## System Requirements

### 1 Functional Requirements

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| Requirement ID | Description | Priority | Acceptance Criteria |
| FR-1 | Track user location in real time. | High | User’s location is displayed accurately on the map. |
| FR-2 | Provide route guidance to preset locations (home, hospital, etc.). | High | System guides user to the selected destination. |
| FR-3 | Warn user when deviating from the pre-recorded route. | High | Alert is triggered when user leaves the planned route. |
| FR-4 | Enable Free Roam Mode for routes outside usual patterns. | Medium | User can travel new routes with tracking enabled. |
| FR-5 | Allow the user to press a panic button, alerting linked contacts. | High | Notification is sent to all linked contacts. |
| FR-6 | Notify linked contacts of user’s location in real-time during panic mode. | High | Contacts can view real-time updates of user location. |
| FR-7 | Send low-battery warnings to linked contacts. | Medium | Notification is sent when battery level is critically low. |
| FR-8 | Allow users to create, edit, and delete a list of preset routes. | Medium | User can manage routes through the interface. |
| FR-9 | Enable linking with other user accounts for emergency alerts. | High | User can add, edit, and remove linked contacts. |

### 2 Non-Functional Requirements

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| NFR-1 | The application should function with minimal battery consumption. | High | App operates for 8 hours with active tracking. |
| NFR-2 | The app must support user privacy by protecting data and location history. | High | Data is encrypted, and location history is user-controlled. |
| NFR-3 | Provide reliable and accurate GPS tracking. | High | Location is updated every 5 seconds within 10 meters. |
| NFR-4 | Ensure ease of use with a simple, accessible user interface. | Medium | Users can complete tasks without training or difficulty. |
| NFR-5 | Maintain system performance with under 2-second response time for alerts and notifications. | Medium | All notifications are delivered within 2 seconds. |