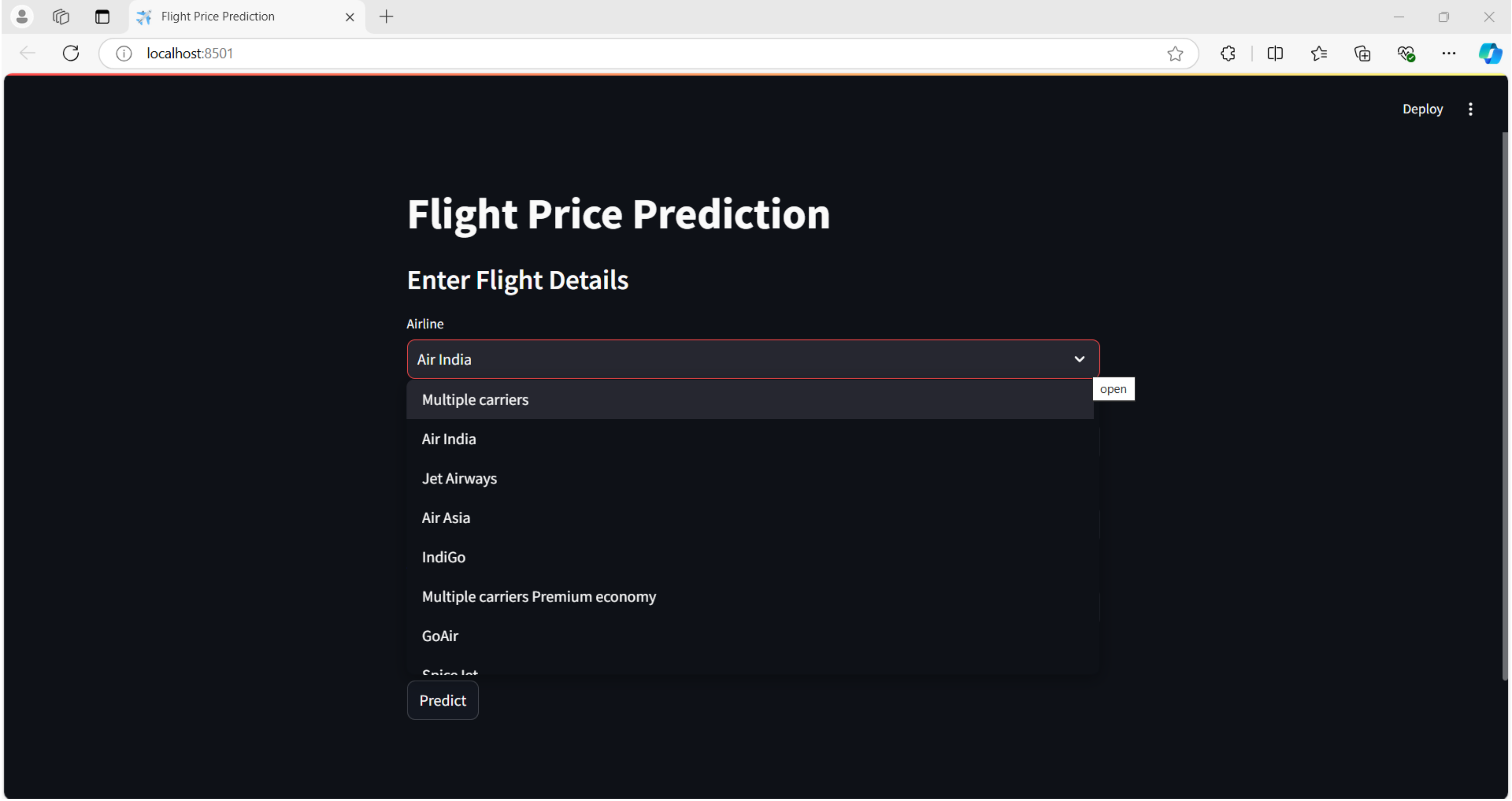
Source: Delhi

Destination: Cochin

Total Stops: 1.0

```
Route: DEL → COC
```

4. Input / select Values:



Flight Price Prediction

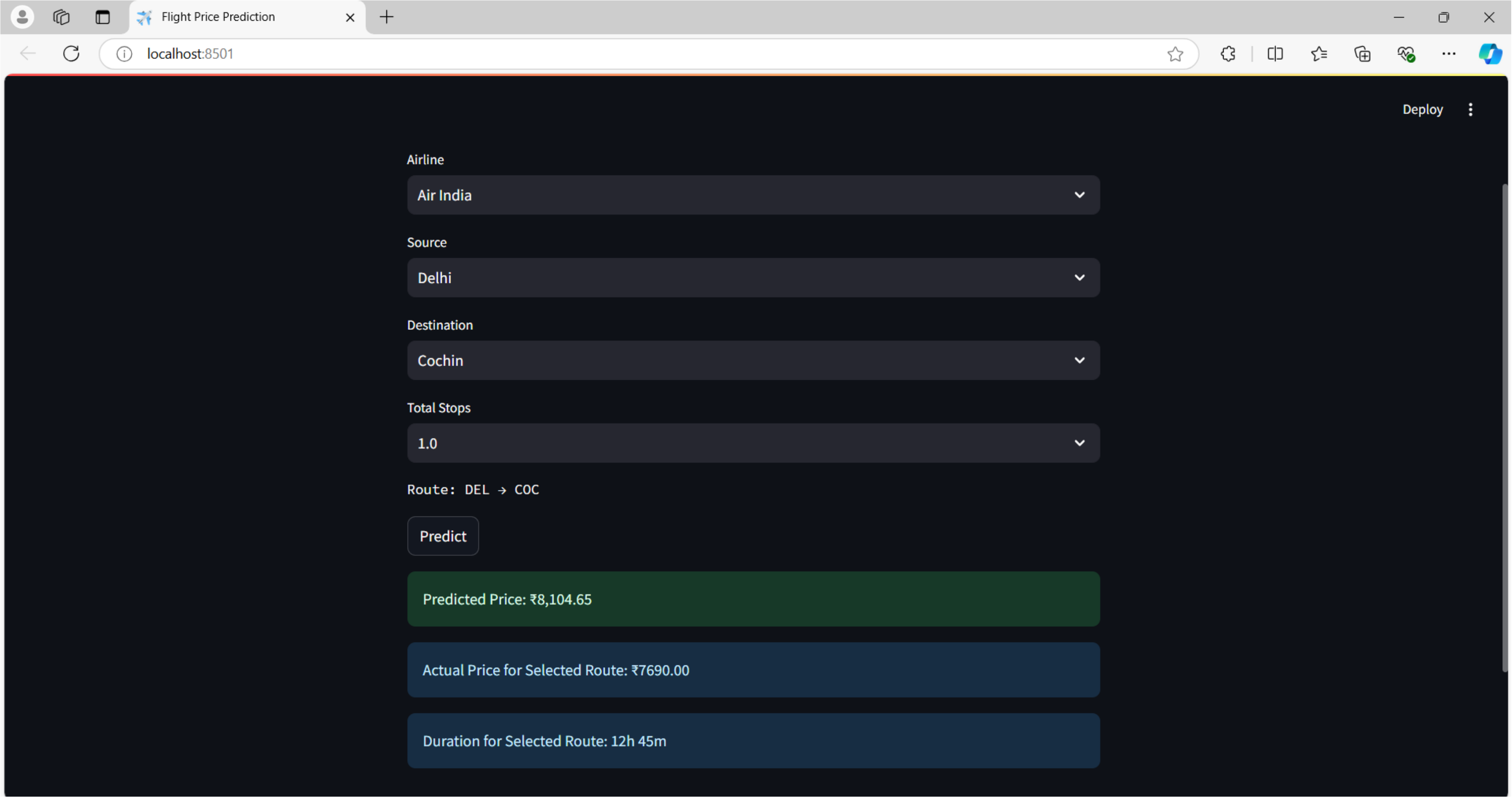
Enter Flight Details

Airline

Air India

Multiple carriers
Air India
Jet Airways
Air Asia
IndiGo
Multiple carriers Premium economy
GoAir
Spice Jet

5. Predicted Price with other information:



Airline

Air India

Source

Delhi

Destination

Cochin

Total Stops

1.0

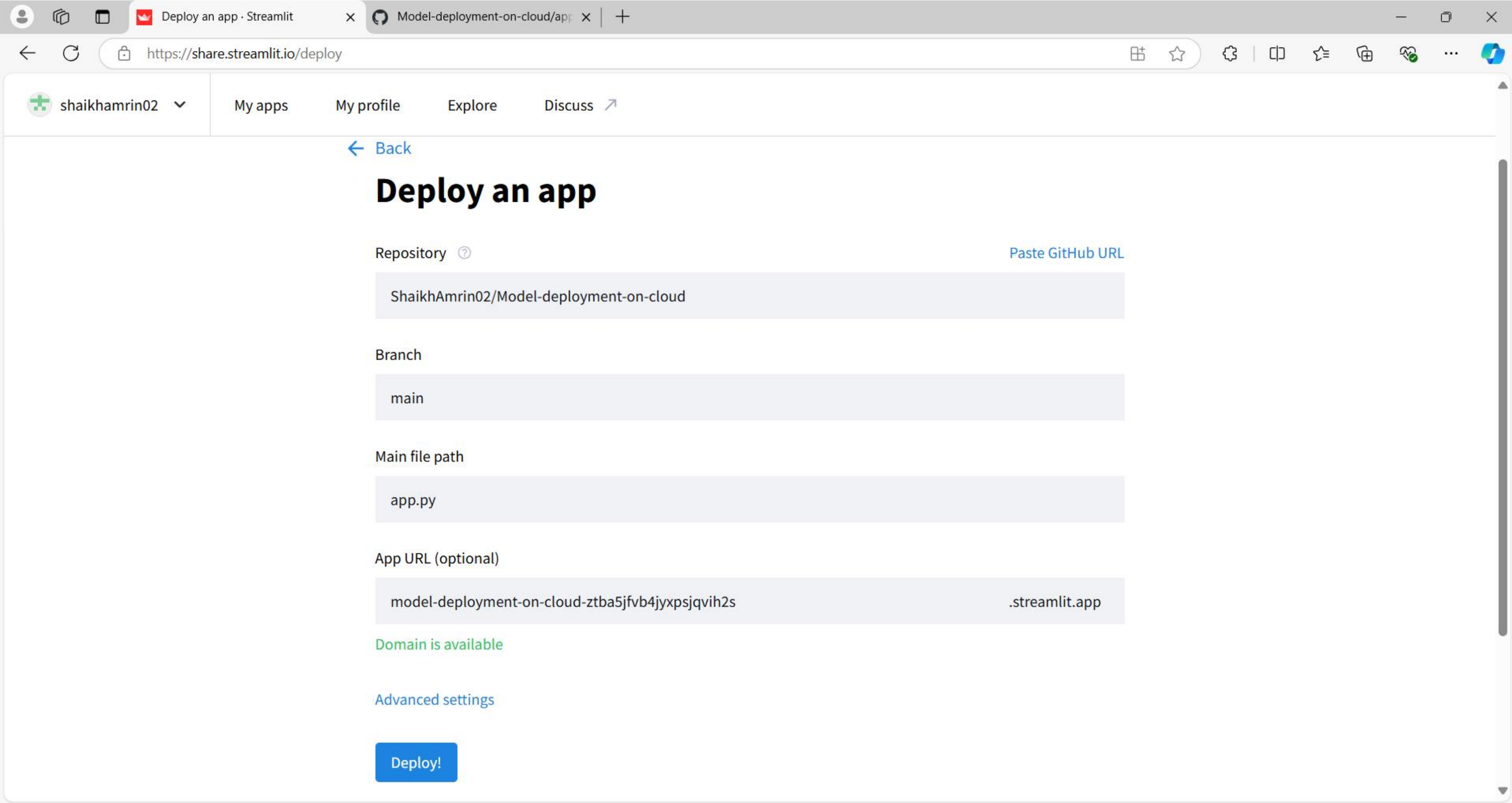
`Route: DEL → COC`

Predicted Price: ₹8,104.65

Actual Price for Selected Route: ₹7690.00

Duration for Selected Route: 12h 45m

6. Streamlit Deployment: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Model-deployment-on-cloud/app
https://share.streamlit.io/deploy
shaikhamrin02
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Deploy an app

Repository: ShaikhAmrin02/Model-deployment-on-cloud

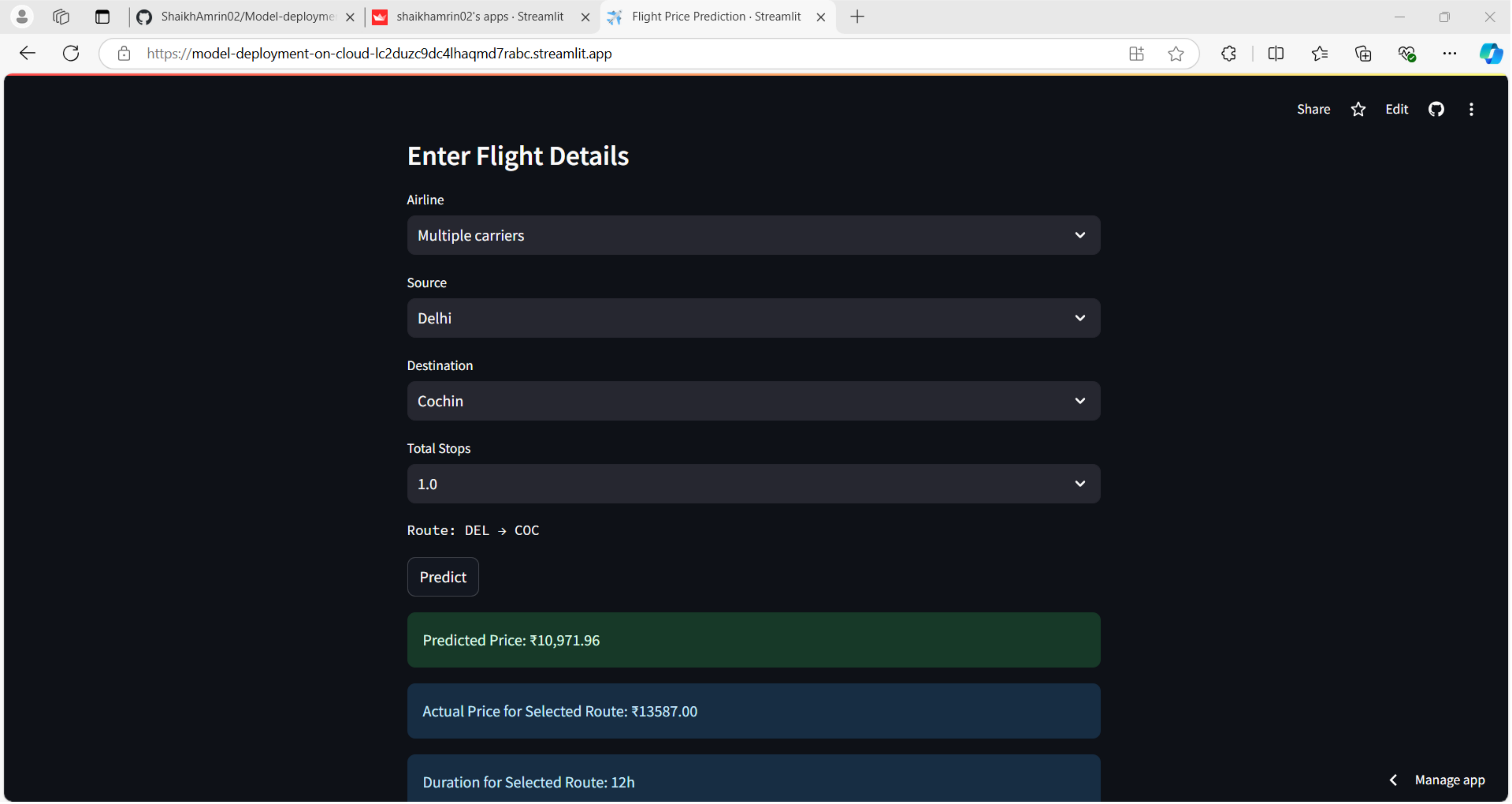
Branch: main

Main file path: app.py

App URL (optional): model-deployment-on-cloud-ztba5jfvb4jyxpsjqvih2s.streamlit.app

Domain is available

7. Deployed on Streamlit Cloud:



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https://model-deployment-on-cloud-lc2duzc9dc4lhaqmd7rabc.streamlit.app
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Manage app

Enter Flight Details

Airline: Multiple carriers

Source: Delhi

Destination: Cochin

Total Stops: 1.0

```
Route: DEL → COC
```

Predict

Predicted Price: ₹10,971.96

Actual Price for Selected Route: ₹13587.00

Duration for Selected Route: 12h