INFINITE LEARN

DATA STRUCTURES AND ALGORITHMS

PROJECT REPORT

TEAM MEMBERS

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ABSTRACT

MOTIVATION OF THE PROJECT

Since ages, for learners (especially students like us), it is tough to find the required books and other learning materials in one place, they spend hours and waste their precious time searching for materials.

Even if they get the required materials and books, they cannot easily understand the topic they are reading and even some people are good listeners and can understand topics easily by listening and visualizing the topics, to help you with reading and learning we produced all-in-one library learning platform.

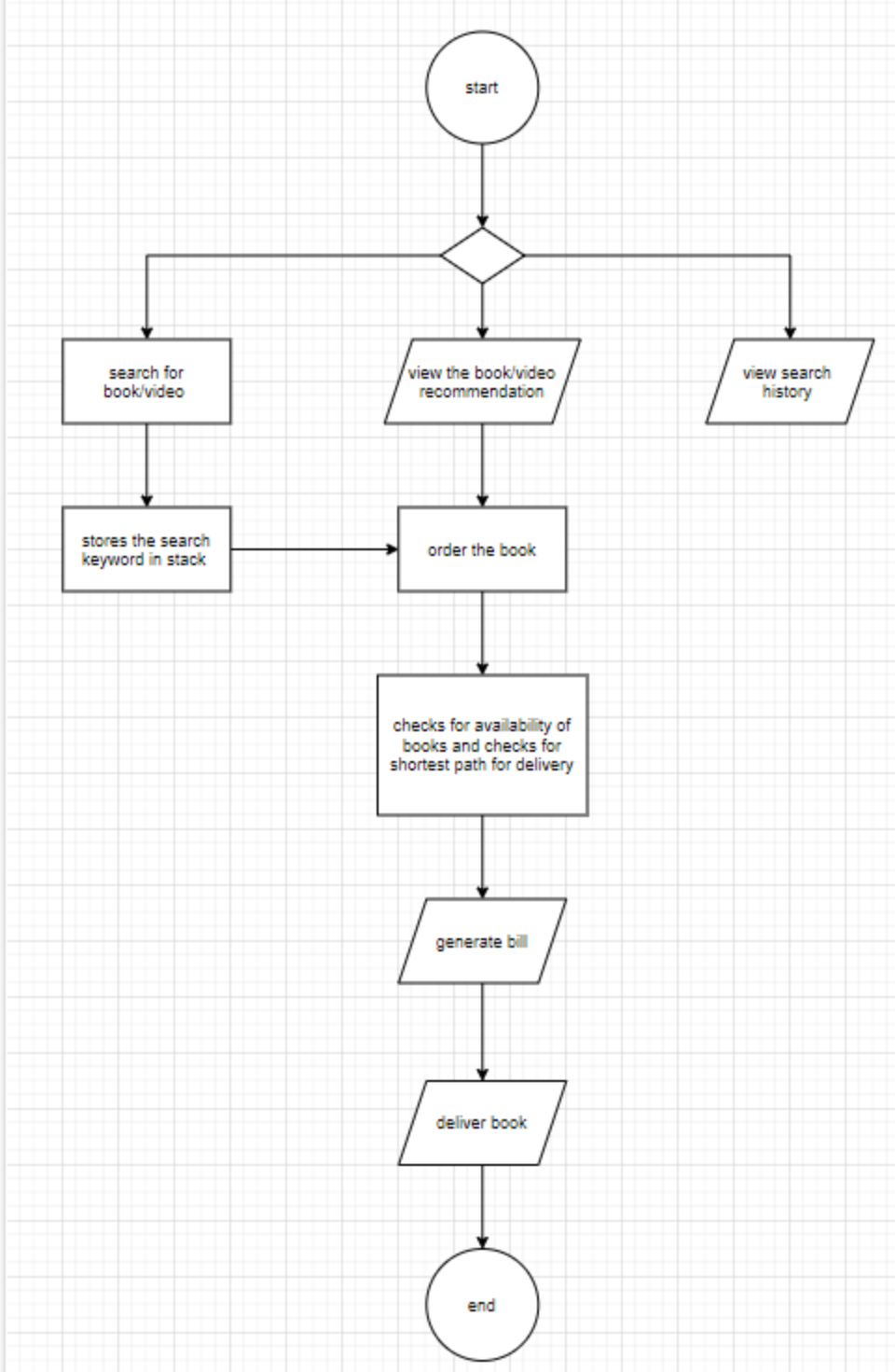
MAIN OBJECTIVE

The main goal of this project is to make a fully functional e-library where users can get access to several types of materials at one go.

After signing up, the users can search for best materials available and give reviews for the same.

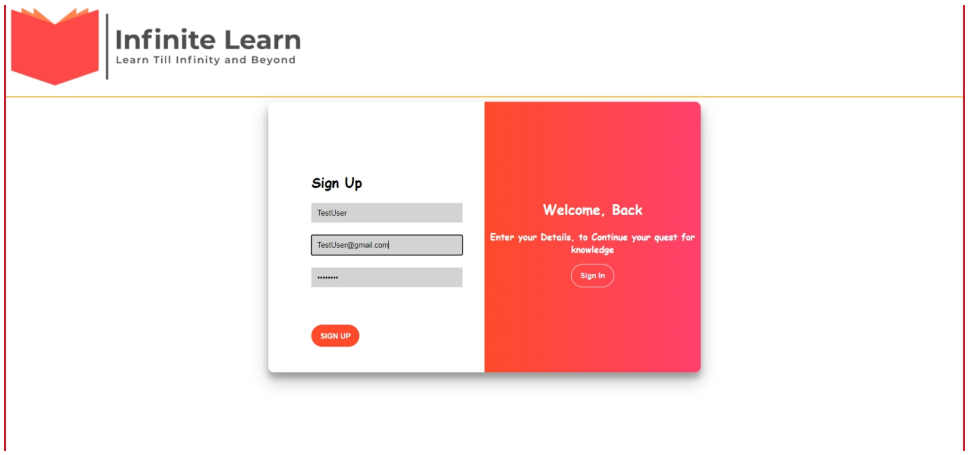
The system uses the user history to give better recommendations and gives a provision of delivering books in the shortest path possible.

FLOW DIAGRAM

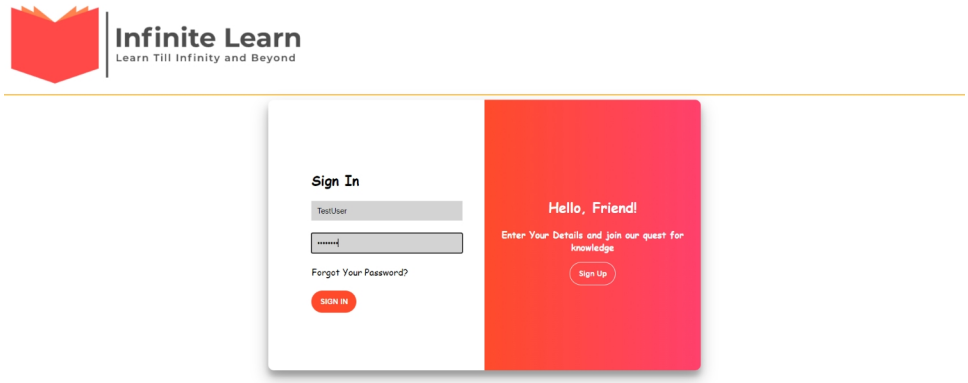


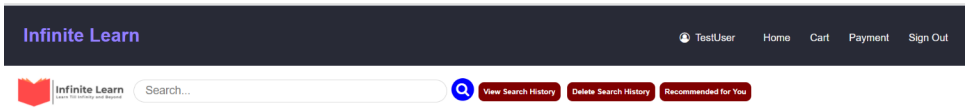
TEST CASE

TC#1: User registers in the sign-up page with valid credentials

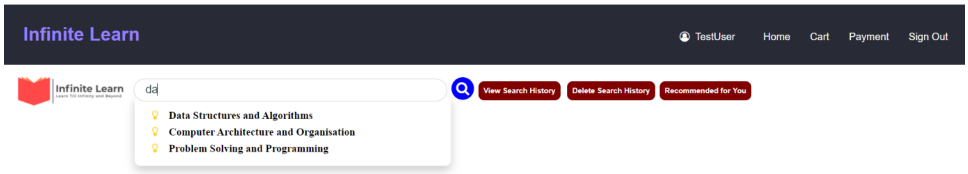


TC#2: User logs in to the website with valid credentials Username: Test User, Password: Password

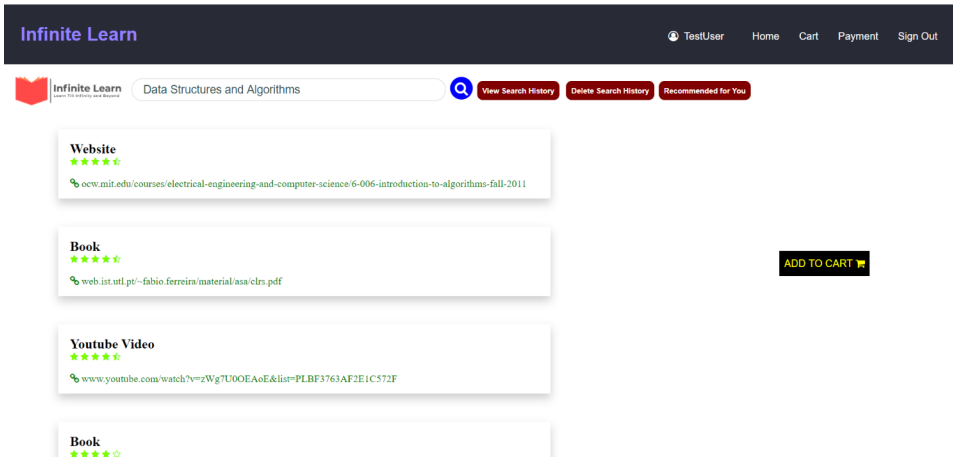




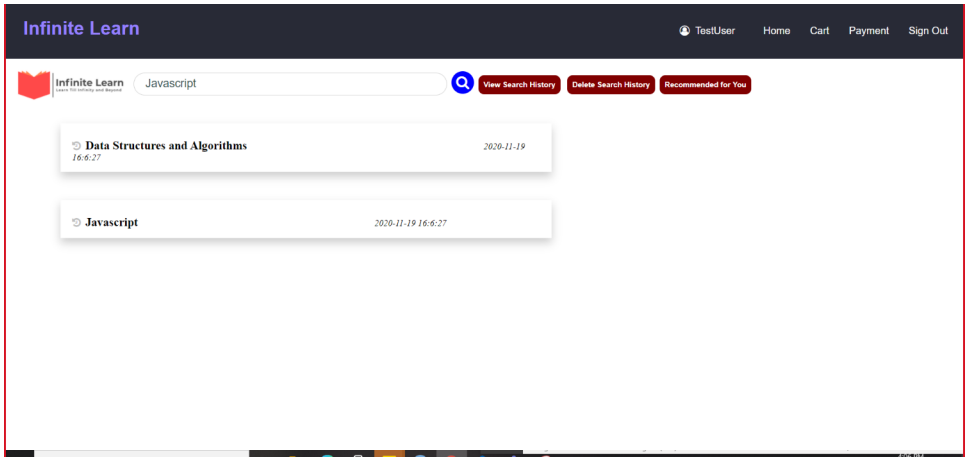
TC #3: On entering “da”, suggestion box is displayed with “Data Structures and Algorithms” as the first choice.



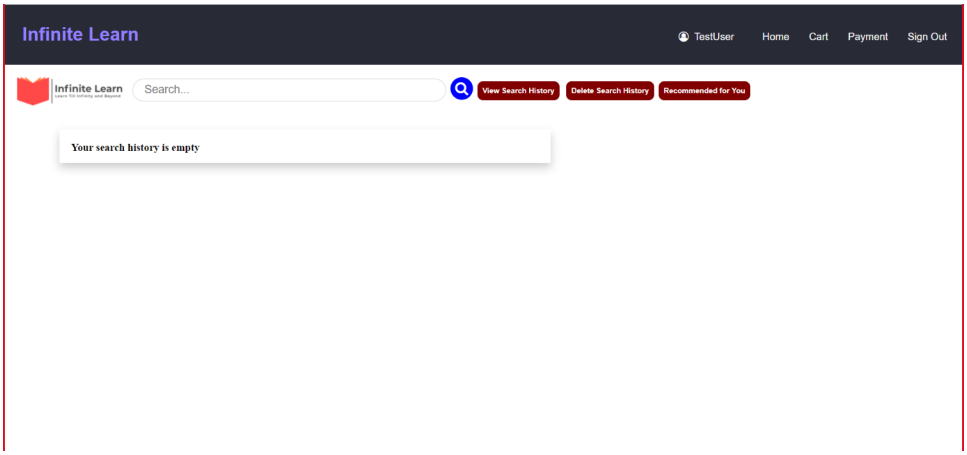
TC#4: On choosing the “Data Structures and Algorithms” suggestion it is selected into the input box. On clicking search button all links related to the topic are displayed.



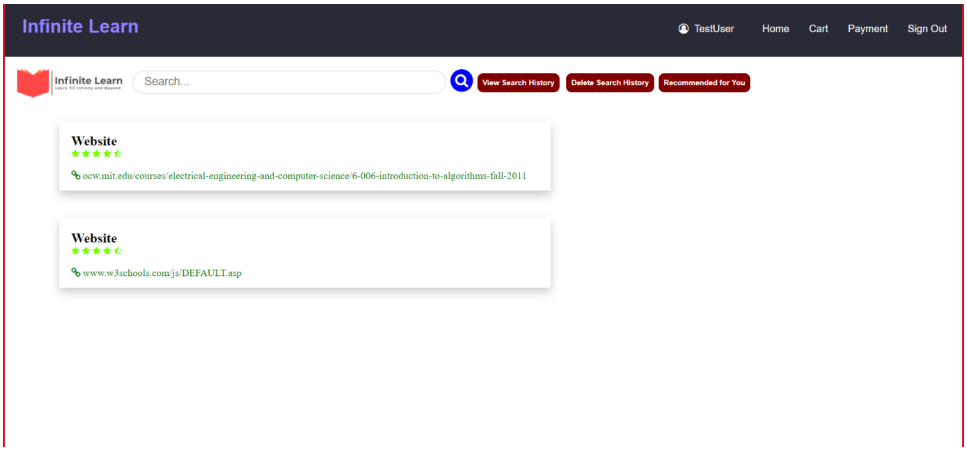
TC #5: On Clicking View Search History the user can see the recently viewed topics searched and on clinking on the topic it can be searched again.



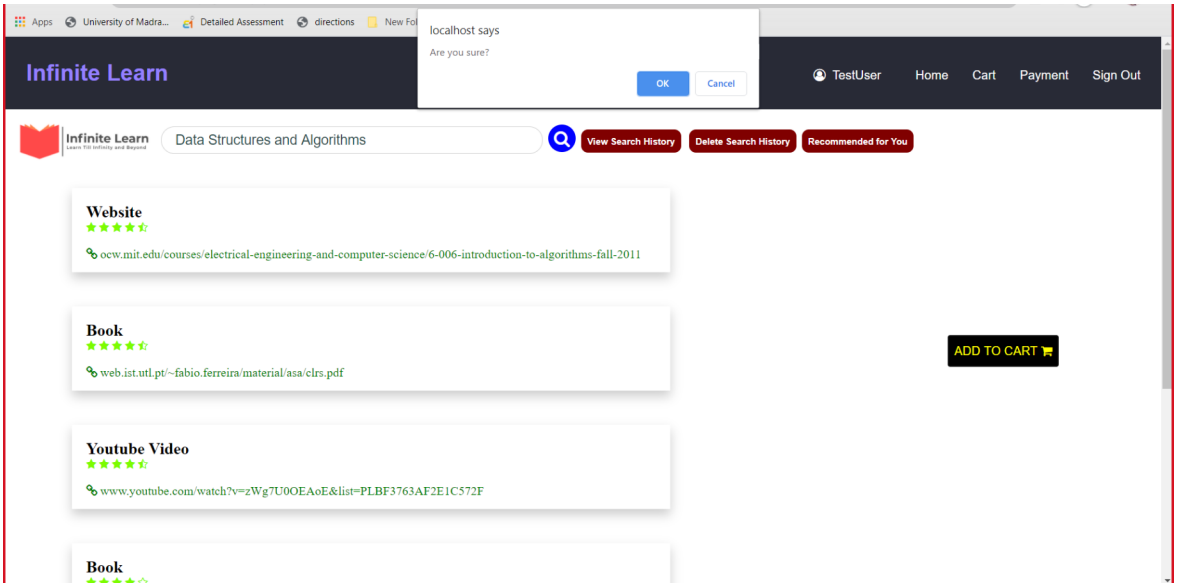
TC #6: On clicking Delete Search History the user can delete his searches done before and Your search history is empty is displayed.

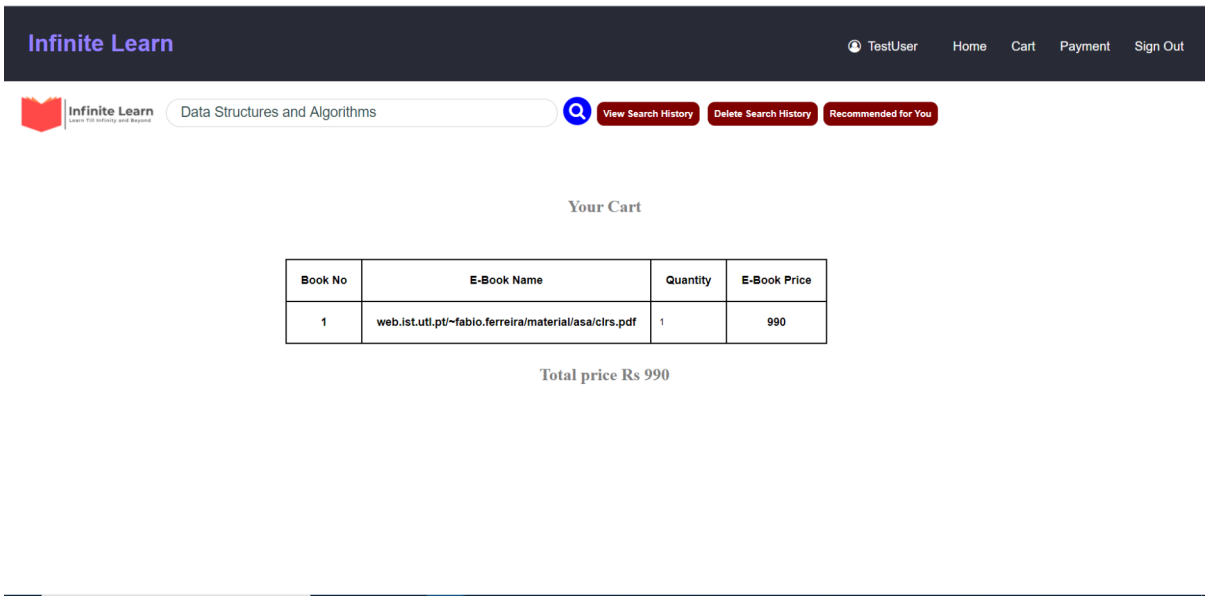


TC #7: On clicking Recommended for you the user gets recommendations based on already searched topics and the most highly rated study resource is displayed

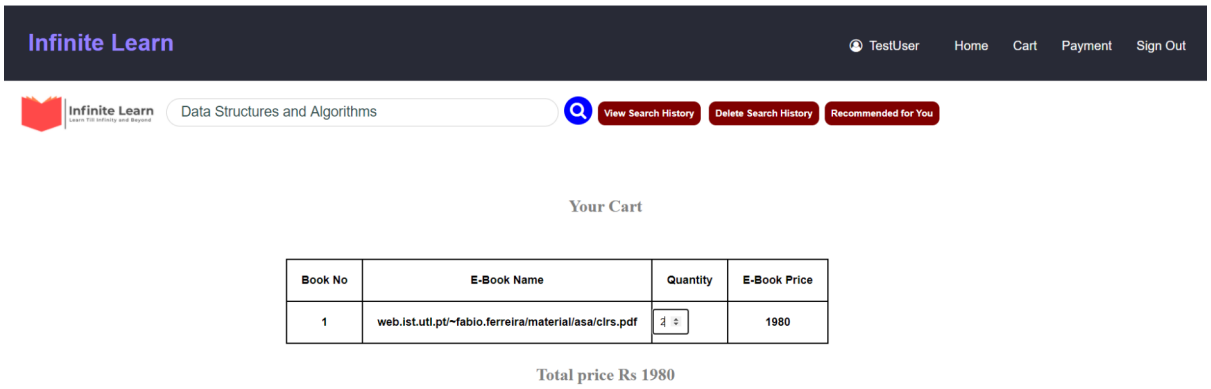


TC #8: On clicking add to Cart a pop up is displayed showing that book is added and when view cart is clicked, a table with the list of ordered books is displayed with the Total Price at bottom.

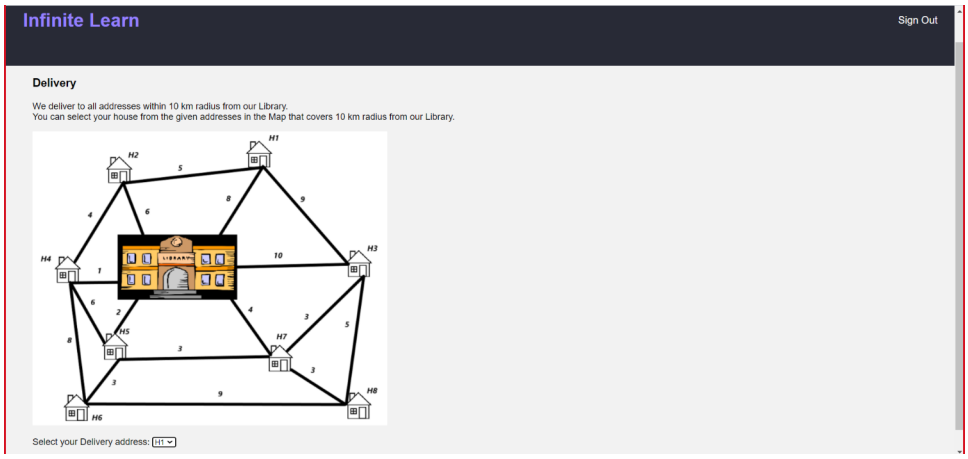




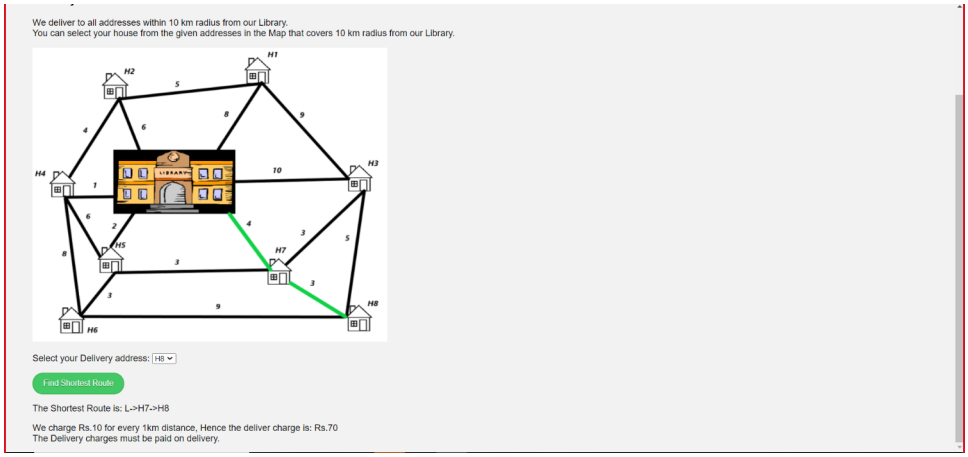
TC #9: On changing the quantity selected the Total Price of the order is updated simultaneously.



TC #10: User clicks the Delivery option and selects the house in the map



TC#11: User clicks find shortest route button and views the shortest path from library to the selected house



LEARNING OUTCOME

Hariharan A:

1. This project has made me improve my concepts in data structures and algorithms especially graphs, hash tables, stacks, sorting algorithms and analyzing their time complexities.

2. I learnt how to manipulate hash tables, graphs and stacks which will be useful in my upcoming exams.

Suraj P:

1. The Project helped me apply the data structures and algorithms taught in theory class in real life. We were able to create our own search using hashing and sort results based on ratings.

2. I also learnt how to create a hash function and handle collisions (if they occur). I also understood the code of all the modules of the project to ensure that all concepts are learnt. Another soft skill I learnt was to cooperate and work in a team to complete the project.

Girish S:

1. Working with this project has helped me to solve problems with a distinct perspective and a context for academic learning, an opportunity to put theory into practice.

2. It also helped me to look at sorting in depth and understand the time complexity of it, which in turn helped in developing ideas for my final year projects.

Kaarthik Shrinivas V:

1.I have learnt in detail about data structures and algorithms throughout the making of the project and learnt how to implement the data structures and algorithms in the code and how they are useful in real life applications.

2.I have learnt how we use graphs and Dijkstra's Algorithm to find the shortest distance between any two points, I have learnt how we use Hash to search an element particularly in less time complexity and effectively and I have learnt how we use stacks and queues in search history storage and displaying it., Overall, it helped me to develop my problem-solving skills and improve my learning, and helped me to apply logic in real life situations.

Dhanish Kumar V:

1.Working on this project has helped me to get a better understand of the data structures and algorithms and real-life application and uses of the algorithm through this project.

2.I have revised the entire concept of what I have learnt in data structures and algorithms for this project to implement and understand the coding.

FUTURE SCOPE

- Our project will offer innovative and more powerful means to researchers for sharing and discussing the results of their work.
- For the recommendations' module, we can expand it to incorporate Machine Learning Algorithms to ensure user can get some better choices to choose and improve the overall experience.
- In our project we are using only a sample map to show how the delivery system works and we are delivering books only within 10 km radius, this can be updated using Google APIs, and the we can delivery for all the customers in world.

ACKNOWLEDGMENTS

We wish to express our sincere thanks and deep sense of gratitude to our project guide, **Dr. Oswald C.,** School of Computing Science and Engineering, for his consistent encouragement and valuable guidance offered to us throughout the course of the project work. We are indeed grateful that we were introduced to books such as **CLRS** and other useful learning material without which we could not have made such a project.

We also express our thanks to our Program Chair Dr. Justus S for giving us an opportunity to make a project for this course this semester.

Finally, we thank our parents, family, and friends for bearing with us throughout the course of our project and for the opportunity they provided us in undergoing this course in such a prestigious institution.