SMART INDIA HACKATHON 2024

Team Name: Byte Me

Get To Know The Problem

Organization	Problem Statement Title	Category	PS Number
GAIL, Ministry of Petroleum and Natural Gas	Development of a Geolocation-Based Attendance Tracking Mobile Application.	Software	SIH1707

A mobile application needs to be developed to streamline and automate the attendance tracking of its employees across multiple office locations.

Aim: To enhance operational efficiency, reduce manual attendance tracking errors, and provide a seamless experience for employees to manage their work-related movements

Proposed Solution

Our solution is a mobile application designed to automate employee attendance tracking by leveraging geolocation-based check-in and check-out functionality. This app will enhance operational efficiency, minimize human errors in attendance logs, and provide a seamless experience for employees across different office locations. The application will offer the following features:

1-Geolocation-Based Attendance:

Automatically detect when an employee enters or exits a predefined 200-meter office radius and log check-in/check-out times along with geolocation.

2-Manual Check-In/Check-Out for Offsite Work:

Employees working remotely or offsite can manually check in and check out by confirming their location. The app will suggest nearby locations based on real-time GPS coordinates.

3-Working Hours Calculation:

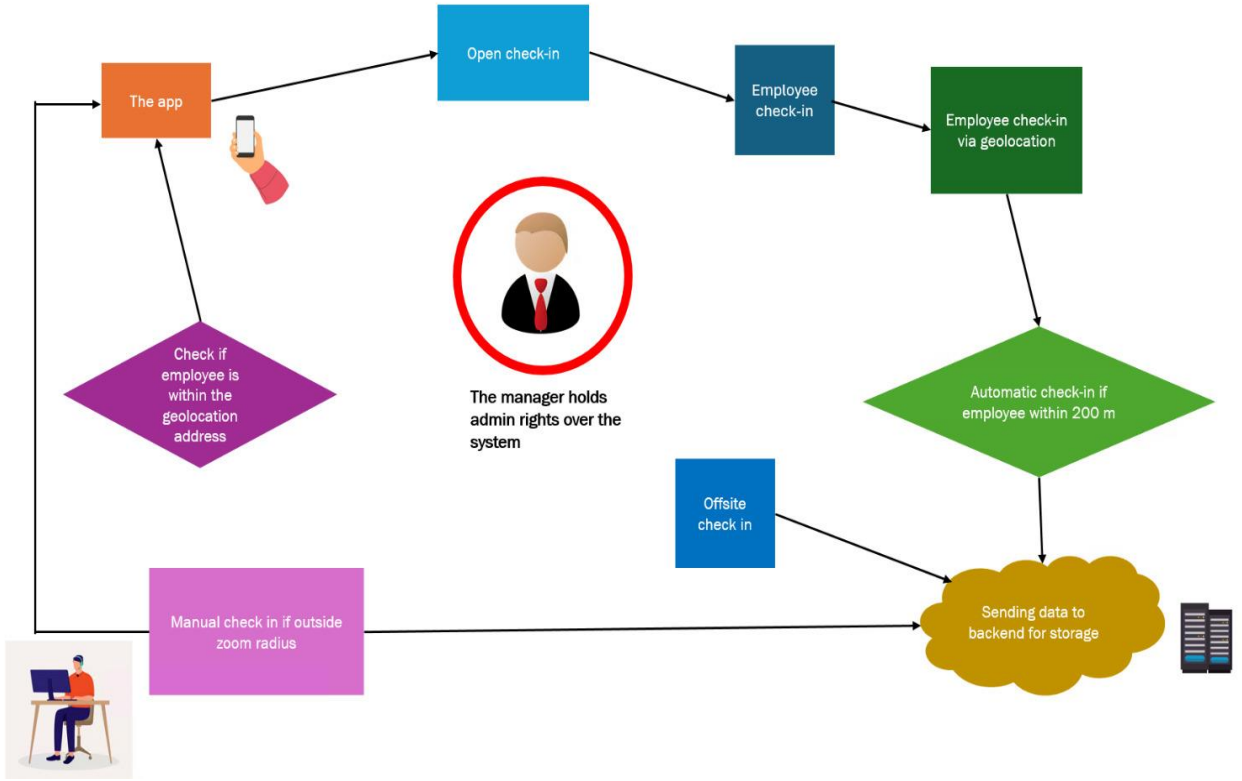
Automatically compute total working hours by calculating the time difference between check-in and check-out events, whether in the office or offsite.

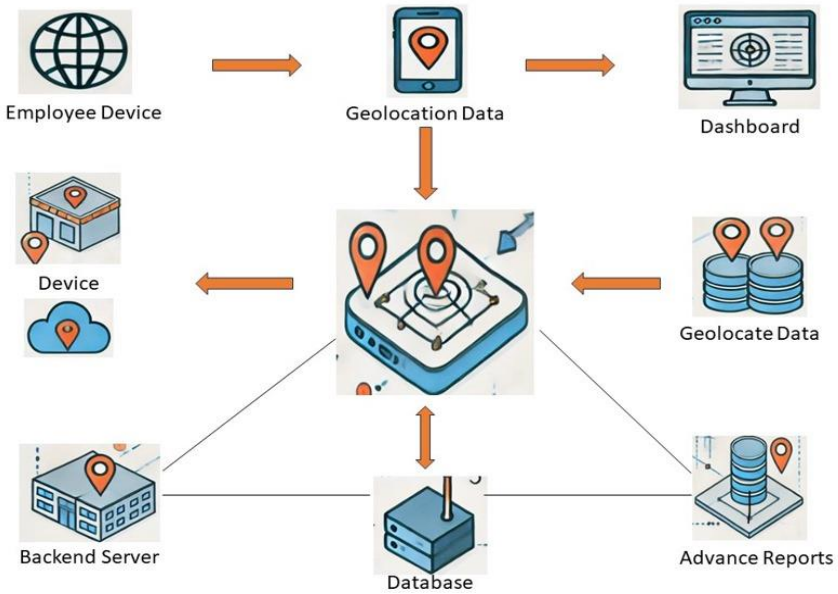
4-Data Accuracy & Integrity:

Attendance data will be securely stored and synced in real-time to ensure data accuracy and prevent tampering. The app will feature offline functionality, allowing users to log attendance without network connectivity, syncing data once the connection is restored.

This solution ensures accurate, tamper-proof attendance records, streamlines employee attendance management, and simplifies the tracking process for HR and administrators.`

Proposed Solution





Flowcharts representing our solution

Business Model

Overview: Our app is a B2B SaaS solution designed to optimize employee attendance management. We offer tiered pricing plans to cater to various business needs and generate additional revenue through premium services.

	Free Plan	Premium Plan	Enterprise Plan
Target	Small businesses/startups	Medium to large enterprises	Large organizations
Features	Basic check-in/out, manual offsite check-in, working hours calculation, limited admin access	Advanced reporting, real-time analytics, API integration, unlimited admin access, priority support	Custom integrations (e.g., ERP systems), enhanced security, dedicated support, extensive customization

Additional Revenue Streams:

- **White-Labeling**: Custom branded versions for large companies
- **Data Analytics Services**: Insights on attendance, work patterns, and productivity

Unique Selling Propositions (USPs)

Automated Geolocation-Based Attendance
Eliminates manual tracking with geofencing, ensuring seamless and error-free check-ins/outs.

Flexible Manual Offsite Check-In
Allows easy attendance tracking for remote or field workers with real-time location suggestions.

Accurate Working Hours Calculation
Provides reliable, automated working hours calculations without manual input.

Tamper-Proof and Secure
Ensures accurate and secure records with real-time data sync, encryption, and audit trails.

Seamless User Experience
Runs efficiently in the background with minimal battery impact and offers an intuitive interface.

Tech Stack

Backend Services

Cloud Backend: Firebase or Google Cloud Platform (GCP)

Database: Cloud Firestore or Firebase Realtime Database

APIs: RESTful APIs for data interaction

Mobile Platform

Android (Kotlin)

Admin Dashboard

Web Framework: React.js or Angular

Backend Framework: Node.js or Django

Geolocation Services

LocationManager & Google Play Services (Fused Location Provider)

Geofencing API for location detection

WorkManager for background tasks

Authentication & Security

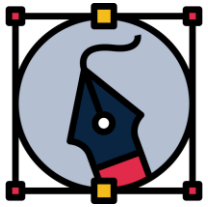
Authentication: Firebase Authentication or OAuth2

Data Encryption: SSL/TLS for secure data transfers

Version Control

Git with GitHub/Bitbucket

UI/UX Framework



Jetpack Compose for UI design

Material Design for adhering to Android’s modern UI/UX standards

Notifications

Firebase Cloud Messaging (FCM) for push notifications

Team Member Details

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