Project Proposal: TagMe - Realtime Attendance Marker

Project Overview

We propose the development of TagMe - Realtime Attendance Marker, a mobile application designed to facilitate real-time attendance tracking for duties based including location verification. In this version, the duty creator has exclusive control over the duty location, ensuring security and preventing unauthorised changes.

Objectives

Phase 1: Basic Functionality

Open Duty Creation:
- Allow any user to create duties through TagMe by specifying the duty, with description, and location.
- Promote collaboration and flexibility in the duty creation process.

Member Assignment:
- Enable users to assign themselves or others to duties during or after duty creation.
- Support users belonging to multiple duties for a versatile user experience.

Location Verification:
- Implement location verification using GPS to ensure attendance can only be marked within the specified duty location.
- Ensure accuracy and reliability in attendance tracking.

Attendance Marking:
- Provide users with a dedicated interface in TagMe to mark attendance for assigned duties.
- Time-stamp and securely record attendance data on Firebase.

Duty Creator Location Control:
- Grant exclusive rights to the duty creator through TagMe to edit or change the duty location.
- Enhance security by preventing unauthorised changes to duty locations.

Real-time Updates:
- Utilize Firebase Realtime Database to deliver real-time updates on duty status and attendance through TagMe.
- Enhance the user experience with instant feedback and collaboration.

Phase 2: Service Expansion

Notification System:
- Implement a robust notification system within TagMe.
- Users receive notifications for upcoming duties, reminders, and updates.

History and Reports:
- Develop features for viewing attendance history and generating reports.
- Store historical attendance data on Firebase.

Admin Management:
- Introducing administrative management features in TagMe.
- Admins have control over user roles, duty creation, and can access detailed reports.

Tech Stack

- Frontend: Flutter framework for a cross-platform mobile application.
- Backend: Firebase for user authentication and real-time database.

Development Timeline

Week 1: Basic Functionality

- Project setup and configuration for TagMe.
- User authentication implementation in TagMe.
- Duty creation, member assignment, and location verification features in TagMe.

Week 2: Duty Creator Location Control

- Implement duty creator location control in TagMe, allowing exclusive rights to edit the duty location.
- Real-time updates using Firebase Realtime Database in TagMe.
- Testing, debugging, and optimization of TagMe.

Security Measures

- Implement secure communication between TagMe and Firebase using HTTPS.
- Configure Firebase Security Rules to control data access and prevent unauthorized actions.

Future Considerations

Future iterations of TagMe can explore additional features such as notifications, history reports, and other enhancements based on user feedback and evolving project requirements.

Conclusion

TagMe, with a reliable location tracking system, aims to provide a secure, collaborative, and efficient solution for real-time attendance tracking. We believe that this approach aligns with the dynamic needs of our users and will contribute to the success of our project.