Data Structure Project
15B11C1311

Topic : TRAVEL INDIA

Group Members: -

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Submitted to: -
Mrs. Varsha Garg

SYNOPSIS

Problem statement: The project aims towards finding the most suitable path that provides the user with details about the trains and flights, between given destination along with the time and fair, and compares it with that of airplanes.

About the Project: To solve the above-mentioned problem we aim to make a program which will help the user to find the most convenient route be it through train and airplane. The user shall enter the destination and the program is ought to return the shortest/fastest route along with the intermediate stations and total fare of the journey.

We will be using an algorithm that is specially designed for finding a path of minimum length from a particular source node to all other vertices of weighted graph. This algorithm is popularly known as Dijikstra Algorithm.

Sometime it happens when we have two routes to reach out our destination, first one which suits our pocket but take exceptionally longer time while on the other hand we have a route which might be little costly but take lesser time to reach out our destination. Therefore, for such scenarios we will be suggesting 2 routes to our user where one route will be that one when he/she will be paying least fare to reach its destination another route will be the fastest route between source and destination of user and may be costlier than first route.

We will also be adding a new feature where our algorithm will be suggesting all possible far-off destination to our user by taking user's budget as an input (which includes a complete round trip).

This is all about at user's end but there isn't less things for our admin. We will have special login credentials for admin as he is the one who is responsible to update fare, time taken to travel between node of the graph to current best advancement. He is also responsible for adding/deleting node from the graph according real world achievements.

We will write algorithm for this project in JavaScript and to ensure whole programme is user-friendly we will use basics of HTML, CSS, PHP and last but not least MySQL.

Concept Used:

1.Data Structures:

- Graphs
- Array
- Adjacent list

2.Algorithm:

- Dijkstra Algorithm

Acknowledgement

First and foremost, we would like to express our gratitude to our Mentor, Mrs. Varsha Garg. She encouraged us to think imaginatively and urged us to do this assignment without hesitation. Her vast knowledge, extensive experience, and professional competence in Data Structures enabled us to successfully accomplish this report. This endeavour would not have been possible without her supervision.

This initiative would not have been a success without the contributions of each and every member. We were always there to cheer each other on, and that is what kept us together until the end.

Introduction

1.1 General Overview

Our website has various kinds of information regarding routes and fares via railways and airways .
Users will be able to search the destination, and the cheapest and fastest routes and cost through train or flight.

1.2 Survey

Railway and airway passengers frequently need to know about their ticket reservation status, ticket, best route and cost.
The number of the route searching counters available to the passengers and customers are very less. As now there are no call centers facilities available to solve the queries of the passengers.
The online travel india system aims to develop a web application which aims at providing with best and shortest route with cheapest way of transportation in online for customers.
We decided to give the name of the website “Travel India”.
In the project we have made front hand with the help of “html, css, java script, bootstrap”.

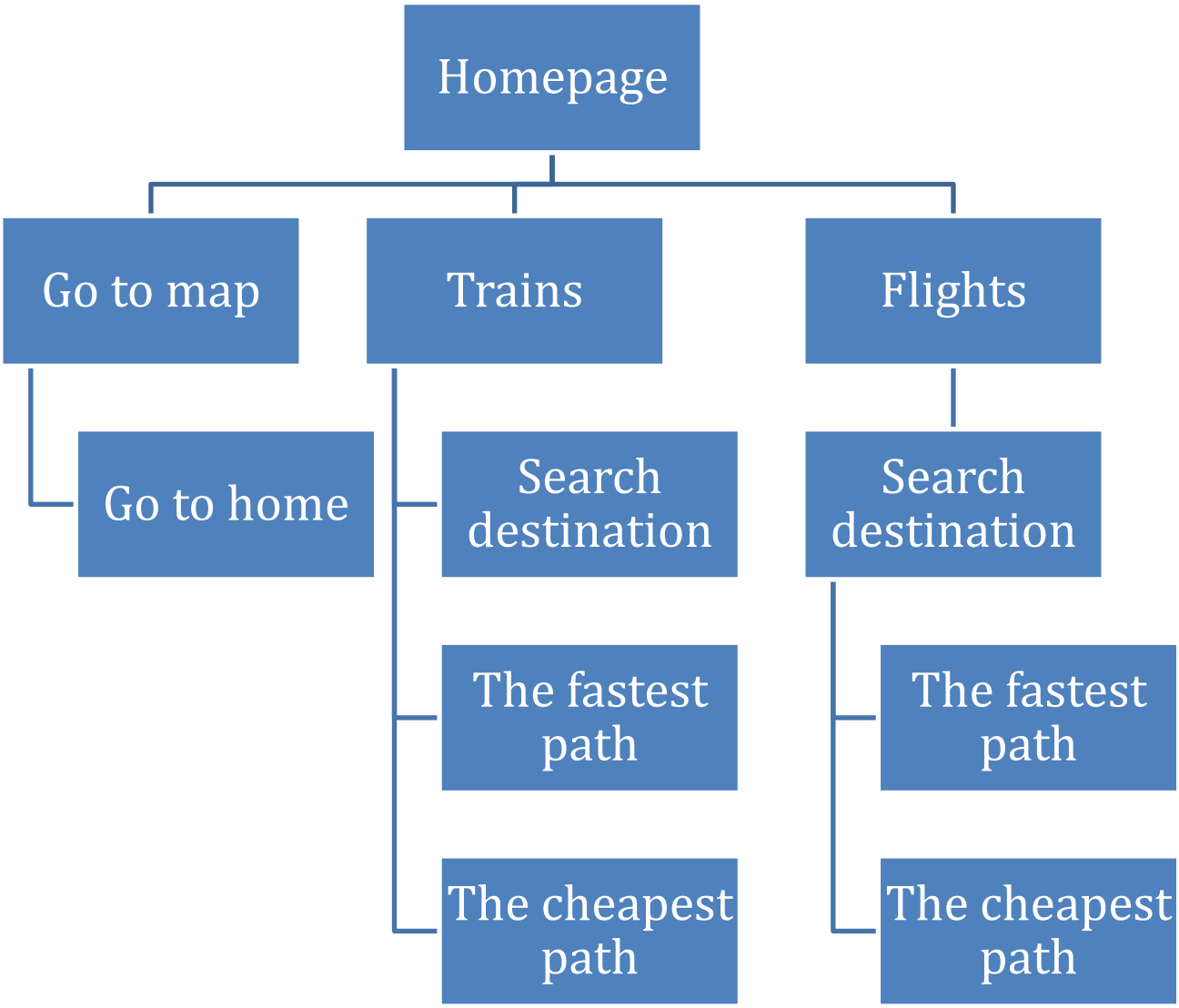
1.3 Objectives:

Project is to design software to fully automate the process of finding the best way to travel.
1. To create a database of the trains and flights.
2. To search the fastest route for via railways and airways.
3.To provide cheapest cost of the distance of the routes travelled.

DESGIN AND IMPLEMENTATION

The Design section will provide a detailed insight into the working of the system, how the system to be framed to make the implementation error free and user friendly.
The Implementation Details section will provide the final design step before actual implementation of the system. It will list all the functions that will be used in the system, parameters used by them, what results they will produce and how they will interact with the rest of the system.
Concluding all this will be the Summary and Conclusion section which will round up the entire discussion.
In this project first we have our home page “Travel India” which consist of three options one for trains , one for flights and one which will directly shows the maps. If you click on any of these options you will see two drop down box, where you can search the destination in the format “From “ and “To”. Then you can see two boxes with ‘Find Fastest Path’ and ‘Find Cheapest Path’. If you will click on the fastest path it will provide the users with the fastest path with the details: Distance , Speed and Time. On the other hand if you click on the cheapest path it will provide the users the category of the train or flight with the cheapest cost.
On the homepage you will see the option “Go to Maps” on clicking it users can directly see the map which consist of all the cities which link your destination. If the users can hover on the circular nodes for information about number of railways as well as airways connections. On this webpage it also provide users ,the option to go back to home page.
We have use “ java script, html, css , bootstrap 5.2.2, font awesome 4.7, image-map” for all design and implementation. In data structures and algorithm we have used “graphs, array, adjacent list” and “Dijkstra algorithm” respectively.

FLOWCHART

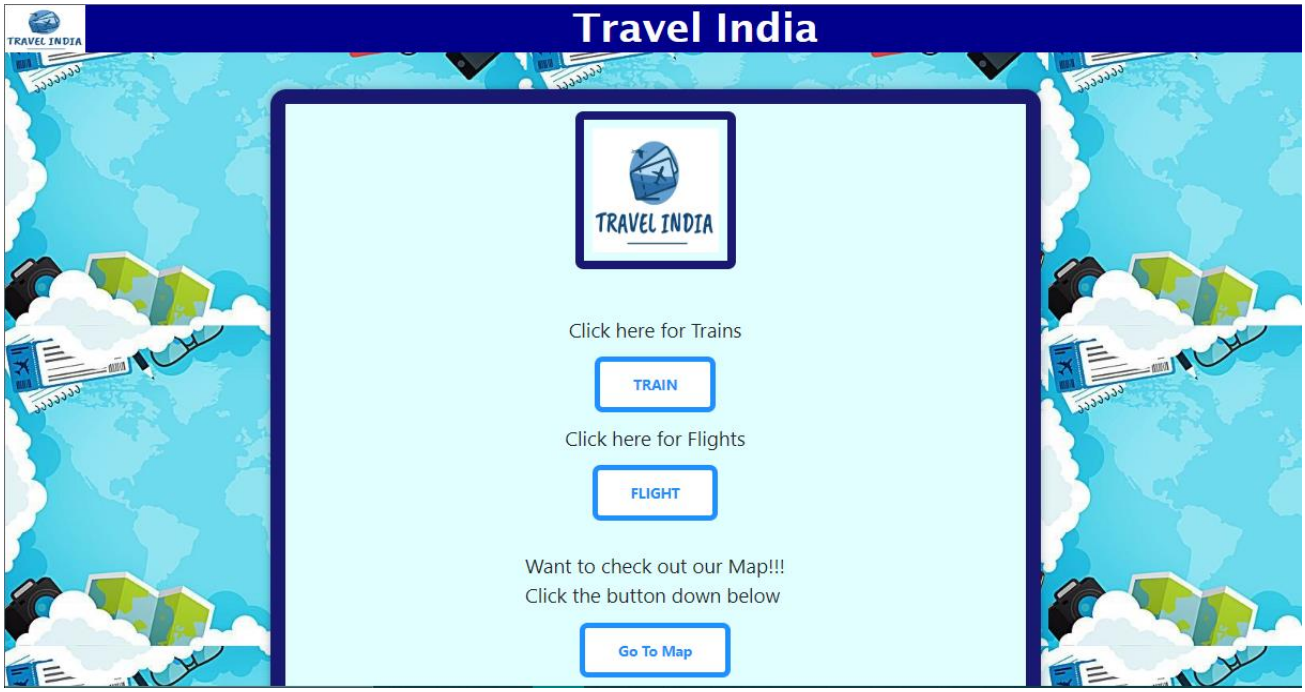


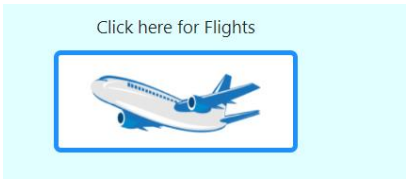
CONTRIBUTION OF MEMBERS:
Sarthak Gupta: Code and frontend
Gargi Jugran: Code, adding nodes and ppt slides
Yashi Ratnakar: Frontend, report and adding nodes
Suyash Rai: Frontend and code

RESULTS

Online railway and flight search destination system was successfully designed and developed as per the specifications. It was extensively tested using a database which contains data similar to what can be expected in an actual database. The system was found to work satisfactorily without any errors and is user friendly under all conditions.

HOMEPAGE:





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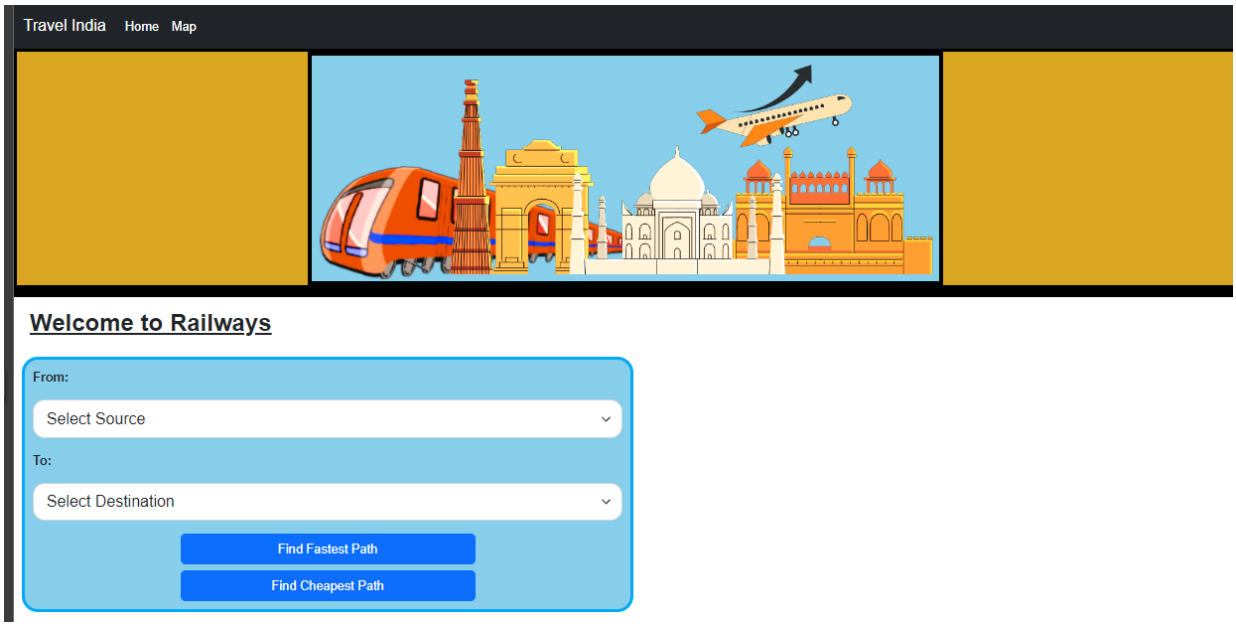
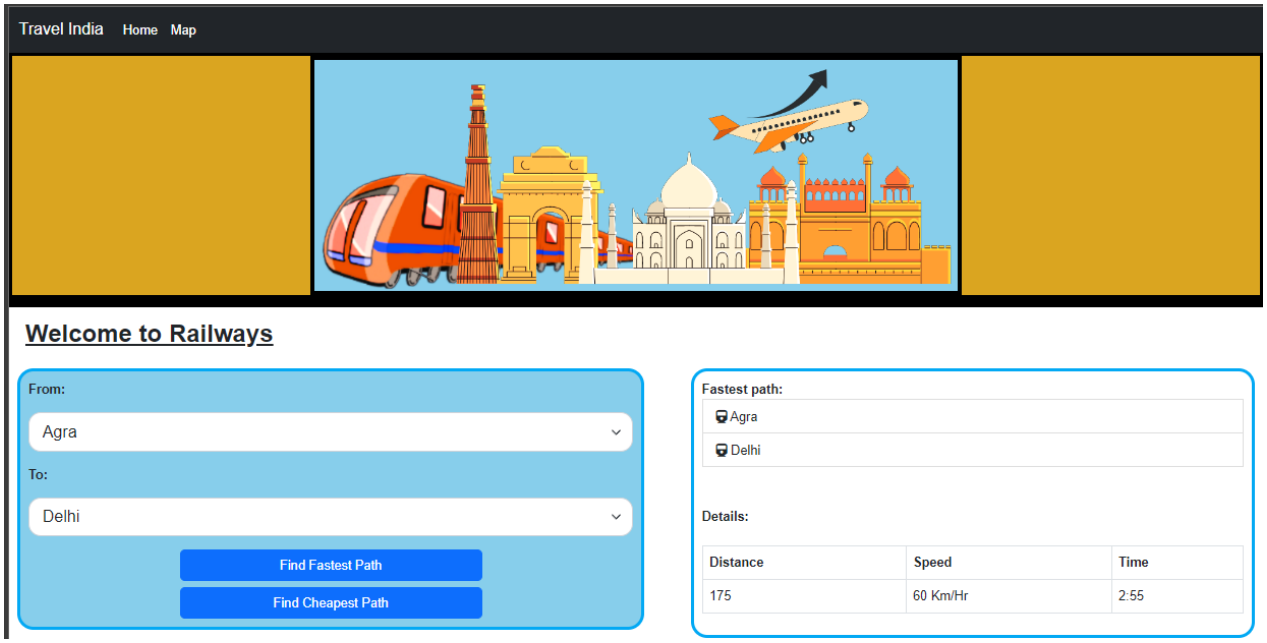
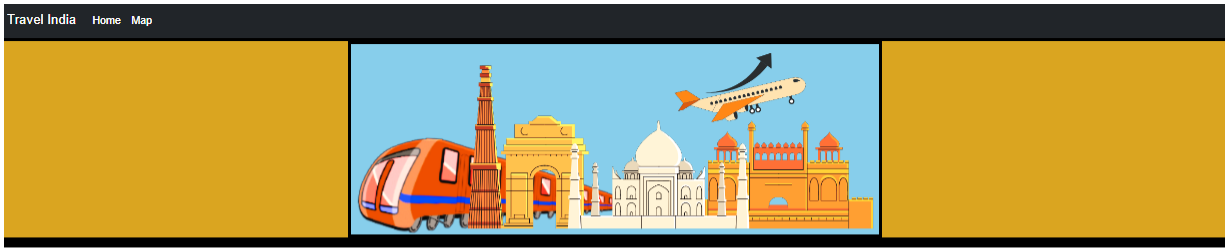
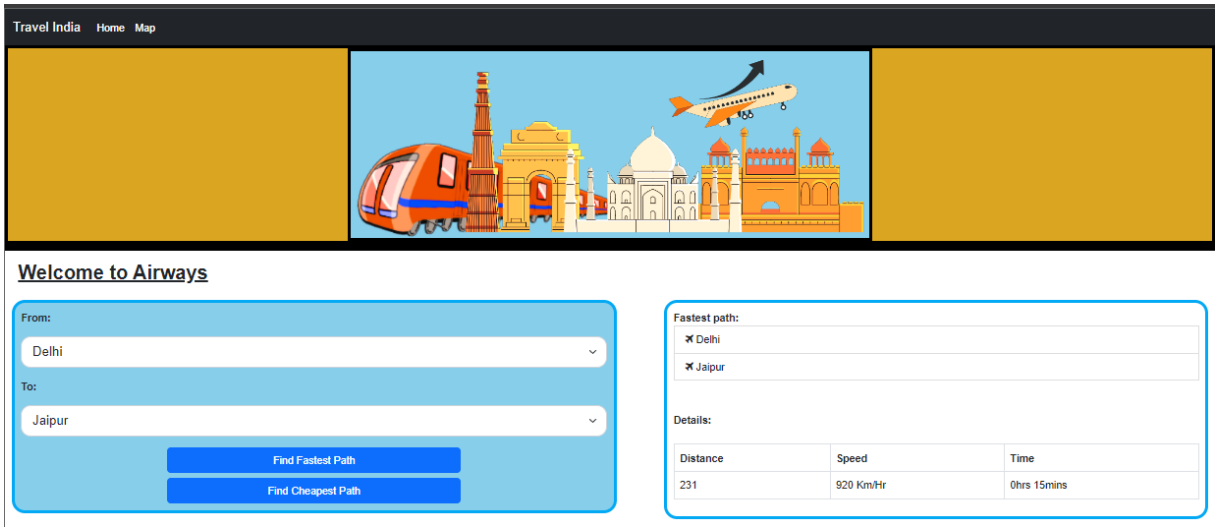


On Searching destination:
For Trains




Travel India
Home
Map
Welcome to Railways
From:
Agra
To:
Delhi
Find Fastest Path
Find Cheapest Path
Cheapest Path:
Agra
Delhi
Details:
Category
Price
Third Tier AC
590

For Flight:


Travel India
Home
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Welcome to Airways
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To:
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Find Fastest Path
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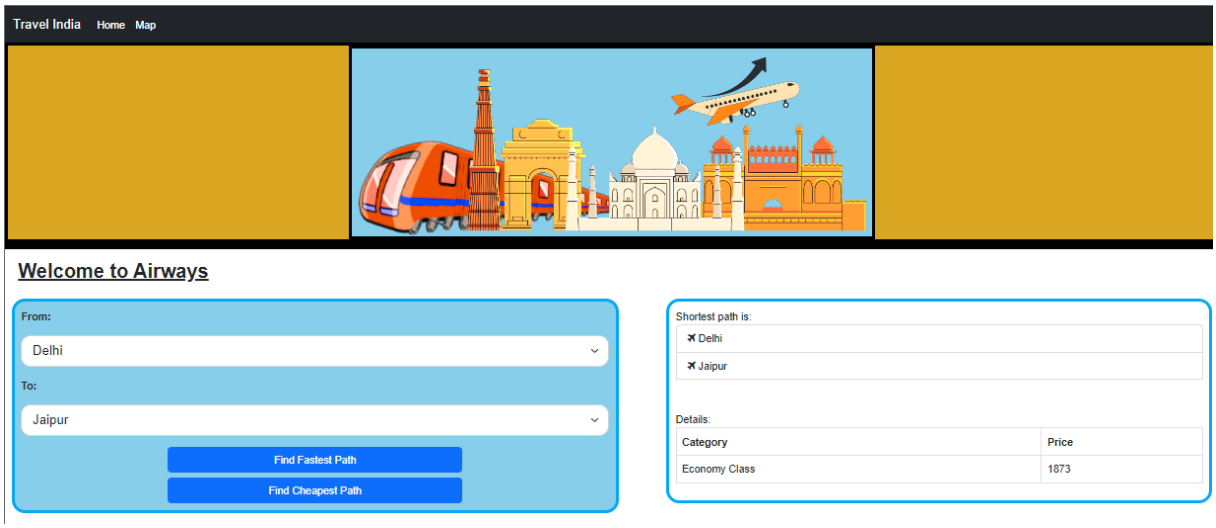
Travel India
Home
Map
Welcome to Airways
From:
Delhi
To:
Jaipur
Find Fastest Path
Find Cheapest Path
Shortest path is:
Delhi
Jaipur
Details:
Category
Price
Economy Class
1873

For Maps:

Welcome To Travel India Map

Hover on the circular nodes for information about number of **Railway** as well as **Airway** connections

Click here to go to Home

Back to Home

BIBLIOGRAPHY

WEBSITES:

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- www.Railyatri.com
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- www.Cleartrip.com
- www.http://google.com/flights.com