

# 1. Introduction

The purpose of this document is to provide a comprehensive software requirements specification (SRS) for a desktop application that helps to control water balance in the body to maintain optimal health. This document defines the functional and non-functional requirements for the system, as well as any constraints, assumptions, and dependencies that may impact its design or implementation. The intended audience for this document includes the software development team, project managers, and stakeholders involved in the development and deployment of the application.

## 2. Use Cases

### 2.1. Regular User Use Cases:

- 1) Login: The user logs into the application with their username and password.
- 2) View water intake history: The user can view a chart or graph showing their water intake over time.
- 3) Add water intake: The user can add the amount of water they consumed at a specific time.
- 4) View water intake recommendations: The user can view recommendations for increasing their water intake.
- 5) Set water intake goal: The user can set a goal for their daily water intake based on their age, gender, weight, and activity level.
- 6) Edit water intake goal: The user can edit their water intake goal if they need to make changes to their daily routine.
- 7) View progress towards water intake goal: The user can view their progress towards their daily water intake goal.

- 8) Receive notifications: The user receives notifications reminding them to drink water if they haven't consumed enough during a specific time period.
- 9) Share water intake history: The user can share their water intake history with their healthcare provider or family members.
- 10) Export water intake history: The user can export their water intake history in a file format, such as CSV or PDF.
- 11) View daily water intake summary: The user can view a summary of their water intake for a particular day, including the amount consumed and the time of consumption.
- 12) View weekly water intake summary: The user can view a summary of their water intake for the week, including the average amount consumed and the days when they drank the most water.
- 13) View monthly water intake summary: The user can view a summary of their water intake for the month, including the total amount consumed and any trends or patterns in their water consumption.
- 14) Set reminders: The user can set reminders to drink water at specific times during the day.
- 15) Edit reminders: The user can edit their reminders if they need to make changes to their daily routine.
- 16) Delete reminders: The user can delete reminders if they no longer need them.
- 17) View water intake history by time of day: The user can view their water intake history by time of day, such as morning, afternoon, and evening.
- 18) View water intake history by beverage type: The user can view their water intake history by beverage type, such as water, juice, or soda.
- 19) View water intake history by location: The user can view their water intake history by location, such as home, work, or gym.
- 20) View water intake history by weather: The user can view their water intake history by weather, such as hot or cold temperatures.

- 21) Sync data: The user can sync their water intake history across multiple devices.
- 22) Change units of measurement: The user can switch between different units of measurement for water intake, such as ounces or liters.
- 23) View water intake history by mood: The user can view their water intake history by mood, such as happy or stressed.
- 24) Set personal goals: The user can set personal goals for their water intake, such as drinking more water during exercise or reducing their intake of sugary beverages.
- 25) View progress towards personal goals: The user can view their progress towards their personal goals for their water intake.
- 26) Receive feedback and suggestions: The user receives feedback and suggestions on their water intake habits and ways to improve them.
- 27) View average water intake: The user can view their average water intake over a specific period of time, such as the past month or year.
- 28) View recommended daily water intake: The user can view the recommended daily water intake for their age, gender, weight, and activity

## 2.2. Administrator User Use Cases:

- 1) Login: The administrator logs into the application with their username and password.
- 2) View user profiles: The administrator can view the profiles of individual users, including their water intake history and personal goals.
- 3) Add new users: The administrator can add new users to the application, including their name, age, gender, weight, and activity level.
- 4) Edit user profiles: The administrator can edit the profiles of existing users, including their personal information and water intake goals.
- 5) Delete user profiles: The administrator can delete the profiles of users who are no longer using the application.

- 6) View user statistics: The administrator can view statistics on user activity, such as the number of users who have met their daily water intake goals.
- 7) View application statistics: The administrator can view statistics on application usage, such as the number of times the application has been opened and the average time spent using the application.
- 8) Manage notifications: The administrator can manage notifications that are sent to users, such as setting the frequency of reminders and customizing the message content.
- 9) Export user data: The administrator can export user data in a file format, such as CSV or PDF.
- 10) View user data by demographic: The administrator can view user data by demographic categories, such as age, gender, or activity level.
- 11) View user data by geographic location: The administrator can view user data by geographic location, such as city or country.
- 12) View user data by time period: The administrator can view user data by time period, such as daily, weekly, or monthly.
- 13) Manage application settings: The administrator can manage the application settings, such as the default water intake goals for new users.
- 14) Manage database: The administrator can manage the database of user profiles and water intake history.
- 15) Manage user feedback: The administrator can manage user feedback and suggestions for improving the application.
- 16) Create user surveys: The administrator can create surveys for users to provide feedback on the application and their water intake habits.
- 17) Analyze user surveys: The administrator can analyze the results of user surveys to identify trends and areas for improvement.
- 18) Generate reports: The administrator can generate reports on user activity and application usage.
- 19) Monitor system performance: The administrator can monitor the performance of the application and troubleshoot any issues that arise.

- 20) Manage user accounts: The administrator can manage user accounts, such as resetting passwords or deactivating accounts.
- 21) Manage user access: The administrator can manage user access to different features of the application, such as restricting access to certain data or functionality.
- 22) Provide technical support: The administrator can provide technical support to users who are experiencing issues with the application.

### 3. System Overview

The water balance control application is designed to help users maintain optimal health by providing a dashboard that displays information on their daily water intake, and the effects of water on their body. The application allows users to input data on their daily water intake, and view charts and graphs that illustrate their hydration status over time. The system will provide the following functionalities:

- Allow users to input data on their daily water intake, including the amount of water consumed and the time period in which it was consumed.
- Store the data in a database for future reference and analysis.
- Provide users with a dashboard that displays their hydration status in the form of charts and graphs.
- Provide users with recommendations for maintaining optimal hydration levels based on their body weight and activity level.
- Allow users to set reminders for drinking water at regular intervals throughout the day.
- Provide users with information on the benefits of staying hydrated and the negative effects of dehydration.

## 4. Functional Requirements

### 4.1. User Management

The application should allow users to create an account, log in, and manage their profiles. The user management module should include the following features:

- User registration with email and password
- User login with email and password
- User profile management
- Password reset functionality
- User role management (administrator and regular user)

### 4.2. Water Intake Data Input

The system shall allow users to input data on their daily water intake, including the following information:

- Amount of water consumed
- Time period in which it was consumed
- Type of water consumed (e.g. still, sparkling, flavored)

### 4.3. Hydration Status Analytics

The system shall provide users with analytics on their hydration status, including the following:

- Charts and graphs illustrating hydration status over time
- Recommendations for maintaining optimal hydration levels based on body weight and activity level
- Reminders for drinking water at regular intervals throughout the day
- Information on the benefits of staying hydrated and the negative effects of dehydration

#### 4.4. Data Storage

The system shall store all water usage data in a secure and reliable database for future reference and analysis.

#### 4.5. System Administration

The system shall provide administrative functionalities, such as user management and database management.

### 5. Non-Functional Requirements

#### 5.1. Performance

This application aims to help people in water balance control by sending notifications. It is very important to provide notification sending on time. The system shall be capable of handling large amounts of data and providing analytics in real-time.

#### 5.2. Security

This application can be used in one scenario: for personal use.

Many users can use the same passwords for different accounts, including bank ones, therefore it is important to provide protection against brute-force and other attacks. The system shall be designed to protect user data from unauthorized access or modification.

#### 5.3. User Interface

The user interface of the application should be designed according to the following specifications:

- The user interface should be simple and easy to use, with a clean and modern design.

- The color scheme should be related to water, such as blue or green.
- The layout should be responsive and adapt to different screen sizes.

## 5.4. Reliability

The system shall be reliable and provide consistent results over time.

# 6. Constraints, Assumptions, and Dependencies

## 6.1. Constraints

The system shall be developed using the .NET Framework.

## 6.2. Assumptions

The system assumes that users will have access to a desktop computer or laptop with an internet connection.

## 6.3. Dependencies

The system depends on third-party libraries for data visualization and database management.

# 7. Conclusion

This Software Requirements Specification (SRS) document has provided a comprehensive overview of the functional and non-functional requirements for a desktop application that helps to control water balance. The system is designed to provide users with insights into their water usage patterns, recommendations for reducing usage.