

**CS102****Spring 2020/21**Project  
Group**G2B**

Assistant:

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Criteria	TA/Grader	Instructor
Presentation		
Overall		

## **Detailed Design Report**

**(v1.0)****8 April 2021**

## **1. Introduction**

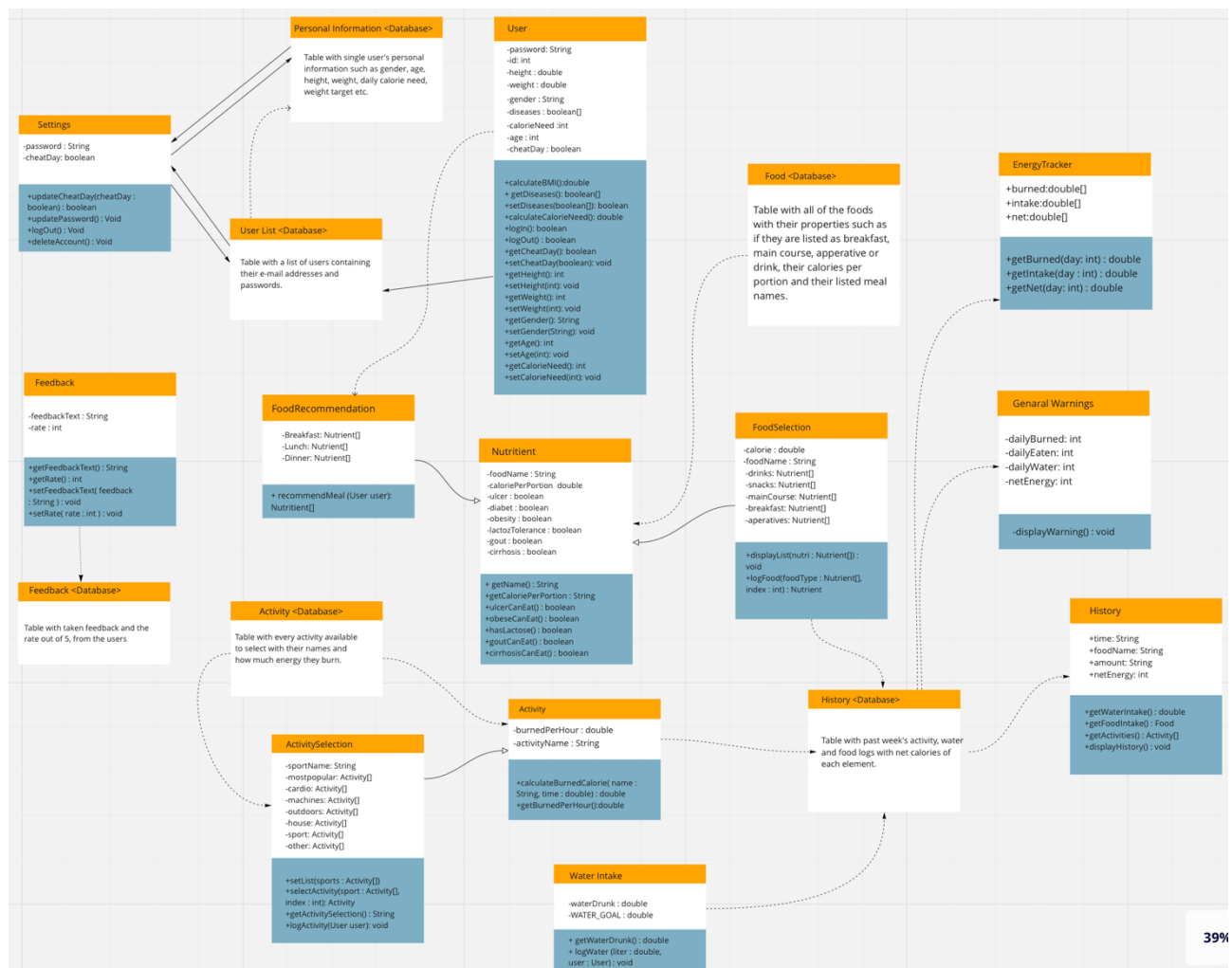
HealMeal is a desktop application designed for people who want to trace their activity, calorie consumption, and stay healthy. HealMeal will suggest daily menus considering their diseases as well. They will be able to see their log history and track their calories. Additionally, the app will allow the user to have a cheat day according to their progress through their goal (if they want to lose weight etc.).

## **2. Details**

### **2.1 System Overview**

HealMeal will be a desktop application. The project will be developed on VSCode. The source will be written using Java. For storage of information of users, databases will be created using SQL. These databases will be stored in Google's Cloud SQL service. In these databases, there will be tables containing food and activity lists as well. Users will register through an ID and their password. Our databases will help with the tracking and storing the history data simultaneously.

## 2.2 Core Design Details



*There is a link of this diagram in Miro in the references.*

## 2.3 Class Explanations

**USER:** A class with User object who has properties such as age, weight, height etc. There will be calculateBMI() method which will use user's weight and height and return the body mass index of the user. There will also be getters and setters for its properties.

**NUTRIENT:** A class which uses Food Database that stores each food's calories per portion and their type (breakfast, main course, aperitives etc.). Nutrient object will have properties dependent to illnesses (if they are bad for people with any illnesses such as diabetes, ulcer etc.). Additionally, there will be methods to detect any illness causing food type.

**FOOD RECOMMENDATION:** A class which recommend foods for the user with using nutrient class and FoodRecomendation class will use user object to determine whether the food properties (mostly illnesses) appropriate for the user or not.

**FOOD SELECTION:** A class which selects food depends on Nutrient class. Food-Selection class provide food name and, food properties whether they are appropriate for obesity, diabetes, lactose tolerance, ulcer, gout and cirrhosis or not. Therefore, this class provide all of the food properties with its methods.

**ACTIVITY:** A class that will determine how many calories the sports in the database help to burn per hour. Through this class, hourly calorie burn will be calculated and can be used in other parts (ActivitySelection etc.) of the program as data.

**ACTIVITY SELECTION:** A class which uses Activity Database that stores different types of sports. In this class, there will be a variety of sports lists (Machines, House, Sports etc.) for users to choose from. This list will be planned to be Activity objects' lists. In addition, there will be some methods to arrange these lists like setList() method. Also, the sports chosen by the users will be sent to the History section of the application via this class.

**WATER INTAKE:** A class which helps the user whether he/she drink adequate amount of water for person's health or not. Also, this class allows user to enter amount of water intake and calculates its amount parallel to his / her aim.

**HISTORY:** History class will provide log information including 3 days or 1 week history for user. It will basically show what the user did such as his / her activity, food intake and water intake history using getActivities(), getFoodIntake() and getWaterIntake() methods and display them using displayHistory() method. It also will get information from the history database which takes information and is affected by data login or update of other classes (FoodSelection, Activity etc.).

**ENERGY TRACKER:** EnergyTracker class will provide some information about net calorie consumption for the user. It will get data from the history database to list the calorie intake and the burned calorie using getIntake() and getBurned() methods so that it will calculate the net energy for the user using getNet() method.

**GENERAL WARNINGS:** A class which uses history database which stores user's calorie consumption, calorie intake, water intake etc. There will be displayWarning() method which will control warning object's properties and user's calorie need by using user object's get method and it will display warnings according to these data.

**FEEDBACK:** A class with properties feedBackText and stars. setFeedBack() method changes feedback according to users feedback and getFeedBack() method gets the feedback property of object. SetRate() method allows user to give points out of five. Feedback database will use this class data.

**SETTINGS:** A class which uses user list and personal information databases and updates them as well. This class has password and cheatDay properties. User can change password by using changePassword() method. updateCheatDay(boolean cheatDay) method controls user's data in Personal Information database and return true if user have cheat day option.

## 2.4 Task Assignment

Barış: Feedback, FoodRecommendation, Nutrient, FoodSelection.

Asım: Creation of all databases.

Aysema: User, Settings, General Warnings.

Oğuz: History, EnergyTracker, and connection between databases and classes.

Göksu: Activity, ActivitySelection, WaterIntake.

## 3. Summary & Conclusions

To sum up, this app allows people to calculate and regulate their calorie intake, also it allows people to calculate their calorie according to their burning calorie which is burned by their daily exercises. After this calculation, application show that whether their eating habit is healthy or not and helps people to achieve their goal that they have chosen at the beginning of the program or not.

### References:

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