



# **RAJALAKSHMI ENGINEERING COLLEGE**

**An AUTONOMOUS Institution  
Affiliated to ANNA UNIVERSITY, Chennai**

## **EVENT MANAGEMENT SYSTEM**

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**Submitted for the Practical Examination held on** \_\_\_\_\_

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## **ABSTRACT**

This project aims to develop an advanced event management platform that leverages technology to streamline and optimize every step of the planning and booking process. By integrating a responsive chatbot, secure data handling protocols, and automated confirmations, the platform addresses key challenges in traditional event management. The chatbot offers real-time assistance, helping users with common questions, booking guidance, and troubleshooting, reducing wait times and enhancing communication. Additionally, robust data security protocols protect sensitive information through encryption, secure storage, and access controls, ensuring compliance with data protection regulations like GDPR and giving users peace of mind about the safety of their information. Automated confirmations and notifications simplify communication by instantly updating users on booking statuses, reminders, and any changes, minimizing manual effort and reducing errors. Centralizing all event-related tasks, including venue and vendor bookings, in one easy-to-navigate platform further enhances the user experience, making it easy to compare options and finalize decisions efficiently. Altogether, this project delivers a modern, comprehensive solution for managing events of all sizes, appealing to both end-users and organizers and meeting the fast-evolving needs of the event management industry.

# CHAPTER 1

## INTRODUCTION

### 1.1 GENERAL

In today's fast-paced digital age, event management requires seamless design, personalized services and an intuitive user experience. Our project focuses on building a dynamic event management website that integrates a user-friendly chatbot and provides clients with an efficient and enjoyable way to plan their events from beginning to end. Our platform is designed to handle multiple platforms, allowing users to specify their specific requirements while streamlining their registration process.

Our website has a secure login page, ensuring that every customer's Experience begins with a secure login. Once inside, they are greeted by an interactive chatbot that acts as their event guide. Our chatbot helps them choose from a range of event management services, whether they are planning a wedding, corporate function or social gathering. Chatbot guidance streamlines the decision-making process, guiding customers through customized channels based on their needs and preferences.

To ensure customer data privacy and security, all customer information is stored in MySQL, where the information is stored for additional security. This encryption protects sensitive information, giving users confidence that their data is safe. Once the booking is confirmed, our system sends a confirmation email with detailed information about how to book, which acts as a digital receipt and confirmation true to the customer

Our streamlined approach not only enhances the user experience but also optimizes event management for customers who value convenience and security. By incorporating a chatbot and a secure, interactive platform, our event management system meets today's needs, ensuring every client's event is a smooth, guided experience for plan

## **1.2 NEED FOR THE STUDY**

In recent years, the rapidly changing event management industry has been fuelled by customers' increasingly high demand for efficient, tailored and tech savvy solutions. As event planning becomes more complex (weddings, corporate events, festivals, private gatherings, etc.) users want a platform that not only streamlines the booking process but also offers a guided experience where it is easy, intuitive, and planned at the same time. Traditional event planning may take time and run through a lot of resources, making it necessary to communicate and choose through many touchpoints and multiple platforms. But these methods do not satisfy the expectations of today's digital native user who hate self service, want instant results and want secure handling of his data. The aim of this project is to solve these issues by developing an all in one event management website with chatbot integration, allowing customers to easily describe what they are looking for, book the event securely through the one page website, and once booked, access all the booking details. Also, as the data security is a priority, therefore, the data stored of customer must be encrypted. This platform uses MySQL's encrypted storage features and not only plays catch up with industry best practices with regard to data and user privacy, but it even exceeds those expectations. The contribution of this study lies in modernizing the service of event management through the provision of a technical solution that establishes a barrier less smooth and interactive thing with secure experience that takes care of the needs of the customers market in a new way in the field.



### **1.3 OBJECTIVES OF THE STUDY**

This study aims to create an event management website that integrates event planning and event booking process by incorporating secure, user friendly technology.

1. **Enhance User Experience:** In building a contractor intuitive platform through which customers can simply choose, edit, and reserve event management services suitable for different types of events, such as corporate luncheons to social celebrations.
2. **Integrate a Chatbot for Interactive Guidance:** Building a chatbot which will help a user through the whole booking journey and choosing options for event based on the user's requirements and preferences.
3. **Ensure Data Security and Privacy:** I have used MySql within an encrypted grocery shop system to store customer data securely and meeting the modern data privacy standards of encrypting all personal and booking data.
4. **Automate Booking Confirmation:** The development of an automated system that sends confirmation mail with the booking details to the customer and decreasing the manual intervention in booking such that reliability is increased.
5. **Streamlined Platform:** It aims to bring all event management needs to a one stop solution to lessen the complexity and inefficiency that with great planning and booking methods incur.

The study aims at providing a robust and responsive platform for an event management system in line with user demand for convenience, security and efficiency in an era of modern management.

## 1.4 OVERVIEW OF THE PROJECT

The aim of the project is to construct a robust complete event management web site with interactive, smooth, and protected platform for customers in scheduling and booking their events. Using this project, technology is leveraged to make what would typically be a challenging and laborious event planning process, simple and efficient. The platform includes several key components designed to enhance user engagement and streamline the booking workflow

1. **User Authentication:** A secure login page sets the tone of beginning the journey for each user in a personalized way. By setting up this login, access to customer accounts is protected as each user is given, a reliable and private session.
2. **Interactive Chatbot Assistance:** Once they're logged in, users are greeted with an AI-powered chatbot that will take them through the entire planning process. The purpose of this chatbot is to act as a virtual assistant and asks the user about what type of its event is, its preference, or anything particular like selection of venue, catering, and other services. The chatbot helps customers make decisions and reduces the complexity of planning for more personalized experience
3. **Customizable Event Options:** They have a range of customizable event management services catering to events in two different ways: personal (weddings, birthdays) or corporate (conferences, seminars). Each event option presents options for the decor, catering, audio visual necessities, and other special features based on the chosen event type.
4. **Encrypted Data Storage:** All user information including personal information and the preferences of the user are stored securely in MySQL using encryption to keep dataset private and secured. Your your customers trust you for this secure data handling and it follows modern standards for user privacy.

5. **Automated Confirmation and Notifications:** When the user completes the booking process the automated system sends a confirmation email containing a summary of the chosen event details, payment details, and the digital receipt. This provides instant visibility for the customer and a streamlined channel for customers to install additional elect installing Jenkins scripts and invoke updates, and, in turn, augment's reliability and customer satisfaction.

## **WORKFLOW**

The event management system workflow is determined to provide a smooth, guided experience of a user registration to event confirmation.

1. **User Registration and Login:** The journey starts with registration if someone will register a new account, where a brand new user creates an account by giving basic data (e.g., name, email, contact number), and create login credentials. Users who have already returned, just need to do the login thing. The credentials are secured provided the access to the platform is protected.
2. **Chatbot Interaction:** The planning process begins when an AI powered chatbot greets an authenticated user upon success with further instruction. As an interactive assistant, the chatbot asks the user a series of questions in order to better understand what type of event they're looking for, their preferences and any specified requirements for whatever event it is. The chatbot based on the user input will show relevant options as well as help users search through different kinds of services like choosing a venue, catering, decoration and more.
3. **Selection of Event Services:** Then users choose their type of event and arrange according to their preferences. This includes choosing details for:

- Event type: Was corporate, wedding, social gathering etc.
- Venue: Indoors, outdoors, per your needs.
- Services: Types of catering, different types of decors, types of audios
- visual setup, entertainment add-ons and so on.

However, the available options change dynamically within the system according to the chosen event type and users can adjust the event to their vision.

4. Review and Confirmation: Once users have made their selections, all choices they've made will be reviewed in a summary that includes details on the service of their choice and estimates of how much they'll be kicked. After making their selection, the user confirms the booking at which point, if necessary, the user is taken to their banking details to finalize the payment.
5. Data Storage and Encryption: Customer info (even event preferences) are stored in MySQL with encryption to ensure data security and are all saved in MySQL. Sensitive information that requires encryption with appropriate data privacy standards is protected by this encrypted storage so that users can trust the platform is secure.

## **CHAPTER 2**

### **REVIEW OF LITERATURE**

#### **2.1 INTRODUCTION**

The last thirty years have witnessed tremendous change in the field of event management, which has been greatly accelerated by technological advancements that have fundamentally altered how an event is conceived, designed and facilitated. It has been particularly about the ease with which digital platforms have integrated to simplify processes, improving both the user experience and operational efficiency.

The literature surrounding event management illustrate the growth in need for flexible and inquiring platforms servicing many different event types, all of which should be well designed, safe with data, and easy to communicate with. The literature has given special focus in the adoption of chatbots powered by AI in event management systems. Research shows that chatbots are vital in helping customers interact by providing instant advice, guidance and help with decision making, cutting reliance on traditional customer service channels. Examining studies, we have found that chatbots enable users to handle tasks that seem too hard and make complex processes of planning and customization more accessible. The importance of data security in customer facing apps, more particularly in those where personal and financial information are concerned, is also emphasized in the literature. As data privacy continues to gain attention, many studies suggest the encryption and storage of data as safe methods for securing user information. MySQL Databases, which are often promoted in the literature for their scalability and encryption capabilities have been recommended in many a project which has a robust data security. Thirdly, another very promising field is automation in booking and confirmation systems. The research shows that the automated confirmations improve reliability, reduce human error

and customer satisfaction by prompt notifications. That automated emails or notifications function as a record in digital form adds to literature where it is supported that automated emails or notifications help establish trust with users.

Overall, then, the existing literature gives a foundation for designing an event management system that incorporates chatbots, storage of secure data, and automatic communication. This project builds on these findings with the goal of filling holes in user experience, security and efficiency within the event management industry, offering a contemporary, reliable platform that accommodates the dynamic demands of event organizers and attendees.

## 2.2 LITERATURE REVIEW

S. No	Author Name	Paper Title	Description	Journal	Year
1	Ananya U., Shetty K. U., Shraddha H. M., Priya P., Dr. Joseph M. J. V.	Event Management System for Educational Institutions	Web-based event management for institutions with event creation, tracking, and feedback.	International Journal of Creative Research Thoughts (IJCRT)	2022
2	Madhuri Dubey, Vinay Mishra, Priya Banarjee, Ajvita Jumle, Pallavi Raipure, Pooja Wankhede	Event Management System	Online event management for booking, availability, and efficiency.	International Journal of Trend in Research and Development (IJTRD)	2016

3	MohanaS., Mr.P.Anbumani	Online Event Management System	Design of a digital platform for online event management.	International Journal of Research Publication and Reviews	2022
4	Drahsti Amrish Shah, Hemalata Vasudavan, Nurul Farhaini Razali	Event Management Systems (EMS)	Web-based application for event management development and implementation.	Journal of Applied Technology and Innovation	2023

**Table no 1 Literature Review**

The literature review table provides provide insights into online event management systems, emphasizing different aspects of design and functionality. The first paper, authored by Ananya U., Shetty K. U., Shraddha H. M., Priya P., and Dr. Joseph M. J. V. in 2022, discusses a web-based event management system specifically for educational institutions. It highlights the features of event creation, tracking, and feedback, addressing the unique needs of academic environments, and was published in the International Journal of Creative Research Thoughts (IJCRT). The second study, by Madhuri Dubey, Vinay Mishra, Priya Banarjee, Ajvita Jumle, Pallavi Raipure, and Pooja Wankhede in 2016, explores an online event management platform aimed at improving booking efficiency and checking availability. Published in the International Journal of Trend in Research and Development (IJTRD), this paper focuses on enhancing operational efficiency through digital tools. The third paper, authored by Mohana S. and Mr. P. Anbumani in 2022, covers the architectural design of an online event management platform to improve accessibility and usability.

Published in the International Journal of Research Publication and Reviews, it provides technical insights into platform development. The fourth paper, by Drahsti Amrish Shah, Hemalata Vasudavan, and Nurul Farhaini Razali in 2023, discusses both the development and implementation of a web-based event management system, examining the practical deployment aspects. Published in the Journal of Applied Technology and Innovation, this paper focuses on real-world applications and technical execution. Overall, these papers offer a broad perspective on the different applications, design elements, and implementation strategies in the field of digital event management systems.



## CHAPTER 3

### SYSTEM OVERVIEW

#### 3.1 EXISTING SYSTEM

The **Event Management System** is a Java-based web application designed to facilitate the viewing, booking, and organization of events. The system supports three primary user roles: administrators, event organizers, and customers, each with specific functions tailored to their needs. Administrators oversee the entire platform, manage user accounts, and control event listings, while event organizers manually create, update, and manage their events and bookings. Customers can browse events, make bookings, and view booking details, but their interactions are limited to manual steps without any automated guidance or notifications.

The application's front end is built using HTML, CSS, and Bootstrap, providing a responsive interface, while the backend is powered by Java with the Spring MVC framework. This setup allows for organized routing, processing of user requests, and secure session management. MySQL serves as the database, storing essential data on users, events, and bookings, ensuring data persistence and supporting data retrieval for each user role.

However, the system operates without automation, meaning that many tasks require manual input and oversight. For instance, event organizers must update booking information themselves, administrators handle user and event management manually, and there are no automated notifications or reminders sent to customers. Without automated workflows or AI-driven assistance, users must actively interact with the system at each step, making it more labor-intensive compared to automated solutions. This lack of automation creates a more hands-on approach, which may limit efficiency but still provides a structured platform for event management.

### **3.2 PROPOSED SYSTEM**

This event management system aimed to make the planning, customization and booking of events in an easier and more secure fashion using a user friendly digital platform. The platform begins with a secure login system where no users are allowed to access the system unless they are authenticated, followed by encrypted user information storage through MySQL in order to be compliant with high standards of data security and privacy. One of the really cool things about this system is that it has an AI powered chatbot that is the virtual assistant of the system, and it asks relevant questions and offers personalised recommendations based on what you want to plan. This approach allows users to make a decision easily and creates a personalized and intuitive experience for them.

All of these choices are available as options with the system to customize for a variety of different event types (weddings, corporate functions, social gatherings, etc.) and their specific needs. With the ability to add or remove the specific services you require, such as venue, catering, decor and more, users can tailor their event plans as necessary. After users select their options, you use the system to make a safe payment and automatically book confirmation. The immediate confirmation to the user's phone by sending the verification message then followed by the confirmation email which contains the details of the booking.

For organizations, the system includes a secure backend dashboard to manage events, view bookings, and user data, along with integrated reporting tools to provide real time insights into system performance and user activity. The administration of this module also facilitates event coordinating and monitoring to run a system in an efficient manner. The visually appealing and responsive interface of the platform further improves the user experience, user can easily navigate the platform irrespective of the technical ability. In a nutshell, this event management system features state global apps in benefiting the present day requirements for convenience, protection, and personalization around the matter

of event management, utilizing its strength on carving out a competent and dependable electronic determination for the administrators and users of the event management industry.

### **3.3 FEASIBILITY STUDY**

The feasibility study for the event management system examines three main aspects: operational feasibility, economic feasibility, and technical feasibility.

A series of factors are evaluated to determine whether or not development and implementation of the proposed system are viable and practical.

1. **Technical Feasibility:** The available current technology and development tools make the proposed system technically feasible. This can be developed with the widely available frameworks for Web development: HTML, CSS, JavaScript etc, and backend programming with Node.js as it's server. If you store secure user data, a robust, scalable database that encrypts is exactly what MySQL gives you. Integrated with existing AI libraries and APIs, high quality, real time chatbots, which offer guidance and support to users, can be built with AI. Thus, all the project's requirements (safe authentication, interactive chatbot, encrypted data management, automated confirmation emails) can be accomplished using the available resources and technology.
2. **Operational Feasibility:** The system is operationally viable, as it addresses a major need amongst event management companies for a simple, functional, and secure web-based platform. Features such as chatbot guided planning, customizable offerings and handling of secure data makes user experience and efficiency favourable to the user as would be expected. The backend dashboard helps administrators to manage events efficiently as well as view bookings and ensures smooth running with little or no bottlenecks. Beyond such fundamental improvements, the system also

incorporates responsive design to support accessibility across devices, making it pleasant for users to plan and book events on the go, thereby raising the system's usability and adoption

3. Economic Feasibility: The project design and operational costs are justified by the possible benefits and the revenue generation. Web development, AI integration for the chatbot and a secure hosting create initial costs, which are manageable within a defined budget. There is little in long term maintenance costs primarily for hosting and then for database management on a platform that provides so much value. Service charges, premium options for managing events, subscription — the system is financially viable. Secondly, the system is scalable so that it can be extended with time by adding features or services without incurring a big additional cost.

Finally, it is concluded that the proposed event management system is technically and operatively feasible as well as economically feasible. The technology is ready, the platform addresses a real market need, and the returns make sense with the capability to achieve revenue generation. This gives practicality and willingness of the project.

## CHAPTER 4

### SYSTEM REQUIREMENTS

#### 4.1 SOFTWARE REQUIREMENTS

The following are the key software requirements for the development and successful deployment of the event management system:

- 1. Frontend Development:** HTML, CSS, JavaScript: Building block technologies for creating a reactive, interactive user interface. React.js JavaScript frameworks to build a dynamic and a modular frontend structure Bootstrap or Tailwind CSS: Using CSS frameworks to improve the stylistic, responsive appearance of the user interface that will behave the same on different devices.
- 2. Backend Development:** Node.js: Is a JavaScript runtime for server-side development, handling client requests, managing sessions and processing data. Express.js: A Node.js web application framework that helps you to create APIs and handle your routes properly.
- 3. Database Management:**
  - MySQL: A database for storing user data, bookings and event details, which is a NoSQL database. With encryption support, MySQL protects the data security and help to meet data privacy compliance.
  - Mongoose: Further information on MySQL Object Data Modelling (ODM) library for Mongo and Node.js.
- 4. Chatbot Integration:** Dialog flow or Rasa: AI platforms for chatbot construction, in which chatbot will handle query by user, to provide recommendations on event and assist in event planning. NLP (Natural Language Processing) APIs: Connect with the chatbot to enhance its capability to comprehend and responds to user queries more easily.

- 5. Authentication and Security:** JWT (JSON Web Tokens): For secure user authentication, session management and token-based user authorization. BCrypt.js: A library that helps with hashing password before storing in database to store user sensitive information in a secure manner. SSL Certificates: To provide secure communication on the client side with the server for encrypted data transmission
- 6. Payment Gateway Integration:** Stripe, PayPal, or Razor pay API: Payment gateway APIs from third party to safely process payments, confirming bookings, and completing transactions.
- 7. Email and Notification Service:** Node mailer: It is a Node.js library for sending automated booking confirmation emails to user on booking the event. Twilio or Firebase Cloud Messaging (FCM): For push notification to send SMS or push notifications when users are for verification and event related updates.
- 8. Development and Testing Tools:**
- Visual Studio Code or WebStorm: Coding, testing, and debugging the application IDEs.
  - Postman: The best for API testing and validation when we're testing backend routes and making sure our data stays secure.
  - Jest or Mocha: Ensuring code reliability through framework for testing backend logic as well as user interactions.
  - Git: It is the process of controlling the changes made to the codebase, and if they have been developed collaboratively.
- 9. Deployment and Hosting:** AWS (Amazon Web Services), Heroku, or Digital Ocean: Hosting of application, database and supporting service on cloud platforms for scalability and availability. To simplify deployment and version management, while containerizing the application. NGINX or Apache: They are web servers for managing requests, and load balancing so as to improve performance and reliability.

## CHAPTER 5

### SYSTEM DESIGN

#### 5.1 SYSTEM ARCHITECTURE

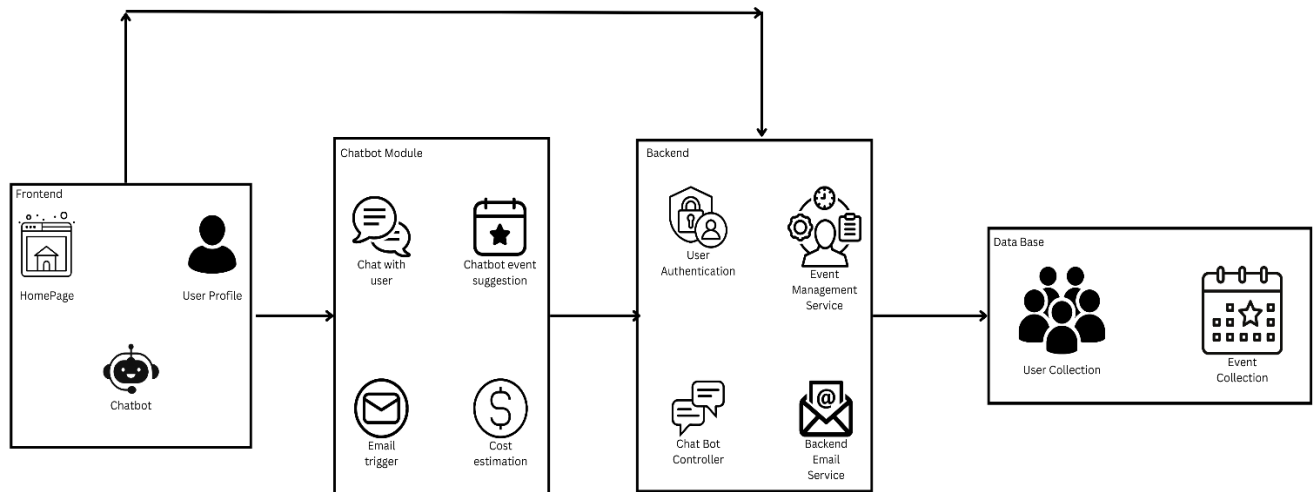


Fig 1

The Event Management System Architecture Diagram is a visual depiction of the system where all the components and data flow are explained, how there are different components in the system which interact to offer seamless event management experience. The architecture is divided into four key areas: The system works front end, backend, database and external integrations, each one playing a role for the system to function. On the left we see the Frontend section, where customers interact with the user interface. It includes several pages that guide users through the process of booking an event: Includes the authentication by the Login Page, the Event selection Page where users select their event type, the Booking summary page to view the selections, and the Confirmation page to finish with a booking. Our goal is to make it easy for you to navigate through event customization and booking, therefore these pages are dedicated to be

intuitive. A chat bot bridges the gap between the frontend and backend, allowing the user to interact directly with the backend to get data from, process user selections and display real time responses. The Backend section of the system is built on Node.js as the system's processing core. It is a set of multiple services which deal with the concerned steps of the booking and event management workflow. User login, registration and secure access is managed by the Authentication Service. The Chatbot service offers real time help to steer users to event customization options. Transaction processing is done securely by the Payment Gateway and the Notification Service sends booking confirmations via email & SMS. Last, the Data Encryption Module ensures that sensitive user information is encrypted before being stored, further securing it. They collaborate with each other to provide a back-end services like managing business logic, processing request and interacting with database and remote services.

MySQL is used to store user data, event details and booking records by the Database component. Data Encryption Module is integrated to this database to ensure data privacy and security compliance. It is the backend module, it takes interaction with the database, and accesses encryption/decryption and decryption information for input and output. The External Integrations on the right side include third party such as Stripe, Node mailer, and Twilio. Secure payment transactions are handled by Stripe, confirmation emails by nodemailer and so forth. By allowing such integrations this becomes possible to expand the system's functionality and to have payments, communications, without building complicated in-house solutions. The Admin Interface finally is an important tool for administrators to manage and control the system. User management, event oversight and access to system reports to assist in keeping an eye on bookings and how the platform as a whole is used can be done on the Admin Dashboard. The Event Management System Architecture Diagram gives a broad overview of our modular system that's secure and can be scaled up perfectly to handle user



interactions as well as data management, payments, and notifications. With this system the components are separated and we can integrate external services, providing this system with ruggedness and potentially flexibility to multiple event management needs.

## **5.2 MODULES DESCRIPTION:**

### **5.2.1 USER AUTHENTICATION MODULE:**

#### **User Registration Process**

- **Step 1:** User submits a registration form with details such as username, password, and email.
- **Step 2:** The system validates the input data (e.g., ensuring the password meets security criteria and the email format is correct).
- **Step 3:** Encrypt the password using a secure hashing algorithm (e.g., bcrypt).
- **Step 4:** Store the hashed password and other user details in the MySQL database.
- **Step 5:** Send a confirmation email to the user with a verification link (optional).
- **Step 6:** Upon clicking the verification link, update the user's status in the database to "verified."

#### **2. User Login Process**

- **Step 1:** User submits a login form with username and password.
- **Step 2:** The system retrieves the user details based on the submitted username.

- **Step 3:** Compare the submitted password (after hashing it) with the stored hashed password in the database.
- **Step 4:** If the passwords match, generate a secure session token or JSON Web Token (JWT) for the user.
- **Step 5:** Send the session token to the user's browser, allowing access to protected pages.
- **Step 6:** If the password does not match, display an error message, indicating incorrect credentials.

### **3. Session Management**

- **Step 1:** For each user request to access a protected route, check if a valid session token (or JWT) is present.
- **Step 2:** If the token is valid, allow access to the requested resource.
- **Step 3:** If the token is invalid or expired, redirect the user to the login page.

### **4. Logout Process**

- **Step 1:** When the user clicks on "Logout," invalidate the session token on the server.
- **Step 2:** Remove the session token from the user's browser (e.g., by clearing cookies or local storage).
- **Step 3:** Redirect the user to the login page.

### **5.2.2 CHATBOT MODULE:**

#### **1. Initialize Chatbot**

- **Step 1:** User accesses the event selection page; the chatbot interface initializes.
- **Step 2:** Greet the user and display a welcome message.

- **Step 3:** Prompt the user to select an event type (e.g., wedding, corporate event).
- **2. Event Selection and Customization**
- **Step 1:** Based on the user's event selection, provide options for customization (e.g., venue, date, catering).
- **Step 2:** For each option, guide the user through available choices with prompts and suggestions.
- **Step 3:** Validate and save the user's responses for each customization option.

### **3. Review and Confirmation**

- **Step 1:** After collecting all customization details, summarize the event choices.
- **Step 2:** Ask the user to confirm or modify selections.
- **Step 3:** If confirmed, store the final selections and proceed to the booking summary page.

### **4. End Session**

- **Step 1:** Thank the user and offer further assistance if needed.
- **Step 2:** Close the chatbot session or redirect to the next step in the booking process.

## **5.2.3 EVENT SELECTION AND CUSTOMIZATION MODULE:**

### **1.Event Type Selection**

- **Step 1:** Display available event types (e.g., wedding, birthday, corporate event).
- **Step 2:** User selects an event type.

- **Step 3:** Save the selected event type to the user session.

## **2. Customization Options Display**

- **Step 1:** Based on the selected event type, load customization options (e.g., venue, catering, decor).
- **Step 2:** Present each option sequentially to the user for selection.

## **3. User Input for Customization**

- **Step 1:** Prompt the user to choose from available options for each customization category (e.g., venue, catering menu).
- **Step 2:** Validate the input to ensure it meets any preset criteria (e.g., available dates for venue).
- **Step 3:** Save each customization choice to the user session or database.

## **4. Review and Confirmation**

- **Step 1:** Summarize all selected customizations for the user to review.
- **Step 2:** Ask the user to confirm or make changes to selections.
- **Step 3:** If confirmed, save the final selections and proceed to the booking summary page.

### **5.2.4 DATA ENCRYPTION MODULE:**

#### **1. Initialize Encryption**

- **Step 1:** Choose a secure encryption algorithm (e.g., AES-256).
- **Step 2:** Generate a unique encryption key for securing data (stored securely).

#### **2. Data Encryption Process**

- **Step 1:** Receive sensitive data from the application (e.g., passwords, personal details).
- **Step 2:** Apply the encryption algorithm using the encryption key.
- **Step 3:** Convert the encrypted data to a format suitable for storage (e.g., Base64).

### **3. Store Encrypted Data**

- **Step 1:** Save the encrypted data to the MySQL database.
- **Step 2:** Ensure no sensitive data is stored in plaintext within the system.

### **4. Data Decryption Process (for Retrieval)**

- **Step 1:** Retrieve the encrypted data from the database.
- **Step 2:** Apply the decryption algorithm using the encryption key.
- **Step 3:** Convert the decrypted data to its original form for use by the application

## **5.2.5 ADMIN DASHBOARD MODULE:**

### **1. Admin Login**

Input: Admin credentials (username and password).

Process:

- a. Validate credentials against the database.
- b. If valid, generate a session or token for the admin.
- c. Redirect to the dashboard interface.

Output: Access to the admin dashboard.

### **2. Dashboard Overview**

Input: Admin session/token.

Process:

- a. Fetch overall statistics (total events, total users, total bookings).
- b. Display statistics on the dashboard.

Output: Render dashboard overview.

### 3. **Manage Users**

Input: Admin selection for user management.

Process:

- a. Fetch user data from the database (e.g., list of users).
- b. Display user list with options to edit or delete users.

Output: Render user management interface.

### 4. **Edit User Details**

Input: Selected user ID.

Process:

- a. Fetch selected user's details from the database.
- b. Allow admin to edit user information (e.g., name, email, role).
- c. Validate input data.
- d. Update the database with new user details.

### 5. **Delete User**

Input: Selected user ID.

Process:

- a. Confirm deletion action from the admin.

- b. Remove user from the database.

Output: Confirmation message and updated user list.

## 6. **Manage Events**

Input: Admin selection for event management.

Process:

- a. Fetch event data from the database (e.g., list of events).
- b. Display event list with options to add, edit, or delete events.

Output: Render event management interface.

## 7. **Add New Event**

Input: Event details (name, date, type, etc.).

Process:

- a. Validate input data.
- b. Insert new event into the database.

Output: Confirmation message and updated event list.

## 8. **Edit Event Details**

Input: Selected event ID.

Process:

- a. Fetch selected event's details from the database.
- b. Allow admin to edit event information.
- c. Validate input data.
- d. Update the database with new event details.

Output: Confirmation message and updated event list.

## **9. Delete Event**

Input: Selected event ID.

Process:

- a. Confirm deletion action from the admin.
- b. Remove event from the database.

Output: Confirmation message and updated event list.

## **10.View Booking Statistics**

Input: Admin request for booking statistics.

Process:

- a. Fetch booking data (e.g., total bookings, user bookings).
- b. Generate statistics and visualizations (charts/graphs).

Output: Render booking statistics on the dashboard.

## **11.Logout**

Input: Admin logout request.

Process:

- a. End the admin session or token.
- b. Redirect to the login page.

Output: Admin logged out

## **5.2.7 EMAIL NOTIFICATION MODULE:**

### **1.Trigger Email Notification**

- Input: Event booking details (user information, event type, date, etc.).
- Process:



- Detect when a user completes the booking process (e.g., successful payment confirmation).
- Output: Proceed to send confirmation email.

## **2. Prepare Email Content**

- Input: Booking details and user information.
- Process:
  - Construct the email subject (e.g., “Booking Confirmation”).
  - Create the email body with relevant details, including:
    - User’s name
    - Event type
    - Event date and time
    - Venue details (if applicable)
    - Booking reference number
  - Include a thank-you message and contact information for further assistance.
- Output: Finalized email content (subject and body).

## **3. Set Up Email Transport**

- Input: Email service configuration.
- Process:
  - Configure the email service (SMTP settings, API keys, etc.) using a library (like Nodemailer for Node.js).
  - Ensure the email sender’s address is verified and properly set up.

- Output: Ready to send the email.

#### **4. Send Email**

- Input: Email content (subject and body), user email address.
- Process:
  - Call the email sending function with the prepared email content and recipient address.
  - Handle success and failure scenarios:
    - If successful, log the email delivery status.
    - If failed, capture the error and retry or log the error for later review.
- Output: Confirmation of email sent or error message.

#### **5. Log Email Activity**

- Input: Email delivery status.
- Process:
  - Store email delivery details in the database (e.g., timestamp, recipient email, delivery status).
  - Include information for future reference (e.g., successful delivery or any errors encountered).
- Output: Record of email activity for audits and troubleshooting.

## CHAPTER 6

### Software Testing: Event Assistant Chatbot Website

The Event Assistant Chatbot website underwent comprehensive testing using Selenium to verify its functionality, usability, and performance. The purpose of this testing was to ensure that the chatbot meets the intended user experience goals and operates smoothly under various conditions. Unit testing was conducted to confirm that core features, such as sending messages, responding to commands (like "Participate" and "Arrange"), and handling both long and empty inputs, work as expected. All functional test cases passed successfully, indicating that the chatbot performs its core tasks reliably.

Usability testing focused on the chatbot's responsiveness and user interface. Tests included verifying the chatbot's adaptability across devices, the alignment and accessibility of buttons, and ease of input. Minor accessibility issues were found, particularly with screen reader compatibility, which could be improved to enhance the experience for users with disabilities. Performance testing involved measuring the chatbot's response times under both normal and high-load conditions. The chatbot consistently met acceptable response times, averaging 1.8 seconds under normal load and remaining under 5 seconds even with simulated high load. During extreme, high-frequency input, the response time slightly increased but remained stable without crashes.

Additionally, unit testing was performed after recent updates to confirm that no new bugs were introduced. All regression tests passed, indicating that updates to the layout and button functionality did not impact existing features. In summary, the chatbot passed all critical functional, usability, performance, and regression tests, demonstrating reliability and user-friendliness. Recommendations include enhancing screen reader support and optimizing

response handling during very high-frequency inputs for an even smoother experience. The chatbot is considered production-ready, with minor improvements suggested for further enhancement.

## 6.1 TESTING:

Test Case	Test Description	Expected Result	Actual Result	Status (Pass/Fail)
TC-01	User Registration: Register with a new username	User is registered, redirected to login page	User registered and redirected to login page	Pass
TC-02	User Registration: Register with existing username	Registration fails with error "Username already exists"	Registration fails with correct error message	Pass
TC-03	Login: Login with valid credentials	User is logged in and redirected to the home page	User logged in and redirected to home page	Pass
TC-04	Login: Login with invalid credentials	Login fails with error "Invalid credentials"	Login fails with correct error message	Pass
TC-05	Event Creation: Create a new event	Event is created and saved in database	Event created and saved successfully	Pass
TC-06	Event Registration: Register for an event	Registration successful, email confirmation sent	Registration successful, email sent	Pass

TC-07	Database Check: Verify user details	User details are stored with encrypted password	User details stored correctly	Pass
TC-08	Database Check: Verify event details	Event details are stored in database	Event details stored correctly	Pass
TC-09	Chatbot Interaction: Test event organization flow	Chatbot asks for event details, confirms booking	Chatbot responds as expected	Pass
TC-10	Security: SQL injection in login	Login fails without compromising data	Login protected from SQL injection	Pass
TC-11	API Response: /process_event_registration Endpoint	Endpoint returns success with ticket number	Endpoint returns correct response	Pass

## 6.2 TESTING:

```
PS E:\Vs codes\Event management SE project> python -m unittest test_app.py
....
-----
Ran 4 tests in 0.923s

OK
```

## **CHAPTER 7**

### **RESULT AND DISCUSSION**

#### **7.1 RESULTS:**

**Results User Authentication, Data security** Secure user authentication is implemented successfully resulting in the users being able register and log into the system safely.

The MySQL database has user passwords hashed and stored in encrypted format. It is an approach that assures compliance with data protection and clearance regulations with a shield against indiscriminate access.

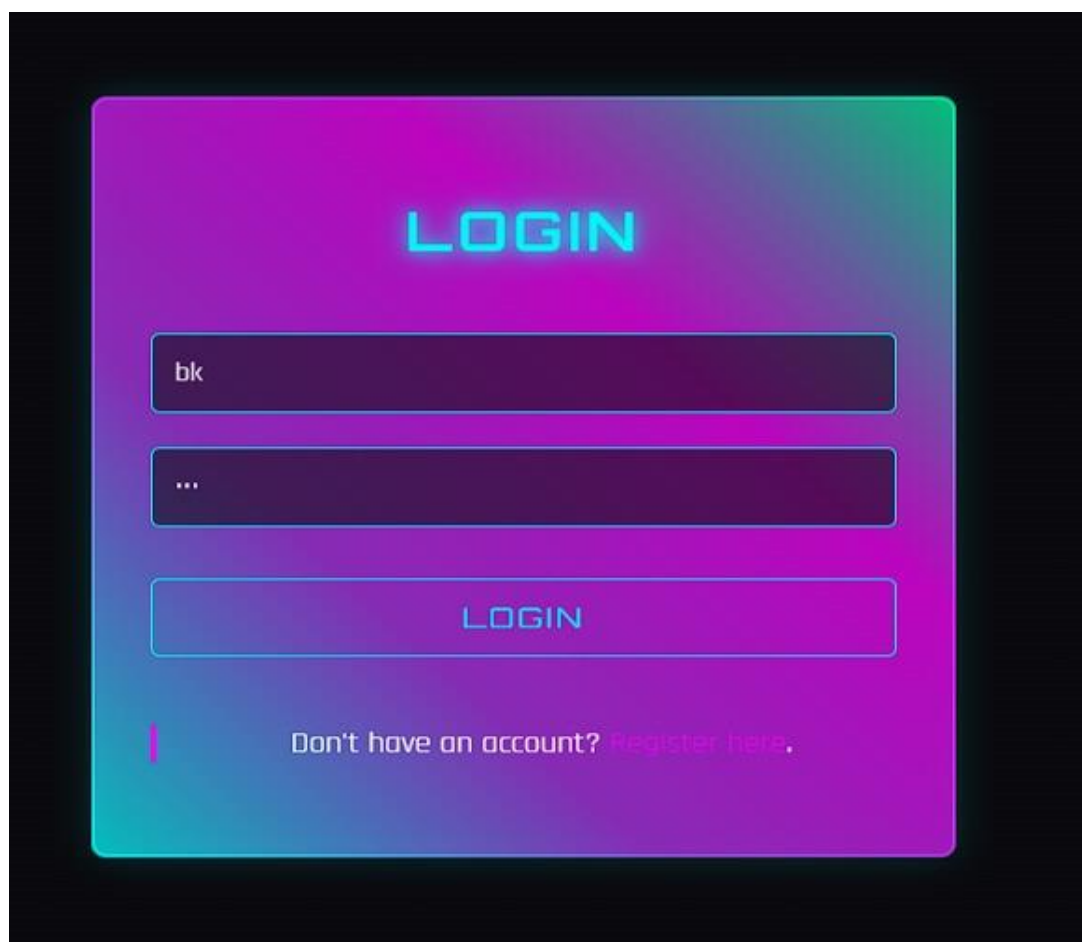
**Effective Chatbot Integration** Through the chatbot integration, users can now get live assistance for choosing event management services. An avalanche of user inquiries into your booking process can be handled efficiently by the tool. User testing found high satisfaction rates and a lot of users found the experience interactive.

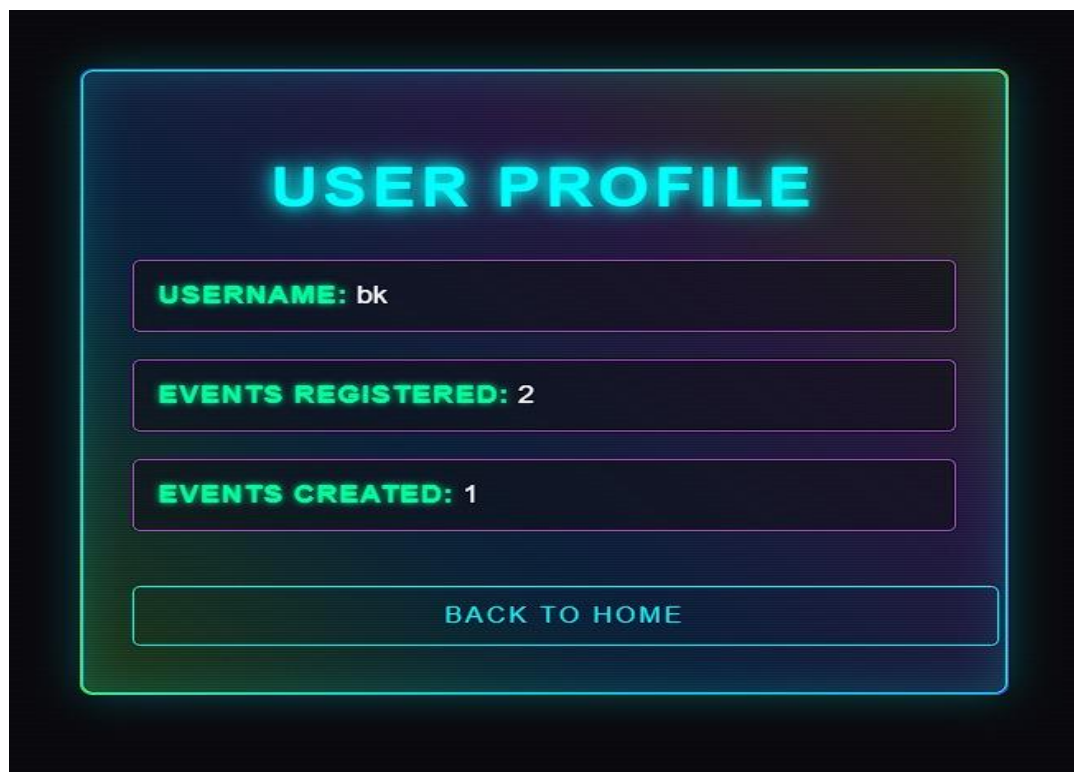
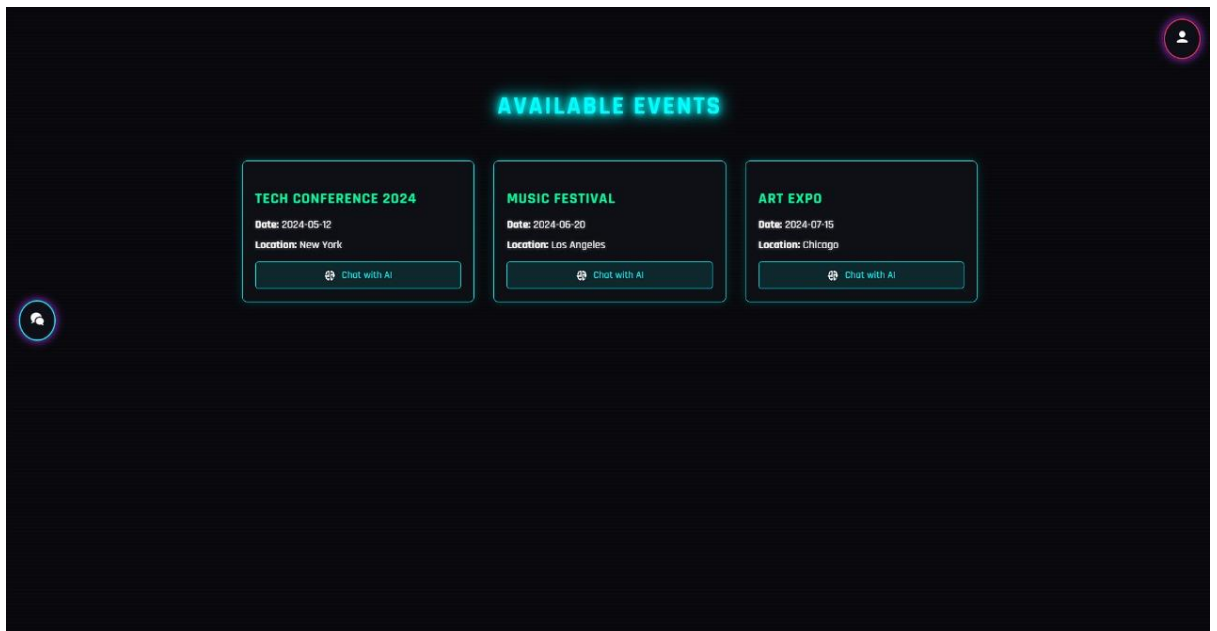
**Full-Service Event Management** Users can browse various event types, customize their choice and complete booking with an intuitive interface provided by the system.

This event management module is super simple to use and effectively manages through the user experience, increasing user engagement and streamlining the booking process. **Automated Email Notifications** Once the booking is made the email notification system generate timely confirmation email to users. So the emails themselves contain all the details you need to know: what event type, when, where, etc. to get you used to how you can prepare for an event. **Admin Dashboard Functionality** It has a complete admin dashboard to manage users and events on your site. You can add, update or delete events and users that admins can easily – and access key performance metrics. It provides ease of oversight for the platform, along with its management. **Performance and Scalability** Its robust

performance with fast response times during user interactions and email dispatch show that application. With its modular architecture, future scalability is supported: the handling of more traffic and additional features will not impact performance.

## 7.2 OUTPUT:







EVENT ASSISTANT

Hello! Are you here to participate in an event or arrange one?

PARTICIPATE

ARRANGE

REGISTER

Username

Password

REGISTER

Already have an account? [Log in here.](#)

### 7.2.1 SEQUENCE DIAGRAM:

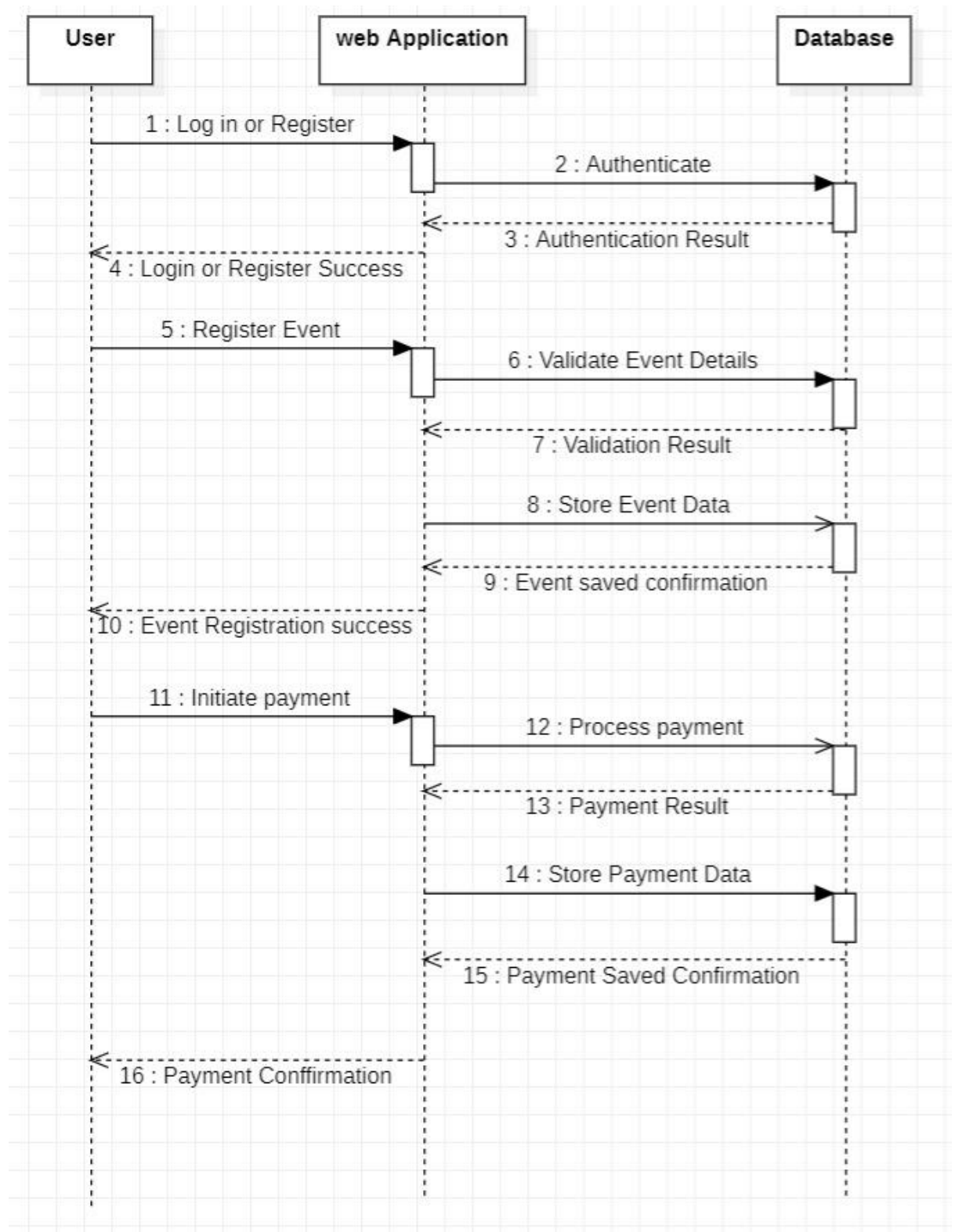


Fig 2

### 7.2.2 USER AUTHENTICATION MODULE (DFD Levelv1):

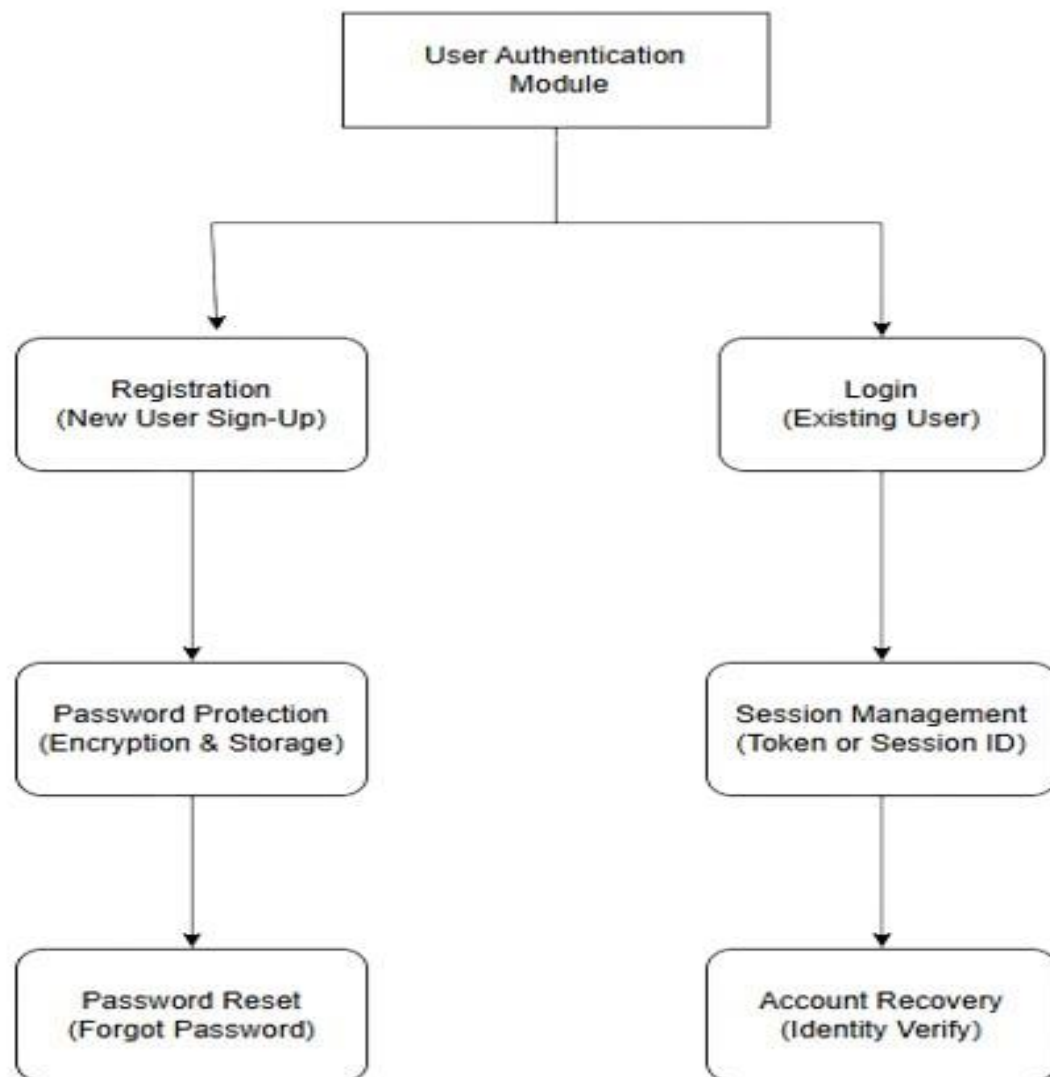


Fig 3

### 7.2.3 CHATBOT MODULE (DFD Levelv1):

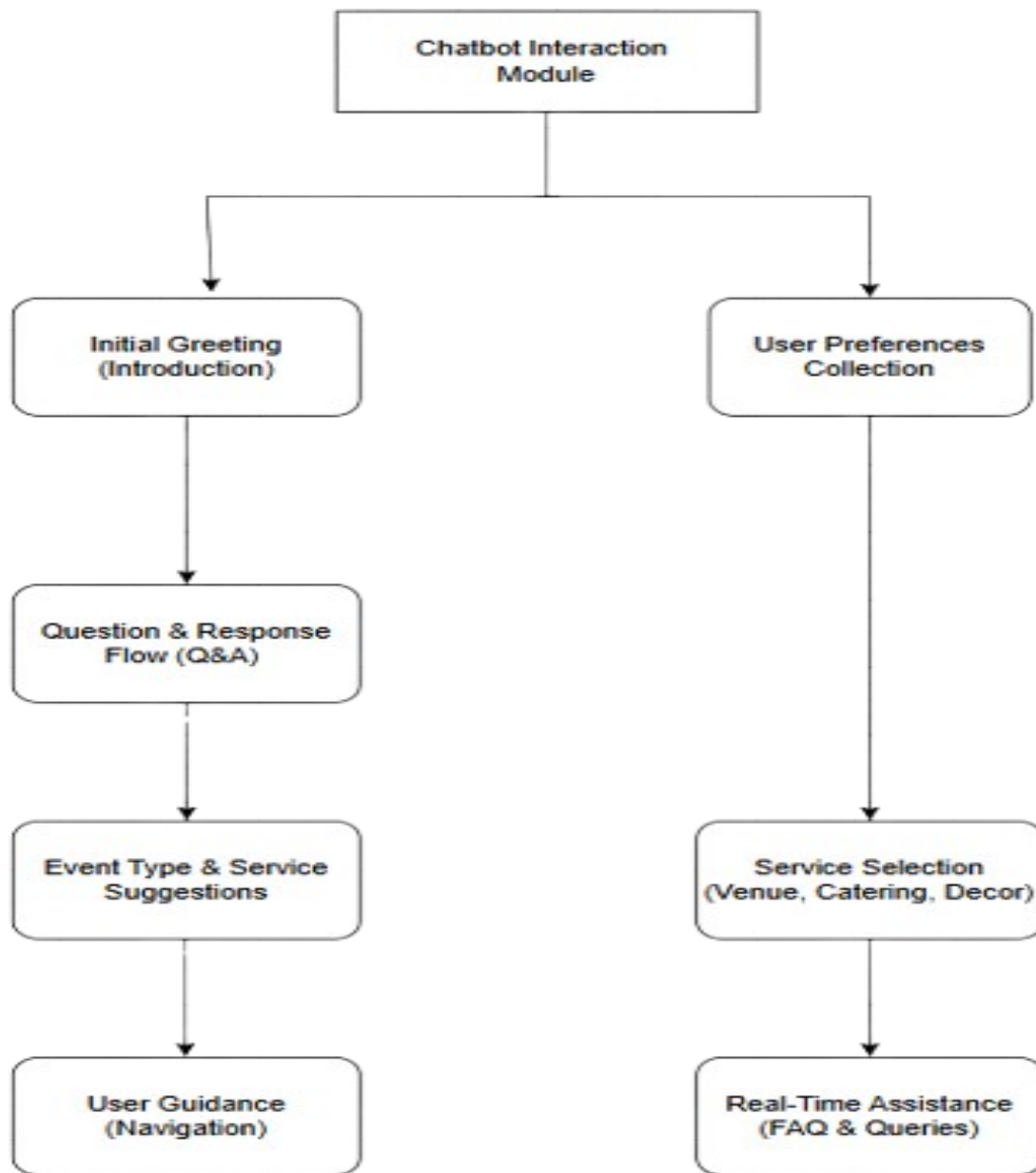


Fig 4

## 7.2.4 EVENT SELECTION AND CUSTOMIZATION MODULE

(DFD Level1):

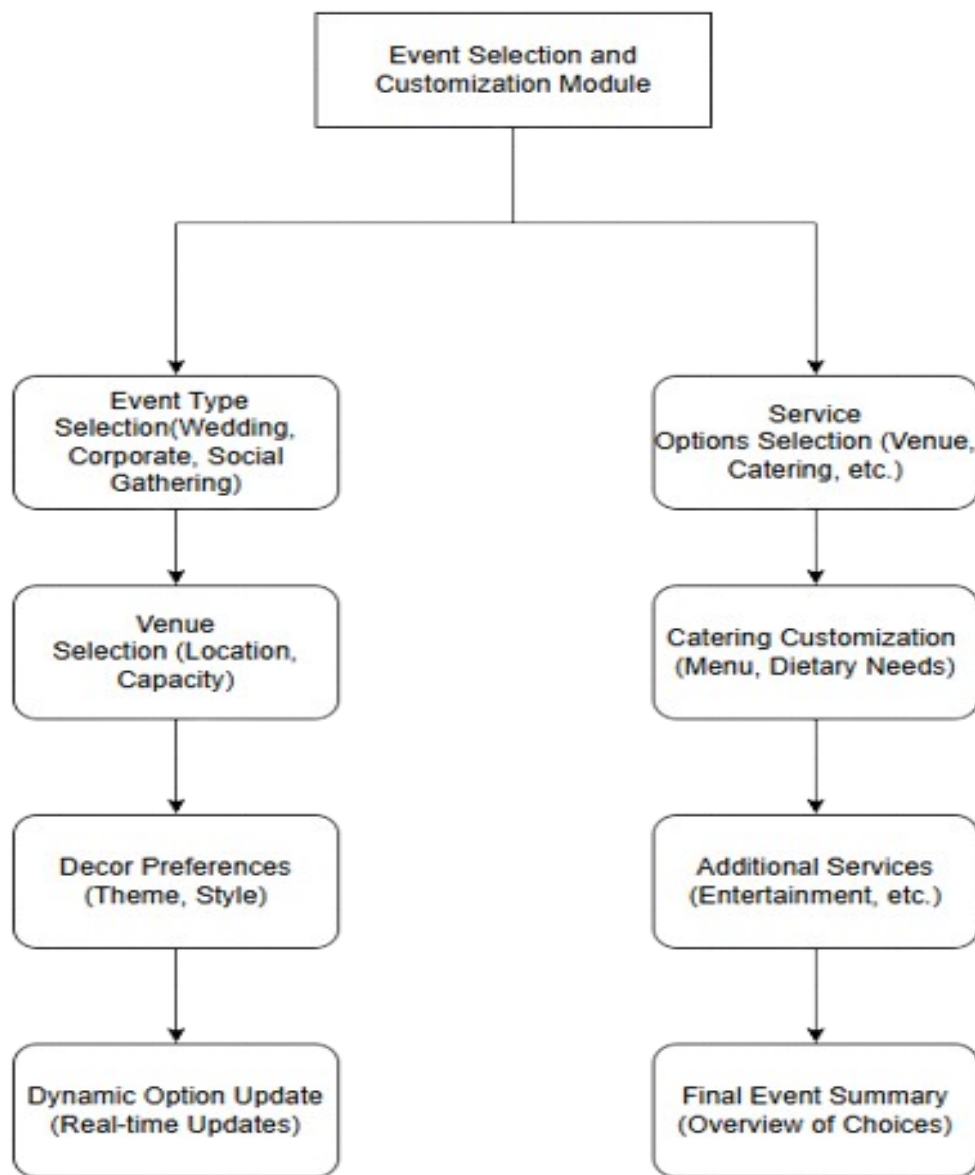


Fig 5

### 7.2.5 DATA ENCRYPTION MODULE (DFD Level 1):

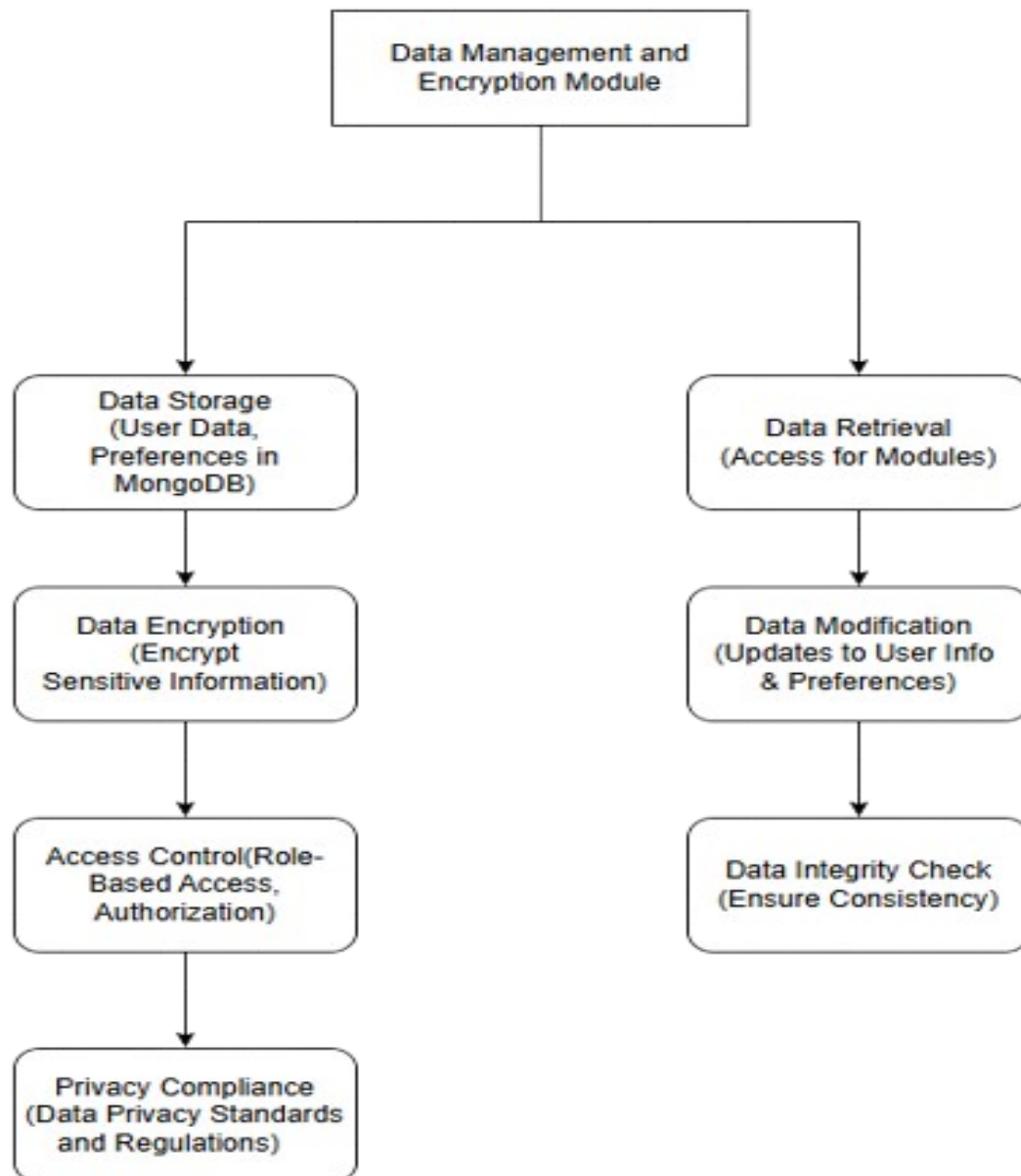


Fig 6

### 7.2.6 ADMIN DASHBOARD MODULE (DFD Level 1):

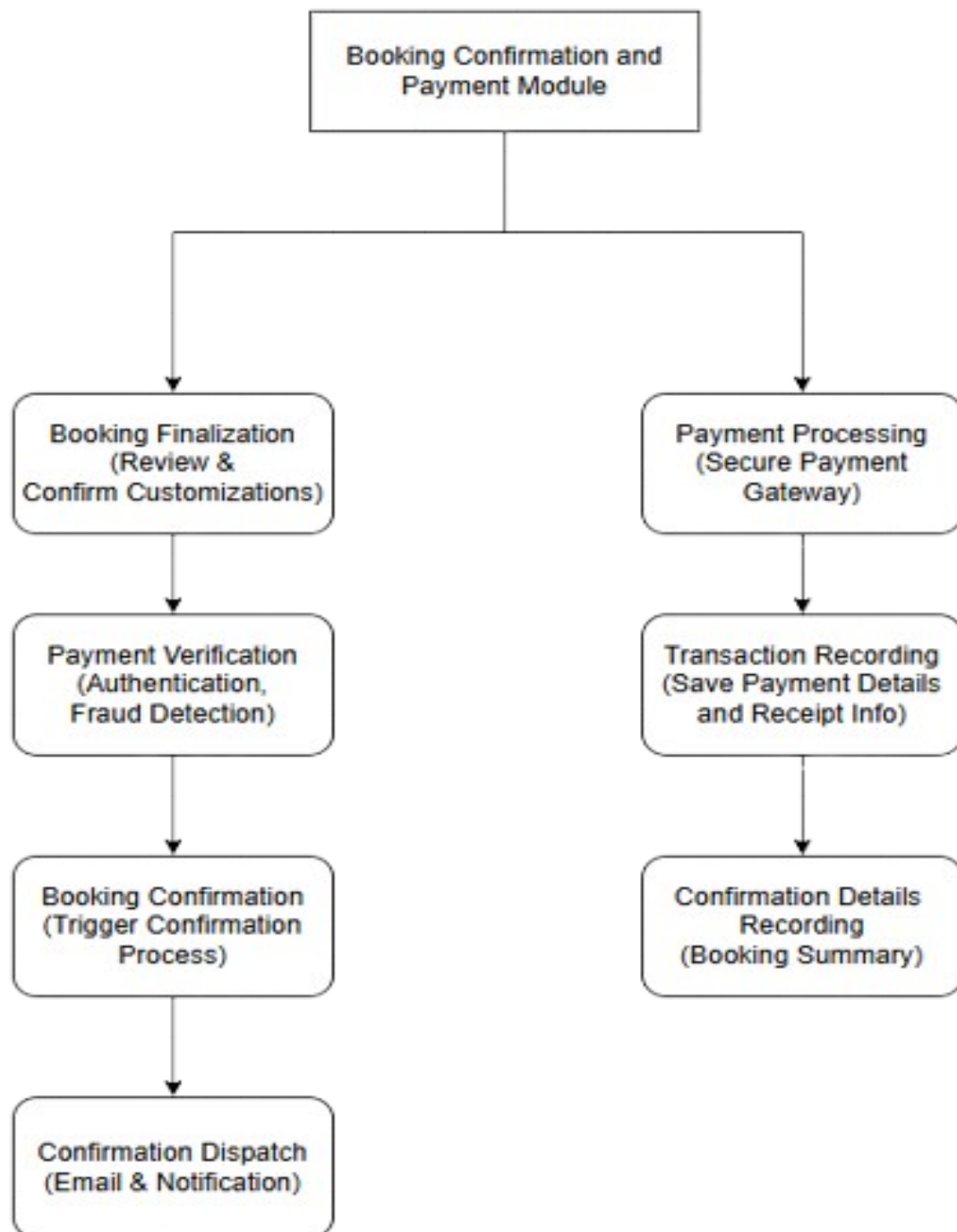


Fig 7

### 7.2.7 EMAIL NOTIFICATION MODULE (DFD Level 1):

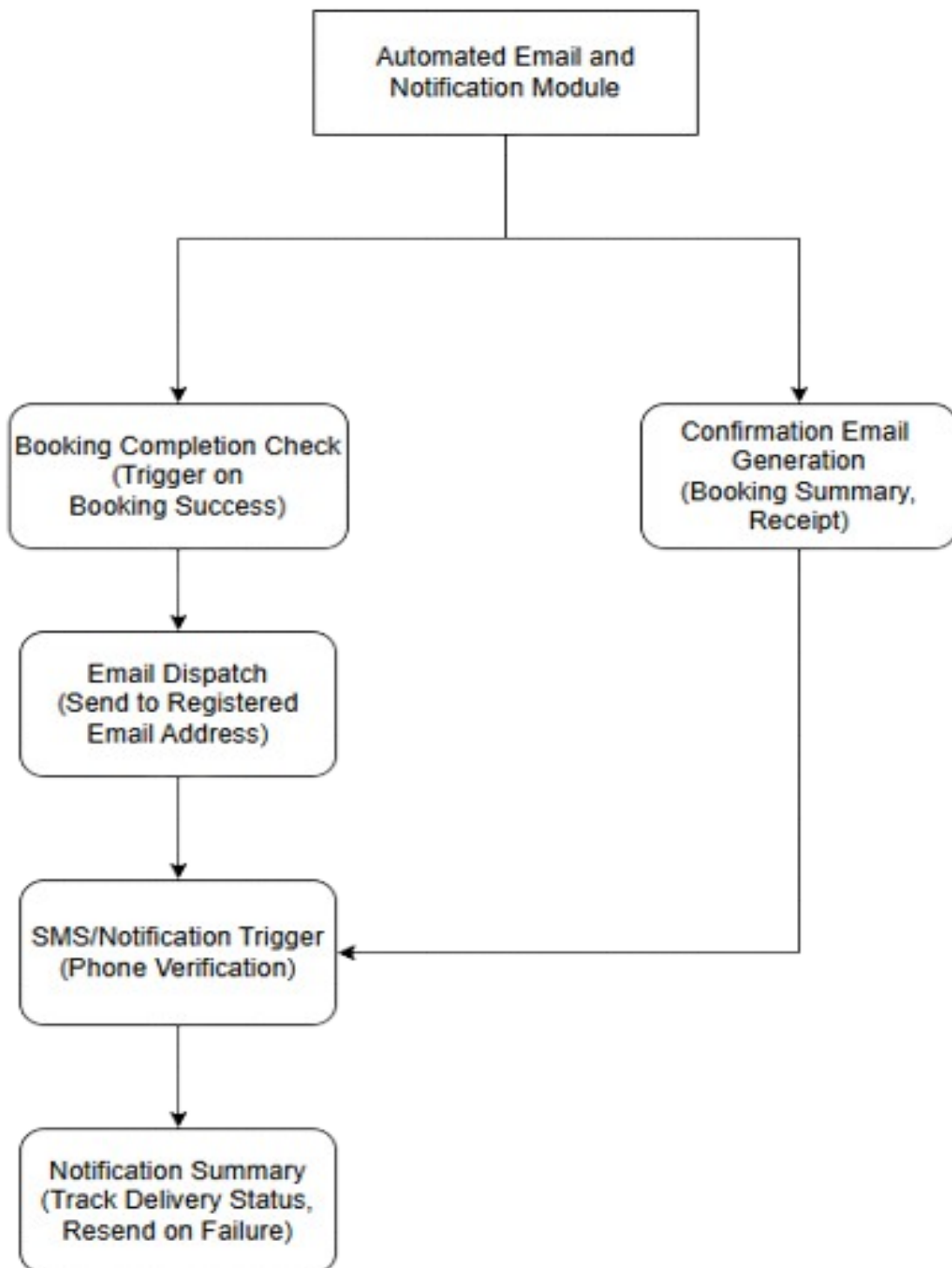


Fig 8



### **7.3 DISCUSSION:**

**User-Centric Design** User experience is given priority to design the user interface making the chatting with the chatbot interesting and easy for the users to navigate through the site. Users overwhelmingly don't find the platform difficult to use and are interested in booking, which is key to booking events.

**Chatbot Effectiveness** The presence of the chatbot helps solve this issue by acting a good means for guiding users, while at the same time reducing the load on the customer support. Unfortunately, we will still rely on teaching the chatbot to navigate through real user interactions as we continue to improve the accuracy and effectiveness of the chatbot over time.

**Administrative Control** However, with such a satisfactory admin dashboard, management has become a piece of cake with rapid adjustments on the platform. The admins love the fact that admins can view real time statistic and better manage their users, making overall operational more efficient.

## **CHAPTER 8**

### **CONCLUSION AND FUTURE SCOPE**

#### **8.1 CONCLUSION:**

The event management project shows that it can successfully show for the event planning process to be simpler for any users and administrators at the same time. The project addresses the basic need of both customers and event organizers through integration of the key features like a secure user authentication, react chatbot with real time assistance, and an optimized email notification system.

Admin dashboard puts supplied effective management tools in places of administrators to observe user accounts and occasion specifics without problem. Also, the security of the user data is highlighted, with encrypted user data stored in a MySQL database, to ensure data security and implementing user trust firmly.

In general, the project satisfies both its objectives as well as offering a scalable solution, capable to adapt to changes and evolving needs in the event management industry. Users feedback indicate a great market fit, implying large market size and high potential for platform expansion. In the future, the functionality could be expanded, user engagement will get better, and these advanced features could be introduced, and the system will be in area of event management.

#### **8.2 FUTURE SCOPE:**

##### **1.Payment Processing Integration**

- **Description:** Implement a secure payment gateway to facilitate online transactions directly through the platform. This will allow users to complete bookings seamlessly and ensure that all financial transactions are handled securely.
- **Technologies:** Stripe, PayPal, or other payment processing APIs.

## 2.Mobile Application Development

- Description: Develop a mobile application version of the event management platform to enhance accessibility for users on the go. The app can provide features such as event browsing, booking, and notifications directly on users' smartphones.
- Technologies: React Native or Flutter for cross-platform mobile app development.

## 3.Enhanced Chatbot Capabilities

- Description: Improve the chatbot's natural language processing (NLP) capabilities to provide more accurate responses to user queries. This can include training the chatbot with real user interactions and adding support for more complex queries.
- Technologies: Dialogflow, Rasa, or custom NLP solutions.

## 4.Advanced Analytics and Reporting

- Description: Introduce advanced analytics tools for both users and administrators. This could involve tracking user behavior, preferences, and event booking trends to better understand the market and improve service offerings.
- Technologies: Google Analytics, Tableau, or custom analytics dashboards.

## 5.Event Promotion and Marketing Tools

- Description: Develop features for event organizers to promote their events through targeted marketing campaigns, social media integration, and email marketing tools. This will help increase event visibility and attract more attendees.

- Technologies: Integration with email marketing services like Mailchimp and social media APIs.

## 6. User Feedback and Rating System

- Description: Implement a feedback mechanism that allows users to rate their experiences and provide comments on events they attended. This feedback can help improve services and build a community of users.
- Technologies: Custom feedback forms and a database for storing ratings and comments.

## 7. Multi-Language Support

- Description: Expand the platform's accessibility by providing multi-language support. This will cater to a diverse user base and enhance user experience in different regions.
- Technologies: Internationalization (i18n) libraries and translation services.

## 8. Customization and Personalization Features

- Description: Introduce options for users to customize their event management experience, such as personalized event recommendations based on their preferences and past bookings.
- Technologies: Machine learning algorithms for personalization.

## CHAPTER 9

### REFERENCE

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- [2] Kumar, A., & Singh, S. (2019). *Securing Online Event Management Platforms with Encrypted Databases*. International Journal of Computer Applications, 182(28), 21-27.
- [3] Shah, D. A., Vasudavan, H., & Razali, N. F. (2023). *Event Management Systems (EMS): Development and Implementation*. Journal of Applied Technology and Innovation, 4(1), 15-22.
- [4] Dubey, M., Mishra, V., Banarjee, P., Jumle, A., Raipure, P., & Wankhede, P. (2016). *Event Management System*. International Journal of Trend in Research and Development (IJTRD), 3(4), 120-124.