Bilkent University
Department of Computer Engineering

CS491 Senior Design Project

T2435
Eventure

Analysis and Requirements Report

Damla İmre	22001640	damla.imre@ug.bilkent.edu.tr
Gizem Gökçe Işık	21803541	gokce.isik@ug.bilkent.edu.tr
Alper Bozkurt	21802766	alper.bozkurt@ug.bilkent.edu.tr
Ercan Bahri Nazlıoğlu	21903151	bahri.nazlioglu@ug.bilkent.edu.tr
Onur Tanınmış	22003312	onur.taninmis@ug.bilkent.edu.tr

Supervisor: Cevdet Aykanat
Innovation Expert: Muhammed Naci Dalkıran
Course Instructors: Atakan Erdem, Mert Bıçakçı

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Table Of Contents

1. Introduction

In today's fast-paced world, finding events that align with personal interests and expectations has become increasingly challenging. People often struggle to discover activities that resonate with their preferences, let alone find companions who share their enthusiasm for such events [1]. Whether it's a music festival, workshop, or community gathering, searching for suitable events and like-minded individuals to enjoy them often feels overwhelming. This difficulty can lead to missed opportunities for social engagement and personal fulfillment, leaving many people feeling disconnected and uninspired.

Our mobile application addresses these challenges by offering a revolutionary way to discover and interact with events. The app uses advanced AI algorithms to create personalized event recommendations tailored to each user's past preferences and current location. This ensures that users are presented with events that are not only relevant but also highly engaging. Additionally, the app integrates a robust social platform, enabling users to connect with others who share similar interests through direct invitations, group chats, or real-time interactions during events. With features such as an interactive event map and social hot spots, the application transforms event discovery into a seamless and community-driven experience.

In this report, the analysis and requirements of our application will be explained thoroughly. It begins by discussing the current systems and their limitations, followed by a detailed overview of the proposed system. Key sections include the functional and non-functional requirements and some system models. The report also addresses engineering design considerations, including constraints, standards, risks, and ethical responsibilities. Finally, it presents the project plan, strategies for teamwork, and approaches for acquiring new knowledge and learning, ensuring a comprehensive framework for the successful development and deployment of the application.

2. Current System

The event discovery market features platforms like Eventbrite, Meetup, Swoogo, and River, each with unique strengths and limitations. Eventbrite excels in ticketing and event management but lacks robust social features for attendees to interact before events. Meetup focuses on community building and connecting people with shared interests but is less suited for larger-scale or business-oriented events. Swoogo caters to event organizers with advanced analytics and marketing tools but is often too complex and costly for smaller-scale or casual events [2]. River emphasizes personalized and community-driven experiences but falls short in providing extensive customization or professional event management capabilities [3].

While these platforms address specific event discovery and management aspects, they often fail to integrate personalized recommendations, real-time social interaction, and safety features into a single solution.

Eventure bridges the gaps in the current market by combining personalized event recommendations, enhanced social features, and user safety tools. The app uses AI to analyze users' past preferences, feedback, and location, offering tailored suggestions that resonate with individual interests. Unlike competitors, *Eventure* integrates an interactive map that displays event locations, real-time user avatars, and hot spots highlighting popular events and friend participation, making event exploration more engaging.

3. Proposed System

3.1. Overview

The proposed system, *Eventure*, is a comprehensive mobile application designed to transform the way users discover and interact with events by combining advanced technologies with social and safety features. The system utilizes AI-powered recommendations to provide personalized event suggestions based on users' interests, past feedback, and current location, ensuring relevance and engagement.

Eventure focuses on social integration by enabling users to connect with like-minded individuals, invite friends, and participate in group chats for events, fostering a sense of community and collaboration. The interactive event map enhances the event exploration process, offering current visualizations of nearby events, popular hotspots, and friends' live locations.

A distinguishing aspect of Eventure is its strong emphasis on user safety. The system includes a discreet Safety Button that users can activate to notify emergency contacts or local law enforcement in critical situations, ensuring peace of mind during event participation.

The system further allows users to provide structured feedback after events, contributing to improved recommendations and event quality over time. Users can also create and manage their own events, enabling a seamless experience for both event attendees and organizers.

By integrating event discovery, social interaction, and safety tools into a single platform, Eventure addresses gaps in existing systems and offers a user-friendly, scalable, and secure solution that meets the needs of modern event-goers.

The subsequent sections of the report outline the functional and non-functional requirements, system scenarios, and design considerations, providing a clear roadmap for the development and implementation of the application.

3.2. Functional Requirements

1. **Event Discovery**: Users should be able to view events recommended based on their interests and location.
2. **User Matching**: Users should be matched with others who share similar interests.
3. **User Profiles**: Users should be able to create personal profiles to specify their preferences and interests.
4. **Feedback Mechanism**: Users should provide feedback after events to share their experiences.
5. **Secure Communication**: Users should communicate with other participants securely.
6. **Safety Button**: A safety button should be available to enhance users' security when meeting other participants, allowing them to send an emergency alert if needed.
7. **Event Notifications**: Users should receive notifications about their favorite events or matched participants.
8. **Interactive Event Map**: The application should include an interactive map feature (similar to Snapchat Maps), where users can view nearby events and the locations of friends who have chosen to share their location.
9. **Event Bookmarking**: Users should bookmark events they are interested in and revisit them later.
10. **Chat:** Users should be able to chat and communicate with their friends.
11. **Group Chats**: A group chat feature should allow participants of the same event to communicate and plan together.
12. **Event Creation and Hosting**: Users should create and host their own events, with options to set details like time, location, details, attendee limits, and event prices.
13. **AI-Powered Recommendations**: The app should use AI algorithms to refine event recommendations based on user preferences.
14. **Gamification**: Introduce gamification elements like rewards for attending events, providing feedback, or engaging with the community.
15. **Accessibility Features**: Include features like adjustable font sizes and high-contrast mode for improved accessibility.

3.3. Non-functional Requirements

3.3.1. Usability

- The interface should be user-friendly and intuitive.
- It should be compatible with mobile devices.

- A tutorial guide should be available for new users.

3.3.2. Reliability

- The system should maintain 99.9% uptime to ensure constant availability.
- Event details and user data should be accurate and up to date.

3.3.3. Performance

- The system should return search and recommendation results within 1 second.
- It should support at least 1000 concurrent active users.

3.3.4. Supportability

- The system should be easily upgradable and allow for the addition of new features.
- Technical support and bug reporting tools should be integrated.
- Third-party service integrations (e.g., maps and payment systems) should be manageable.

3.3.5. Scalability

- The system should quickly scale to accommodate increasing user and feature demands.
- Infrastructure should support future features like live chats.

3.4. System Models

3.4.1. Scenarios

Scenario 1: User Onboarding Process

Actor: Onur (New User)
Flow of Events:

1. Onur downloads the application and opens it for the first time.
2. He clicks the "Get Started" button and selects the "Create an Account" option.
3. He enters his personal details, such as name, email, phone number, and password.

4. He sets his preferences, including his interests (e.g., music, sports) and whether he prefers to attend events with a partner or alone.
5. He specifies expectations for a partner (e.g., shared interests, age group).
6. He verifies her account via a code sent to his email or phone number.
7. The application welcomes Onur and displays a tutorial on exploring events and connecting with other users.

Scenario 2: Exploring Events and Showing Interest

Actor: Cevdet Aykanat (Existing User)
Flow of Events:

1. Cevdet Aykanat logs into the app and lands on the homepage, where events are listed.
2. He filters events based on his interests (e.g., music concerts) and location.
3. He finds a concert he likes and clicks on it to view more details.
4. He marks himself as “Interested” in the event and optionally selects “Looking for a Partner.”
5. He browses other users interested in the same event and views their profiles.
6. He sends a connection request to a user with similar preferences.

Scenario 3: Providing Feedback After an Event

Actor: Gökçe (Event Participant)
Flow of Events:

1. Gökçe attends an event she registered for through the app.
2. After the event, she receives a notification asking her to provide feedback about the event and the participants.
3. She rates the event’s organization and shares comments about the overall experience.
4. Gökçe also rates her partner based on how well they matched her expectations.
5. The feedback is saved and contributes to the event's and participants’ overall scores.

Scenario 4: Emergency Situation During an Event

Actor: Ercan (Event Participant)
Flow of Events:

1. Ercan attends an event he found through the app and shares his live location with the app for safety.
2. During the event, Ercan feels unsafe and presses the emergency button in the app.
3. The app immediately notifies Ercan's emergency contact and shares his location.
4. If Ercan enables "Notify Authorities," the app sends his location and a pre-written alert message to local authorities.
5. Ercan's emergency is resolved, and he feels reassured about the app's reliability.

Scenario 5: Admin Managing Users and Events

Actor: Damla (Admin)
Flow of Events:

1. Damla logs into the admin panel of the application.
2. She reviews flagged users and events that require moderation.
3. She removes a user who violated the community guidelines based on multiple complaints.
4. She approves a newly created event after verifying its legitimacy.
5. She checks the feedback data to identify high-rated events and users for promotion on the homepage.

Scenario 6: AI-Driven Matching and Recommendations

Actor: Alper (Regular User)
Flow of Events:

1. Alper opens the app and clicks the "Recommended for You" tab.
2. The app uses AI to suggest events and potential partners based on his preferences, past feedback, and activity history.
3. He finds a suggested art workshop that matches her interests and sees a recommended partner profile with high compatibility.
4. Alper joins the event and connects with the suggested partner.

Scenario 7: Enhanced User Trust with Verified Profiles

Actors: Sophia (New User), Guillermo (Admin)
Description:

1. Sophia can opt to verify their profiles by uploading an ID or linking a social media account.
2. Guillermo reviews and approves verified profiles to ensure authenticity.

3. Verified profiles are marked with a "Trust Badge" to build user confidence during interactions.
4. Non-verified users are restricted from participating in certain premium features like private messaging.

3.4.2. Use Case Model

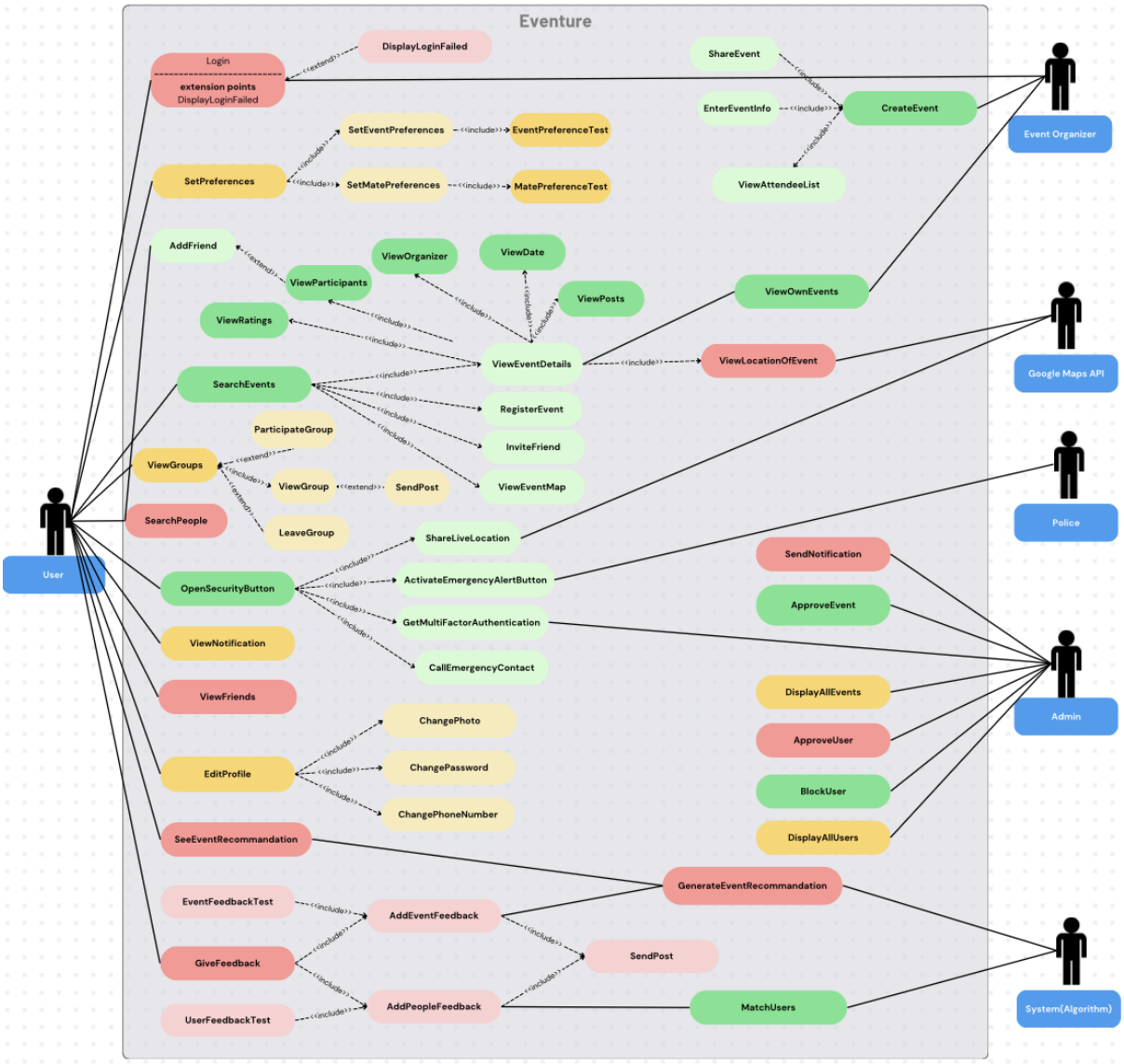

Figure 1: Use Case Diagram

3.4.3 User Interface - Screen Mock-ups

3.4.3.1 Welcome Screen

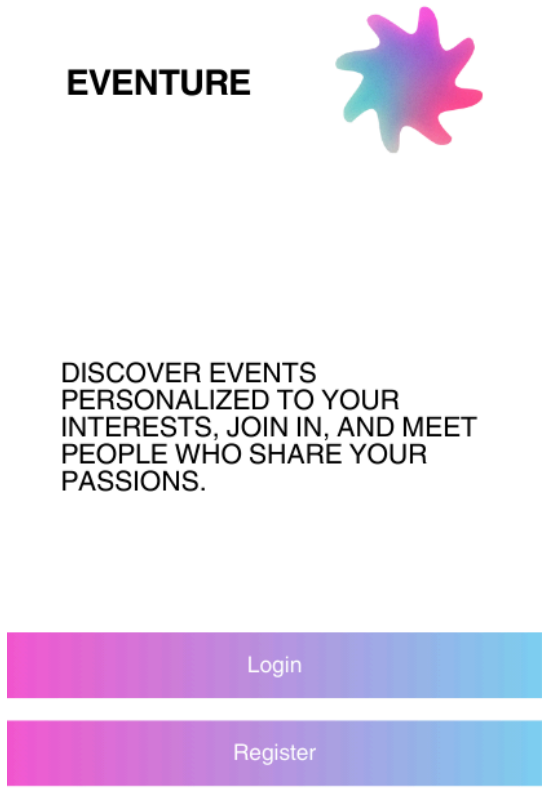

Figure 2: Welcome Screen

When the user first opens the app, a welcome screen appears, displaying Eventure's logo along with a brief description of the app. The screen also offers two choices: Login and Register.

3.4.3.2 Login Screen

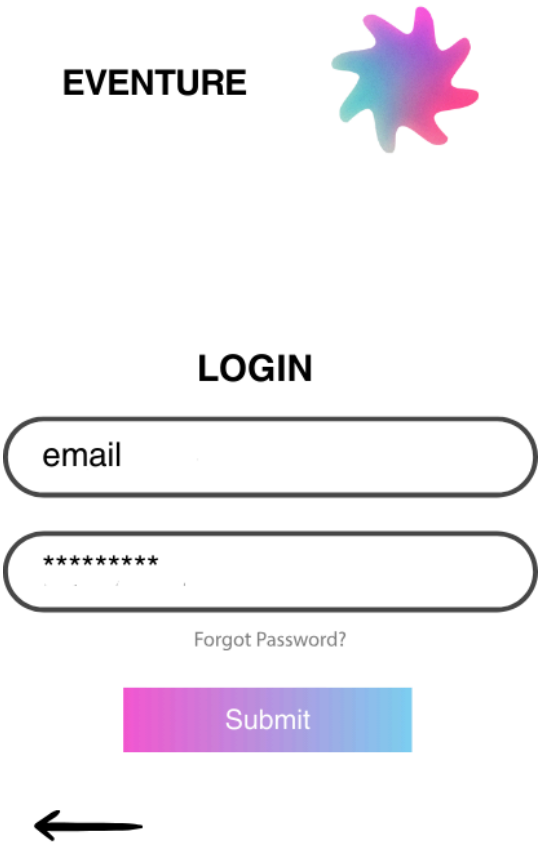

Figure 3: Login Screen

After the user taps the Login button, prompting them to enter their account credentials. Once the information is provided, the user can proceed by pressing the Submit button.

3.4.3.3 Forgot Password Screen

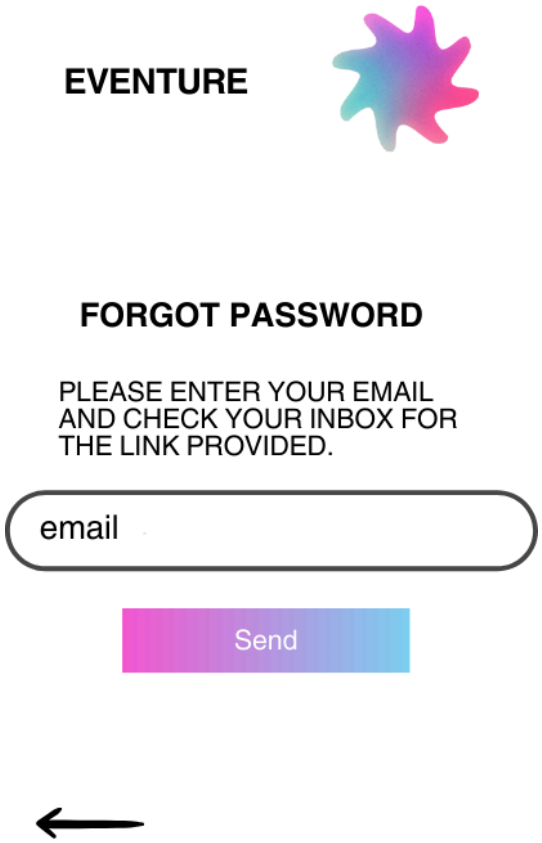

Figure 4: Forgot Password Screen

After the user presses the Forgot Password button on the Login Screen, a screen appears, prompting them to enter their registered email address. Once the email is submitted, a password reset link is sent to their inbox. When the user clicks the link, they are redirected to the application's Login Screen.

3.4.3.4 Register Screen

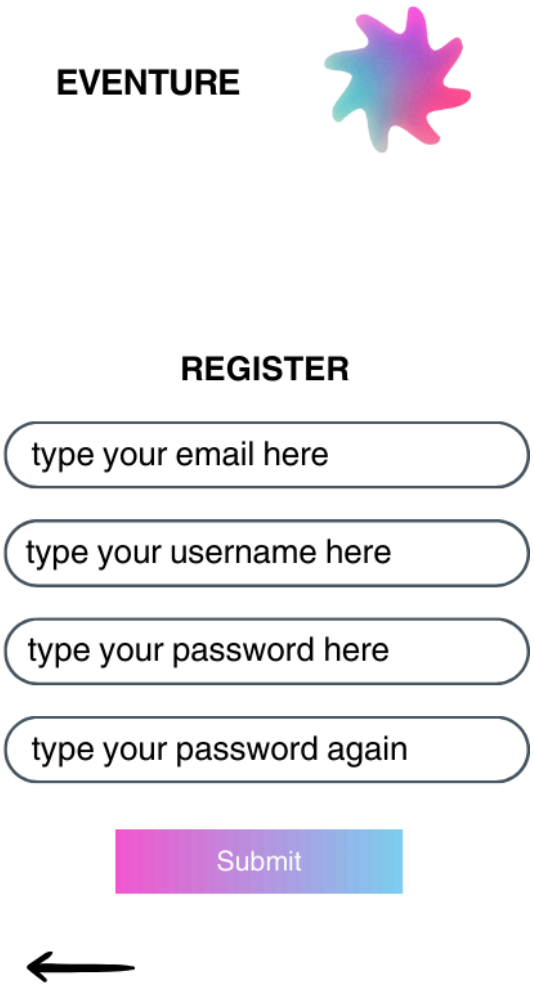

Figure 5: Register Screen

On the Register Screen, users can create a new account by providing their username, email, and password. By clicking the Register button, if the entered information is valid, an account is successfully created, and the user is redirected to the Login Screen to log in. Additionally, pressing the Back button takes the user back to the Welcome Page.

3.4.3.5 Home Screen

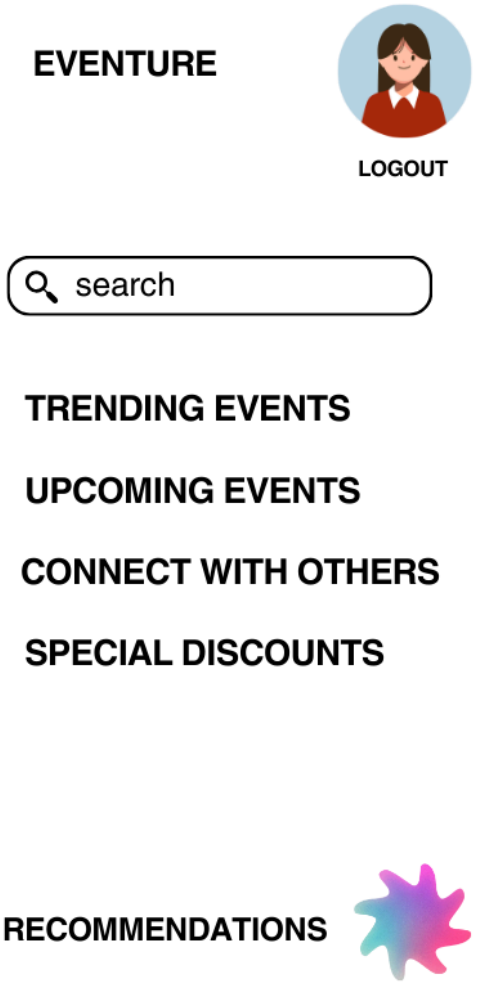

Figure 6: Home Screen

After the user logs in, the application navigates to the Home Screen. On the Home Screen, the user can explore various features, including searching for events, viewing trending and upcoming events, connecting with others, discovering special discounts, and receiving personalized recommendations based on their preferences using AI algorithms.

3.4.3.6 Logout Screen

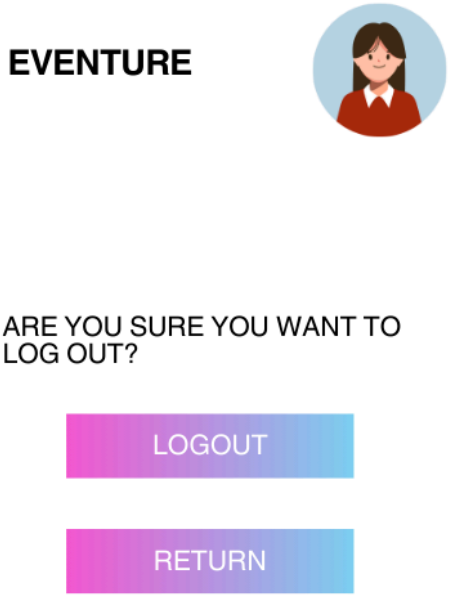

Figure 7: Logout Screen

When the user clicks the Logout button, the application prompts the user to confirm if he/she wants to log out or return. If the user presses Logout, the application navigates to the Welcome Page. If the user presses Return, the application redirects them back to the Home Page.

3.4.3.7 Recommendations Screen

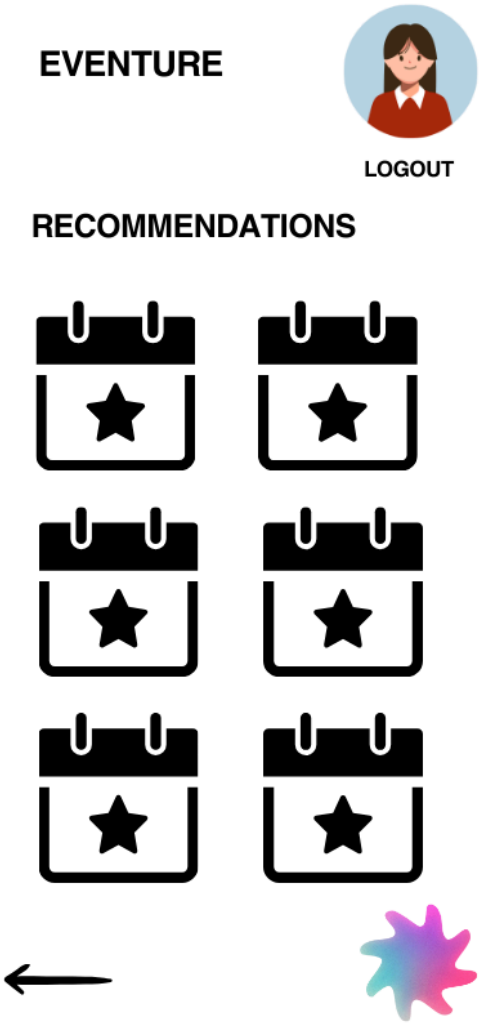

Figure 8: Recommendations Screen

On the Recommendations Page, the user can view events recommended based on their preferences from past events they have attended. These recommendations are powered by AI algorithms that analyze the user's previous activity to suggest relevant events.The user can click on an event, which will navigate them to the Event Detail Page, where they can view more information about the selected event.

3.4.3.8 Trending Events Screen

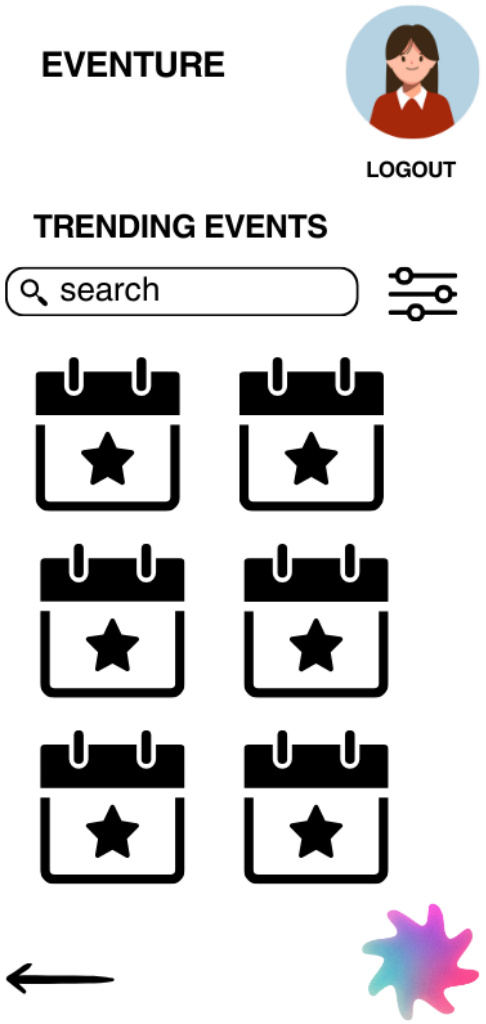

Figure 9: Trending Events Screen

On the Trending Events Page, the user can view events that are popular based on their location. Additionally, the user can filter events according to their preferred criteria, which are event type, date, city, district, and price of the event.

3.4.3.9 Filter Screen

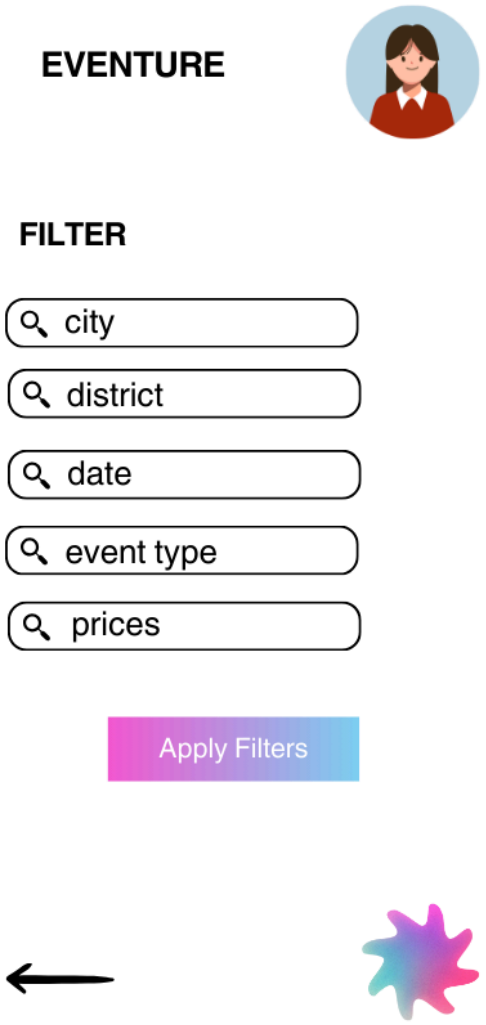

Figure 10: Filter Screen

On the Filter Screen, the user can filter events by city, district, date, type, and price. After selecting their preferences, the user can click the Apply Filters button to see the filtered results.

3.4.3.10 Upcoming Events Screen

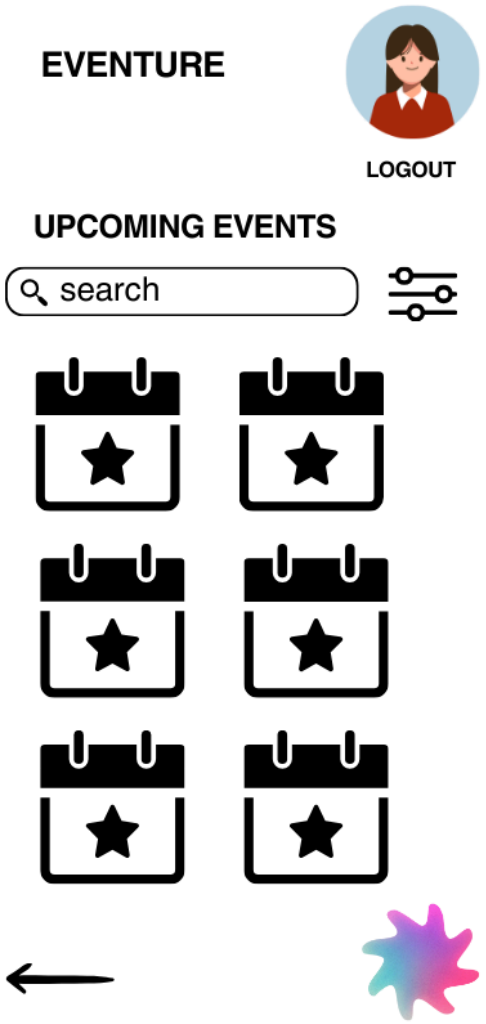

Figure 11: Upcoming Events Screen

On the Upcoming Events Page, the user can view events that are scheduled to take place in the future, based on their current location.

3.4.3.11 Connect with Others Screen

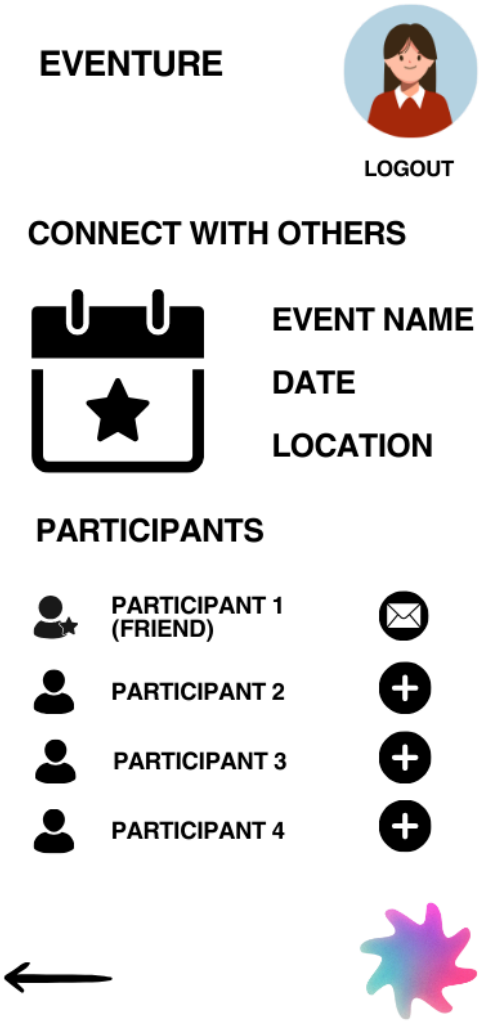

Figure 12: Connect with Others Screen

On the Connect with Others page, users can view event details, and below, the Participants section displays the attendees. Users marked with a star icon are friends, and they can be directly messaged. For non-friends, users must first add them as a friend before sending a message as a security measure.

3.4.3.12 Special Discounts Screen

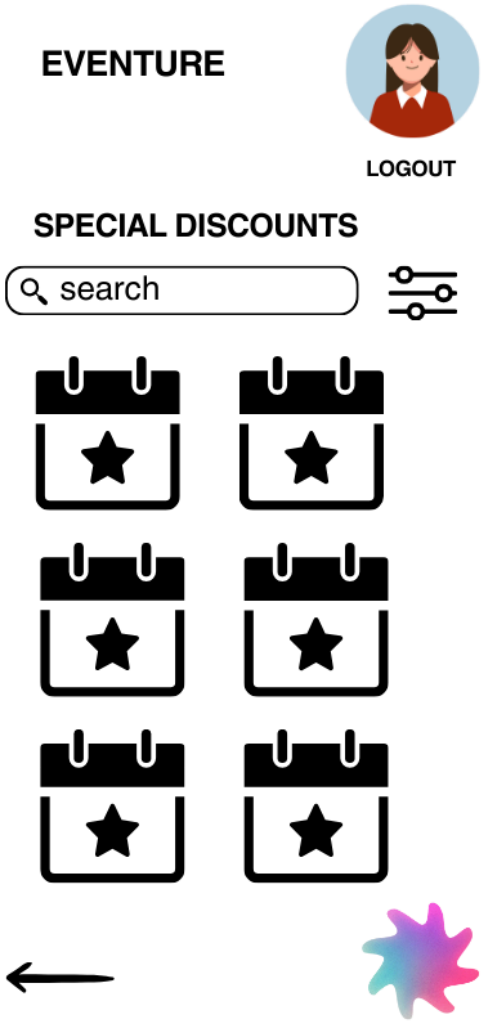

Figure 13: Special Discounts Screen

On the Special Discounts Page, the user can view events with discounted prices based on their location. The user can also apply filters and click on any event to view more details.

3.4.3.13 Event Detail Screen

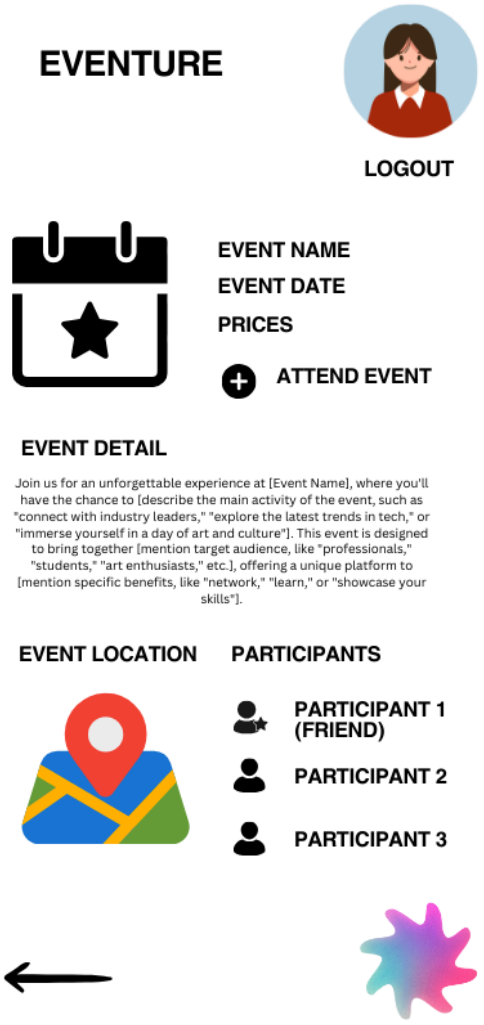

Figure 14: Event Detail Screen

On the Event Detail Page, the user can view the event's name, date, price, details, and location. The page also displays the list of participants attending the event. Additionally, the user can click the Attend Event button to confirm their participation.

3.4.3.14 Profile Screen

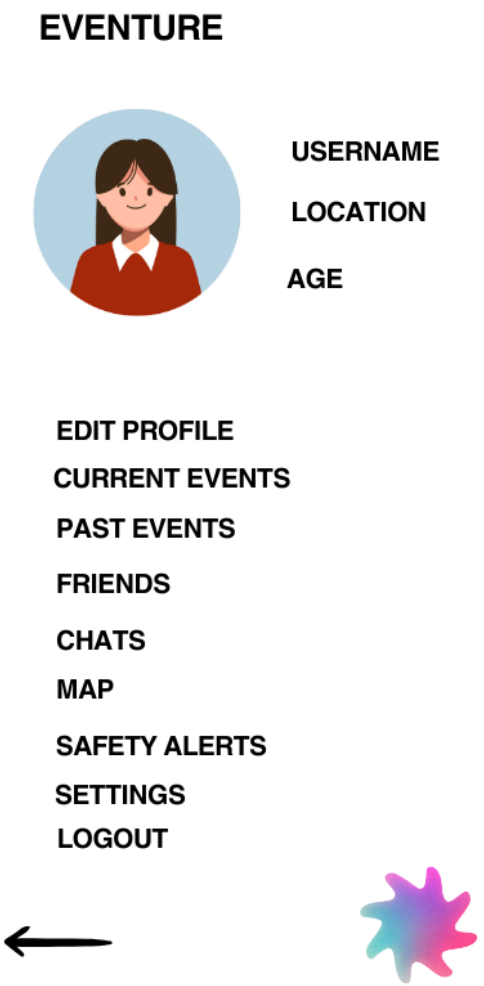

Figure 15: Profile Screen

On the Profile Page, the user can view their username, location, age, and profile photo. The user can also click several buttons, including Edit Profile, Current Events, Past Events, Friends List, Chats, Safety Alerts, Settings, and Logout. Additionally, the page provides a map to view their friends' locations and nearby hotspot events.

3.4.3.15 Edit Profile Screen

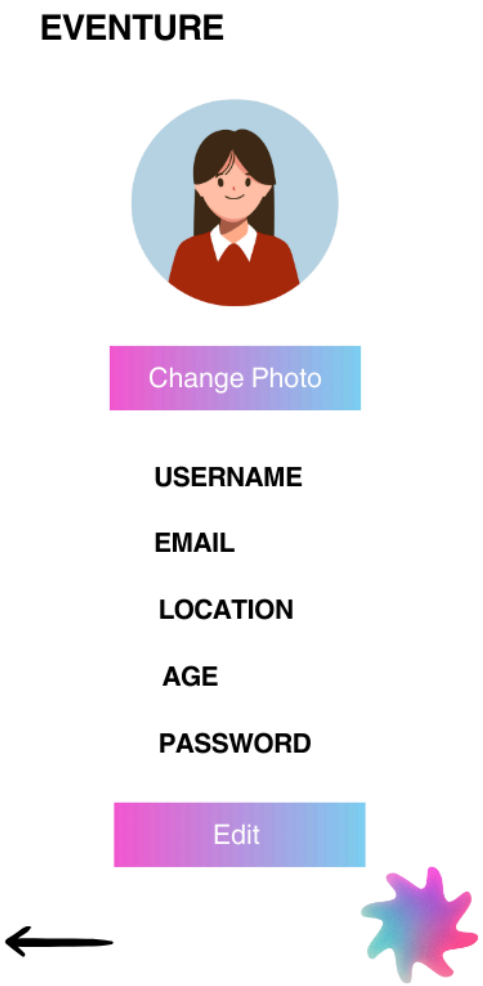

Figure 16: Edit Profile Screen

On the Edit Profile Page, the user can update various details such as their username, email, location, age, and password. The user can also change their profile photo by clicking the Change Photo button.

3.4.3.16 Settings Screen

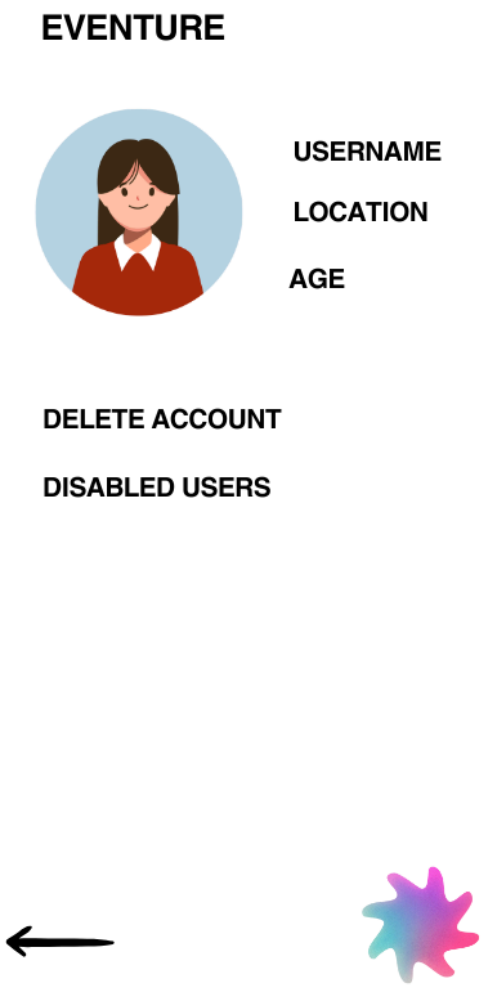

Figure 17: Settings Screen

On the Settings Page, the user can delete their account and view a list of users they have disabled.

3.4.3.17 Current Events Screen

Figure 18: Current Events Screen

On the Current Events Page, the user can view the events they are attending, along with the number of days remaining until each event.

3.4.3.18 Past Events Screen

Figure 19: Past Events Screen

On the Past Events Page, the user can view the events they attended in the past, along with the details of each event.

3.4.3.19 Friends Map Screen

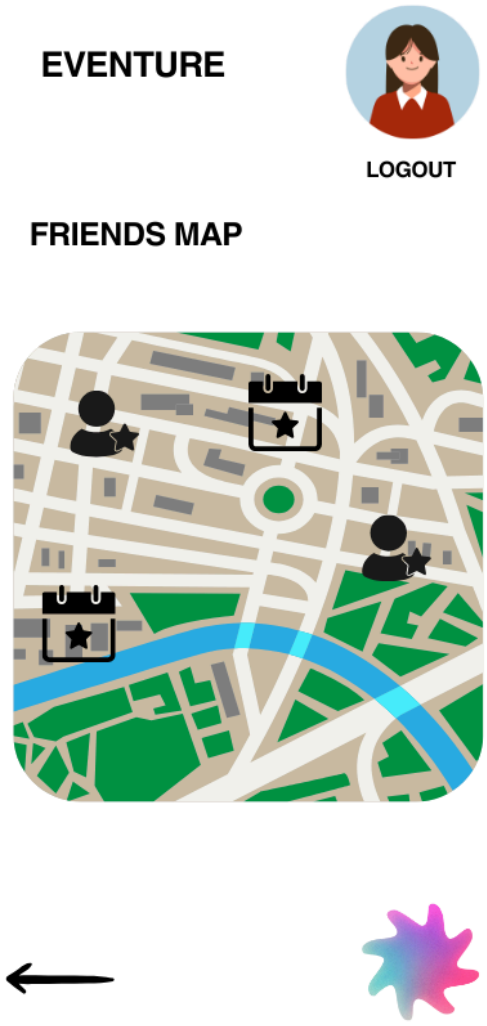

Figure 20: Friends Map Screen

On the Friends Map Page, the user can view their friends' locations, nearby hotspot events, and their own current events.

3.4.3.20 Chat Overview Screen

Figure 21: Chat Overview Screen

On the Chat Overview Page, the user can see all their chats, including individual conversations with friends and group chats they have joined. The user can view the most recent messages from their friends or group chats and click on any chat to open and continue the conversation.

3.4.3.21 Private Chat Screen

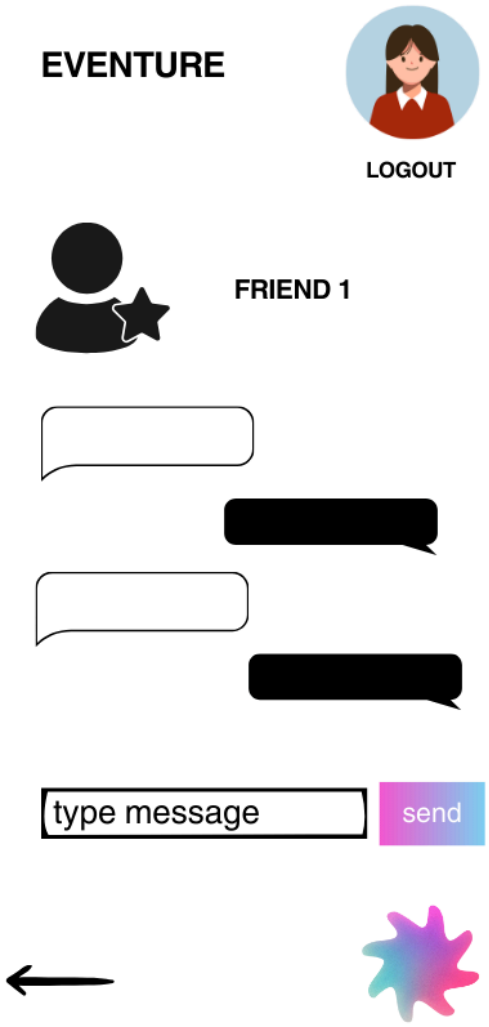

Figure 22: Private Chat Screen

On the Private Chat Page, the user can communicate with their friends by typing and sending messages directly to them.

3.4.3.22 Group Chat Screen

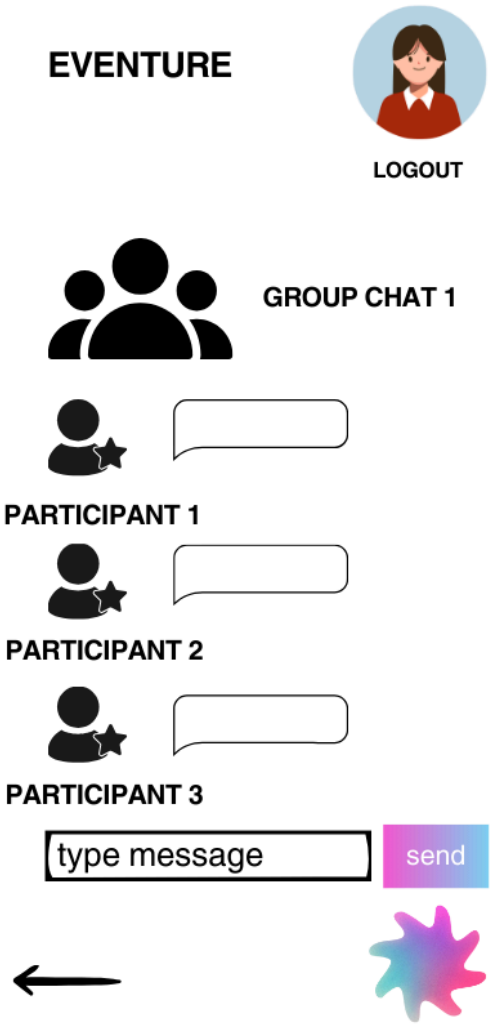

Figure 23: Group Chat Screen

On the Group Chat Page, the user can communicate with other group members by typing and sending messages to the group.

4. Other Analysis Elements

4.1. Consideration of Various Factors in Engineering Design

4.1.1 Constraints

Accessibility: Eventure must comply with international accessibility standards like WCAG 2.1, ensuring that all users, including those with disabilities, can navigate and use the application effortlessly, whether through screen readers, keyboard navigation, or other assistive technologies.

Aesthetics: The user interface must not only be visually appealing but also designed to foster user engagement and trust. The color palette, typography, and layout should provide a clean, modern look while maintaining professional integrity suitable for a global audience.

Cost: The development process is constrained by a limited budget, requiring reliance on open-source frameworks like React and Kotlin. Additionally, efforts must avoid paid APIs where feasible and explore free or low-cost alternatives to reduce operational expenses.

Data Privacy: Adhering to GDPR and other relevant privacy laws is a key constraint. The system must protect user data, including preferences, location, and interactions, through encryption, secure authentication, and limited data retention policies.

Functionality: The application must support dynamic functionalities such as personalized event recommendations, location-based filtering, and user feedback sharing. These features must be implemented seamlessly, ensuring reliability and ease of use for the end-user.

Interoperability: The system must integrate with multiple external APIs, such as those for events, transportation, and accommodations, to provide up-to-date information. This necessitates maintaining compatibility with diverse data formats and ensuring smooth data exchange.

Maintainability: The application’s codebase and architecture must be modular and well-documented, allowing for future updates, debugging, and integration of additional features without significant overhead.

Scalability: Eventure must be designed to handle increasing users and events efficiently. To maintain performance, the backend should support growth through optimized database queries, caching mechanisms, and load balancing.

Sustainability: The app should encourage environmentally responsible behavior, such as prioritizing local event suggestions or optimizing transportation options to minimize carbon emissions and reduce environmental impact.

Usability: The application must prioritize user-friendliness, offering a straightforward, intuitive interface that minimizes the learning curve. This includes clearly labeled navigation, responsive design, and seamless workflows to enhance user satisfaction.

Table 1: Factors that can affect analysis and design

Factors	Effect level	Effect
Public health	3	The app promotes mental well-being by encouraging social interactions, but its effect on physical health is minimal.
Public safety	5	Ensures safe interactions through authentication mechanisms for user connections.
Public welfare	6	Enhances community well-being by fostering connections and providing access to affordable event experiences.
Global factors	7	Caters to a global audience by accommodating diverse user preferences and integrating international APIs.
Cultural factors	7	Ensures inclusivity and adapts recommendations to align with cultural preferences and sensitivities.
Social factors	8	Strengthens community bonds and facilitates meaningful connections through event-based networking.
Environmental factors	4	Encourages nearby events and minimizes transfers in travel to reduce carbon emissions.

Economic factors	6	Offers cost-effective travel and event planning options while supporting local businesses.

4.1.2 Standards

The following standards are applied in the development of Eventure:

- **ISO/IEC 27001**: To ensure robust data security practices.
- **IEEE 830**: For documenting system requirements.
- **WCAG 2.1**: To provide accessibility compliance.
- **JSON Schema**: Standardizes data exchange between APIs and the application.

4.2. Risks and Alternatives

Table 2: Risks

Risk	Likelihood	Effect on the Project	B Plan Summary
Inaccurate or delayed API data	Medium	Reduces recommendation accuracy.	Implement fallback mechanisms and periodic data validation.
Data privacy breaches	Low	Reduces user trust.	Encrypt sensitive user data and perform regular security audits.
Poor user engagement due to UI complexity	Medium	Reduces app adoption.	Conduct usability testing and improve the UI iteratively.
Scalability issues with increased users	Medium	Degrades system performance.	Optimize database queries and implement load-balancing mechanisms.
Difficulty in integrating third-party APIs	High	Delays in delivering core features.	Build custom scraping solutions or create partnerships with API vendors.
Difficulty in finding resources for AI	High	Delays or limits functionality of the recommendation engine.	Refactor existing datasets, simplify AI models or consult external experts to optimize resource use.

4.3. Project Plan

Table 3: List of work packages

WP#	Work Package Title	Leader	Members Involved
WP1	Project Information Form	Damla	Damla, Alper, Gökçe, Onur, Ercan

WP2	Project Web Page (Specific project web domain)	Ercan	Ercan
WP3	Project Specification Document	Gökçe	Gökçe, Onur, Ercan, Damla, Alper
WP4	Analysis and Requirement Report	Alper	Alper, Gökçe, Onur, Ercan, Damla
WP5	Backend of the Project	Onur	Onur, Damla, Ercan
WP6	Database of the Project	Damla	Damla, Ercan, Onur
WP7	Frontend of the Project	Gökçe	Gökçe, Alper
WP8	Presentation and Demo	Alper	Alper, Gökçe, Onur, Ercan, Damla
WP9	Detailed Design Report	Ercan	Ercan, Alper, Gökçe, Onur, Damla
WP10	Final Report	Onur	Onur, Damla, Ercan, Alper, Gökçe
WP11	Enhancements & Testing	Damla	Damla, Ercan, Onur, Alper, Gökçe
WP12	Final Demo	Onur	Damla, Ercan, Onur, Alper, Gökçe

WP 1: *Project Information Form*			
Start date: *15.10.2024* **End date:** *18.10.2024*			
Leader:	*Damla İmre*	**Members involved:**	*Damla İmre, Gizem Gökçe Işık, Alper Bozkurt, Ercan Bahri Nazlıoğlu, Onur Tanınmış*
Objectives: *To gather basic project details, define team members, and outline the initial scope of the project. Find a name for the project, a supervisor, and an innovation expert.*			

Tasks:

Task 1.1 Name of the project: *Find a name for the project*

Task 1.2 One-paragraph description of the project: *Write a high-level summary of your project in the elevator pitch format.*

Task 1.3 Find a Supervisor & Innovation Expert: *Choose and finalize a Supervisor & Innovation Expert for the project*

Deliverables

D1.1: *Project Information Form*

WP 2: Project Webpage (Specific project web domain)			
Start date: *20.10.2024* **End date:** *23.10.2024*			
Leader:	*Ercan Bahri Nazlıoğlu*	**Members involved:**	*Ercan Bahri Nazlıoğlu*

Objectives: Create a website for the project to host and share document files.

Tasks:

Task 2.1 Project Webpage: *Develop a webpage for the project to serve as a platform for sharing deliverables and related documents.*

Task 2.2 Create Github Repository**:** *Set up a GitHub repository to manage the project's source code, documentation, and version control. The repository will serve as a central location for collaboration and tracking changes throughout the project's lifecycle.*

Deliverables

D2.1: *Project Webpage*

D2.2: *Github Repository*

WP 3: *Project Specification Document*			
Start date: *15.11.2024* **End date:** *22.11.2024*			
Leader:	*Gizem Gökçe Işık*	**Members involved:**	*Damla İmre, Gizem Gökçe Işık, Alper Bozkurt, Ercan Bahri Nazlıoğlu, Onur Tanınmış*
Objectives*: Provide a brief description and requirements of the proposed project.*			
Tasks: ***Task 3.1 Write the Introduction for the project****: Write the introduction for the project involving description, constraints, and professional and ethical issues parts* ***Task 3.2 Write Requirements of the project:*** *Write the requirements for the project involving functional and non-functional requirements*			
Deliverables ***D3.1:*** *Project Specification Document*			

WP 4: Analysis and Requirement Report			
Start date: *10.12.2024* **End date:** *16.12.2024*			
Leader:	*Alper Bozkurt*	**Members involved:**	*Damla İmre, Gizem Gökçe Işık, Alper Bozkurt, Ercan Bahri Nazlıoğlu, Onur Tanınmış*
Objectives: *To analyze system requirements and produce a detailed requirement report, including constraints and risks.*			

Tasks:

Task 4.1 Introduction for the project: *Write the introduction for the project*

Task 4.2 Describe the current system: *Write about the current system in our domain, our differences from them*

Task 4.3 Describe the proposed system: *Give a detailed description of the project, involving the parts of*

3.1 Overview

3.2 Functional Requirements

3.3 Non-functional Requirements

3.4 System Models

3.4.1 Scenarios

3.4.2 Use Case Model

3.4.3 User Interface - Screen Mock-ups

Task 4.4 Mention other analysis elements: *Give a description of the project*

on the remaining analysis elements, involving the parts of

4.1. Consideration of Various Factors in Engineering Design

4.2. Risks and Alternatives

4.3. Project Plan

4.4. Ensuring Proper Teamwork

4.5. Ethics and Professional Responsibilities

4.6. Planning for New Knowledge and Learning Strategies

Deliverables

D4.1: *Analysis and Requirements Report*

WP 5: Backend of the Project			
Start date: *10.11.2024* **End date:** *20.05.2025*			
Leader:	*Onur Tanınmış*	**Members involved:**	*Damla İmre, Ercan Bahri Nazlıoğlu, Onur Tanınmış*
Objectives: To implement the backend logic of the system, including database connectivity, API development, and server-side functionality using Android Studio with Java			
Tasks: ***Task 5.1 Generate the entity, repository, service, and controller structure:*** *Create the needed entity, repository, service, and controller components that are pre-determined on the class diagram. Create endpoints so that the frontend can consume the backend operations* ***Task 5.2 User Authentication:*** *Develop user authentication and data management modules.* ***Task 5.3 External APIs:*** *Integrate external APIs for event and location data.* ***Task 5.4 Optimization of Backend Performance:*** *Test and optimize backend performance.*			
Deliverables ***D5.1:*** *Backend APIs* ***D5.2:*** *Backend service module*			

WP 6: Database of the Project

Start date: *10.11.2024* **End date:** *31.03.2025*			
Leader:	*Damla İmre*	**Members involved:**	*Damla İmre, Ercan Bahri Nazlıoğlu, Onur Tanınmış*
Objectives: *Create the database component of the project and connect the database to the project*			
Tasks: ***Task 6.1 Create the database component of the project:*** *Open up a database in PostgreSQL and create the necessary tables for the project.* ***Task 6.2 Connect the database to the backend project:*** *Connect the database to the backend project and do some test operations using Postman*			
Deliverables ***D6.1:*** *Database component*			

WP 7: Frontend of the Project			
Start date: *10.11.2024* **End date:** *20.05.2025*			
Leader:	*Gizem Gökçe Işık*	**Members involved:**	Gizem Gökçe Işık, Alper Bozkurt
Objectives: *The objective of this work package is to design and develop the user interface for the project, achieving a seamless and user-friendly experience. This includes creating visually appealing designs for the application. The frontend will also integrate the backend APIs to provide users with functionality.*			

Tasks:

Task 7.1 Design the User Interface: *Create wireframes and prototypes to visualize the application's layout and structure, focusing on user experience and accessibility.*

Task 7.2 Develop the Frontend: *Implement the user interface using React Native and ensure responsiveness, functionality, and integration with the backend APIs.*

Task 7.3 Testing and Debugging: *Test the frontend on various devices and platforms, identify bugs, and fix them to achieve a final product.*

Deliverables

D7.1: *UI/UX Design Prototypes*

D7.2: *Functional Frontend Application*

D7.3: *Testing and Debugging*

WP 8: Presentation and Demo			
Start date: *Unknown* **End date:** *Unknown*			
Leader:	*Alper Bozkurt*	**Members involved:**	*Damla İmre, Gizem Gökçe Işık, Alper Bozkurt, Ercan Bahri Nazlıoğlu, Onur Tanınmış*

Objectives: *Prepare a presentation and a prototype demo to showcase the work and the final version of the product.*

Tasks:

Task 8.1 **Prepare Presentation and Prototype Demo:** Create a presentation and a functional prototype demo to show the development process, key features, and the final state of the product.

Deliverables

D8.1: *Presentation Slides*

D8.2: *Project Prototype Demo*

WP 9: Detailed Design Report

Start date: *10.03.2025* **End date:** *15.03.2025*

Leader:	*Ercan Bahri Nazlıoğlu*	**Members involved:**	*Damla İmre, Gizem Gökçe Işık, Alper Bozkurt, Ercan Bahri Nazlıoğlu, Onur Tanınmış*

Objectives: The objective of this work package is to create a detailed design report for the project. This report will cover both high-level and low-level design aspects, including class diagrams, package structures, system architecture, hardware/software integration, access control mechanisms, and security measures.

Tasks:

Task 9.1 Documenting Current Software Architecture: *Define the structure of the software, including key components, modules, and their interactions.*

Deliverables

D9.1: Detailed Design Report

WP 10: *Final Report*

Start date: *Unknown* **End date:** *Unknown*

Leader:	*Onur Tanınmış*	**Members involved:**	*Damla İmre, Gizem Gökçe Işık, Alper Bozkurt, Ercan*

			Bahri Nazlıoğlu, Onur Tanınmış

Objectives: *The primary objective of this work package is to compile a final report for the project. This report will document the project's final status, including a detailed analysis of requirements, architecture, design, implementation, testing, and achievements.*

Tasks:

Task 10.1 Requirements Details: *Summarize and review the project's requirements.*

Task 10.2 Final Architecture and Design Details: *Provide a detailed account of the final architecture and design, including diagrams, workflows, and decisions made during the project lifecycle.*

Task 10.3 Development/Implementation Details: *Describe the development process, highlighting technical challenges, and solutions implemented.*

Task 10.4 Testing Details: *Present a summary of the testing process, including test cases and results.*

Deliverables

D10.1: *Final Report*

WP 11: Enhancements & Testing			
Start date: *05.2025* **End date:** *05.2025*			
Leader:	*Damla İmre*	**Members involved:**	*Damla İmre, Gizem Gökçe Işık, Alper Bozkurt, Ercan Bahri Nazlıoğlu, Onur Tanınmış*

Objectives: *Unit testing will be conducted based on predefined test cases. If errors are identified, the issues will be resolved.*

Tasks: ***Task 11.1 Testing scenarios:*** *Created test cases will be tested.*
Deliverables ***D11.1:*** *Unit testing and bug fixing*

WP 12: Final Demo			
Start date: *05.2025* **End date:** *05.2025*			
Leader:	*Onur Tanınmış*	**Members involved:**	*Damla İmre, Gizem Gökçe Işık, Alper Bozkurt, Ercan Bahri Nazlıoğlu, Onur Tanınmış*
Objectives: *Make the app ready for use.*			
Tasks: ***Task 12.1:*** *Code optimization* ***Task 12.2:*** *Executable creation* ***Task 12.3:*** *Uploading app to Google PlayStore*			
Deliverables ***D12.1:*** *Final source code*			

4.4. Ensuring Proper Teamwork

Clear and transparent communication is a cornerstone of effective teamwork, especially in complex projects like Eventure. Open communication ensures that all team members are aligned with the project's goals, milestones, and expectations. When communication is transparent, it helps to prevent misunderstandings, confusion, and misaligned priorities, which can lead to delays or inefficiencies. It also fosters an environment where feedback can be shared constructively, encouraging

collaboration and innovative problem-solving. Clear communication ensures that everyone is aware of their responsibilities and the progress of others, which builds trust among team members and creates a unified approach to achieving the project's objectives.

Effective teamwork is crucial to the success of the Eventure project because it involves the seamless integration of various skills, expertise, and ideas. Developing a sophisticated application like Eventure requires collaboration across different disciplines, such as AI modeling, mobile development, and UI/UX design. Each team member must contribute their knowledge and work together toward a shared vision. When teamwork is effective, tasks are completed efficiently, issues are addressed promptly, and progress is maintained without unnecessary setbacks. Additionally, strong teamwork encourages accountability and responsibility, as each member is motivated to contribute to the success of the team. For Eventure, effective teamwork ensures that the project is developed on time, within budget, and meets the high standards expected by users.

Communication is facilitated through WhatsApp for coordinating schedules and setting up meetings, while Zoom is used for conducting online discussions and progress reviews. These tools enable the team to maintain consistent communication, regardless of physical location.

For version control and project development, the team utilizes Git and GitHub. These platforms provide a structured framework for code management, enabling team members to work on separate features simultaneously while ensuring that changes are efficiently merged and tracked. This approach minimizes conflicts and ensures a high standard of quality for the project deliverables.

In addition to version control, the team uses GitHub Issues to streamline task management and project tracking. GitHub Issues allows team members to create, assign, and prioritize tasks effectively, ensuring that each feature, bug fix, or enhancement is clearly documented. By linking tasks to specific milestones and deadlines, the team can track progress in real-time and ensure that everyone is on the same page. This tool also facilitates the identification of bottlenecks or areas that require additional focus, helping to maintain momentum throughout the project.

Roles and responsibilities within the team have been assigned based on individual skills, interests, and expertise. This thoughtful allocation fosters engagement and allows each member to contribute effectively in areas where they excel. Additionally, the team emphasizes transparency and open communication, creating a collaborative environment where ideas, feedback, and progress are shared freely. This ensures that every member is aligned with the project's objectives and milestones, reinforcing collective ownership of the development process.

To maintain accountability and track progress, the team has implemented a system for meeting logs. Each meeting is documented, capturing key discussions, decisions, and action points. These logs are reviewed at the start of each subsequent meeting to ensure that previous tasks are on track, and any unresolved issues are addressed.

This practice promotes continuous improvement and ensures that the team remains focused on meeting deadlines and objectives.

4.5. Ethics and Professional Responsibilities

Ethical considerations and professional responsibilities are central to the development of the Eventure project, as the application deals with sensitive user data, privacy concerns, and potential societal impact. The project team is committed to upholding the highest ethical standards in all aspects of its development.

One key ethical responsibility is ensuring that the application respects user privacy and data security. As Eventure collects and processes data related to users' event preferences, location, and personal information, it is essential to comply with data protection laws such as the General Data Protection Regulation (GDPR) and the Kişisel Verilerin Korunması Kanunu (KVKK). Users will be fully informed about the data collected and will have control over their personal information, including the ability to opt-out, delete, or modify their data as needed. Data will be encrypted, stored securely, and shared only with authorized parties, ensuring that privacy is respected at all times.

The project team also has a responsibility to avoid bias and discrimination in the development of the application. The AI algorithms that power Eventure's recommendation system must be designed to treat all users fairly and equitably, without favoring certain demographics or reinforcing stereotypes. Regular audits and testing will be conducted to ensure that the algorithms are free from biases that could lead to unequal or unfair treatment of users.

Additionally, ethical considerations extend to the potential societal impact of the project. Eventure aims to enhance the user experience by providing personalized event recommendations, but the team is conscious of the risks of over-reliance on technology and the need to maintain human agency. The application will strive to balance personalization with user autonomy, ensuring that it complements rather than replaces personal decision-making.

From a professional responsibility perspective, the team is committed to using only properly licensed tools and libraries, ensuring that the project complies with intellectual property laws. Any code or resources sourced from external platforms will be properly attributed, avoiding plagiarism and respecting copyright. Moreover, the project will prioritize sustainability by adopting energy-efficient practices in both the development and operational phases, minimizing the environmental impact of the application.

By adhering to these ethical standards and professional responsibilities, the Eventure project seeks to provide a service that is both beneficial to users and aligned with the values of transparency, fairness, and respect for privacy.

4.6. Planning for New Knowledge and Learning Strategies

The development of the Eventure project involves several new technologies and concepts, which require continuous learning and adaptation by the project team. Recognizing that there will be knowledge gaps in certain areas, the team has established a comprehensive approach to acquire the necessary skills and expertise to successfully complete the project.

One key area where the team requires further learning is machine learning and AI algorithms, specifically for building the personalized recommendation system and the event-matching features. To address this, the team plans to conduct extensive literature reviews to identify best practices and the latest advancements in these fields. Online courses, tutorials, and forums such as Udemy, Coursera, edX, Stack Overflow, and HuggingFace's community help will also be utilized to enhance the team's understanding.

Another area of focus is the mobile development aspect, especially in Android app development using Kotlin and the integration of AI models within the app. Since the team has varying levels of experience with Android Studio, the group plans to take advantage of official Android documentation and specialized resources such as Udacity's Android development courses. Peer mentoring within the team will also be encouraged, with members who have more experience in specific areas offering guidance to others.

Furthermore, to ensure the system is optimized and scalable, the team will familiarize itself with cloud infrastructure and serverless computing. This knowledge will be critical for handling large volumes of data and ensuring that the app can scale efficiently to support future user growth. Online resources, such as tutorials on AWS, Google Cloud, and serverless architecture, will be pivotal in bridging this knowledge gap.

As the project progresses, the team will regularly review its learning strategies and adjust them based on the evolving needs of the project. Weekly or bi-weekly learning sessions will be held, where team members can share what they have learned and discuss challenges they have faced. Additionally, the team will track progress by documenting key learnings and any new knowledge gained during the project. This will not only contribute to individual development but also ensure that all team members remain aligned with the project's goals.

We are also reviewing academic articles and research papers to understand the latest advancements in AI, machine learning, and event recommendation systems. Additionally, we are consulting with our supervisor and an innovation expert to gain insights and guidance on the technical and creative aspects of the project. These discussions not only help us refine our approach but also ensure that our solution aligns with industry best practices and user-centric design principles. Through this combination of research and expert consultation, we aim to bridge knowledge gaps and deliver a robust and innovative application.

By proactively planning for knowledge acquisition and utilizing a variety of learning resources, the team is committed to overcoming any skill gaps and ensuring the successful completion of the Eventure project.

5. Glossary

A

- **AI (Artificial Intelligence):** Technology enabling machines to simulate human intelligence, used in Eventure for personalized event recommendations.
- **Accessibility:** Design of products or services usable by people with disabilities, adhering to WCAG 2.1 standards in Eventure.
- **Admin Panel:** A backend interface for administrators to manage users, events, and flagged content.

C

- **Community-Driven Experience:** A user-centric design approach emphasizing social interactions and shared interests.
- **Constraints:** Limitations within the project scope, such as budget, accessibility, and privacy regulations.
- **Coursera:** An online platform providing educational courses, referenced for team learning.

D

- **Data Privacy:** Protection of user data under regulations like GDPR and KVKK, ensuring confidentiality and security.
- **Dynamic Functionalities:** Features that adapt to user input, such as personalized event recommendations and real-time maps.

E

- **Ethical Responsibilities:** Professional obligations to ensure fairness, privacy, and equitable treatment of all users.
- **Event Bookmarking:** A feature allowing users to save events of interest for later access.
- **Event Feedback:** User-provided insights on event quality, enhancing future recommendations.
- **Event Notifications:** Alerts sent to users about events or participant updates.

F

- **Functional Requirements:** Specific features the app must have, such as event discovery, user matching, and safety tools.

G

- **GDPR (General Data Protection Regulation):** European privacy law protecting personal data, applied in Eventure.
- **Gamification:** Use of game-like elements to engage users, such as rewards for participation.

I

- **IEEE 830:** A standard for documenting software requirements specifications, ensuring clear and comprehensive documentation of Eventure's functional and non-functional requirements.
- **Interactive Event Map:** A visual tool displaying nearby events and user activity, inspired by Snapchat Maps.
- **ISO/IEC 27001:** An international standard for information security management applied in Eventure.

K

- **KVKK:** Turkish Personal Data Protection Law, ensuring local compliance with privacy standards.

M

- **Maintainability:** The ability to easily update or debug the app’s codebase and architecture.
- **Machine Learning:** A subset of AI used in Eventure to refine event recommendations.
- **Milestones:** Key project stages or goals tracked via GitHub Issues.

N

- **Nonfunctional Requirements:** Attributes defining system performance, usability, reliability, and scalability.

P

- **Personalized Recommendations:** AI-driven suggestions tailored to user preferences and activity.
- **Pseudo Requirements:** Informal requirements derived from user expectations rather than technical specifications.

R

- **Reliability:** Assurance of constant app availability and accurate data.
- **Requirements Engineering:** Process of documenting system needs, following IEEE 830 standards.

S

- **Scalability:** The ability of the app to handle increased users and features efficiently.

- **Secure Communication:** Ensures encrypted interactions between users.
- **Snapchat Maps:** A reference for Eventure's interactive map functionality.
- **Stakeholders:** Individuals or groups with interest in the project, such as users, administrators, and developers.

T

- **Teamwork:** Collaborative effort among team members to achieve project objectives using tools like GitHub and Zoom.
- **Trust Badge:** A verification marker indicating authentic user profiles.

U

- **Usability:** The ease of use of the app, ensures an intuitive interface and accessible design.

W

- **WCAG 2.1:** Web Content Accessibility Guidelines for making web applications usable by people with disabilities.
- **WhatsApp:** A messaging tool used by the Eventure team for communication.

6. References

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