SafeRoute

Smart Safety Tracker App

The Safety Gap We're Closing

Most personal safety apps fail when users need them most—during emergencies when manual activation is impossible.

Late-Night Commute

A woman walks home alone. Her phone battery dies. No one knows she hasn't arrived safely.

Rideshare Deviation

A cab takes an unfamiliar route. The passenger is too intimidated to speak up or alert others.

Solo Travel

An elderly traveler misses a connection. Family has no idea they are stranded or in distress.

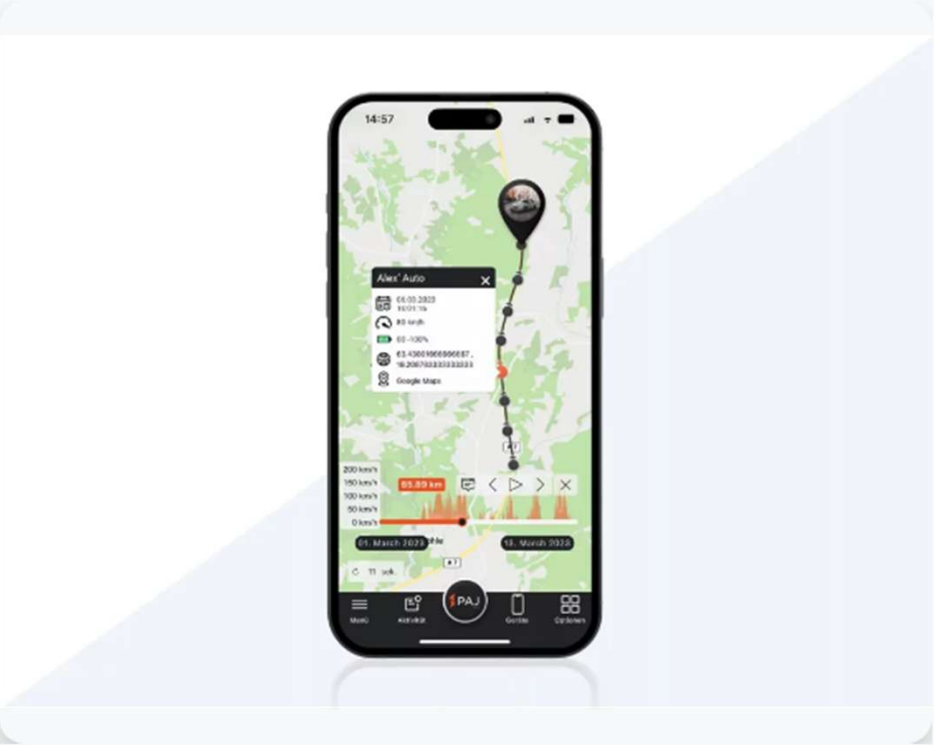
The Cost: Delayed response, missed intervention, preventable incidents.

Introducing SafeRoute

A fully autonomous safety tracking system that monitors your journey and alerts trusted contacts.

- **Set your destination once:** No checks needed.
- **Continuous GPS monitoring:** Runs in background.
- **Smart detection:** Identifies delays or route changes.
- **Automatic alerts:** Live location sent to trusted circle.

Key Metric: Zero manual actions required during emergencies.



Our Purpose & Vision

Purpose

Make personal safety effortless and intelligent through automation—because emergencies don't wait for you to unlock your phone.

Vision

Build a care-driven safety ecosystem that alerts your loved ones before something goes wrong, creating a proactive shield around every journey.

"Safety should be invisible until it's essential."

Market Landscape

Features	Life360	bSafe	Noonlight	SafeRoute
Real-time GPS	✔	✔	✔	✔
Requires manual SOS	✔	✔	✔	✘
Auto off-route detection	✘	✘	✘	✔
Auto delayed arrival alerts	✘	✘	Limited	✔
Works if unconscious	✘	✘	✘	✔

Most solutions assume the user can act. SafeRoute assumes they can't.

What Makes SafeRoute Different

Autonomy-First Design

No buttons to press mid-crisis. Set it once, trust it always.

Smart Trigger System

Off-route detection, timed arrival checks, and motion stop detection.

Trusted Integration

Live location sharing, ETA updates, and two-way communication.

Privacy by Default

Data shared only during active trips with full user consent.

Who SafeRoute Protects

Women's Safety

Late-night commutes, jogging routes, and campus walks.

Elderly Care

Monitor parents or grandparents on errands or medical visits.

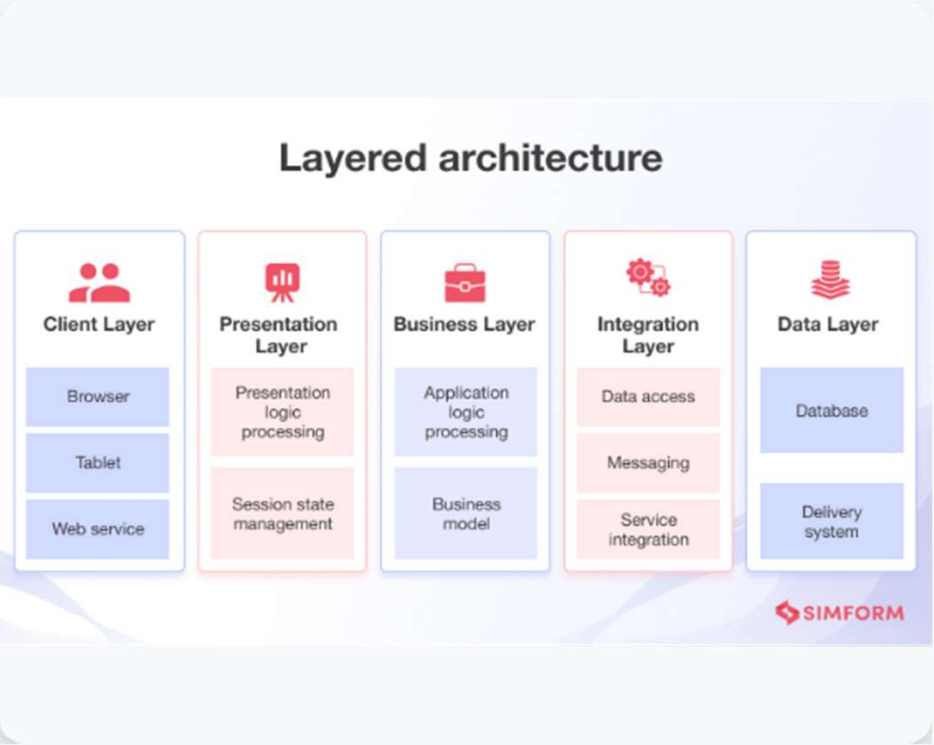
Solo Travelers

Backpackers and business travelers in unfamiliar locations.

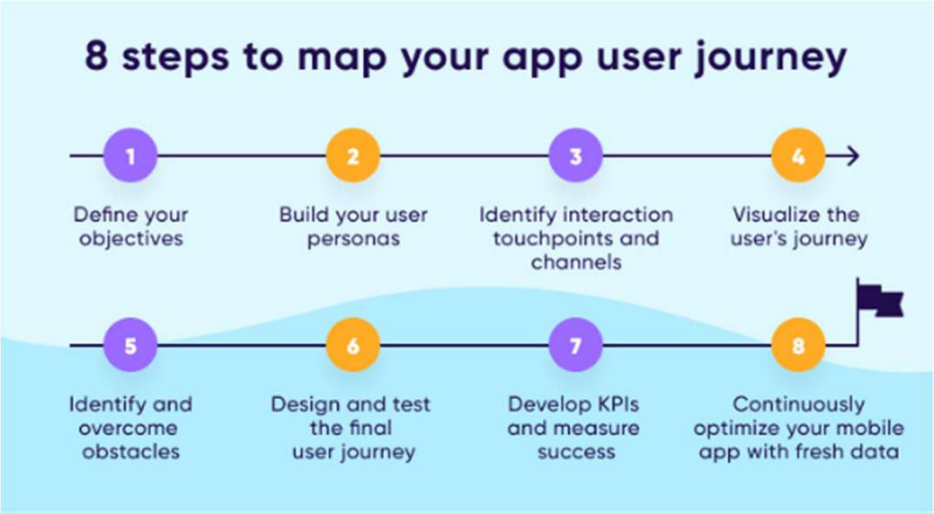
Technical Architecture

- **User Layer:** Mobile App (React Native), Web App.
- **API Layer:** Firebase Auth, Google Maps API, Cloud Functions.
- **Data Layer:** Firestore (Profiles), Realtime DB (Location).
- **Notification Layer:** FCM (Cloud Messaging), APNs.

Key Integrations: GPS Fusion, Battery optimization algorithms.



User Journey Flow



Process Logic

1. **Trip Setup:** User sets destination & trustedcontacts.
2. **Monitoring:** GPS tracks location every 30-60s.
3. **Smart Detection:** Checks for deviations or stops.
4. **Alert Trigger:** "Are you okay?" push notification.
5. **Escalation:** If no response, SMS sent to contacts.
6. **Completion:** Trip summary sent upon arrival.

Project Charter

Scope

- User authentication & profiles
- Real-time GPS tracking
- Alert trigger logic (off-route, delay)
- Push & SMS notifications

Constraints

Budget: $28,000 | Time: 4 Weeks

Success Criteria

- 95%+ GPS accuracy during tests
- < 3 min alert delivery time
- Zero false negatives
- Positive UAT feedback (10+ users)

Stakeholders

Commuters, Families, Dev Team

Work Breakdown Structure

1. Initiation & Design

1.1 Requirements & Charter

1.2 Planning & UI Design

1.3 Database Schema Design

1.4 API Architecture

2. Backend Dev

2.1 Login & authentication

2.2 Trip Management Module

2.3 Alert Logic Implementation

3. Frontend Dev

3.1 Login & Onboarding

3.2 Live Tracking Map View

3.3 Safe arrival confirmation

4. Testing & Deploy

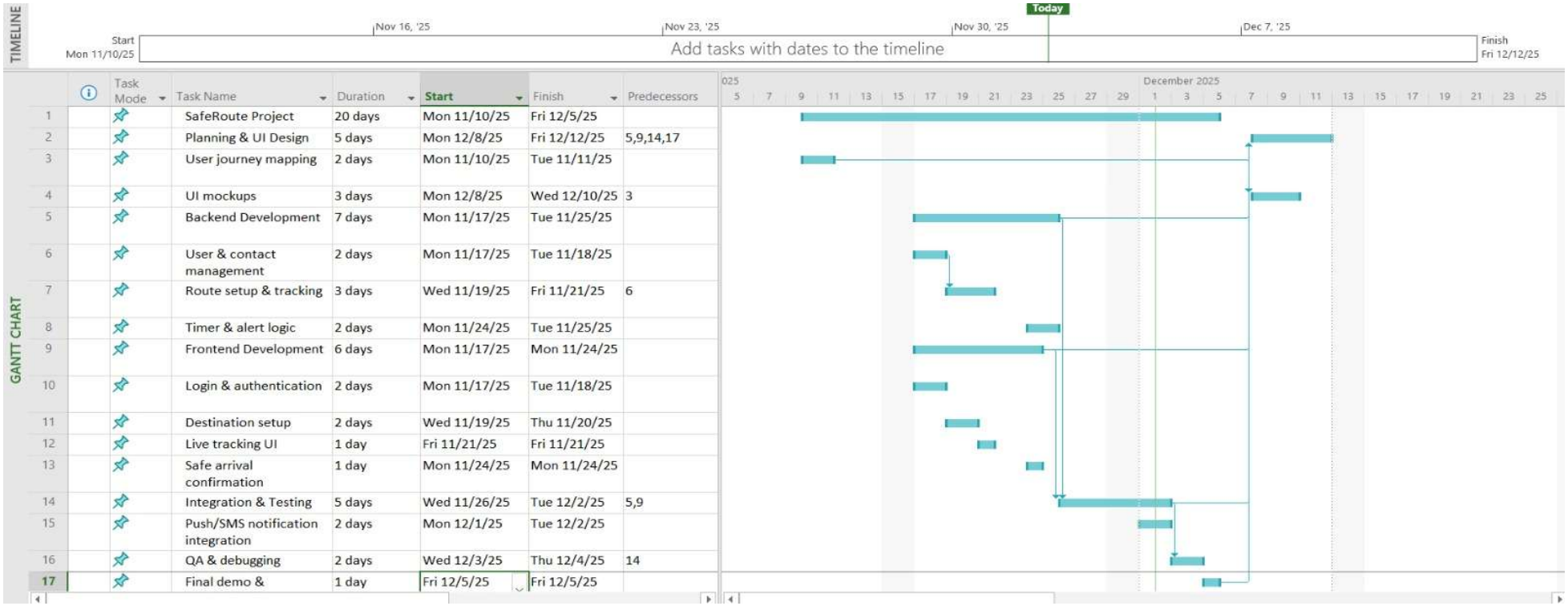
4.1 Integration & Unit Testing

4.2 QA & debugging

4.3 Production Release

Project Schedule & Gantt Chart

Structured 4-week timeline aligned with Agile development.



	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		SafeRoute Project	20 days	Mon 11/10/25	Fri 12/5/25	
2		Planning & UI Design	5 days	Mon 12/8/25	Fri 12/12/25	5,9,14,17
3		User journey mapping	2 days	Mon 11/10/25	Tue 11/11/25	
4		UI mockups	3 days	Mon 12/8/25	Wed 12/10/25	3
5		Backend Development	7 days	Mon 11/17/25	Tue 11/25/25	
6		User & contact management	2 days	Mon 11/17/25	Tue 11/18/25	
7		Route setup & tracking	3 days	Wed 11/19/25	Fri 11/21/25	6
8		Timer & alert logic	2 days	Mon 11/24/25	Tue 11/25/25	
9		Frontend Development	6 days	Mon 11/17/25	Mon 11/24/25	
10		Login & authentication	2 days	Mon 11/17/25	Tue 11/18/25	
11		Destination setup	2 days	Wed 11/19/25	Thu 11/20/25	
12		Live tracking UI	1 day	Fri 11/21/25	Fri 11/21/25	
13		Safe arrival confirmation	1 day	Mon 11/24/25	Mon 11/24/25	
14		Integration & Testing	5 days	Wed 11/26/25	Tue 12/2/25	5,9
15		Push/SMS notification integration	2 days	Mon 12/1/25	Tue 12/2/25	
16		QA & debugging	2 days	Wed 12/3/25	Thu 12/4/25	14
17		Final demo &	1 day	Fri 12/5/25	Fri 12/5/25	

Risk Management & Mitigation Strategy

Rank	Risk	Impact	Mitigation Strategy
High	**GPS Signal Loss**		Hybrid location logic, error buffering, timer fallback.
High	**False Alerts**		Grace period, one-tap cancel, algorithm refinement.
Med	**Privacy Concerns**	High	Clear privacy policy, encryption, automatic data deletion.
Med	**SMS Cost Overruns**	Medium	Alert limits during testing, shift to push notifications.
Low	**Team Skill Gaps**		Pair programming, early integration tests.

Red Zone: GPS failures are the highest threat to credibility and must be addressed immediately.

Roadmap: Beyond MVP

AI Scoring

Analyze crime data and lighting to suggest safer alternate routes dynamically.

Wearables

Apple Watch & Wear OS support with gesture-based silent SOS triggers.

Analytics

Machine learning to detect unusual behavior patterns and reduce false positives.

Conclusion

SafeRoute demonstrates how thoughtful design and automation can significantly improve personal safety. The project combines real-time GPS tracking, intelligent alert logic, and user-centered design to create a safety tool that acts when users can't.

Solves Manual Failure

Removes need for manual SOS.

Scalable Tech

Built on Firebase & Google Maps.

Strong Mgmt

Effective planning & execution.

Future Ready

AI & Wearable integrations planned.

"SafeRoute is more than an academic project — it's a real solution shaped by compassion, technology, and practical design to protect people when they need it the most."