

Data Structures and Algorithms

EVENT MANAGEMENT SYSTEM

Course Project Report

**School of Computer Science and Engineering
2023-24**

Contents

Si. No.	Topics
---------	--------

- | | |
|----|-------------------------|
| 1. | Course and Team Details |
| 2. | Introduction |
| 3. | Problem Definition |
| 4. | Functionality Selection |
| 5. | Functionality Analysis |
| 6. | Conclusion |
| 7. | References |

1. Course and Team Details

1.1 Course details

Course Name	Data Structures and Algorithms
Course Code	23ECSC205
Semester	III
Division	A
Year	2023-24
Instructor	Prof. Vaishali Parab

Page | 2

1.2 Team Details

Si. No.	Roll No.	Name
1.	10	ANURAG CHOUGULE
2.	21	PRASHANT UPPAR
3.	40	YASASHWI S G
4.	70	SHIVKUMAR CHOUGALA

1.3 Report Owner

Roll No.	Name
21	PRASHANT UPPAR

2. Introduction

The residents of Belagavi city are currently grappling with difficulties in securing suitable venue halls for specific events, exacerbated by a lack of information regarding the facilities, costs, and optimal travel routes associated with these venues. This dearth of knowledge is impeding the seamless organization of events, causing inconvenience to both individuals planning events and managers overseeing the process.

Page | 3

One of the primary challenges faced by the residents is the time-consuming nature of booking a venue hall for their events, as the intricate details regarding facilities and associated costs remain elusive. Additionally, individuals are often unaware of the most efficient travel routes to these venues, leading to unnecessary delays and complications.

For event managers, the lack of a streamlined process poses significant obstacles in ensuring effective event organization and customer management. The absence of comprehensive information on venues not only hampers decision-making but also prolongs the planning phase, affecting the overall success of the events.

Addressing these challenges requires the implementation of a centralized and accessible platform that provides detailed information on venue facilities, costs, and travel routes. Such a solution would not only alleviate the concerns of the residents but also empower event managers to enhance efficiency and customer satisfaction in the event planning process.

3. Problem Statement

3.1 Domain

The existing event management process faces inefficiencies in providing comprehensive event information, budget-conscious venue selection, and logistical optimization. This project aims to overcome these challenges by developing an Event Management System featuring a user-friendly interface with a detailed list of events, cost-sorted venues, and optimized travel routes using a shortest path algorithm, ultimately improving the overall efficiency and experience for both organizers and attendees.

3.2 Module Description

I am handling the entire execution flow of the program. It starts with creating user and manager interfaces. In user login, I check the credentials by matching the login ID and password, then display events and venue hall lists from a file, storing them in a structured format. Later on, I provide the shortest path to venues from different areas of the city and also offer the shortest path to neighbouring areas along with the exact distance using Dijkstra's algorithm. I am also involved in area search within the system domain using a naive algorithm. Additionally, I am in touch with the quicksort algorithm for sorting venue halls based on their prices. I am responsible for implementing hashing data display functions and storing data into files.

Page | 4

In the manager interface, I have provided functionalities such as adding events and venue halls to the file, as well as the ability to delete them. Managers can also retrieve booking details, including the date and user ID associated with the booking.

4. Functionality Selection

Si. No.	Functionality Name	Known	Unknown	Principles applicable	Algorithms	Data Structures
	Name the functionality within the module	What information do you already know about the module? What kind of data you already have? How much of process information is known?	What are the pain points? What information needs to be explored and understood? What are challenges?	What are the supporting principles and design techniques?	List all the algorithms you will use	What are the supporting data structures?
1	Check the user Login credentials	User name and password	There may so may info to check we need to take imp one	comparison	File functions	arrays
2	Display events	Event id and event name	We are restricted to minimal event there may be more also	Looping, iterative	File Functions	structures
3	Display venue halls	Venue hall id , venue hall name and price	There are many halls where some not mentioned due to less info	Looping, iterative	File Functions	Structures
4	Shortest path to all area including venue location	City details and adjacency matrix	Additional path between area unknown	Looping and iterative	Dijkstra's algorithm	Structures, Arrays, graphs

5	Add events	Existing event details and event details to be added	----	Bruth force technique	File writing functions	structures
6	Add venue hall	Existing venue hall details and venue hall details to be added	---	Bruth force technique	File writing functions	structures
7	Delete event	Existing event details and event id to be delated	----	Bruth force technique	File writing functions	structures
8	Delete venue	Existing venue hall details and venue hall details to be deleted	--	Bruth force technique	File writing functions	structures
9	Display	Booking date with user id to that	User other minute details not considered	Bruth force technique with looping and iteration for display	File functions	structures

5. Functionality Analysis

1) Checking user credentials:

User will enter his user id and password which will get searched the domain users if matched then it proceed.

Time efficiency:- $O(n)$

2) Choose event:

User will be displayed with list of events so out that he has to select one event with get stored.

Time efficiency:- $O(n)$

3) choose venue hall:

User will be displayed with list of venue halls so out that he has to select one venue with get stored.

He will be given with sorting option for venue halls based on price

Time efficiency:- $O(n)$

4) Finding shortest path to venue and remaining city areas:

User will be displayed with area with id so he has to enter source and destination id , After that it will display shortest path to all the areas

Time efficiency :

Page | 6

printsolution: $O(n)$

mindistance: $O(n)$

Dijkstra : $O(n)$

Total time efficiency:

$=O(n+n+n)$

$=O(3n)$

$=O(n)$

5) Add events:

Program will display existing events and then it will ask details of event to be added like event id and event names and through fprint if will write to the file

Time efficiency:- $O(n)$

6) Add venue halls:

Program will display existing venue and then it will ask details of venue hall to be added like venue hall id , venue hall names, venue hall price and through fprint if will write to the file

7) Delete events :

It will ask for the id of events to be deleted if search for that if found in the list it get deleted

Time efficiency:- $O(n)$

8) Delete venue halls :

It will ask for the id of venue hall to be deleted if search for the same if found then it get listed form the list

Time efficiency:- $O(n)$

9) Display the booking details of the month

The program will read the `hash_table_data` file where we stored month data with user id that will be displayed to the manager.

Page | 7

Time efficiency:- $O(n)$

6. Conclusion

Communication:

Clear and regular communication ensured alignment on project goals and timelines.

Collaboration:

Smart task delegation enabled each team member to contribute their expertise effectively.

Project Management:

Project scope and timelines were crucial for efficient project management, keeping the team on track for timely deliveries.

Data Structures:

Emphasis on well-designed data structures optimized code, especially when handling large datasets.

Algorithmic Efficiency:

The importance of efficient algorithm selection and implementation was highlighted for addressing various functionalities and enhancing system performance.

Debugging and Performance Tuning: Skills in debugging and performance tuning were honed while overcoming challenges in optimizing code for efficiency.

Practical Application:

Demonstrated the practical application of knowledge, emphasizing the fundamental role of data structures and algorithms in building reliable and scalable software.

Continuous Learning:

Highlighted the dynamic nature of software development, stressing the need for continuous learning to stay updated with industry developments and best practices.

7. References

~*~*~*~*~*~*~