SOFTWARE REQUIREMENT SPECIFICATION(SRS) FOR PERSONALIZED HEALTH TRACKER

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1. INTRODUCTION

Personalized Health Tracker: A healthcare-related app that tracks, then matches med supplies & offerings according to heart rate, blood pressure and daily activity for an entire family. In addition, the app also produces tailored health tips through analysis of current and historical data to monitor your fitness levels, set objectives and link health data from wearables.

1.1 PURPOSE

This document specifies the requirements for the "Personalized Health Tracker" application, focusing on its functionality, user interface, and database structure. The goal is to create a scalable, secure, and user-friendly solution for users to manage their health metrics and gain actionable insights.

1.2 SCOPE

Users can:

- Log and sync daily health measures.
- See health insights and trends
- Health goals — set and track. health goal(s) Merge data from external source(s).
- View historical data, notifications or alerts Created in C# with WPF for the interface and SQL Server for data storage.

1.3 Definitions, Acronyms, and Abbreviations

- WPF: Windows Presentation Foundation
- SQL: Structured Query Language
- API: Application Programming Interface
- Systolic: Pressure in arteries during the heart’s contraction
- Diastolic: Pressure in arteries when the heart rest

2. OVERALL DESCRIPTION

2.1 PURPOSE

- Users Enter Daily Metrics: Users can manually add heart rate, blood pressure, activity levels or syncs.
- Personalized Insights: Data is fed into an AI model to deliver insights, specific to users, that recommend health actions.
- Goal Tracking – To set a goal and track progress using visual cues.
- Health History – see how your health has changed over time.
- Device Integration — Sync data from wearables such as Fitbit or Apple Watch.
- Notifications: Health related abnormal alerts or reminders for a goal completion.

2.1 USER CHARACTERISTICS

The application is intended for health-conscious individuals of any age who want to track and improve their health. Users may include patients under medical supervision or people who rely on wearables to maintain a healthy lifestyle.

3. SYSTEM FEATURES

3.1 HOME PAGE

Purpose: Introduction to the app and an overview of its services.

Features:

- Overview of key services (heart rate, blood pressure, activity tracking).
- Navigation links (login, sign-up, insights, etc.).
- "Get Started" or "Learn More" buttons.

3.2 USER SIGN-UP/LOGIN PAGE

Purpose: Allows patients to create an account or log in.

Features:

- Input fields for email, password, name, contact details.
- "Sign in with Google/Facebook".
- Forgot password functionality

3.3 DASHBOARD

Purpose: Central hub displaying a snapshot of health metrics.

Features:

- Overview of heart rate, blood pressure, and activity levels.
- Visual representation of recent health data.
- Sync health data manually or from devices.

3.4 DAILY HEALTH METRICS ENTRY

Purpose: Users can input daily health metrics.

Features:

- Input fields for heart rate, blood pressure, and activity levels.
- Integration with wearable devices for automatic syncing.
- Option to add notes about medications or diet.

3.5 HEALTH INSIGHTS

Purpose: Provide users with personalized insights.

Features:

- Graphs comparing daily, weekly, and monthly trends.
- Suggestions (e.g., "Increase physical activity").
- Alerts for abnormal metrics like high blood pressure.

3.6 HEALTH HISTORY

Purpose: Displays historical health metrics.

Features:

- Timeline or table of past health data.
- Filters for specific metrics.
- Export data to PDF/CSV.

3.7 HEALTH GOALS AND PROGRESS

Purpose: Users can set and track personal health goals.

Features:

- Set goals (e.g., lower blood pressure).
- Progress tracking with visual indicators.
- Notifications for goal completion.

3.8 DEVICE INTEGRATION/SYNC

Purpose: Sync data from wearables and health apps.

Features:

- List of supported devices.
- Sync status and troubleshooting.

3.9 PROFILE SETTINGS

Purpose: Manage user information and preferences.

Features:

- Edit personal information and health preferences.
- Notification and sync settings.
- Password change and security options.

3.10 ADMIN DASHBOARD

Purpose: Platform management for administrators.

Features:

- Manage user data and monitor platform performance.
- View system errors or health trends.
- Create, Read, Update and Delete Users

3.11 CONTACT SUPPORT

Purpose: Help users troubleshoot issues.

Features:

- FAQs and troubleshooting tips.
- Contact form for inquiries.

4. EXTERNAL INTERFACE REQUIREMENTS

4.1 USER INTERFACES

The application is equipped with a simple and intuitive user interface that allows users to input health data, check metrics and get insights using very navigable pages.

4.2 HARDWARE INTERFACES

The application will sync with external health devices like fitness trackers (Fitbit, Apple Watch) through device-specific APIs.

5. DATABASE DESIGN

5.1 TABLES AND RELATIONSHIPS

Users Table

- Stores user details like email, name, and password.
- Key fields: UserID, Name, Email, PasswordHash, DateOfBirth, CreatedAt.

HealthMetrics Table

- Stores daily health metrics (heart rate, blood pressure).
- Key fields: MetricID, UserID, HeartRate, BloodPressureSystolic, BloodPressureDiastolic, ActivityLevel, MetricDate.

HealthInsights Table

- Stores personalized health insights.
- Key fields: InsightID, UserID, InsightType, InsightDetails.

Goals Table

- Stores users' health goals and progress.
- Key fields: GoalID, UserID, GoalType, TargetValue, StartDate, EndDate.

DeviceSync Table

- Syncs data from wearables.
- Key fields: SyncID, UserID, DeviceType, LastSyncedAt.

HealthHistory Table

- Stores historical health metrics.
- Key fields: HistoryID, UserID, MetricType, MetricValue, RecordedAt.

Notifications Table

- Stores notifications for users.
- Key fields: NotificationID, UserID, NotificationType, Message, SentAt.

Relationships

Users have a one-to-many relationship with HealthMetrics, HealthInsights, Goals, DeviceSync, HealthHistory, and Notifications.

6. NON-FUMCTIONAL REQUIREMENTS

6.1 PERFORMANCE

The system should handle up to 10,000 users concurrently, ensuring fast data input, sync, and retrieval.

6.2 Security

- User data will be encrypted during transmission and storage.
- Passwords will be hashed and stored securely.
- 2-factor authentication will be available for users.

6.3 Scalability

The application must support growth in the number of users and health metrics data without performance degradation.