Software Requirements Specifications

Overview of Document:

This SRS document is structured into the following sections:

- Introduction: Provides an overview of the document and its contents.
- General Descriptions: Provides a high-level description of the software system.
- Specific Requirements: Provides a detailed description of the software system requirements.
- Appendices: Includes additional information that may be helpful for understanding or implementing the SRS.

I) Introduction:

Purpose:

The Purpose of the event planning and management app is to streamline and enhance the process of organising, managing, and participating in events within the college community. The application aims to provide an efficient and user-friendly platform for both event organisers and attendees, facilitating seamless communication, coordination, and execution of various events, ranging from small club meetings to large-scale campus-wide functions.

Scope:

Scope of the app encompasses the functionalities and features that will be included in the application. The scope of the event planning and management app includes, but is not limited to:

1. User Registration and Authentication:
    - Users should be able to register and create accounts.
    - Secure authentication mechanisms to ensure user data privacy and security.
2. Event Creation and Management:
    - Creation of new events with details such as date, time, venue and event type.
    - Management tools for organisers to update event information, track RSVPs, and monitor attendance.
3. Event Discovery and Registration:
    - Search and browse functionality for users to discover upcoming events.
    - Registration and RSVP features for attendees to express their interest and confirm attendance.
4. Communication and Notifications:
    - In-app messaging for event organisers and participants to facilitate communication.
    - Push Notification and email alerts for important event updates and announcements.
5. Calendar Integration:
    - Integration with user calendars to automatically add scheduled events and reminders.
6. Feedback and Ratings:
    - Feedback mechanisms for attendees to provide reviews and ratings for events.

- Analytics for organisers to assess the success and impact of their events.

7. Administrative Tools:

   - Administrative dashboard with tools for managing user accounts, overseeing events, and addressing reported issues.

8. Security and Privacy:

   - Robust security measures to protect user data and ensure the integrity of the platform.
   - Privacy settings for users to control the visibility of their profiles and event participation.

9. Mobile Responsiveness:

   - Compatibility with mobile devices to ensure accessibility for users on various platforms.

Definitions, Acronyms, and Abbreviations:

1. Event:

   ➔ An organised activity, gathering, or occasion planned and executed by the clubs within the college.

   ➔ Acronym/Abbreviation: EVNT

2. Management:

   ➔ The creation, adjustment, and optimization of event schedules to ensure efficient utilisation of resources and a seamless experience for participants and organisation.

   ➔ Acronym/Abbreviation: MNGT

3. Clubs:

➔ Student organisations formed around common interests, hobbies, or activities within the college community.

➔ Acronym/Abbreviation: CLBS

4. Students:

➔ Individuals enrolled in the college who are potential participants, attended, or organisers of events.

➔ Acronym/Abbreviation: STDNS

5. Organisers:

➔ Individuals or groups responsible for planning, coordinating, and executing events.

➔ Acronym/Abbreviation: ORG

References:

- IEEE Std 830-2019: IEEE Recommended Practice for Software Requirements Specifications

2) General Description

Product Perspective:

1. System Architecture : The mobile application will be based on a client-server architecture. The server side shall look after the database requirements of the application whereas the client side will feature a user-friendly interface for the users (students, club leads)

2. Interfaces : The application will consist of 2 user interfaces, one for the student (user account) and one for the club leads (professional account). These interfaces will be easy to use and navigate.

3. Integration with existing systems : The application will integrate with the existing college database to gather information about the users as well as professional users. This will also help in validating the users and generating credentials at the time of account creation.

4. User Profile : A user profile will be created at the time of account creation which will gather details such as name, roll number, department, interests and preferred clubs. This profile will help in curating a personalised home page for the user which will display upcoming events/workshops in their preferred domain. The user will be able to view their attendance as well as customise their notification settings. For clubs, the leads will be able to update information about their team, club logos, club merchandise, and provide information about the upcoming events/workshops.

5. Security and Privacy : It is necessary to implement robust security measures to handle sensitive student as well as club data. Access control will be implemented to prevent unauthorised access to club profiles, mainly scheduling events.

Product Functions:

1. Event Scheduling and Conflict Resolving : The application will enforce algorithms for scheduling events to avoid conflicts regarding venue availability, time slots, and resource requirements. Notifications/in-app messages will be sent to the club profiles to notify them of possible conflicts.

2. Attendance Tracking and Management : Users can mark their attendance at an event through a simple check-in process. Personalised check-in codes can help avoid attendance proxies. This attendance data will be available to the club leads with the data of the user as well as the timestamp at which they checked in. QR codes will be generated for every user and scanned by event organisers.

3. Regular Attendees/Volunteer Notifications : The club leads will receive notifications about student users who have regularly attended sessions and taken active participation in the club's events. These notifications help the club leads in choosing the right volunteers for the club.

4. View User Profiles : The users can view their profile which displays their details, attendance history, preferred clubs, club affiliations, etc.

5. Points tracker : A reward system will be maintained to award students with points after successfully attending an event/participating in a club activity to encourage their engagement. This data will also be available to the club leads which will help them while rewarding club members with merchandise, certificates, etc. Certificates will be awarded according to an existing template, either provided by the club/app generated, immediately after the session ends so that the students can upload them on their social media/resume.

User Characteristics:

1. Intended Users : This application is mainly directed towards students and the leads of various clubs. For scalability purposes, this application will later be extended to the college administration.

2. Prerequisites for Users : Users must be students of the Indian Institute of Information Technology, Kottayam. They must be well-versed with using a mobile application. Other than this, the application is simple to use and does not have any more prerequisites.

3. User Interface Requirements : The student user interface as well as professional user interface will feature a login page. After logging into the application, the student will be directed to a customised homepage that features their preferred clubs and club affiliations. For club leads, the homepage will display past conducted events, events scheduled by other clubs, etc.

Assumptions and Dependencies:

- Device connectivity and compatibility : The application assumes that the intended users have a compatible device to run the app on and an internet connection.
- User engagement : The application should be utilised by the students and club leads to facilitate event management, attendance tracking and other facilities.
- College support : The application must be encouraged by the college administration.
- Event venue availability : The availability and allocation of event venues must be accurately reflected in the app. Any changes should be promptly updated. The app depends on these timely updates.
- Database Integration : The application depends on its integration with the college's existing database or authentication system for user verification and access control.
- User training and support : Adequate training and support mechanisms to ensure that users (students and club leads) are familiar with the app's functionalities and can troubleshoot common issues.

Apportioning of Requirements:

1. The mobile application will be designed to work with 2 operating systems, namely Android and iOS. The frontend for both operating systems will be designed using Flutter.

2. The database of this application will be managed using MongoDB.

3. The application will be designed using Figma.

3)Specific Requirements

External Interfaces:

The user interface of the application is designed to ensure a seamless interaction for both students and club leaders, providing an intuitive experience for managing profiles, events, and club-related activities.

Functions:

The function of this software application are:

1)User Registration:

- Allows students to register and create profiles, providing essential personal details and club preferences.
- **Inputs:** User details (Name, Roll Number, Email ID, Preferred clubs,Interested Domains).
- **Outputs:** Confirmation of successful user profile creation.

2)Club Registration:

- Club leaders will have to register, create profiles after which they can manage past/future sessions and track attendance.
- **Inputs:** Leader details, Past sessions, Future sessions.
- **Outputs:** Confirmation of successful club profile creation, attendance records.

3)Event Management:

- Facilitates efficient scheduling and management of events, with a focus on attendee tracking.
- **Inputs:** Event details (title, date, time, venue).
- **Outputs:** Confirmation of successful event creation, attendee lists.

4) Notification System:

- Implements a notification system to send timely reminders for scheduled events through push notifications. And as it's a mobile app so in both iOS /android it is available.

Performance Requirements:

1)Response Time:

- The application should have a maximum response time of 5 seconds for common user interactions, including user registration, profile creation, and event scheduling.

2)Concurrent Users:

- The system should support a minimum of 1000 concurrent users during peak usage periods, ensuring a smooth experience for all users.

3) Event Scheduling Speed:

- The time taken to schedule an event should not exceed 10 seconds, regardless of the number of events in the system.

Logical Database Requirements:

1)Document Structure:

- Student Collection: Attributes: _id, Name, Roll Number, Email ID, Preferred Clubs, Interested Domains
- Club Collection: Attributes: _id, LeaderID, Club Name, Past Sessions, Future Sessions.
- Event Collection: Attributes: _id, Title, Date, Time, Venue, Attendees.

Design Constraints:

1)Mobile Platform Compatibility:

- The application must be compatible with both Android and iOS mobile platforms.

2)MongoDB Database:

- The project is designed to utilise MongoDB as the backend database.

3)User Authentication:

- Secure user authentication is mandatory for accessing and updating profiles, events, and club information.

4)Scalability:

- The application should be designed to handle an increasing number of users, clubs, and events as the college community grows.

Software System Attributes:

- Usability: The system should have an intuitive interface to enhance ease of use for students.
- Privacy: Provide users with clear information about how their data will be used and stored. Implement encryption for data transmission and storage to protect user information from unauthorised access.
- Maintainability: The application should be designed for ease of maintenance and updates. Implement version control and documentation practices to facilitate future enhancements and bug fixes.

Other Requirements:

1. Help Desk Support: Establish a help desk or support system to address user queries, issues, and provide assistance in using the application effectively.

2. Training Sessions: Organise training sessions for both students and club leads to familiarise them with the application's features and functionalities.

3. Technical Documentation: Maintain detailed technical documentation, including system database schema to assist developers in future maintenance and updates

4) Appendices

Appendix A – Glossary:

Agenda: A schedule or plan detailing the activities and timeline of an event.

Event: A planned occasion with a specific purpose, such as a conference or workshop.

Organiser: An individual or entity responsible for planning and executing an event.

Participant: An individual attending an event.

Sponsor: An entity providing financial or in-kind support for an event.

Venue: The physical location where an event takes place.

Cred System: A point-based system within the Event Management App, assigning credits to participants for various actions, including registration and competition victories.

Appendix B – Analysis Models:

1)Use Case Model:

Describes the interactions between the Event Management App and its users. Use cases include Create Event, Register Participant, Manage Agenda, Send Notifications, Conduct Post-event Evaluation, and Manage Cred System.

2)Data Model:

Enhances the existing data model to include the Cred System. This includes entities such as Participant_Credits, Event_Competitions, and Credit_Transactions.

3)Flowchart - Cred System:

Illustrates the step-by-step process of how participants earn credits within the app.

Appendix C – Supplementary Information:

1)Sample Data:

- Sample Event: "Tech Summit 2024"
  - Organiser: Cyber Security Club
  - Venue: BCD 404
  - Date: 2024-05-15
  - Participants: 150 registered

2)Cred System Rules:

- Every participant receives 1 credit upon successful registration.

- Participants earn additional credits for winning competitions within the event.

- Credits can be redeemed for event merchandise, certificates, or other rewards.

3)Test Cases:

- Test Case 1: Verify the accurate allocation of credits upon participant registration.

- Test Case 2 Test the cred system's functionality for awarding extra points to competition winners.

- Test Case 3: Validate the participant's ability to redeem credits for rewards.

4)User Manual:

- Updated user manual sections explaining the Cred System, including how credits are earned, tracked, and redeemed.

5)Technical Specifications:

- Technical specifications for the implementation of the Cred System, including database modifications and integration points.

6)Security Guidelines:

- Recommendations for ensuring the security of participant credit data and transactions within the app.

7)Performance Testing Results:

- Include results of performance testing specific to the Cred System, ensuring smooth credit transactions and redemption processes.

Appendix D – Future Prospects:

1) The application will be later on scaled to include an interface for college administrators where they can update/intimate students about workshops/STTPs/events taking place in the college.
2) The application will also include a chatbot to help with user FAQs and easy navigation.

These appendices are designed to accommodate the newly introduced Cred System, providing clarity on its terms, incorporating it into analysis models, and offering additional information for users and developers.

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