Requirements Software Specification

1.Introduction

1.1 Purpose

The purpose of this document is to build a desktop application, which tracks the quantity of consumed water . System will allow the user to register and control their amount of consumed liquid, sending notification when the user should drink a glass of water.

1.2 Document definitions and abbreviations

Guest	Someone, who has not logged in yet.
User	Someone, who successfully logged in and can use the application.
DB	Database
ER	Entity Relationship
UML	Unified Modelling Language

1.3 Intended audience and reading suggestions

This document describes a water reminder tracker “Drink It”. It will be useful for people who want to track the amount of consumed water. It is beneficial for people from different age groups: children and adults. Our application helps users to stay hydrated, reach their goals and consume a needed amount of water. The application stores statistics of consumed amounts of water.

1.4 Project scope

This application will be a desktop application developed for the Windows operating system. The application will be designed to track the user's amount of consumed water and send a notification where the user should drink a glass of water. It will facilitate the user to reach his/her personal goal and consume appropriate amounts of water.

Besides, our application allows users to track the overall amount of consumed liquid, including different beverages, not only water.

The application contains a relational DB containing a list of users and information about them.

2.Overall Description

2.1 Product Perspective

The water track database system stores the following information:

- **User description:**

It includes the user's name and password. This information allows the user to successfully log into our application.

- **Menu description:**

It includes the list of available beverages. In accordance, each beverage stores information about its volume of liquid and time, when it was consumed.

2.2 Product features

- Guest can sign in and create a user. During the process of registration guest have to choose their username and password.
  - When a guest chooses an existing username he will be notified about it and will be asked to choose another login.
  - Guest enters a new username and chooses a password he is successfully registered in.
- Registered guests can log in. To do this, guest have to enter their username and password.
  - In case of entering the wrong username or password, the guest will be notified about it and will be asked to try to enter the correct username/password.
  - In case of entering the correct01 username and password guest is logged in.
- Logined users must add data into his/her personal account at profile at settings page.

  - User must enter a gender, age, weight and the application will calculate his/her personal goal..

- User can select a home page from a menu.

  - On the Home page User can add drinks, which he/she consumes.

  - On the Home page User sees information about the current day and daily goal. Home page contains information about the current quantity of consumed water and shows the quantity, which the user should consume to reach the goal.

  - Home page contains a list of consumed beverages. The list has the name and the quantity of each drink and time when it was consumed.

- User can select the Calendar page from a menu.

  - User can select a day from the calendar and be redirected to an informational page.

- User can be redirected from the Calendar page to the Information page.

  - User can see a diagram of consumed beverages, progress bar, where he sees his/ her achievements in reaching the goal.
  - User can see the list with the name and the quantity of each drink and time when it was consumed.

- User can select Menu Page.
  - User can select the drink and specify the volume.

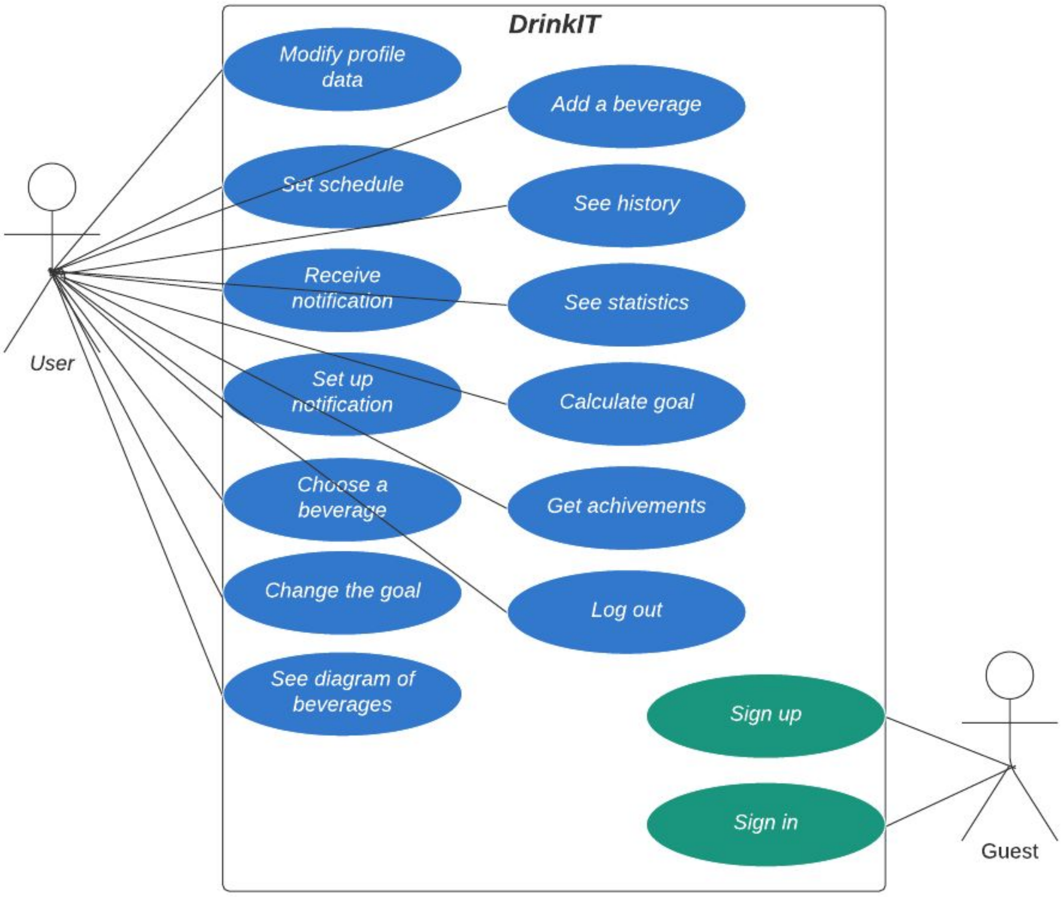
- User can select the Statistic Page.
  - User can see statistic about selected period of time(day, week, month, year)

- User can select Settings Page.
  - User can see personal data.
  - User can set a reminder interval.
  - User can switch on/off notifications.

- User can log out.

2.3 User class and characteristics

User classes and characteristics can be demonstrated by use case UML diagram:



Use cases description:

№	Name	Functionality	Description
1	Sign up	Creates new account	User creates a new personal account and fills it with relevant information.
2	Sign in	Sign in to existing account	User takes to his personal account via login and password.
3	Modify profile data	Enter/change personal information	Any registered user can enter/modify his profile by adding/changing information about his/her sex, age, weight.
4	Set schedule	Enter interval of time	User enters a wanted interval of time, when he/she wants to get

			notification about the need to drink a glass of water.
5	Receive notification	Application send notification	User gets notification to drink a glass of water several times a day due his/her personal goal.
6	Set up notification	Switch on/off notification	User can switch on/off the notification on the settings page.
7	Choose a beverage	Choose a beverage from the menu	User can choose wanted drinks from the list, which include water, tea, coffee, apple juice, sports drink, energy drink, milk, beer.
8	Change the goal	Change personal goal in profile	User can change the personal goal, if the calculated goal doesn't fit his/her needs.
9	See diagram of beverages	Diagram with percentage of consumed drinks	User can see the diagram with all consumed drinks on the selected day. Diagram shows the percentage of each drink separately.
10	Add a beverage	Add a new beverage to menu	User can add new beverages, write the name of the beverage and its volume.
11	See history	See history of consumed beverages	User can see the history of consumed beverages on the Home page.
12	See statistics	See statistics of consumed water	User can see the amount of consumed water of a selected period of time(day, week, month, year) visualized into a graph. Besides, the user can see the progress bar of his/her achievement.
13	Calculate goal	Application calculate personal amount of water, which user should drink	Application uses user personal information (age, sex, weight) and calculate need amount of water.
14	Get achievements	Get achievement, when the user reaches the goal.	User gets achievement if he reach his/her goal several days in a row.(3 days, 12 days, 1 month, 3 month)
15	Log out	Log out from application	Users can log out from the application on the settings page.

2.4 Operating environment

Operating environment for water reminder tracker is listed below:

- Database: Microsoft SQL server
- Main platform: Windows Presentation Foundation / .NET Framework
- Programing language: C#

2.5 Assumptions and dependencies

One assumption about the application is that it will always be used on desktops, our application will not occupy a lot of memory, that’s why in most cases it will not be a problem to download and launch our application.

3.System Features

3.1 Description and priority

The main idea of this project is the development of a convenient and simple system for people to track the consuming of water and other liquid and help users to consume a personal needed amount of water. The main priorities of the application are simplicity, convenience, and intuitiveness of the UX part. It will make the application easy to use for everyone.

3.2 Stimulus/response sequences

User creates a new personal account and fills it with relevant information. User takes to his personal account via login and password.

User is asked to enter his/her personal data. The are weight, sex, age. After entering personal data the user sees the goal - the amount of water, which it is needed to drink every day.

During the day User gets notification that it is needed to drink a glass of tea. In addition, user can independently add different beverages and their volume in order to track daily intake of liquids.

- **Stimulus:** Sign up with new login and correct password
- Response: The user created
- **Stimulus:** Sign up with taken login
- Response: The new user is not created, error displayed.
- **Stimulus:** Sign up with a password longer than 20 chars or less than 4 chars.
- Response: The new user is not created, error displayed.
- **Stimulus:** Add a drink and its volume on the home page.
- Response: The drink is added in the history of the current day.

3.3 Client/Server system

The term client/server refers primarily to architecture or logical division of responsibilities, the client is the application (also known as the front-end), and the server is the DBMS (also known as the back-end).

A client/server system is a distributed system in which,

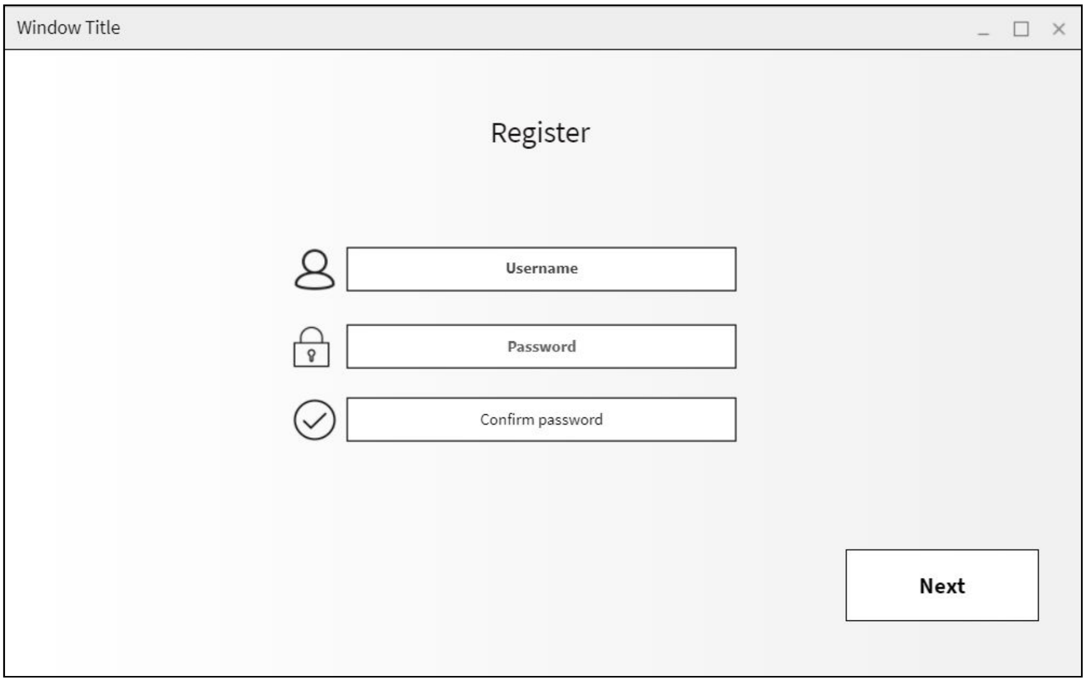
- Some sites are client sites and others are server sites.
- All the data resides at the server sites.
- All applications execute at the client sites.

4.External Interface Requirements

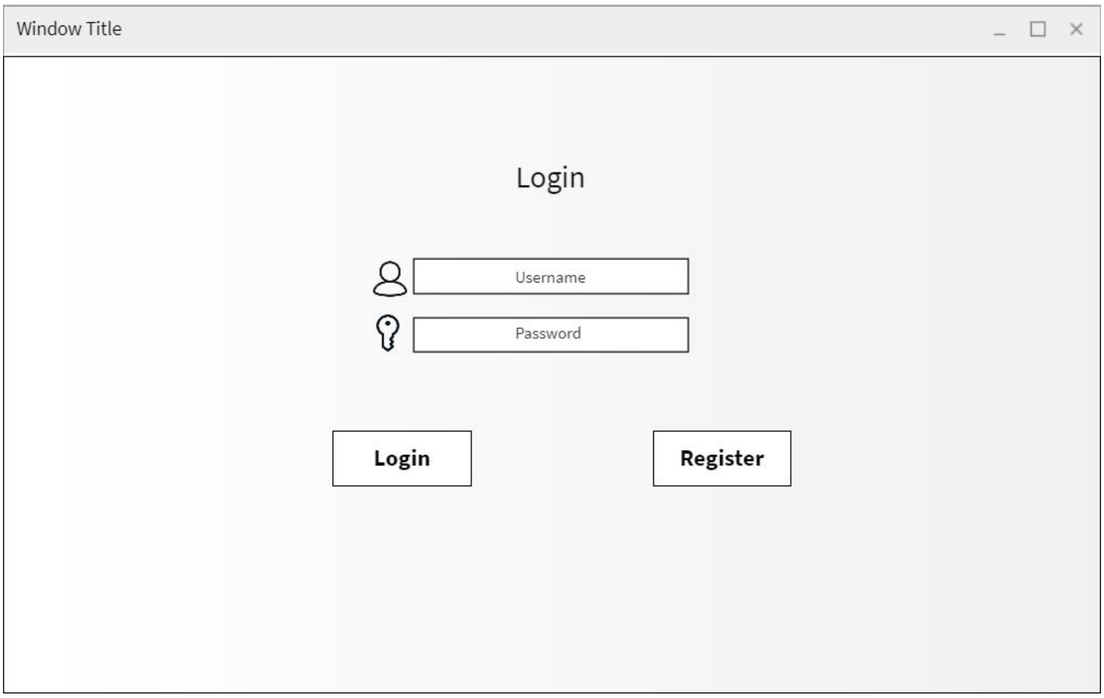
4.1 User Interfaces

The following mock-ups describe most features of user interface.

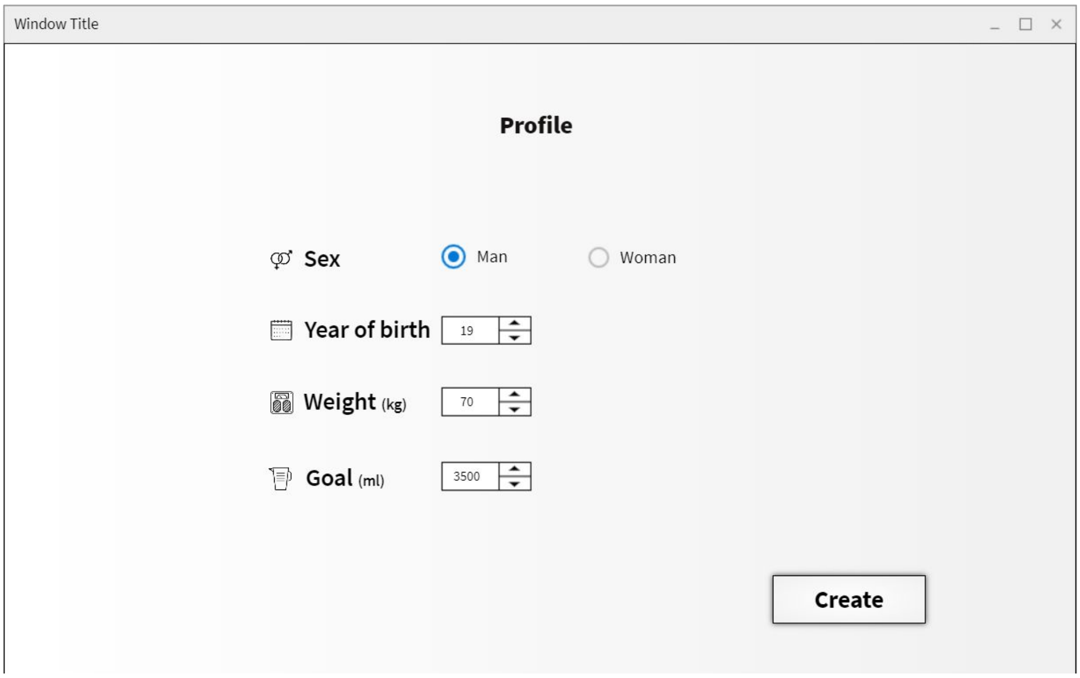
Registration window.



Login page.



Profile page.



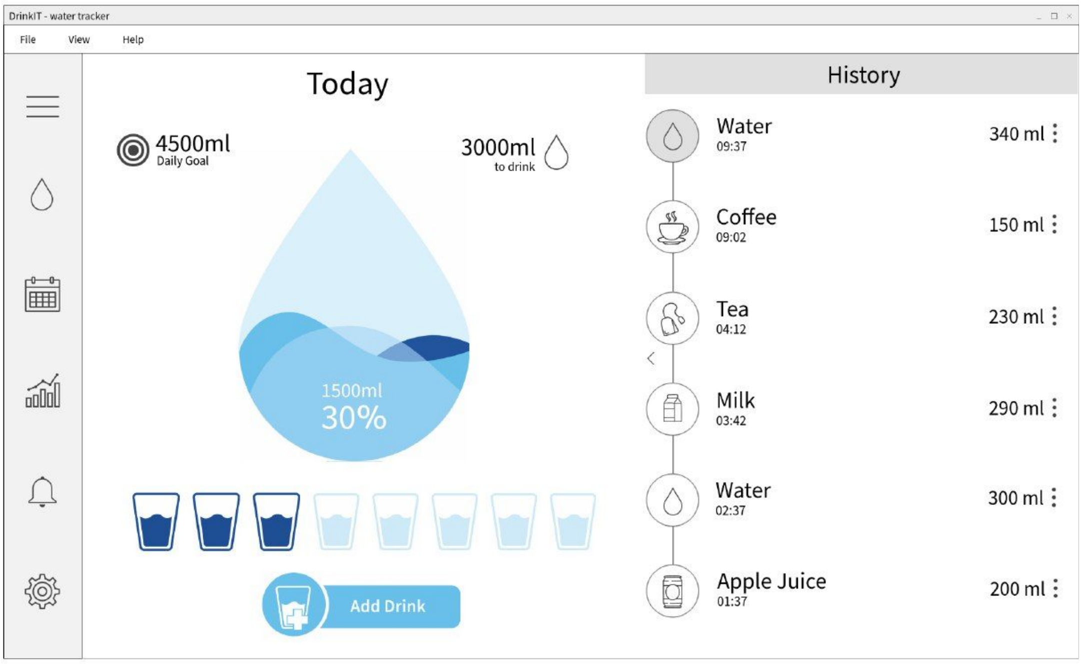
Sex ● Man ○ Woman

Year of birth 19

Weight (kg) 70

Goal (ml) 3500

Home page.



4500ml Daily Goal

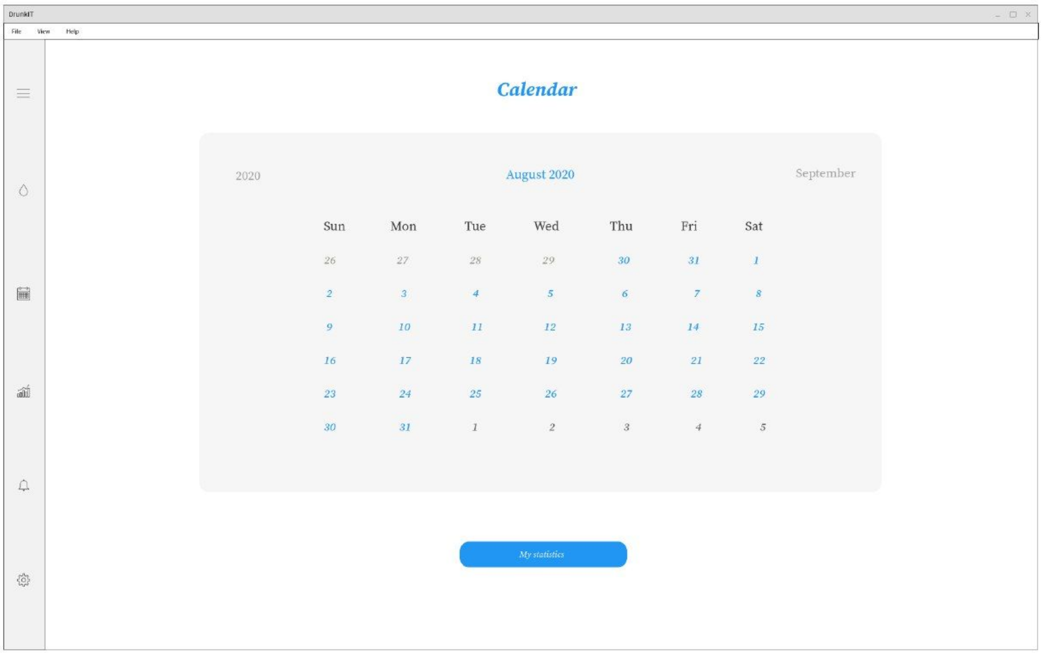
3000ml to drink

1500ml 30%

History

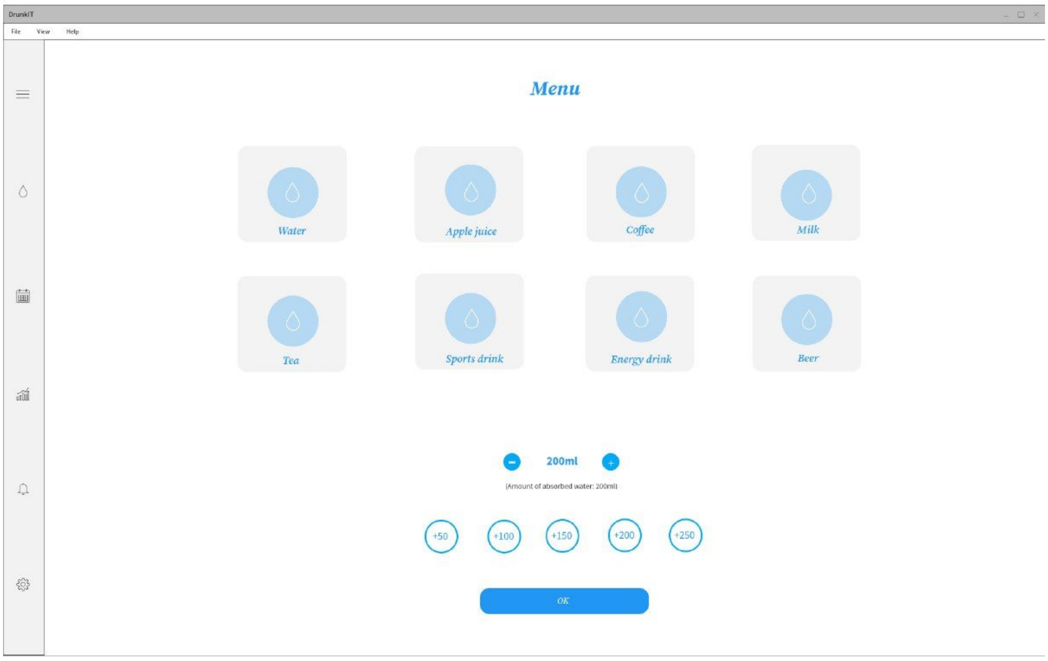
Water	09:37	340 ml
Coffee	09:02	150 ml
Tea	04:12	230 ml
Milk	03:42	290 ml
Water	02:37	300 ml
Apple Juice	01:37	200 ml

Calendar page.



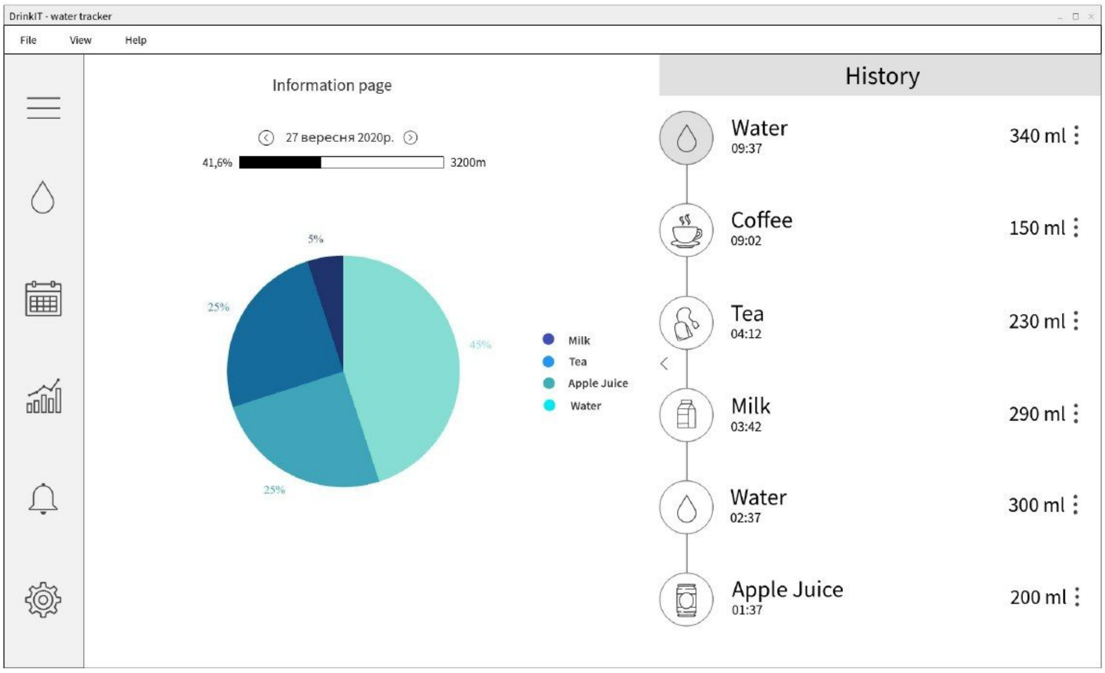
Sun	Mon	Tue	Wed	Thu	Fri	Sat
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	1	2	3	4	5

Menu page.



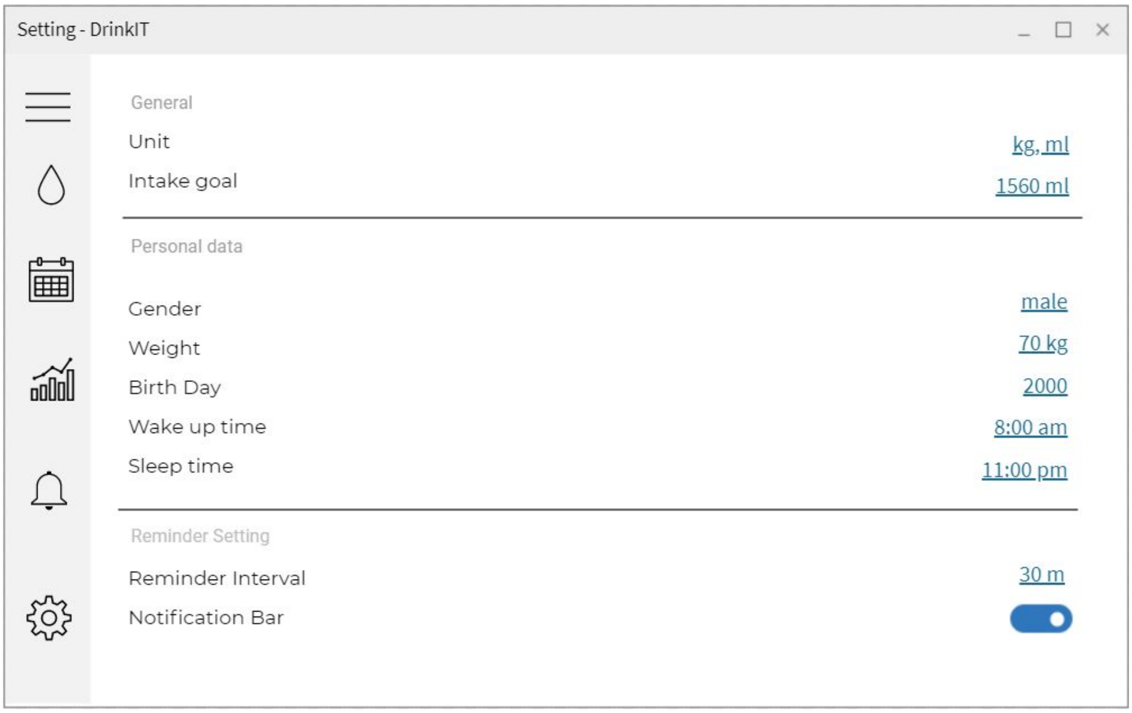
(Amount of absorbed water: 200ml)

Informational page.



Water	09:37	340 ml
Coffee	09:02	150 ml
Tea	04:12	230 ml
Milk	03:42	290 ml
Water	02:37	300 ml
Apple Juice	01:37	200 ml

Settings page.



General

Unit	kg, ml
Intake goal	1560 ml

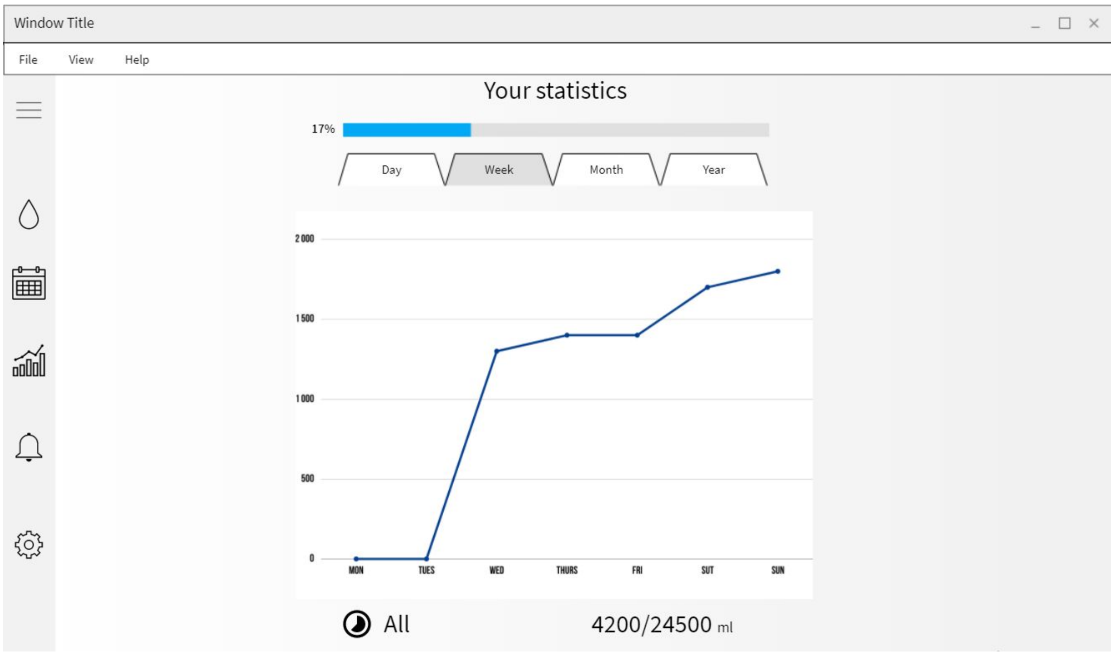
Personal data

Gender	male
Weight	70 kg
Birth Day	2000
Wake up time	8:00 am
Sleep time	11:00 pm

Reminder Setting

Reminder Interval	30 m
Notification Bar	●

Statistics page.



Your statistics

17%

All

4200/24500 ml

4.2 Hardware Interfaces

Computer with Windows

4.3 Software Interfaces

Software used	Description
Operating system	Windows, chosen for its best support and user-friendliness
Framework	.Net framework, most suitable framework for current task
Database	MS SQL, can be easily integrated with .Net

4.4 Communication Interfaces

This project will support Windows operating System.

5.Nonfunctional Requirements

5.1 Performance Requirements

This application is a desktop app, so there is no significant load on the system. But anyway it's very important to satisfy such criteria:

- Each page must load within 2 seconds.
- Database must meet all sequrity requirements.
- High response speed
- Big throughput
- Quick execution time

5.2 Security Requirement

Security Requirements that need to be satisfied in order to achieve the security attributes of application:

- Authentication and authorisation according to standard
- All passwords must be encrypted
- User cannot access data of another user
- All private data must be encrypted

5.3 Software Quality Attributes

- Reliability: system should perform its intended function adequately for a specified period of time, and should operate in a defined environment without failure.
- Learnability: system should have simple and understandable user interface, present information as close to reality as possible and permit efficient utilization of the software’s failures.
- Robustness: small the impact of operational mistakes, erroneous input data, and hardware errors.
- Usability: The testing system should satisfy the maximum number of customers’ needs.

5.4 Acceptance criteria

Scenario: Sign up with new login and correct password

Given	The login has not been taken and password correct
When	User is not signed in
Then	The new user created

Scenario: Sign up with new login and invalid password

Given	The login has not been taken and password invalid
When	User is not signed in
Then	The new user is not created, error displayed

Scenario: Sign up with taken login

Given	The login has not been taken
When	User is not signed in
Then	The new user is not created, error displayed

Scenario: Sign out

Given	Sign out button pressed
When	User is signed in
Then	The session for current user is closed

Scenario: Chose beverage

Given	The user is signed in
When	Menu page displayed
Then	The beverage added to history on home page

Scenario: Change the goal

Given	The user is signed in
When	All personal data entered
Then	Goal successfully changed

Scenario: Log out

Given	The user is signed in
When	Users use the application
Then	user is logged out