# Business Requirements Document

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# 1. Scope

This project focuses on developing a comprehensive web application that integrates personal safety and well-being features for individuals, particularly those in high-risk urban environments. The application allows users to manage their daily activities, track health-related metrics, and maintain trusted contacts for emergencies. It also includes robust authentication and role management functionalities.

# 2. Introduction

### 2.1 Purpose

The purpose of this Business Requirements Document (BRD) is to define and describe the requirements for the **Personal Safety and Well-Being Management Tool**. This tool will help users enhance their personal safety and manage their well-being effectively by providing functionalities for tracking health-related activities, managing daily routines, and maintaining emergency contacts.

### 2.2 Scope

The Personal Safety and Well-Being Management Tool will include features for:

- **Managing User Accounts and Roles**: Users can create, update, and manage their accounts and assigned roles.
- **Managing Trusted Contacts**: Users can add, update, and manage a list of trusted contacts for emergencies.
- **Tracking and Assessing Daily Activities**: Users can log and assess daily activities such as exercise, meditation, screen time, sleep, and emotional well-being.
- **Providing Health and Well-Being Insights**: Users receive feedback on their health and well-being based on logged data.
- **Sending Emergency Alerts**: Users can quickly send alerts to their trusted contacts in case of emergencies.

The frontend will be developed using Angular, while the backend will be built with Spring Boot microservices.

### 2.3 Definitions

- **Trusted Contacts**: Individuals selected by the user to receive alerts in case of an emergency.
- **Day Planner:** A tool for users to plan and log their daily activities such as exercise, meditation, anxiety, depression and calculate score.
- **Screen Time**: The amount of time a user spends on digital devices, which is tracked and assessed for well-being.
- **Sleep Tracking**: Logging and assessing the quality and quantity of sleep to provide insights into health.
- **Work-life Balance**: Logged daily activities that included family time, me time, tasks pending and completed.

### 2.4 Stakeholders

- **End Users:** Individuals who want to improve their personal safety and manage their well-being.
- **Development Team:** Engineers and developers responsible for implementing and maintaining the application.

## 3. Business Objectives

### 3.1 Goals

- **Enhance Personal Safety**: Enable users to manage trusted contacts and send emergency alerts when needed.
- **Improve Well-Being Management**: Provide tools for users to log and assess their daily activities and health metrics.
- **Provide Real-Time Health Insights**: Offer users dynamic feedback on their health and well-being based on logged activities.

- **Increase Awareness and Control**: Equip users with tools to make informed decisions about their health and safety based on comprehensive data tracking and analysis.

### 3.2 Benefits

- **Comprehensive Well-Being Management:** Users can log and manage various aspects of their health and daily routines, from exercise to sleep.
- **Emergency Preparedness**: Users have quick access to emergency alert features, ensuring their trusted contacts are informed in critical situations.
- **Dynamic Health Insights**: Users receive feedback on their activities and well-being, helping them make necessary adjustments to improve their health.
- **Interactive Visualization**: Provides graphical representations of daily activities and health metrics, allowing users to better understand and manage their well-being.

## 4. Functional Requirements

### 4.1 User Management

- Requirement: Users must be able to create, manage, and delete their accounts.
- Details:
    - Create User: Users can sign up by providing their name, email, and password, with the option to assign a specific role (e.g., admin, regular user).
    - Edit User: Users can update their account details, including name, email, and password.
    - Delete User: Users can permanently delete their accounts from the system.
    - View User: Users can view their account details, including associated trusted contacts and activity logs.

### 4.2 Trusted Contacts Management

- Requirement: Users must be able to add, update, and delete trusted contacts for emergency purposes.
- Details:
    - Add Contact: Users can add new trusted contacts by providing the contact's name and phone number.
    - Edit Contact: Users can update the details of an existing trusted contact.
    - Delete Contact: Users can remove trusted contacts from their list.
    - View Contacts: Users can view their list of trusted contacts and manage them as needed.

### 4.3 Daily Activity Tracking

- Requirement: Users must be able to plan and track their daily activities, such as exercise, meditation, and work hours.
- Details:
    - Create Day Plan: Users can create a daily plan, including activities like exercise, meditation, and work hours.
    - Edit Day Plan: Users can update their daily plans, adding or modifying activities.
    - Delete Day Plan: Users can delete day plans that are no longer needed.
    - View Day Plan: Users can view their daily plans and track their progress.

### 4.4 Screen Time Management

- Requirement: Users must be able to log and assess their daily screen time usage.
- Details:
    - Log Screen Time: Users can input the amount of time spent on screens each day.
    - Edit Screen Time: Users can update or correct previously logged screen time data.
    - Delete Screen Time: Users can remove logged screen time data if necessary.

- View Screen Time: Users can view their screen time history and assess its impact on their well-being.

### 4.5 Sleep Tracking

- Requirement: Users must be able to log and assess their sleep patterns.
- Details:
    - Log Sleep: Users can record the hours slept and rate the quality of their sleep.
    - Edit Sleep Data: Users can update or correct sleep data.
    - Delete Sleep Data: Users can remove sleep data entries.
    - View Sleep Data: Users can view their sleep history and assess its quality and impact on their overall health.

### 4.6 Emotional Well-Being Tracking

- Requirement: Users must be able to log daily activities and assess their emotional well-being.
- Details:
    - Log Emotional State: Users can record their daily emotional states, including levels of anxiety, stress, and depression.
    - Log Daily Activities: Users can input the amount of time spent on activities such as work, family, and personal time.
    - Edit Activity Logs: Users can update or correct logged emotional states and activities.
    - View Emotional Trends: Users can view trends in their emotional states over time.

### 4.7 Alerts and Notifications

- Requirement: The application must allow users to send emergency alerts to their trusted contacts.
- Details:
    - Send Alert: Users can trigger an emergency alert that sends a predefined message to their trusted contacts.
    - Customise Alert: Users can customise the message content of their emergency alerts.
    - View Alert History: Users can view a history of all sent emergency alerts.
- Requirement: Notify users of significant changes or trends in their well-being metrics.

- Details:
    - Daily Summary Alerts: Users receive daily summaries of their logged activities and emotional states.
    - Health Alerts: Users are notified if their logged data indicates significant changes in their well-being (e.g., consistent high stress levels).
    - Notification Channels: Alerts and notifications can be delivered via in-app messages, email, or SMS.

# 5. Non Functional Requirements

### 5.1 Performance

- The application must handle multiple concurrent users with minimal latency.
- Data processing, activity tracking, and health assessments should be responsive and provide real-time updates.

### 5.2 Security

- The application must include strong authentication and authorization mechanisms to protect user data.
- User data must be encrypted during transmission and at rest.

### 5.3 Usability

- The user interface should be intuitive and user-friendly, with clear navigation and helpful tooltips.
- The application must be accessible on various devices, including desktops, tablets, and smartphones.

# 6. Components and Services

**Frontend (Angular):**

- **Components**:
    - **UserManagementComponent**: For creating, updating, and managing user accounts.
    - **TrustedContactsComponent**: For adding, updating, and managing trusted contacts.
    - **DayPlannerComponent**: For creating and managing daily activity plans.
    - **ScreenTimeComponent**: For logging and viewing screen time usage.

    - **SleepTrackerComponent**: For logging and assessing sleep quality and quantity.
    - **ActivitiesComponent**: For recording and assessing emotional well-being metrics.
    - **AlertsComponent**: For sending emergency alerts to trusted contacts.

- **Services**:
    - **UserService**: Handles HTTP requests for creating, retrieving, updating, and deleting user accounts.
    - **ContactService**: Manages HTTP requests for trusted contact operations.
    - **DayPlannerService**: Manages the creation and retrieval of daily plans.
    - **ScreenTimeService**: Handles screen time logging and assessment.
    - **SleepService**: Manages sleep data logging and analysis.
    - **ActivitiesService**: Handles emotional well-being data logging and assessment.
    - **NotificationService**: Manages and retrieves notifications and alerts related to emergencies.

**Backend (Spring Boot):**

- **Services:**

    - **UserService**: Contains business logic for managing users and their roles, interacting with the database.
    - **ContactService**: Handles business logic for managing trusted contacts and integrates with the database.
    - **DayPlannerService**: Manages business logic for daily planning and integrates with the database.
    - **ScreenTimeService**: Manages business logic for logging and assessing screen time.

    - **SleepService**: Handles business logic for sleep tracking and assessment, interacting with the database.
    - **ActivitiesService**: Contains business logic for managing and assessing emotional well-being data.
    - **NotificationService**: Handles the logic for sending alerts and notifications.

## 7. Interaction

**Frontend and Backend Communication:**

- **HTTP Requests**: The Angular frontend communicates with the Spring Boot backend via HTTP requests for user management, activity logging, and other operations.
- **Data Binding**: Data models are exchanged between the frontend and backend to keep the application synchronised.

**Real-Time Updates:**

- **Angular Components**: Reactively update the UI based on data changes from the backend.
- **Spring Boot Services**: Process requests and manage data, ensuring consistency and reliability.

## 8. Technologies Used

The project employs the following technologies:

- **Programming Language**: Spring Boot for backend services.
- **Frameworks**:
    - Angular for building the frontend.
    - Spring Boot for creating microservices.
- **Database**: PostgreSQL for storing persistent data.

- **API Communication**: RESTful APIs using Spring Boot.
- **Frontend**: Angular for building the user interface.
- **Containerization**: Docker for containerizing services.
- **Security**: Implementing OAuth2 for secure authentication.