Misr University for Science and Technology
Information Technology College

Academic Year: 2021-2022
Course Code: CS341
Department: Computer Science
CRN: 10637

Semester: Fall /2021-2022
Course Title: Software Engineering 1
Course Instructor: Dr. Khaled AlSheshtawy

Team Members:

Name	ID	Level
Ibrahim Abouzaid	89434	3
Nour Gaser	89553	3
Hussein Ali	89545	3
Waled Abdelrahman	89536	3
Omer Hassan	89658	3

Project Title

Nutrio - Fitness Tracker

Under the supervision of

Dr. Khaled AlSheshtawy

T.A. Ayman S. Abdelaziz

1- System Domain:

Fitness tracker is an online website which allows its users to track their daily diet and workout routines. When users decide to register, they can enter some of their information, such as age, gender, height, and weight. The users then can pick a diet to follow from a set of standard diet plans, or customize a diet plan for themselves. The user can also pick a standard workout routine or customize one. Additionally, users can set weight or exercise goals and the fitness tracker will then suggest diets and workout routines to help them reach that goal and track their progress towards it. The fitness tracker saves all of this information in a secure database for the users to view logs of their meals and workouts anytime.

When a user logs in, they see an overview of their day so far; how many calories they consumed, and how many they have left (based on their configured diet), and same goes for other nutritional elements (carbohydrates, protein, minerals, etc.). Below the daily diet summary, the overview also contains a brief checklist for the user's workouts which they're supposed to do on that day (based on their configured workout routine). The user can easily add a new meal which they've just consumed to that day or workouts that they have done; the database entry for that day is updated and their overview page is refreshed.

The users can customize and change their diets or workout routines at anytime from the settings page. If the user enters a new meal which would make one of their nutritional elements exceed its limit for the day (based on their diet plan), the user can choose to subtract the excess amount from the next day's limit for that element.

In order to accomplish these tasks the users should be registered on our website with all the information required as name, age, gender, height, weight, email, username and password, and with a configured diet plan and workout routine.

2- System Actors:

Term	Definition
User	The person who has an account on the system and can track their diet and workout routine.

3- Functional Requirements Specification:

REQ01 - Users must register on the website in order to use its fitness tracking system.

REQ02 - The system must send verification emails to newly-registered users.

REQ03 - Users must verify their email addresses before they can login.

REQ04 - Users must be logged in to use the system.

REQ05 - Users can choose a standard diet plan.

REQ06 - Users can build a customized diet plan.

REQ07 - Users can choose a standard workout routine.

REQ08 - Users can build a customized workout routine.

REQ09 - Users can edit their diet and workout configurations.

REQ10 - The system must save the user's configurations to the database.

REQ11 - Users can navigate to an overview page with their day's progress so far (diet plan and workout routine).

REQ12 - Users can add a new meal to their day.

REQ13 - Users can add a new workout to their day.

REQ14 - The system must update the user's day entry on their record in the database after each entry of a meal or a workout.

REQ15 - The system must calculate the user's amount of remaining nutritional elements for the day, along with their workouts for that day, when they navigate to their overview page.

REQ16 - The system must save the user's meals and workouts as a day entry for the user's record in the database.

REQ17 - Users can view logs of previous days to track their old meals and workouts.

REQ18 - Users can set dietary/workout goals; the system will keep track of their progress.

4- Non-Functional Requirements

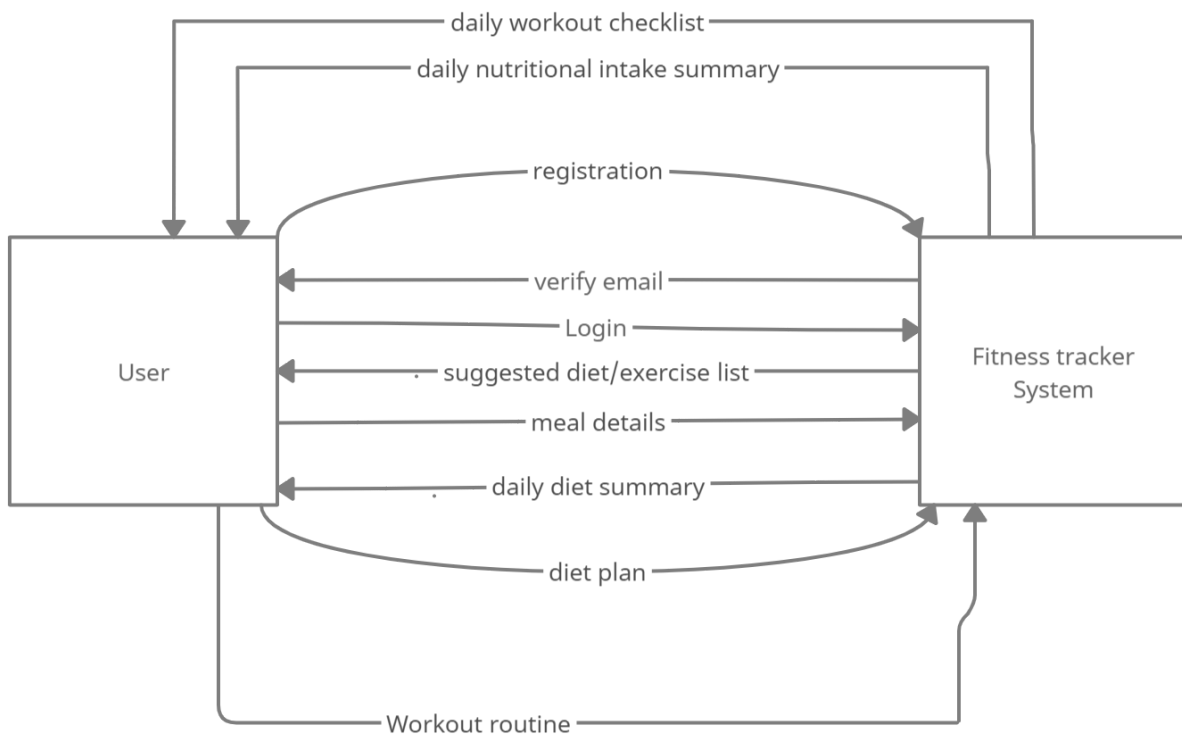REQ01 - The system should be easy to use without any previous prerequisites.

REQ02 - The system should be responsive.

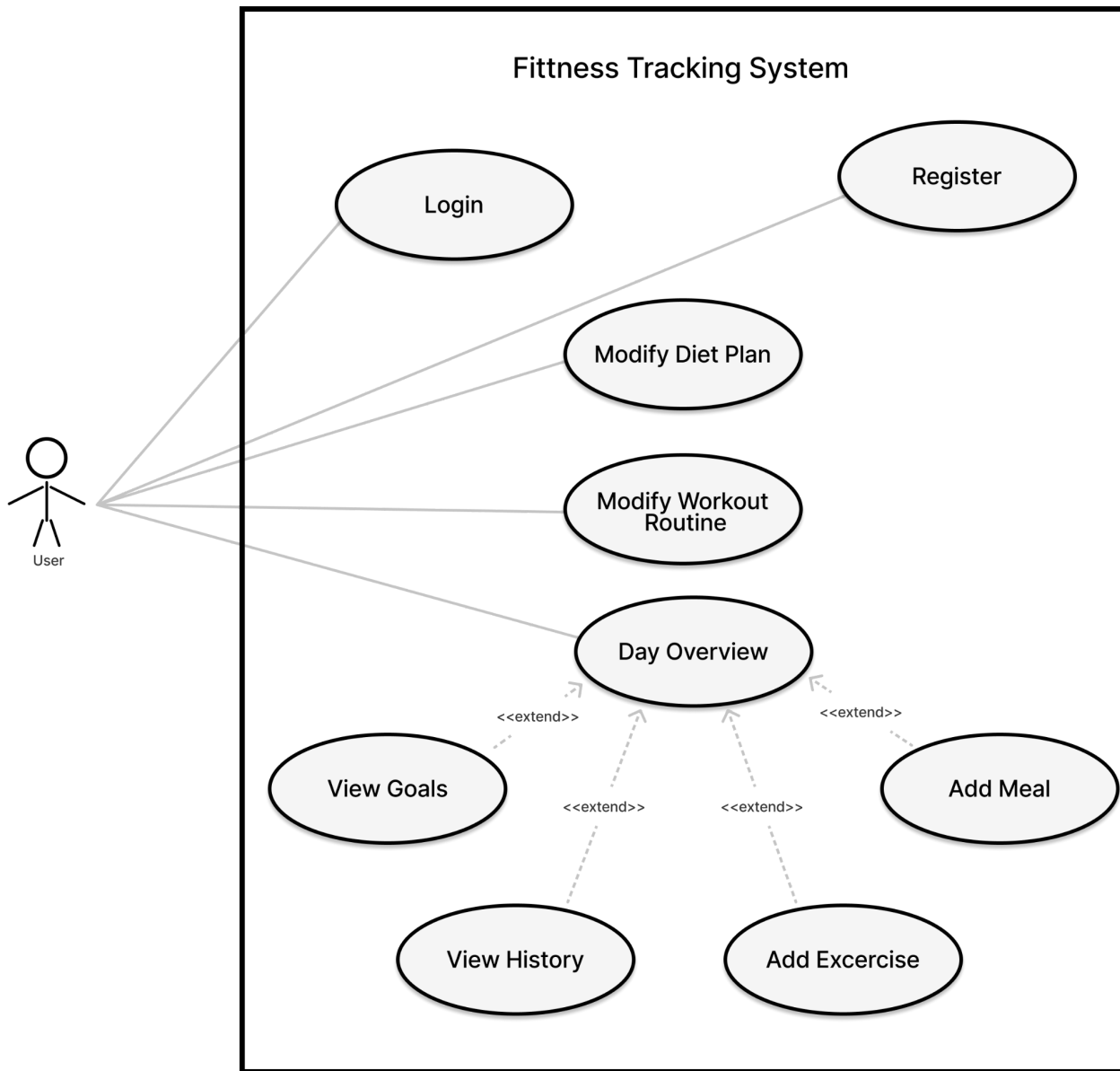REQ03 - The user's data must be private to the user only.

REQ04 - Users' password must be hashed and salted.

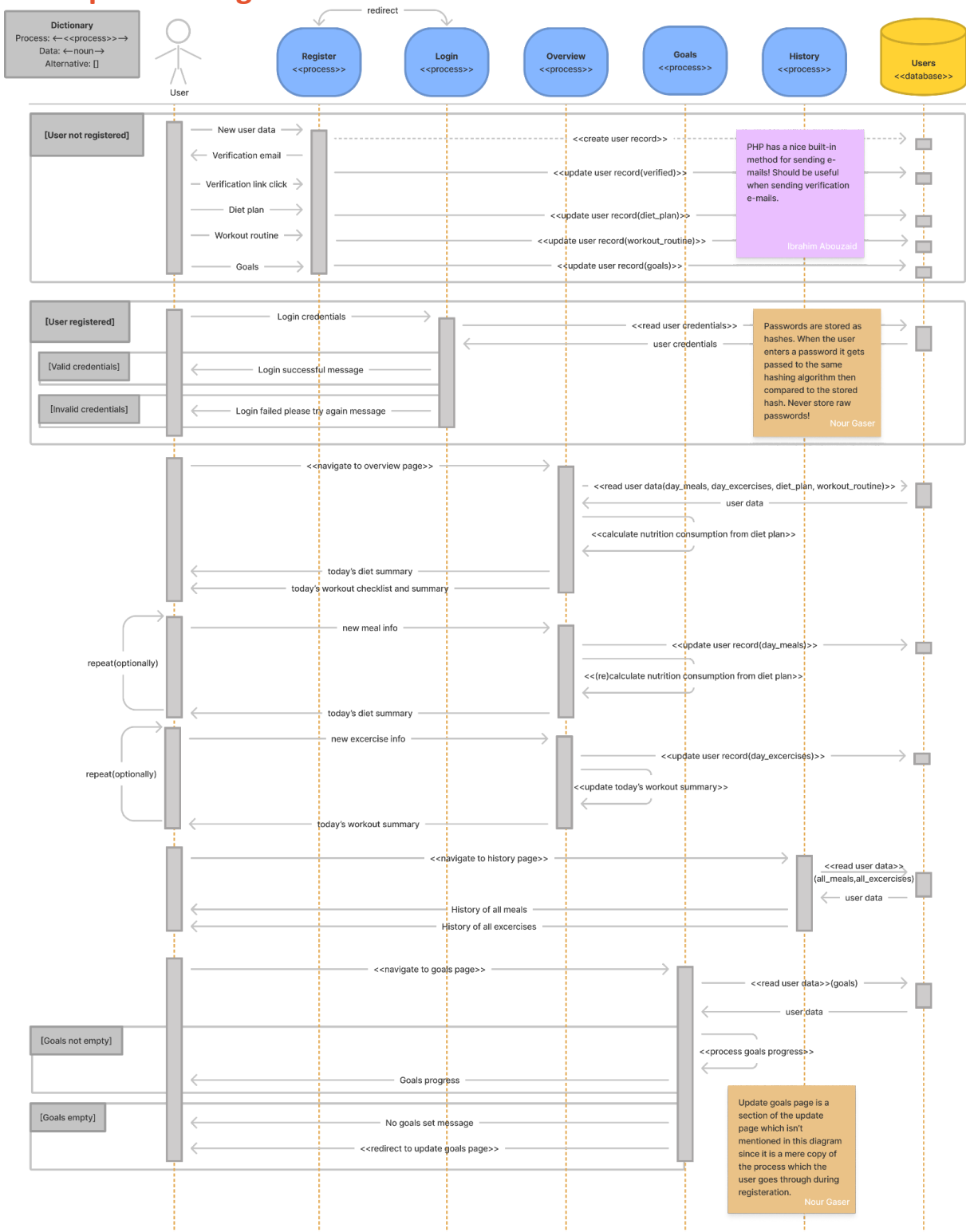REQ05- The system should be accessible from any browser.

Nutrio

5- Context Diagram

daily workout checklist

daily nutritional intake summary

registration

verify email

Login

. suggested diet/exercise list

meal details

. daily diet summary

diet plan

Workout routine

User

Fitness tracker System

Nutrio

6- Case Study Diagram

Fittness Tracking System

- Login
- Register
- Modify Diet Plan
- Modify Workout Routine
- Day Overview
  - <<extend>> View Goals
  - <<extend>> View History
  - <<extend>> Add Excercise
  - <<extend>> Add Meal
- User

You can also view this case study diagram digitally through [this link][1].

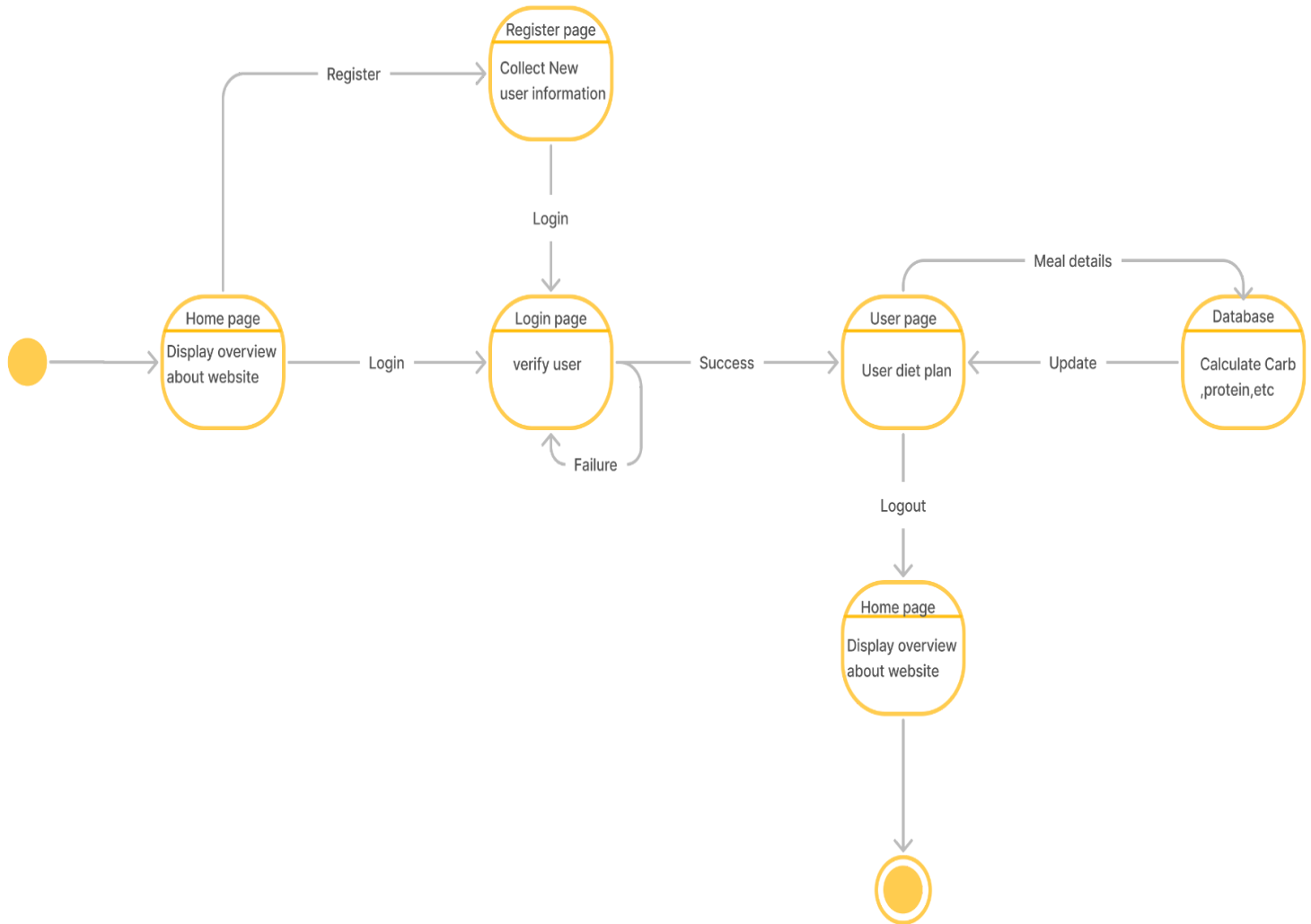[1]https://linky.design/must-se-project-phase2-case-study-diagram

Nutrio

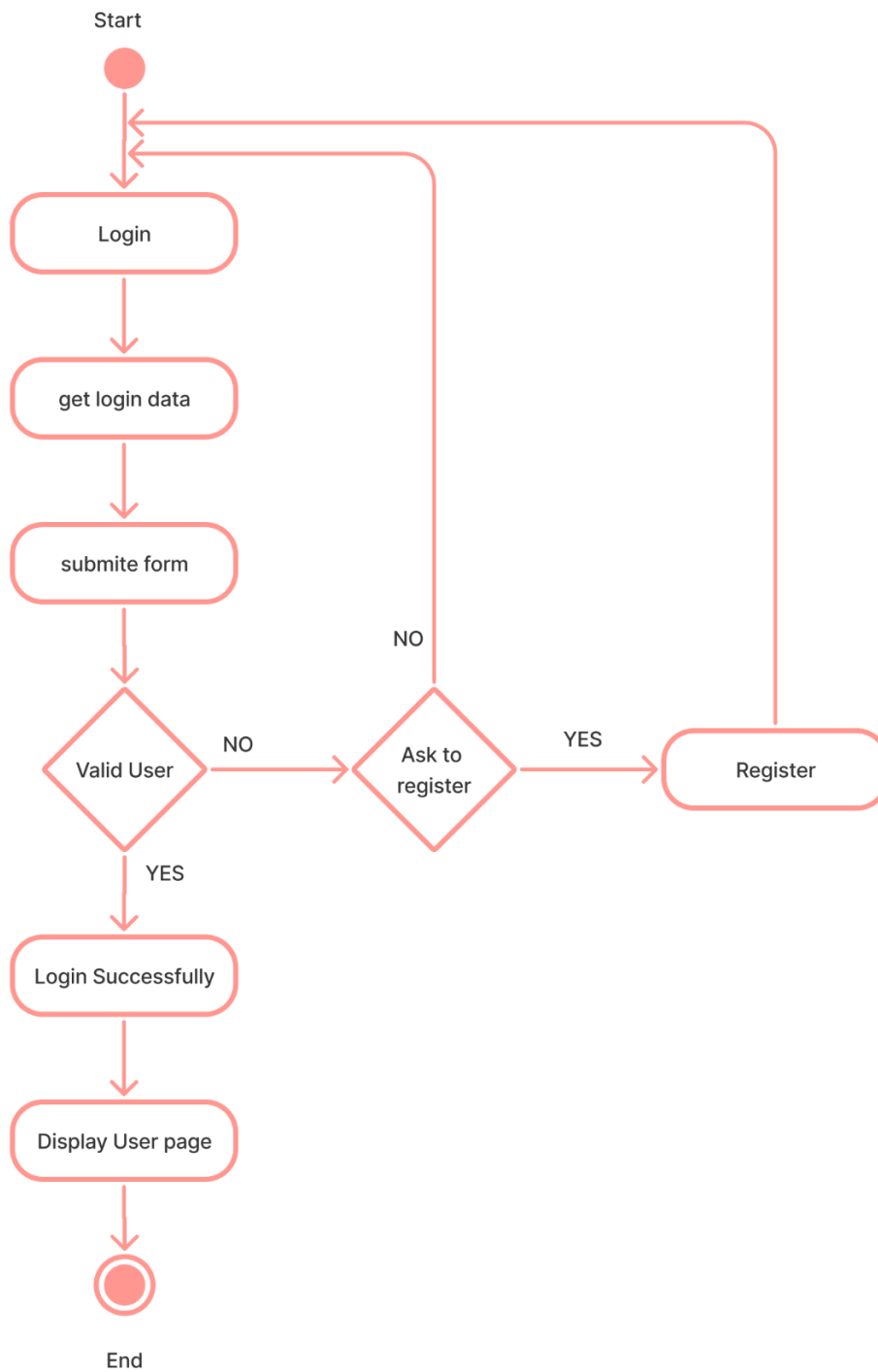# 7- Sequence Diagram

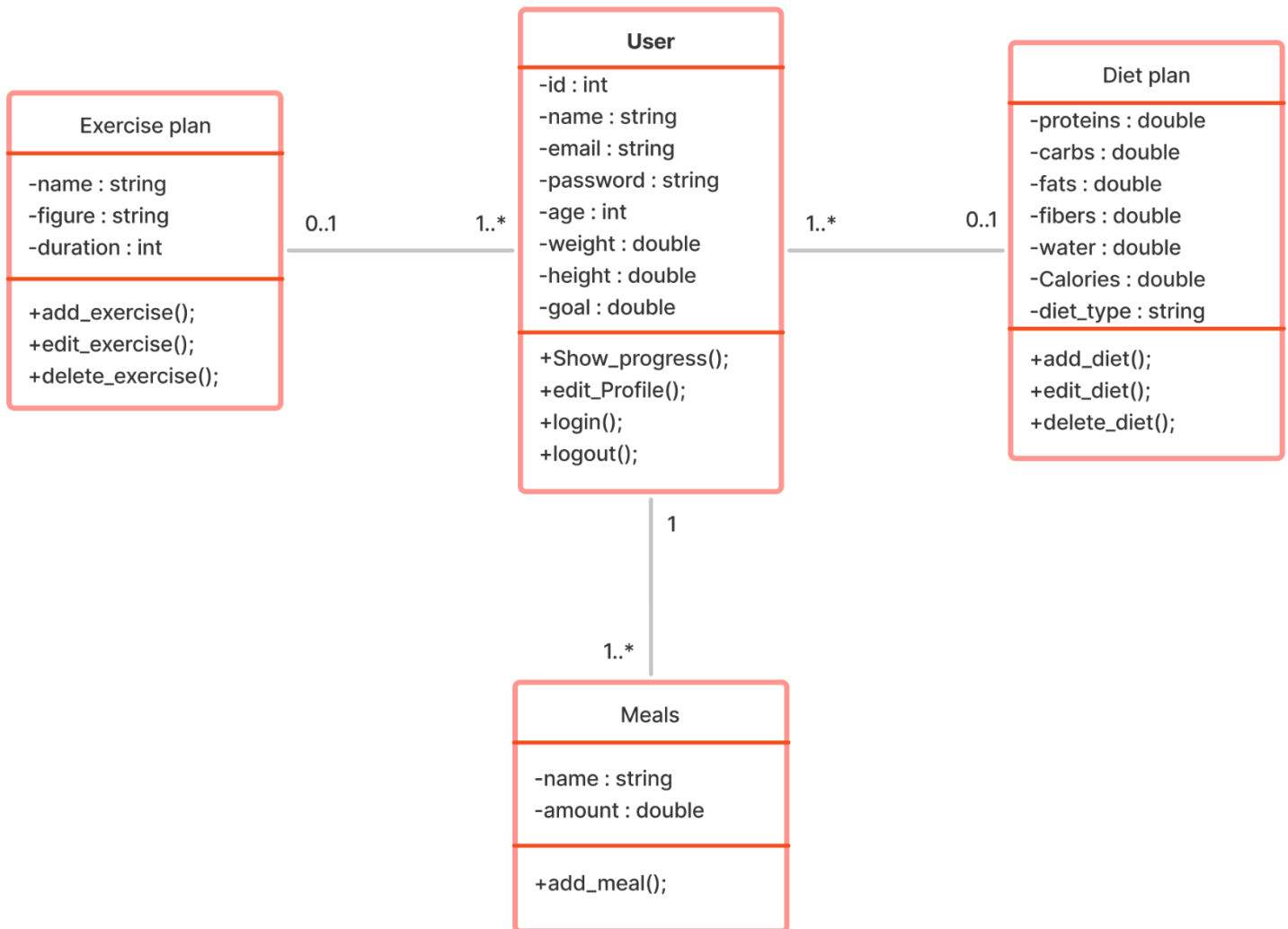**You can also view this sequence diagram digitally through [this link](https://linky.design/must-se-project-phase2)[2].**

---

[2] https://linky.design/must-se-project-phase2

8- State Chart Diagram

9- Activity Diagram

Start

Login

get login data

submite form

Valid User

NO → Ask to register

YES → Register

YES

Login Successfully

Display User page

End

10- Class Diagram

User

-id : int
-name : string
-email : string
-password : string
-age : int
-weight : double
-height : double
-goal : double

+Show_progress();
+edit_Profile();
+login();
+logout();

Exercise plan

-name : string
-figure : string
-duration : int

+add_exercise();
+edit_exercise();
+delete_exercise();

0..1   1..*

Diet plan

-proteins : double
-carbs : double
-fats : double
-fibers : double
-water : double
-Calories : double
-diet_type : string

+add_diet();
+edit_diet();
+delete_diet();

1..*   0..1

1

1..*

Meals

-name : string
-amount : double

+add_meal();

Nutrio

11- Implementation[3]

Config

```php
1   <?php
2   require_once "parse_env.php";
3   (new DotEnv("../.env"))->load();
4
5   define('DB_SERVER', getenv("DB_URL"));
6   define('DB_USERNAME', getenv("DB_USERNAME"));
7   define('DB_PASSWORD', getenv("DB_PASSWORD"));
8   define('DB_NAME', getenv("DB_NAME"));
9
10  /* Attempt to connect to MySQL database */
11  $link = mysqli_connect(DB_SERVER, DB_USERNAME, DB_PASSWORD, DB_NAME);
12
13  // Check connection
14  if($link === false){
15      die("ERROR: Could not connect. " . mysqli_connect_error());
16  }
17
```

[3] https://github.com/nourgaser/Nutrio-Uni

Home page

```html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="/styles/global.css">
    <link rel="stylesheet" href="/styles/index.css">
    <title>Home</title>
</head>

<body>
    <div class="header">
        <img src="/images/logo.svg" alt="logo">
        <div class="links">
            <a href="/" class="link selected">Home</a>
            <a href="#" class="link">About Us</a>
            <button class="btn">
                <a href="/login.php" class="link">Login</a>
            </button>
        </div>
    </div>
    <div class="main">
        <div class="left">
            <h1 style="color: var(--main-color);">Plan your diet and keep track of your excercises</h1>
            <p>Nutrio is a platform where you can build a custom diet plan (or choose a standard one!) to
            <a href="/register.php"><button type="button" class="btn">Join Now!</button></a>
        </div>
        <div class="right">
            <img src="/images/watch.svg" alt="image of a smart watch">
        </div>
    </div>
</body>

</html>
```

Database connection

```php
// Check input errors before inserting in database
if (empty($email_err) && empty($password_err) && empty($confirm_password_err)) {

    // Prepare an insert statement
    $sql = "INSERT INTO user (name, email, password, birthday, weight, height, weight_goal) VALUES (?,?,?,FROM_UNIXTIME(?),?,?,?)";

    if ($stmt = mysqli_prepare($link, $sql)) {
        // Bind variables to the prepared statement as parameters
        //TODO: also validate name, birthday, height, weight and goal
        mysqli_stmt_bind_param($stmt, "sssiiii", $_POST["name"], $param_email, $param_password, $_POST["birthday"], $_POST["weight"], $_POST["height"], $_POST["goal"]

        // Set parameters
        $param_email = $email;
        $param_password = password_hash($password, PASSWORD_DEFAULT); // Creates a password hash

        // Attempt to execute the prepared statement
        if (mysqli_stmt_execute($stmt)) {
            // Redirect to login page
            header("location: login.php");
        } else {
            echo "Oops! Something went wrong. Please try again later.";
        }

        // Close statement
        mysqli_stmt_close($stmt);
    }
} else {
    if (!empty($email_err)) echo $email_err;
    if (!empty($password_err)) echo $password_err;
    if (!empty($confirm_password_err)) echo $confirm_password_err;
}

// Close connection
mysqli_close($link);
```

Nutrio

```
143             <div class="form-input">
144                 <label for="age">Birthday</label>
145                 <input type="date" name="birthday" id="birthday">
146             </div>
147             <div class="form-input">
148                 <label for="weight">Weight</label>
149                 <input type="number" name="weight" id="weight">
150             </div>
151             <div class="form-input">
152                 <label for="height">Height</label>
153                 <input type="number" name="height" id="height">
154             </div>
155             <div class="form-input">
156                 <label for="goal">Weight Goal</label>
157                 <input type="number" name="goal" id="goal">
158             </div>
159             <button type="submit" class="btn noselect">Register</button>
160         </form>
161         <p class="bottom-text">Already have an account? <a href="/login.php">Login</a></p>
162     </div>
163 </body>
164
165 <script>
166     console.log("<?php echo getenv("DB_URL") ?>");
167 </script>
168
169 </html>
```

```
108    <!DOCTYPE html>
109    <html lang="en">
110
111    <head>
112        <meta charset="UTF-8">
113        <meta http-equiv="X-UA-Compatible" content="IE=edge">
114        <meta name="viewport" content="width=device-width, initial-scale=1.0">
115        <link rel="stylesheet" href="/styles/global.css">
116        <link rel="stylesheet" href="/styles/register.css">
117        <title>Register</title>
118    </head>
119
120    <body>
121        <div class="container">
122            <a href="/index.php" class="logo">
123                <img src="/images/logo.svg" alt="logo">
124            </a>
125            <p style="text-align: center;">Your handy calorie tracking buddy █</p>
126            <form action="register.php" method="post" class="form">
127                <div class="form-input">
128                    <label for="name">Full Name</label>
129                    <input type="text" name="name" id="name">
130                </div>
131                <div class="form-input">
132                    <label for="email">Email</label>
133                    <input type="email" name="email" id="email">
134                </div>
135                <div class="form-input">
136                    <label for="password">Password</label>
137                    <input type="password" name="password" id="password">
138                </div>
139                <div class="form-input">
140                    <label for="password2">Confirm Password</label>
141                    <input type="password" name="password2" id="password2">
142                </div>
```

12-   Website Design[4]

Home Page
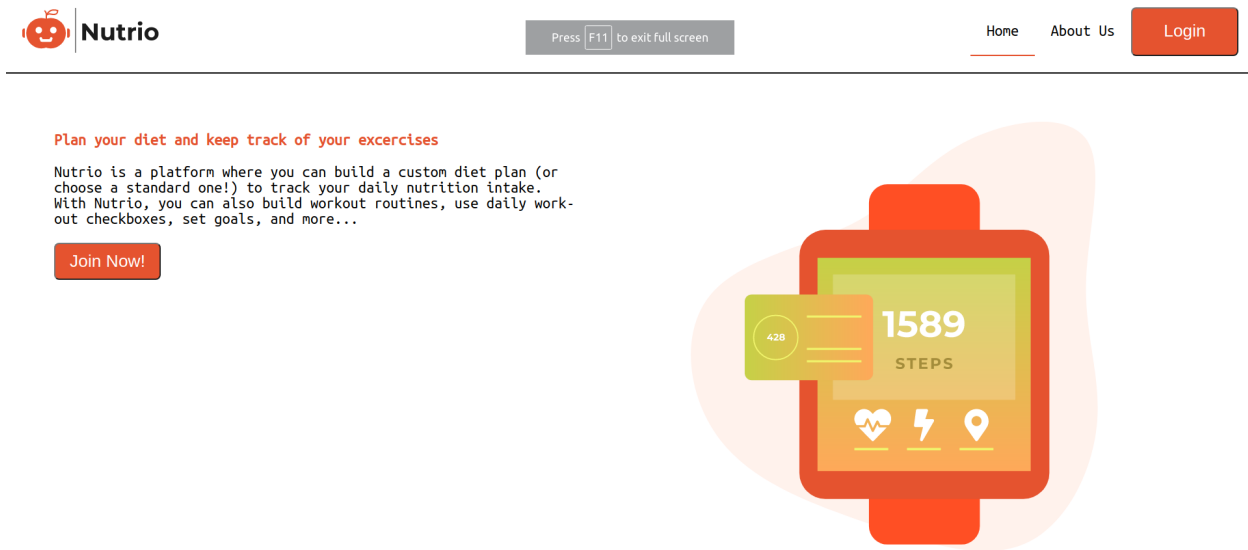
Nutrio

Home   About Us   Login

Plan your diet and keep track of your excercises

Nutrio is a platform where you can build a custom diet plan (or choose a standard one!) to track your daily nutrition intake. With Nutrio, you can also build workout routines, use daily work-out checkboxes, set goals, and more...

Join Now!

1589
STEPS
428

Login Page

Nutrio

Nutrio

Your handy calorie tracking buddy ▌

Email _____

Password _____

Login

Don't have an account? *Register*

Register Page

✕

Nutrio

Your handy calorie tracking buddy ▮

Email
Password
Confirm Password
Age
Weight
Height
Weight Goal

Register

Already have an account? Login

Overview Page

Nutrio

⦿ Today's Overview

🌱 Diet

🏋 Workouts

📖 Journal

📅 Calendar

🤖 Data Analysis

👤 Profile

⚙ Configure

Diet

Unit | Had | ❔   View Full diet 🌱

Fats(g)   Protein(g)   Carbs(g)   Fiber(g)   Water(L)   Calories
43   43   43   43   43   1456   72%
60   60   60   60   60   2000

Add New Meal

Meal | Choose a meal   Amount |

➕

Add

![Nutrio logo] Nutrio