Location Tracking App

Group 8

The Fellows Consulting Group - Tom Hill

Meet the team

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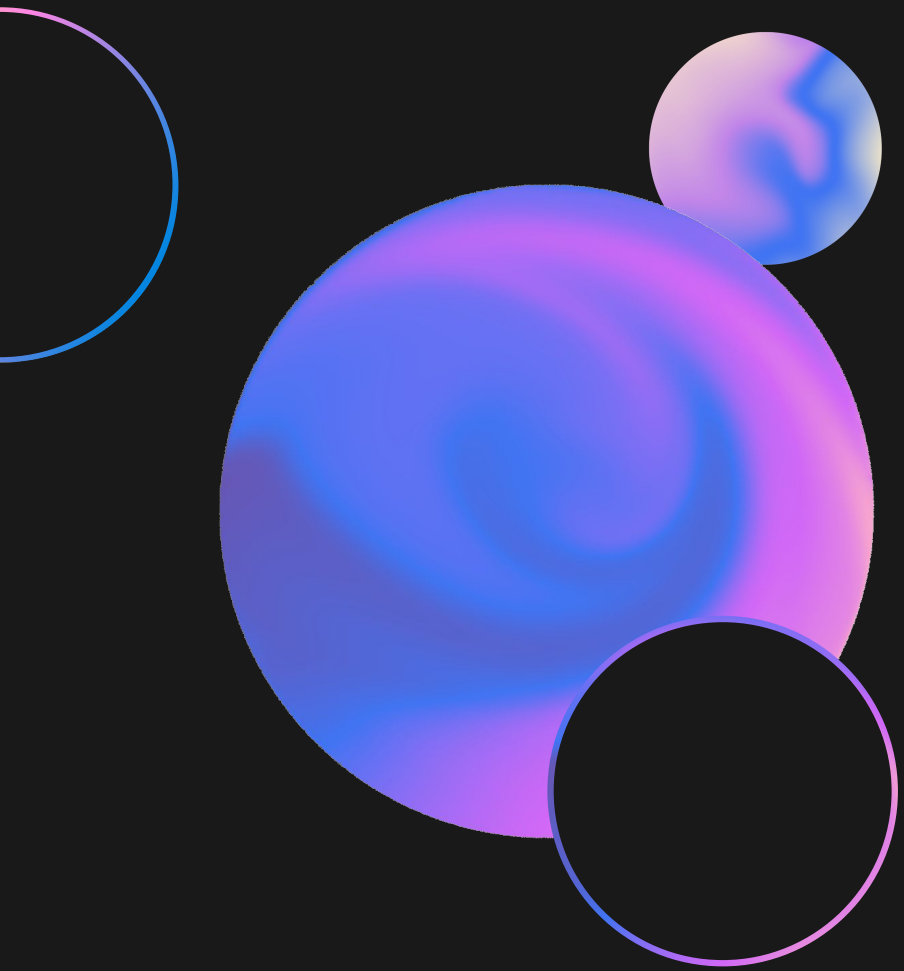
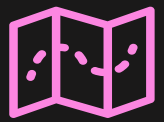


01 Introduction

Introduction

Mobile Location Verification Application



Overview:

This app helps service-based businesses by:

- Tracking service personnel in real-time.
- Verifying their identity securely.
- Allowing supervisors to monitor and report on performance.

Purpose:

To improve security, trust, and efficiency during service visits to customer homes.

Target audience identification

Our app is designed for:

Homeowners/Customers

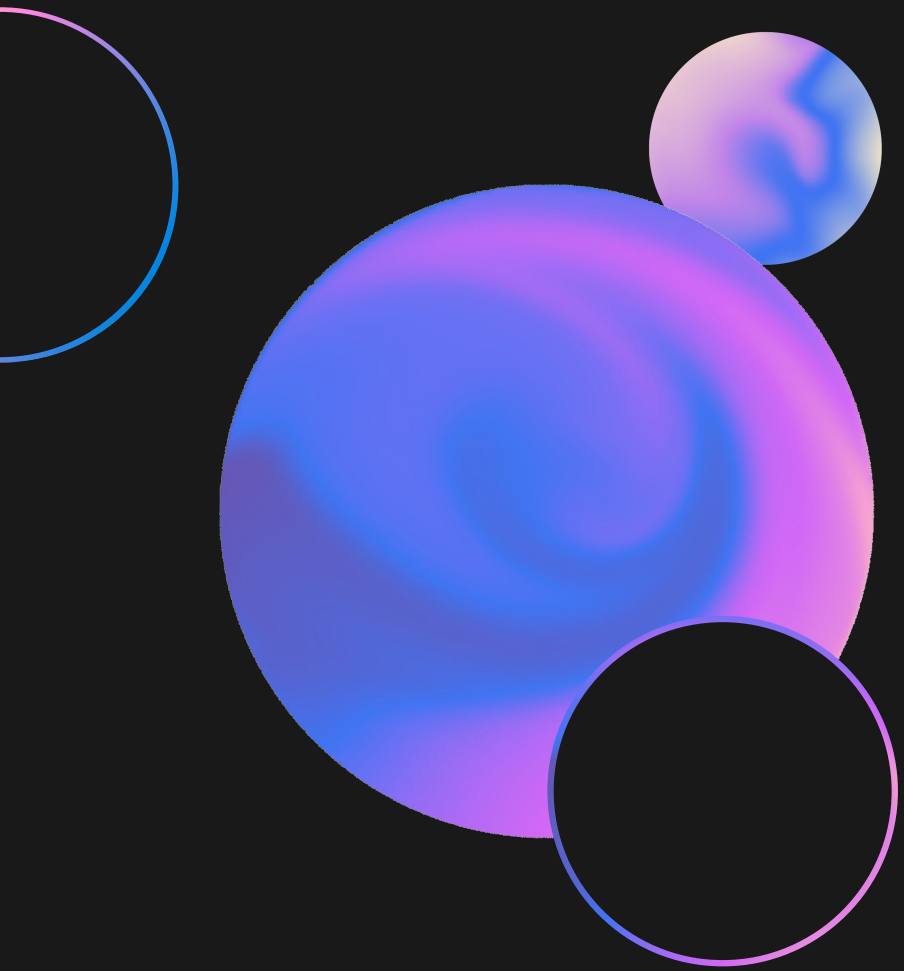
- Need to verify service personnel's identity and track their arrival.
- Benefit: Ensures safety and peace of mind.

Service Providers/Companies

- Need to monitor personnel, track schedules, and improve efficiency.
- Benefit: Better operations and happier customers.

Supervisors/Managers

- Need tools to track personnel in real time and generate reports.
- Benefit: Easier team management and transparency.



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Scope & Deliverables

Scope & Deliverables

Scope

- Develop a mobile application to track and verify the location of service personnel during visits to customer homes.
- Ensure real-time visibility for homeowners and supervisors, enhancing security and transparency.
- Build apps compatible with Android and iOS platforms, with seamless functionality across devices.

Deliverables

- *Functional Android Application*: Demonstrates location tracking and identity verification.
- *Functional iOS Application*: Includes real-time tracking and reporting features.
- *Project Documentation*: Covers requirements, use cases, and system design details.
- *Working Demos*: Showcasing the app's key features, including customer and supervisor workflows.

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Methodology & Results

Methodology

Requirement Analysis

- We identified the core features the app needed:
  - Accurate location tracking
  - Push notifications
  - Compatibility with both Android and iOS platforms
- Held team meetings to discuss project goals, break down tasks, and assign responsibilities.

Design & Development Process

- We created a basic structure for how the app's components would interact. This included separating the backend (for things like GPS tracking) from the user interface.

  Development Tools:

  - For Android, we used Flutter and Android Studio for development and testing
  - For iOS, we used Flutter and Xcode for development and testing.

Methodology

Testing

We tested the app using two main methods:

- Black-box testing to check how the app worked from the user's perspective.
- White-box testing to check the code logic, like how GPS data and notifications were handled.

Tools Used

- **Version Control**: GitHub was used to track changes and collaborate effectively.
- **Coding**: VS Code, Xcode, & Android Studio

Results

Feature	Goal	What We Achieved
Location Accuracy	Ensure accurate location tracking	Achieved real-time location updates with an accuracy of 2 meters
Location Pins and Path	Display pins for personnel and homeowners, with a path	Dynamic pins and path successfully implemented
Cross-Platform Functionality	Android 12+ and iOS 15+	Fully functional on Android 12+ and iOS 15+
Notification Pop-up	Notify on destination arrival	Destination notification added

Results

Feature	Goal	What We Achieved
Driving Simulation	Visualize service personnel driving	Simulated driving feature added
Live Location Tracking	Track movement in real-time	High-accuracy live tracking enabled
Future Improvements	Export reports (PDF and CSV)	Pending implementation

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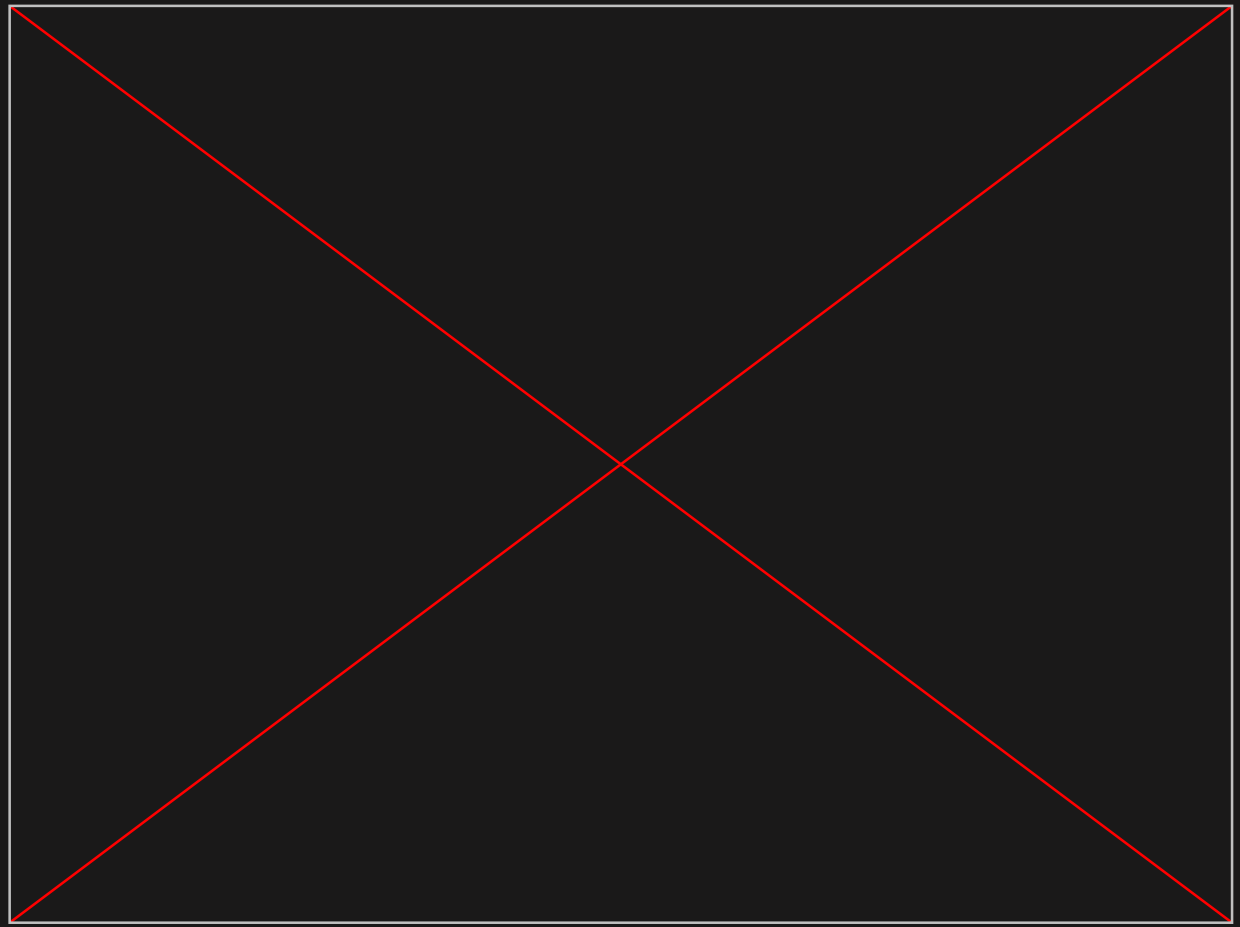
ndroid Demo


Driving Simulation
Enter destination address
Dallas

05

IOS Demo



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Challenges & Solutions

Challenges

- Had trouble creating the notification for the service personnel's arrival
- Had trouble with the driving simulation when the user's current location wasn't updated quickly which caused noticeable delay
- Android and IOS Device Emulators produced errors during execution

Solutions

- Did research on notifications for flutter and any related modules to be used which allowed notifications to be displayed
- Tested driving simulations with real time driving and automated the process once we found the correct tools to do so

Conclusion

Summary:

We created an app to track service personnel in real-time and verify their identity during home visits. The app creates a seamless experience for both users and service personnel, ensuring efficient and accurate location updates from start to finish.

Key Achievements:

- Developed Android and iOS versions of the app.
- Added features such as GPS tracking and identity verification.

Impact:

The app improves safety, trust, efficiency, and user satisfaction for both homeowners and service providers. It also helps transform the quality of location-based services.

Thank You!