CS699 Project Report on Flight Price Optimization

Prathamesh Yeole(22m0795), Sandeep Kumar(22m0790)

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1 Team members

Name	Roll no.
Sandeep Kumar	22m0790
Prathamesh Yeole	22m0795

2 Project name and Description

Title :

Flight Price Optimization

Github : https://github.com/prathamy/CS699-Repo

Motivation :
Getting to know what website will give you the best deal on flights is important when travelling, especially when the prices can be dynamic. So price tracking will be helpful in getting the best flight deal available online.

Problem Statement :

- To scrape data from travel websites for a particular time and route.

- Give the user the best deal in terms of price.

3 What have we Achieved

In this project, we have obtained the stated goals in the problem statement above. Our final result is a **python django** Web application that :

- scrape the best prices from multiple websites (Technology used : **Selenium library(Python)**) :

  1. Paytm
  2. Flipkart
  3. EaseMyTrip

- Get the best prices and their respective airlines company, display that to the user. (Technology used : **HTML, CSS frontend**)

- Plot the prices along with the corresponding airline company. (Technology used : **pyplot, pyscript, python**)

- This report is typed in **LaTeX**

- The project updates were timely committed and pushed on **Github**.

- The project was entirely coded on **VScode IDE** .

4 Possible Future Work

We could possibly do the following things additionally in the project :

1. Store the data on prices each hour (or some fixed period of time) in a database, then plot the best price with respect to time. This would help to track and analyze historic trends of prices for any given route.

2. Include more websites.

5 High Level Documentation

- Directory Structure :

  - manage.py : It helps to start the server via command line
  - project
    * urls.py : list all routes to views.py and called functions.
    * Other files such as __init__.py, asgi.py, etc are present by default in project folder when we make a Django project.
  - scraping
    * templates/scraping

· webpage.html : This is the main front-end webpage of the project. It includes the code for entering the data in HTML form, displaying the final information as well as plotting the bar graph via pyplot after getting required data from views.py.
* urls.py list all the routes to view.py and called functions.
* views.py : This .py file contains the main back-end portion of the code that is involved in scarping the data (using **Selenium** library) written in **python**. This return the dictionary **request** to webpage.html to display the information obtained in the front end.
* Other files in this directory came by default when we create django web app.

- Libraries :
  - **Selenium** : Python open source library that helps with data scraping on a website using web elements.
  - **matplotlib.pyplot** : Used to plot bar graph of prices.
  - **pyscript** : A python library that enables us to write a python code within a HTML file by writing it within py-script tag.

6 Compilation or Running Instructions

- To start the server : `python3 manage.py runserver` in the main directory (**CS699-Repo**)

- Open on browser the local server i.e. `127.0.0.1:8000`

- Fill the details asked in the dropdown boxes, click **Submit** button.