

Foodie

Web application, java, javascript, maven, spring-boot, PostgreSQL

DESCRIPTION

We plan to develop a general dieting web application. The possible features will include (possibly along with others we come up with along the way):

- Calorie tracking and management of macros (carbohydrates, sugars, proteins, fats, salts)
- An about section for some widely known diets with the ability to choose your own diet
- Free recipes along the diets,
- BMI calculator,
- Calory intake calculator for the weight goal in a given time,
- Fortune wheel for random meal of the day,
- Information about allergens present in the recipes,
- Water consumption
- Search for a recipe with a given ingredient (f.e. potato)

TECHNICAL INFO

Technology stack:

Frontend: JavaScript

Backend: Node.js, Spring Boot, Java, Maven

Database: PostgreSQL

Hosting: ...

System architecture:

Client-Server Model: RESTful APIs - database communication with backend

APP INCLUDES

- Different user accounts

USER PROFILES:

"As a user, I want to be able to..."

Must have:

- Log in and access the web application so I can use the app with my previous data
- Register my account in the application so I have my profile.
- See my daily nutritional value intake, so I can track my macros throughout the day.
- See my today's meals on the main page so I can keep track of what I ate
- See my daily calories, so I can be more aware of how much I eat during the day.
- Add a meal I ate (cal/100g), so it adds up to my counter
- Load in a meal that I ate from the recipe list
- I want to see the database of recipes, so I can get inspired
- Edit my daily meal, so I can fix my typos
- Have access to recipes, so I can choose what to eat from a list of verified recipes (we need to fill up the data with basic recipes)
- Have access to the specific recipe steps to recreate at home
- Set goals for my daily macros and calories (displays how much you can eat)

Should have:

- See my entire history, to see my eating patterns long-term
- Have a sidebar with shortcuts, so I do not have to look around the app for various features
- Add my own recipe to the site, so other users can incorporate it into their diet
- Be able to calculate my BMI, to know what goal weight to aim for
- Fill out my profile information, for example, my weight, height, age, etc..., to observe my progress
- Put in my weight goal, so the application tells me how many calories to consume
- Filter my recipes based on a diet/ingredients, to find exactly what I am looking for
- Listen to music while using the app to have fun while using the app

Could have:

- Daily streak of following your goals
- Review someone's recipe, so I can share my thoughts
- Change, or retrieve my password, in case I forget it
- Read articles about some different diets so I can find one that suits my lifestyle the best
- Enter my water consumption so I can track how much should I drink each day
- Starting quiz
- Random meal spin wheel

Must stories criteria

1. Register my account in the application so I have my profile.

- User cannot register two accounts for the same e-mail
- User cannot register an account with a username or email that's already taken: if the email or username is taken the system displays: "User with this email already exists." or " User with this username already exists."
- There is a login page to which the user is brought to whenever they aren't logged in and they enter the website
- The provided data is stored in a table of PostgreSQL relational database
- For the correct registration user needs to input: e-mail address, username, password (twice)
- The provided email must exist in order to authenticate the account.
- Password should meet complexity criteria (at least 8 characters, at least one digit, one letter, one special sign from the set: !?#\$%^&*@-+=) otherwise an account is not created and an error message is displayed
- Password should be repeated during registration process, if repeated passwords do not match, the system should display message: "Passwords do not match"
- The input in all fields should be properly sanitized and not susceptible to injections
- If all the data provided is acceptable an email containing an activation link should be sent to the provided email address and the system displays: "Your account has been created: please check your email and click the activation link to be able to use your account.". At this time the user account should also be created with a flag determining it as inactive (the flag of activation is a separate column in relational table of type integer)
- If the user clicks the activation link, the account should be activated and a success message should be displayed
- The relational table should store the information of dates: date of registration as timestamp, date of clicking activation link as timestamp,

2. Log in and access the web application so I can use the app with my previous data

- The user must input an email and a password to an active account to log in
- The indicator of the amount of letters will be "*", the password won't be shown on screen
- If the input doesn't match an active account in the database, appropriate error message will be displayed
- If the account information matches with an account that is inactive, display an error message "Account is not activated"
- If the input matches an account in the database that is active, the user is brought to the main page of the web app
- The user needs to input their information each time they want to start a session on the website

3. See my daily calories, so I can be more aware of how much I consume during the day

- On the home page, there is a donut diagram of your daily calory intake/goal set by the user, with numeric values displayed when hovering over the diagram corresponding to the daily goal(more on the goal in US 12)
- Goal is set to 2000 by default
- Whenever you add a meal It's added to today's calorie and nutritional intake
- Whenever you edit your history, the diagram changes accordingly
- When the user is done eating for they day they can press the "Clear meals" button, and the counter resets
- When the value of consumed calories exceeds the goal set by the user, the diagrams turn red

4. See my daily nutritional value intake, so I can track my macros throughout the day

- On the home page there are three diagrams of users todays macro consumption for protein, carbohydrates and fat
- Goals are set to: 50 for protein, 250 for carbs and 50 for fat by default
- Whenever user adds a meal, values of macros are added to their todays macros intake
- Whenever user edits a meal, diagrams change accordingly
- When the user is done eating for they day they can press the "Clear meals" button, and the counters reset

- When the value of consumed macros exceeds the goal set by the user, the diagrams turn red

5. Add a meal I ate (cal/100g), so it adds up to my counters

- Under the counter there is an "add a meal" button
- When clicked the user is brought to a new page, on which they can add a meal that they ate to today's meals
- They are presented with input boxes in which they need to provide each respective macro/100g along with calories/100g, name of the meal and amount of grams they consumed
- User is presented with two buttons – submit and cancel
- When user chooses to click the submit button, the meal is added to today's history, the counters are updated accordingly and they are brought to the home page
- When user chooses to click a cancel button, they are brought back to the home page and their input isn't saved
- User cannot enter negative or nonnumeric values for calories or macros. The precision of the input is saved up to 2 decimal points.

6. Load in a meal that I ate from the recipe list

- Under the counter there is an "add a meal" button
- When clicked the user is brought to the "add a meal" page, on which they can add a meal that they ate from recipe list to today's meals
- User can browse a list of previously added recipes from the database, after they choose one of them the input boxes get filled automatically with the according data
- Each recipe includes name, macros/100g, calories/100g, and ingredients
- User needs to input how many grams they ate
- Once a recipe is selected and amount entered, its values are added to today's calorie and macro counters
- The added meal is saved and displayed in "today's meals"
- Only positive numeric values are allowed for grams eaten, if not there is an error message
- System automatically calculates total macros and calories based on entered grams and recipe values

7. See my today's meals on the main page so I can keep track of what I ate

- All meals added today are displayed in a visible table on the home page
- Each listed meal shows: meal name, calories, fat, carbs, fiber, protein, salt and time of addition
- Meals are listed in chronological order
- If the user edits a meal, the list updates accordingly
- When the user is done eating for their day they can press the "Clear meals" button, and the table resets
- Meals should be stored in a database with a date/timestamp for filtering
- If no meals are added today, a message like "Add a meal to see it here" is shown

8. Edit my meal, so I can fix my typos

- Next to every meal of today's history list, there is an "edit" button
- Once clicked, the user is brought to the "add a meal" page, in which they are asked to edit the meal with all the data filled
- User can change the name, grammar and macro values
- Instead of creating a new meal the "add a meal" button will only edit the already existing meal in the history
- This feature has the same requirements for accepting the input as "add a meal"
- Editing a meal doesn't update its timestamp

9. See the database of recipes, so I can get inspired

- Next to the "add meal" button there is a "browse recipes" button on the main page
- Once clicked it takes the user to a different page, in which all the recipes are listed out
- There will be a "go to home page" button, which brings the user back
- All of the names of the recipes will be clickable
- Once clicked the user will see specific information about clicked recipe

10. Have access to the specific recipe steps to recreate at home

- Once the user clicks one of the recipes they see the details of the recipe
- They can see name, time to prepare, calories, macros, type of diet, ingredients list, steps
- Whenever user chooses a different recipe, the previous one will hide it's details

11. Have access to recipes, so I can choose what to eat from a list of verified recipes (we need to fill up the data with basic recipes)

- Each recipe added to the database should have the same format, including: ingredients, number of calories, number of macros, category of diet (vege, etc.), steps to do to make a meal
- The data needs to be stored in a database
- Each recipe has unique id number set as PRIMARY KEY
- All columns needed for the must criteria in the table have to be set to NOT NULL, since all recipes have the same format. It is not possible to add recipe without one or more column value
- There can't be duplicate data in database (each recipe needs to be different)

12. Set goals for my daily macros and calories (displays how much you can eat)

- On the home page, there is a diagram of your daily macro and calorie intake/goal. There is one diagram for each macro intake
- Below the diagrams there is a "Change daily goals" button
- Clicking on the button allows you to set your daily goal for each of the macros and calories
- When clicked a pop up appears, that allows the user to input their daily goal
- The value has to be a numerical non negative value
- At the bottom of the pop up there are submit and cancel buttons, allowing the user to save their input or discard it
- After clicking one of the buttons the pop up disappears
- This goal is saved across days

Should stories criteria

1. See my entire history, to see my eating patterns long-term

- There is a button on the side bar, and when clicked it opens a new page with meal history
- User can see all his past meals information, including date, meal name, calories, macros
- There is a button to go back to the main page
- This list is updated when the daily list is reset

2. Have a sidebar with shortcuts, so I do not have to look around the app for various features

- On the home page there is a sidebar containing all necessary sites to easily move between them
- Each name on sidebar will be connected to it's site or pop up
- Once clicked on the shortcut that interest user they will be moved to the according page or the pop up will be displayed
- Some features from "must" stories will be moved to the sidebar to make the home page less cluttered

3. Add my own recipe to the site, so other users can incorporate it into their diet

- User can add new recipe to the application by clicking "Add new recipe" button on site with recipes. It will open a new site
- Users recipe should match recipe pattern from application (name, recipe steps, weight, calories, macros, diet category)

- Weight, calories and macros input should be not negative and numerical. If not there is error shown
- There is a cancel button which clears all input added till now and exits to the main site
- There is an add button which saves recipe to the database and exits to the main site
- Recipe saved by any user is public, so any other user can see it
- There is no option to delete or edit already saved recipe so before saving user is informed to check it

4. Be able to calculate my BMI, to know what goal weight to aim for

- In the sidebar there is a “BMI calculator” option. Clicked, it opens a pop up
- BMI calculator contains 2 text boxes and their descriptions (weight, height), and specification of units (kg, m).
- Only non-negative numbers can be entered to the text boxes
- On the bottom there are two buttons – “Cancel” and “Calculate”
- “Cancel” button when clicked, takes the user back to the homepage
- “Calculate” button when clicked, the result is displayed
- The result is counted with the formula $BMI = \text{weight}/\text{height}^2$

5. Fill out my profile information, for example, my weight, height, age, etc. to enter my progress

- On the sidebar there is a “My profile” section. When clicked, it takes the user to another site
- On My profile site there are following sections: name, surname, age, sex, height, weight, bmi. In every section there is it's name and users input (or blank space if user didn't input their data)
- On the bottom there is an “Edit profile” button. When clicked, it takes the user to another page with all the data (besides bmi) filled out in text boxes
- User cannot alter their bmi, as it is counted based on users height and weight. If user enters that data, bmi is counted with following equation $bmi = \text{weight}/\text{height}^2$ and changed accordingly
- Name and surname textboxes take text value, age, height and weight take integer values (1-120 for age, 1-250 for height, 1-300 for weight) for the sex, there are two options – male and female, user can select only one of them.
- On the bottom there are two buttons – “Cancel” and “Submit”
- “Cancel” button when clicked, takes the user back to “My profile” page
- “Submit” button when clicked, takes the user to “My profile” page with data changed accordingly

6. Put in my weight goal, so the application tells me how many calories to consume

- On the sidebar there is a “My goal” section. When clicked, it takes the user to my goal pop up
- In that pop up there are 2 textboxes for height and weight and two checkboxes with sex (male/female with only one to choose)
- There is a textbox where user enters their desired weight
- There is a textbox where user enters in how many days they want to achieve their goal
- There is a “activity factor” section with checkboxes (user can check only one box):

- Little/no exercise = 1.2
- Lightly active (1–3 days/week) = 1.375
- Moderately active (3–5 days/week) = 1.55
- Very active (6–7 days/week) = 1.725
- Super active (athlete, physical job) = 1.9

- On the bottom there are two buttons – “Cancel” and “Submit”
- “Cancel” button when clicked, takes the user back to homepage
- “Submit” button when clicked, the result is displayed
- Result is counted with following equations

- For men: $\text{Target Calories} = [(10W + 6.25H - 5A + 5) \times AF] - ((W - DW) \times 7700) / D$

- For women: Target Calories= $[(10W+6.25H-5A-161)\times AF]-((W-DW)\times 7700)/D$

Where:

W = Current Weight (kg)

H = Height (cm)

A = Age (years)

DW = Desired Weight (kg)

D = Number of days to reach desired weight

AF = Activity Factor:

(the goal isn't updated automatically, the user has to change it themselves)

7. Filter my recipes based on a diet/ingredients, to find exactly what I am looking for

- In the recipe browser there are various list boxes with available options to sort by.
- The list boxes include stuff like: diet, max time needed to prepare meal, max calories
- There is also a text input box allowing the user to filter the recipes by ingredients
- There is a "submit" button
- Once an input is submitted the recipes are filtered, making the ones that don't match the criteria disappear
- If the input doesn't match any recipes, no recipes show up
- There is a "reset filters" button, bringing the recipes back to their original unfiltered state
- If the user exits the recipe list, for example goes back to the main page and the back to the recipe list, their input isn't saved

8. Listen to music while using the app to have fun while using the app.

- Background music is available in the application and can be managed from the sidebar panel
- The user can toggle background music on or off
- Volume level can be adjusted using a slider (from mute to full volume)
- The music plays in the background while the user navigates the app

Could stories criteria

1. Daily streak of following your goals

- Next to the calorie counter there is a small star icon with a counter inside
- This counter represents the daily streak of following your desired goal
- If at the end of the day when the counter resets and your goal is fulfilled, the counter goes up by one
- If otherwise, it goes back down to 0

2. Review someone's recipe, so I can share my thoughts

- On the recipe detail page (accessed by clicking on a recipe name), there is a comment section
- The user can leave a review by clicking the "Add review" button
- Once clicked, a text field and "Submit" button appears
- After submitting, the review is saved and displayed under the recipe, showing the username and timestamp
- Reviews are displayed in reverse chronological order (newest first)
- Review length is limited to 500 characters; if exceeded, an error message is shown

- The "Submit" button is disabled until the text field contains valid input
- Users can edit or delete their own reviews

3. Read articles about some different diets so I can find one that suits my lifestyle the best

- The sidebar includes a "Diet Articles" section
- Clicking it takes the user to a page with a list of articles
- Each article includes a title, short description, and a "Read more" button
- Clicking "Read more" opens the full article site
- Each article entry in the database includes: title, summary, full content, diet category, date added, and author
- Users can filter articles by diet category (e.g., vegan, keto, standard)
- Users can also sort articles by date or popularity

4. Enter my water consumption so I can track how much should I drink each day

- On the home page, under the calorie counter, there is a hydration panel
- The user can input the amount of water they drank in milliliters / liters
- Clicking the submit button saves the entry and updates the daily water total
- water entries are stored in the database with timestamps
- There is a cancel button that brings you to the main page./
- There is a default daily goal, but the user can update this in their profile settings
- When the user reaches their goal, the panel turns green

5. Starting quiz

- After the user registers their account, a pop up appears asking the user "would you like to take a short quiz, that automatically sets your goals for you?"
- If the user clicks no, the pop up disappears and they see the home page
- If they click yes, they are brought to a different page, where they take a short quiz, allowing for their profile goals to be set according to the answers they give in the quiz
- The quiz would start off by mentioning none of the changes to their profile will be final
- The user also has the option to exit out of the quiz anytime they wish, by using the "exit" button
- In each question they are asked about one of the metrics measured by the app, that is allowed to be changed in the profile of the user
- Each question has to be submitted by clicking the "submit answer" button
- The user can also go back to previous questions if they wish, using the "go back to the last question" button
- At the last question of the quiz the "submit answer" button becomes a "finish quiz" button, allowing for the changes to be saved and visible in the users profile
- Each of the inputs has to follow the rule of the inputs as if they were made in the user profile, so the calorie goal cant be negative for example

6. Random meal spin weee

- In the sidebar menu there is a "random meal" button
- Once clicked the user is brought to a page with a big wheel with various meals as parts of the wheel,
- The user can have some agency over the meals that appear of the wheel, for example being able to filter them by diet, or by an ingredient they don't want;
- Once input the diet/ingredient and clicking a "submit" button the meals on the wheel react accordingly and either disappear or stay
- There is a "reset filters" button next to the submit button, bringing the wheel back to its original state,
- In the middle of the wheel there is a big red button with the word "Spin!"
- Once clicked the wheel quickly starts moving and gradually slows down, until it stops completely selecting one of the meals

7. Change, or retrieve my password, in case I forget it

- On the login page there is a "Forgot password" button. Once clicked there is a pop-up with textbox in where user should put email address assigned to his account
- If the provided email exists in the database, an email with a password reset link is sent to the user. Otherwise, the system displays: "No account found with this email address."

- The password reset link is unique, valid for a limited time (e.g., 24 hours), and expires after first use.
- When the user clicks the password reset link, they are redirected to a secure password reset page with 2 textboxes and a "Submit" button
- The user must enter a new password twice. If the input passwords don't match, the system displays: "The provided passwords do not match.". New password should meet complexity criteria (at least 8 characters, at least one digit, one letter, one special sign from the set: !?#\$%^&*@-+=) otherwise an account is not created and an error message is displayed.
- Once the "Submit" is clicked, the system displays: "Your password has been successfully reset.", Unless one of the criteria isn't met
- The old password is no longer valid after resetting.
- The system should store the date and time of the password reset request and the date and time the password was changed in the database.
- The new password has to follow the same encryption pattern as if the user was registering with it