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Healthper: Healthy Diet Mobile Application

Meagan So Shyuan, Norfaradilla Wahid*

Faculty of Computer Science and Information Technology,
Universiti Tun Hussein Onn Malaysia, 86400 Parit Raja, Johor, MALAYSIA

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Abstract: Healthper is an application designed and developed to enable the public to connect with the professional more effectively. This mobile application is developed to allow the public to get tailored services or consultations from qualified professionals. Getting the service is complicated and inefficient; wrong information or published articles on the Internet; and do not have a specific platform as communication tools between users and professionals. The project is developed based on the Prototyping software development methodology. The application is implemented using Android Studio software and the Firebase database. The functional testing and User Acceptance Testing were constructed after the implementation phase. The results show the majority of the test plan's actual outcome for each module was successful. Overall, Heatlhper may provide a specific platform for users and professionals to connect and know correct information about a healthy lifestyle.

Keywords: Healthy diet, dietitians, nutritionist

Diet has long been considered a risk factor for chronic diseases. An unhealthy diet can lead to fatigue, tiredness, and our ability to work in the short term and over time. It can lead to the risk of developing certain diseases and other health issues such as obesity and overweight, diet-related diseases such as heart disease, type 2 diabetes, high blood pressure, and some types of cancer. Malaysia is Asia's fattest country, with 64% of males and 65% of the female population being overweight or obese [1]. Today's young people face a challenging and stressful life with various motionless behaviours and many options of energy-dense food provided. An unrealistic slim fit body and a balanced diet have become a standard to them at the exact moment [2]. This project is to create a mobile application to provide a platform for the public to get a tailored service based on their health condition.

Some of the public do not have this opportunity to consult with these professionals. They do not have a specific platform and are forced to use social media as their communication tool. Although some places provided professional services or personal trainers that play the role of health professions in offering nutrition guidelines or recommendations [3], it is still complicated and inefficient for the public to get the service. The waiting time taken for the registration, appointment, and consultation process is too long. It is not convenient for those who work in the office as they need to have their time to attend physically to the professionals. The challenges faced by some listed mobile applications that are ready for use can bring wrong information for users and a more complicated situation when trying to have a better and healthier life.

*Corresponding author: faradila@uthm.edu.my

Other than that, many current platforms provide wrong information or articles that confuse the public about achieving a healthy lifestyle. It is probably because some of the media do not filter the source and check the qualification of "professionals" on the Internet. Based on the research from Health Feedback [4], fake health news in all types of information spread faster, more profound, and more widely through social media than the facts. The clinicians need to clear up misleading information with their patients because of the widespread distribution of incorrect health statements over the web.

Based on the problem statement, several objectives can be identified. The objectives of this project are:

1. To design a specific platform that enables the user to get tailored services or consultation from qualified professionals.
2. To develop an efficient and valuable platform for the users to get the correct information from qualified professionals.
3. To implement testing on the functionality for the developed application on the target users.

On the other hand, Healthper Mobile Application included three user types: user, professional, and administrator. The user is the main user for this application as they will connect or communicate with professionals such as dietitians and nutritionists to have a tailored service. Besides, Healthper Mobile Application included five functional modules: a module of user management, a module of communication between users and professionals, a module of reporting account summary, a module of payment, and an administrator panel.

2. Literature Review

A healthy diet does not need to be complicated. Healthy eating starts with healthy food choices by practice a healthy meal plate with foods from all the major food groups such as fruits and vegetables, lean proteins, dairy products, grains, and cereals. A healthy plate includes the Ministry of Health launches servings of ¼ protein, ¼ carbohydrates, and ½ vegetables. The diet plan might be different for certain groups of people with the other health problem such as obesity, diabetes, cancer, and heart disease which these peoples need special dietary requirements

2.1 Consultations by professionals

Dietitians and nutritionists provide nutritional services by providing tailored meal recipes for users based on their health condition, educating patients on proper meal preparation through counselling, seminars, workshops, and overseeing meals for optimum health and nutrition. Dietitians are qualified practitioners who treat medical conditions through medical diet counselling to promote nutritional well-being [5]. Besides, nutritionists concentrate on encouraging healthier eating practices and a balanced lifestyle that is limited only to healthy individuals. Meet up with a qualified dietitian and nutritionist can help a person control weight, manage chronic health or gain more information and knowledge on eating better.

2.2 A study on similar application

Three applications are selected for comparison for the benchmark of the proposed application. The systems are YAZIO [6], MyFitnessPal [7] and Lifesum [8]. A table will be represented later to show their difference and similarity with our proposed application.

YAZIO has many main features, such as calories counter that helps to calculate the calories consumed by only takes a few minutes per day. It also offers a fasting feature that allows the user to observe meal plans and fasting countdown features with different fasting plans and countdowns. YAZIO also provides some food recipes in the applications. The user can access more features such as coach, nutritional information, mood tracker, and notes section at RM44.90 for six months.

On the other hand, MyFitnessPal aims to give the right features for the user to hit goals such as losing weight, tone up, lower BMI, or investing in users' overall health. MyFitnessPal allows the user to keep detailed track of their food and nutrition by scanning the barcode. This feature helps in calculating all the nutrients, calories, and vitamins users consumed every day. It also allows the user to add exercises that work the same way as in the food section. MyFitnessPal offers a Facebook-like community section. Users can upgrade MyFitnessPal Premium to get additional features.

Lastly, Lifesum is a health application companion to assist people in taking control of their eating behaviour and living a healthier life. It provides simple meal tracking, including barcode scanning, a huge food database, food and meal ratings, and habit trackers. Lifesum offers meal plans and balanced diets for the user based on their preferences and lifestyle with a hundred easy recipes. The recipe database provided by Lifesum is updated from time to time. Users can pay MYR 167.88 at the beginning of twelve months subscription period to explore premium features.

The proposed application is a healthy diet application Android-based that will be developed as a platform for the targeted user that wishes to have a healthy diet. The application is for those healthy users and unhealthy users with a disease such as diabetes, cardiovascular disease, and others that need more focus monitoring on their food intake. The proposed application may let the user get connect with a professional in a simple step. Table 1 shows the comparison between existing applications and proposed applications.

Table 1: Comparison between the existing applications and the proposed application

Feature	YAZIO	MyFitnessPal	Lifesum	Proposed application
Android-based	✓	✓	✓	✓
IOS-based	✓	✓	✓	x
Web-based	x	✓	✓	x
Clear navigation	✓	✓	✓	✓
Attractive user interface	✓	x	✓	✓
The high number of banner advertisements and pop-ups	x	✓	x	x
Question-based personalization	x	x	x	✓
Connection with the professionals	x	x	x	✓
Social community	x	✓	✓	✓
Weight tracking	✓	✓	✓	✓
Weight loss, weight gain, and weight maintenance	✓	✓	✓	✓
Tracking calories goals	✓	✓	✓	x
Food intake management	✓	✓	✓	x
Reminder notifications to drink water	x	x	✓	x
Healthier food intake based on the recipe provided	✓	✓	✓	✓
Gain more knowledge to have a healthier life	✓	✓	✓	✓
Article or information posted by the professionals	x	✓	x	✓

3. System methodology

A prototype model is used in developing this project. It is a model for software development in which a prototype is constructed, evaluated, and reconfigured before achieving an appropriate

prototype. This model also provides the basis for developing the final framework or application. It works well in situations where the specifications for projects are not recognized in detail [9].

In addition, this model has some benefits, such as reducing the efforts needed to design the final system as the final system is introduced after all the requirements are well known, and there is less risk that the final system will be wrong. Prototyping entails more user interaction and helps them to see and connect with a prototype and provide better and more complete reviews and requirements [10]. The prototype model consists of five main phases: planning, analysis, design, implementation, and testing, as shown in Figure 1.

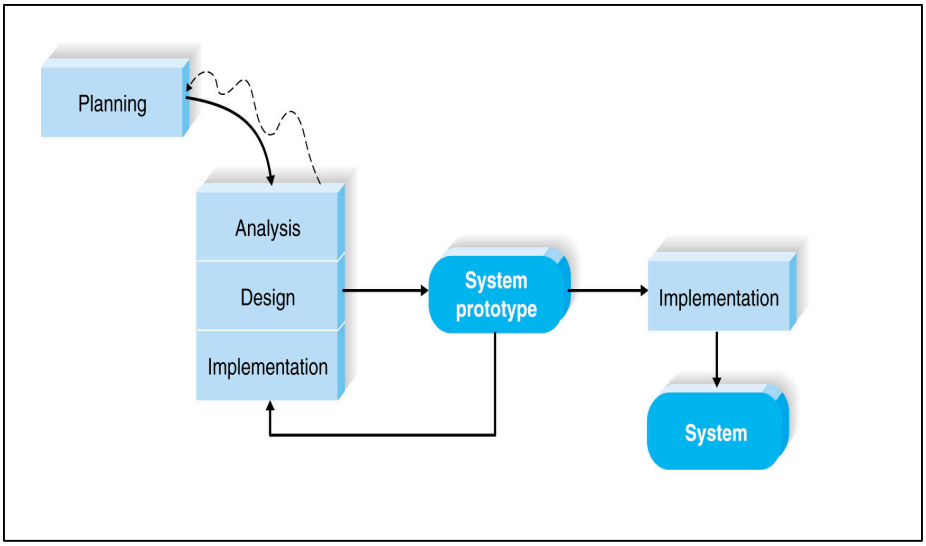

Figure 1: Prototype Model [9]

During the planning phase, the problem statements are identified, and the objectives are set to overcome the problems. The project's scope, including target users and functional modules, is set with the expected output discussed. A Gantt Chart is prepared to allow the project can be done systematically, prioritize, and do more in less time, as attached in Appendix.

In the analysis phase, a Google Form is distributed in social media. An informational interview has been conducted with a professional to understand as much as possible about a healthy diet and identify the requirements of the proposed application. Object-Oriented Analysis and Design (OOAD) and a Unified Modelling Language (UML) diagram were produced to represent the system with its function. The use case diagram, sequence diagram, activity, class diagram, and an Entity-Relationship Diagram (ERD) were created. The wireframe was designed in the design phase to become the guideline for the user interface design. A database design is designed to generate models of the proposed system for conceptual and physical designs.

After getting the user acceptance of the proposed system established, the implementation phase begins. Healthper is developed using Android Studio IDE, which used Java programming language for the back-end user side, while XML and Android Programming are used to design the front-end system. Healthper Administrator Panel is developed in Hypertext Markup Language (HTML), Cascading Style Sheet (CSS), and JavaScript. Firebase is used to set up the proposed system with security and recovery procedures fully defined. The database will be located in the server of Google Data Center.

In the testing phase, the completed proposed system is tested for faults, bugs, and defects following the Software Testing Life Cycle activities to check the system's reliability. The completed proposed system will also be tested to check whether it meets the functional and non-functional requirements as stated during the analysis phase. The user acceptance testing was also conducted to provide users with

a chance to evaluate and interact with the proposed application. The summary workflow for the development of the proposed system is shown in Table 2.

Table 2: Workflow for the development of the proposed system

Phases	Activity	Deliverables
Planning	1. Identify problem statements, objectives, the scope of the project, expected result, and project significance. 2. Set up a work plan. 3. Study online resources and articles that are related to the title. 4. Study the features and functionality of existing applications.	1. Project proposal. 2. Gantt Chart. 3. Literature review. 4. Comparison table between existing applications and proposed applications.
Analysis	1. Questionnaire distributed on social media such as Facebook healthy diet group and Instagram 2. Interview with the professional. 3. Analyze hardware and software requirements. 4. Identify functional and non-functional requirements, 5. Identify the relationship among all classes.	1. Gather user requirements. 2. Hardware and software requirements. 3. Functional and non-functional requirements. 4. Use case diagram, sequence diagram, activity diagram, and class diagram.
Design	1. Design the wireframe. 2. Design the user interface. 3. Design the database.	1. Wireframes. 2. User interface. 3. Database specification.
Implementation	1. Develop the system module. 2. Integrate the system. 3. Connect with the database. 4. Perform the initial alpha test.	1. Proposed system. 2. Errors found and fixed.
Testing	1. Conduct system testing 2. Identify the area of improvement	1. Fix and improve the bugs. 2. Fix and ready to release the new system.

4. System Analysis and Design

Unified Modeling Language (UML) has become a standard for software modelling. It consists of an interconnected series of diagrams used to describe, visualize, build and record software system components [11]. UML diagrams are used within a software framework to track relationships and hierarchies that separate them into components and subcomponents. There are four types of UML diagrams used in this project: use case diagram, sequence diagram, activity diagram, and class diagram.

4.1 System Analysis

4.1.1 Use case diagram

A use case diagram is a behavioural diagram used to summarize the details of a system and its interaction with the system. It provides a graphic description of the actors involved in a system, the various functions required by those actors, and how these various functions interact. Figure 1 shows the use case diagram for Healthper Mobile Application.

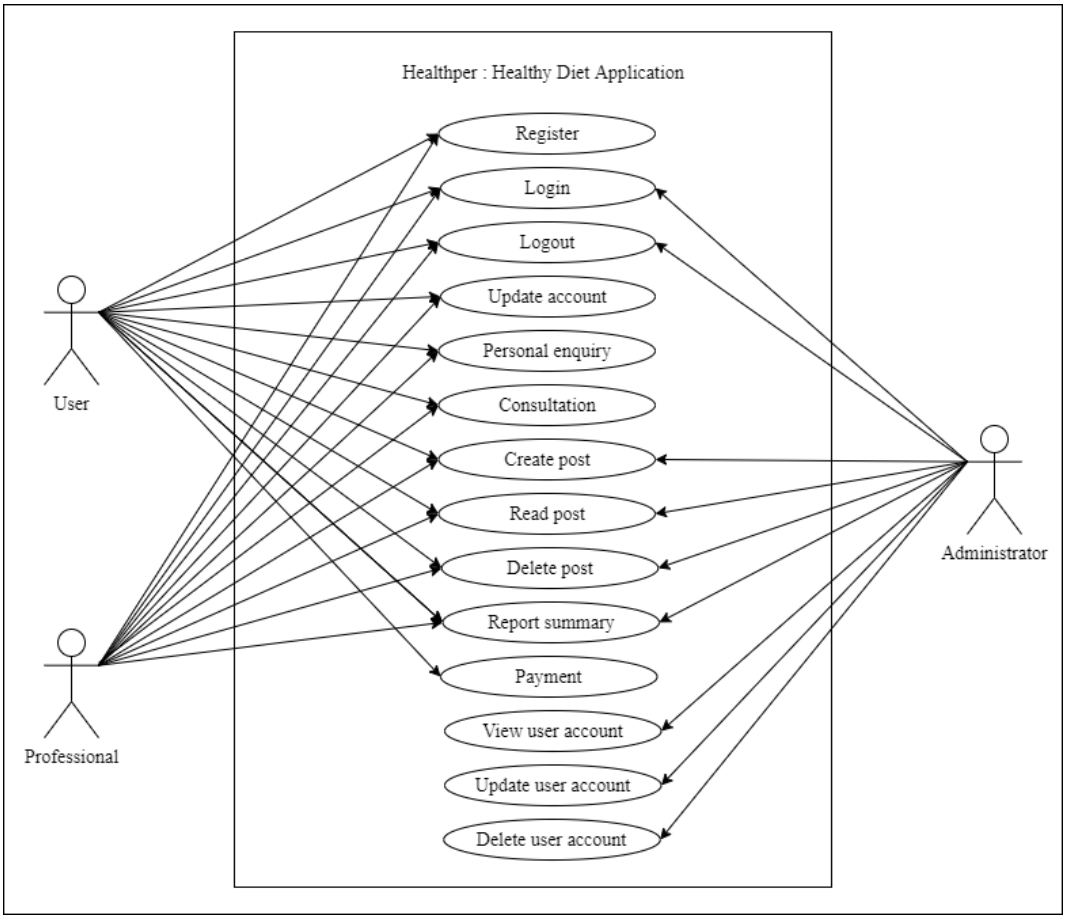

Figure 1: Use case diagram of the proposed application

4.1.2 Activity diagram

Activity diagram is a flowchart to illustrate the flow of one operation to another operation in general. It is possible to describe the operation as a system process. It demonstrates how the events relate to each other in a single-use case and models complex workflows. Figure 2 shows the activity diagram for a user of the proposed application,

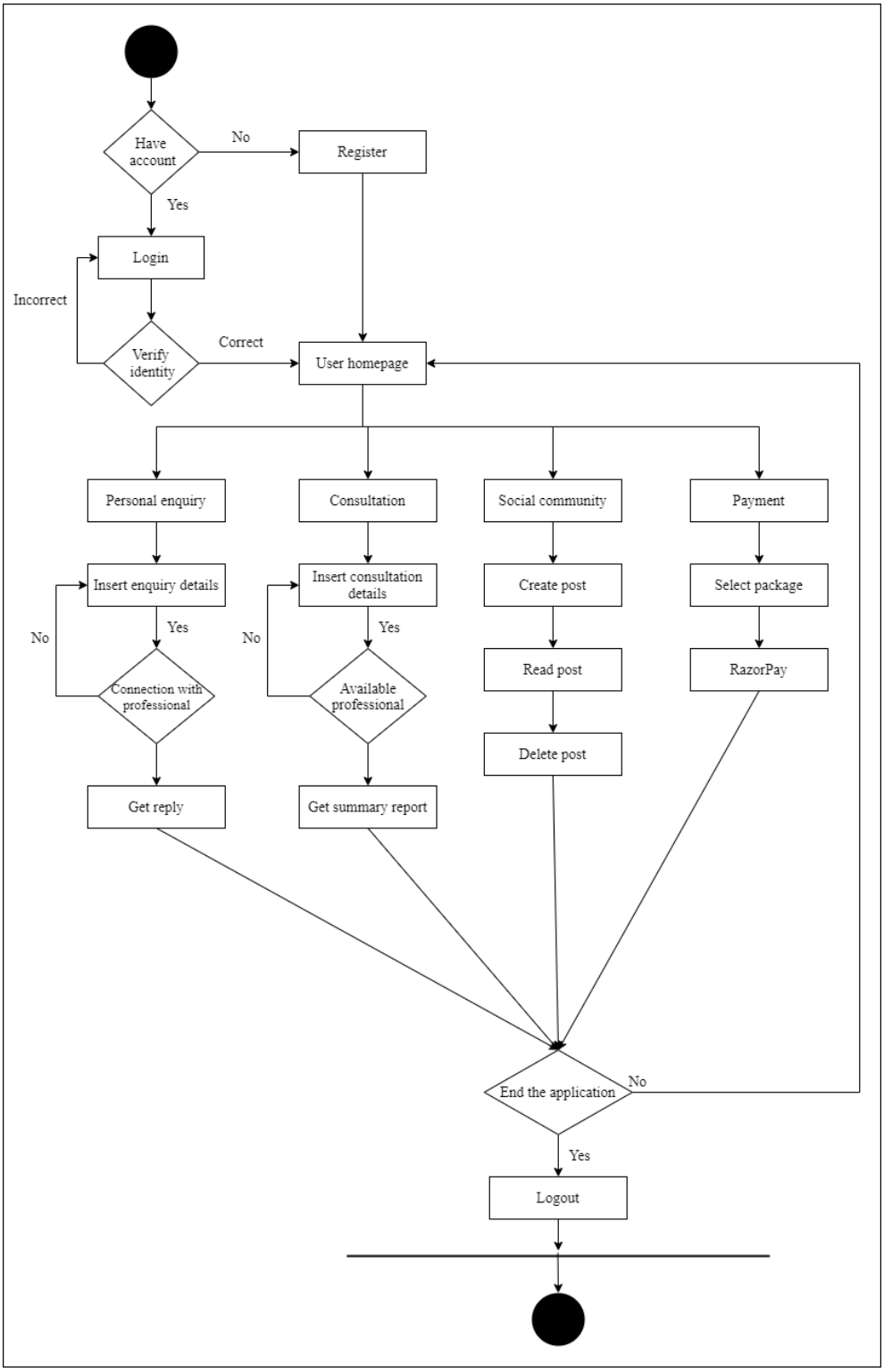

Figure 2: The user activity diagram of the application

4.1.3 Class diagram

A class diagram is a static diagram that describes a system's structure by showing the classes, attributes, operations, and object relationships. Before learning the actual code, it gives a summary of how the software is organized. The repair time can be easily minimized as it helps to understand the general schematics better. The class diagram for this application is shown in Figure 3.

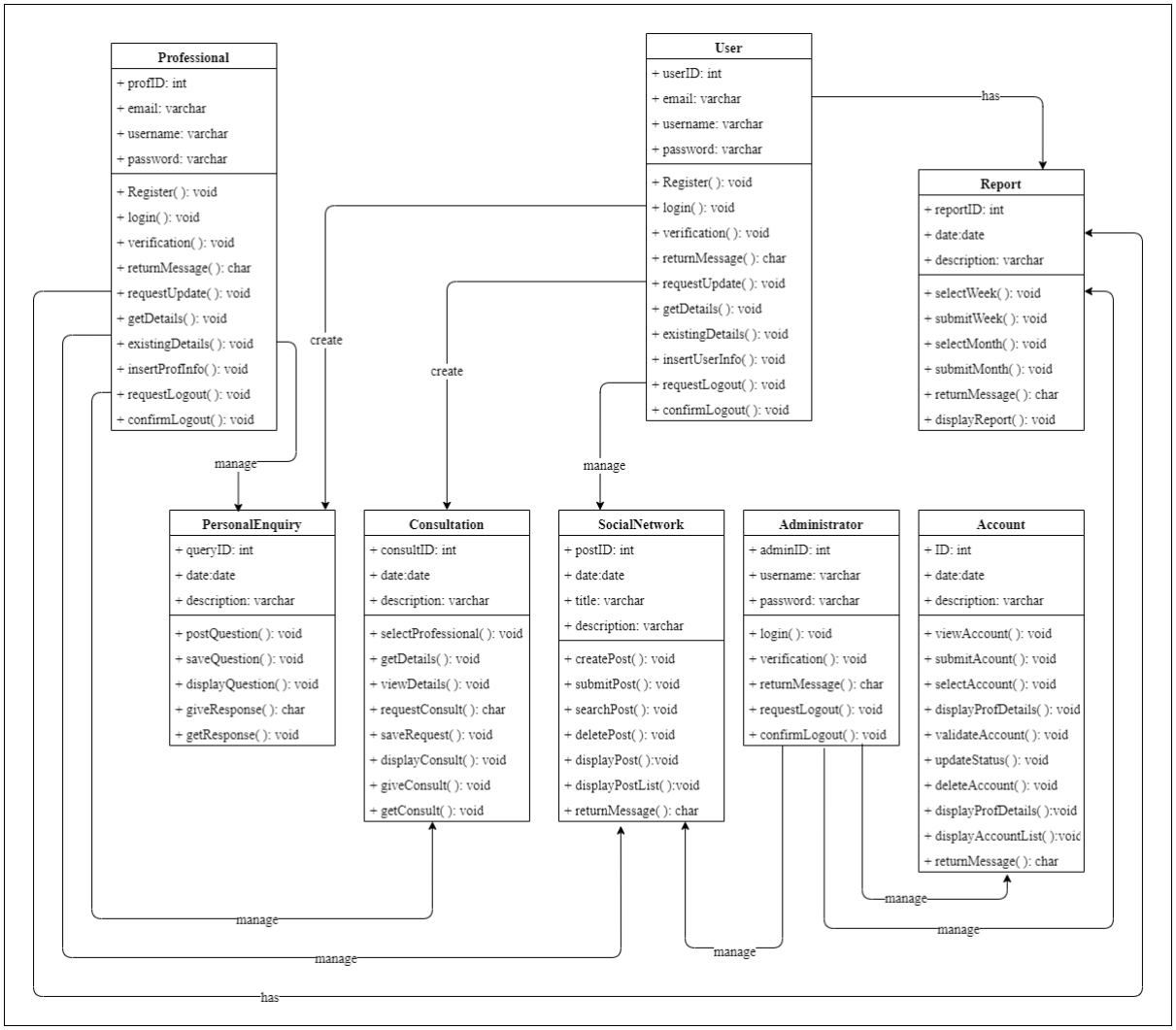

Figure 3: The class diagram of the application

4.2 System Design

User Interface (UI) design requires understanding what users need to do and ensuring that the interface has easy to navigate, understand, and use to facilitate such actions. A wireframe is a design layout with a low resolution that displays the details on the page which will be shown. It provides an outline of the page's structure and style. Figure 4 illustrates the user interface for the user. It shows the homepage that allows users to connect with their desired professionals for consultation sessions and question-and-answer sessions. There is also an interface for users to share their feeling or experience as a social media platform.

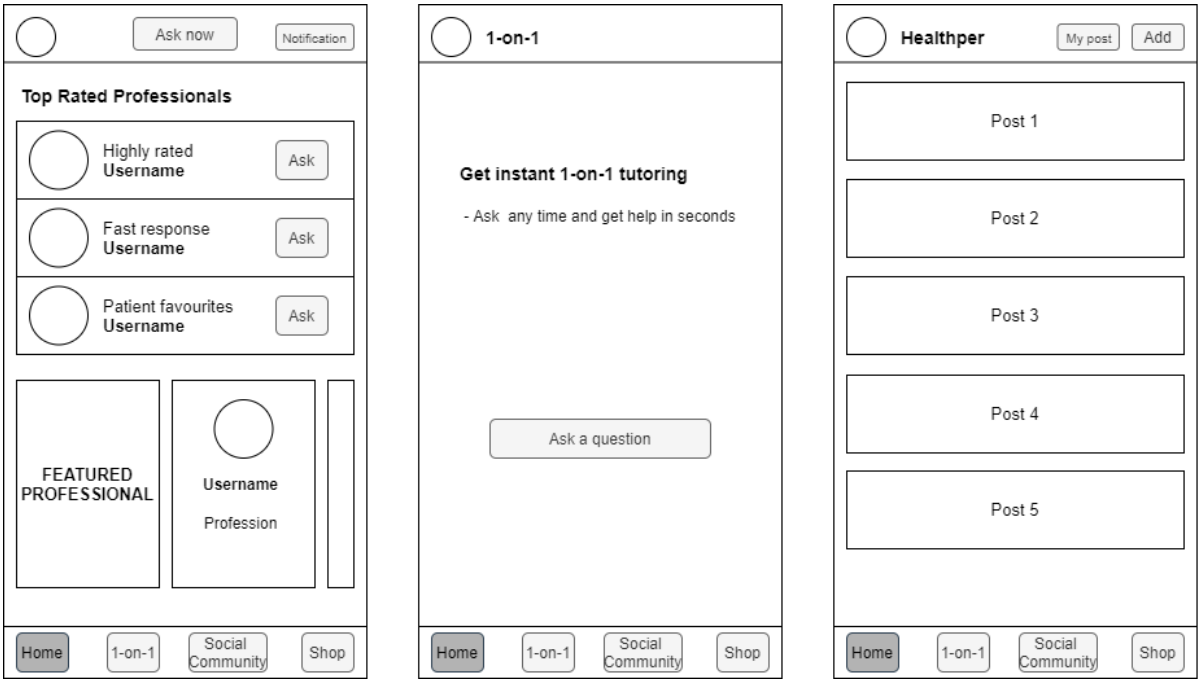

Figure 4: Wireframe for user

5. Implementation and Testing

The implementation step ensures that the application being developed satisfies the defined requirements, while the testing step ensures that the application is error-free.

5.1 Implementation

Healthper mobile application is developed in Android Studio IDE using Java Programming language and Extensible Markup Language (XML). However, the Healthper Administrator Panel is a web application developed in Visual Studio Code using Hypertext Markup Language (HTML0, Cascading Style Sheet (CSS), and JavaScript. The storage platform for both applications is Firebase real-time database and Firebase storage, while Firebase authentication is used as user authentication. Java programming language is used to provide the logic part for the mobile application. Figure 5 shows the Firebase authentication services that implement in the mobile application to authenticate the user. It creates users by using phone numbers and passwords.

```
private void sendVerificationCodeToUser(String _phoneNo) {
    PhoneAuthProvider.getInstance().verifyPhoneNumber(
            _phoneNo,        // Phone number to verify
            60,                 // Timeout duration
            TimeUnit.SECONDS,   // Unit of timeout
            TaskExecutors.MAIN_THREAD,              // Activity (for callback binding)
            mCallbacks);        // OnVerificationStateChangedCallbacks
}

private PhoneAuthProvider.OnVerificationStateChangedCallbacks mCallbacks =
        new PhoneAuthProvider.OnVerificationStateChangedCallbacks() {

            @Override
            public void onCodeSent(@NonNull String s, @NonNull PhoneAuthProvider.ForceResendingToken forceResendingToken) {
                super.onCodeSent(s, forceResendingToken);
                codeBySystem = s;
            }
            @Override
            public void onVerificationCompleted(@NonNull PhoneAuthCredential phoneAuthCredential) {
                String code = phoneAuthCredential.getSmsCode();
                if (code != null) {
                    pinFromUser.setText(code);
                    verifyCode(code);
                }
            }
            @Override
            public void onVerificationFailed(@NonNull FirebaseException e) {
                Toast.makeText( context: pVerifyOTP.this, e.getMessage(), Toast.LENGTH_SHORT).show();
            }
        };
```

Figure 5: Firebase will send the OTP to the user for authentication

Figure 6 shows the code segment for uploading photos or videos to the post community modules for both users and professionals. It allows users to upload local files on the device, such as photos and videos from the camera with the putFile() method. putFile() accepts a File and produces a uploadTask, which may control and track the upload's progress.

```
if (TextUtils.isEmpty(desc) || selectedUri != null){

    progressBar.setVisibility(View.VISIBLE);
    final StorageReference reference = storageReference.child(System.currentTimeMillis() + "." + getFileExt(selectedUri));
    uploadTask = reference.putFile(selectedUri);

    Task<Uri> uriTask = uploadTask.continueWithTask(new Continuation<UploadTask.TaskSnapshot, Task<Uri>>() {
        @Override
        public Task<Uri> then(@NonNull Task<UploadTask.TaskSnapshot> task) throws Exception {
            if (!task.isSuccessful()){
                throw task.getException();
            }
            return reference.getDownloadUrl();
        }
    })
            .addOnCompleteListener(new OnCompleteListener<Uri>() {
        @Override
        public void onComplete(@NonNull Task<Uri> task) {...}
    });
}
```

Figure 6: A code segment for saving the image to Firebase real-time database and Firebase storage

Figure 7 shows the code segment for the user to ask a question through Healthper mobile application. The question will save to the Firebase real-time database, and the data will be retrieved from Firebase on the professional side.

```
String id = UserQuestions.push().getKey();
UserQuestions.child(id).setValue(member);

String child = AllQuestions.push().getKey();
member.setKey(id);
AllQuestions.child(child).setValue(member);
Toast.makeText( context: this,  text: "Submitted", Toast.LENGTH_SHORT).show();

//delete 1 session available
DatabaseReference reference = FirebaseDatabase.getInstance().getReference( path: "Tokens");
reference.child(_USERNAME).child("session").setValue(ServerValue.increment( delta: -1));
```

Figure 7: A code segment for saving data to Firebase real-time database

In addition, the Healthper Administrator Panel is a Node.js Application developed using JavaScript. Figure 8 shows the JavaScript statements for the web application that will save the same Firebase database.

```
Complexity is 4 Everything is cool!
uploadTask.snapshot.ref.getDownloadURL().then(function(downloadUrl)
{
    var time = new Date();

    var options =
    {
        month: "long", day: "2-digit", year: "numeric",
    };

    var postData =
    {
        "desc": desc,
        "postUri": downloadUrl,
        "profileUrl": "https://firebasestorage.googleapis.com/v0/b/healthydiet-a61f1.
        appspot.com/o/web_admin.png?alt=media&
        token=72b9c91e-3b16-4a0b-a161-b5bf1cdb7e3f",
        "time": time.toLocaleString('en-US', options) + ":" + time.toLocaleString
        ('en-US', {hour: 'numeric', minute: 'numeric', second: 'numeric', hour12: true})
        ,
        type: "iv",
        "uid": userid,
        "username": username,
    };

    var newPostRef = databaseRef
    .push();
```

Figure 8: Code segment in JavaScript for saving data to Firebase real-time database

Figure 9 shows the registration process for the application. The user can only register to the application if the username, phone number, and email address are unique. They can log in to the system only with a valid account.

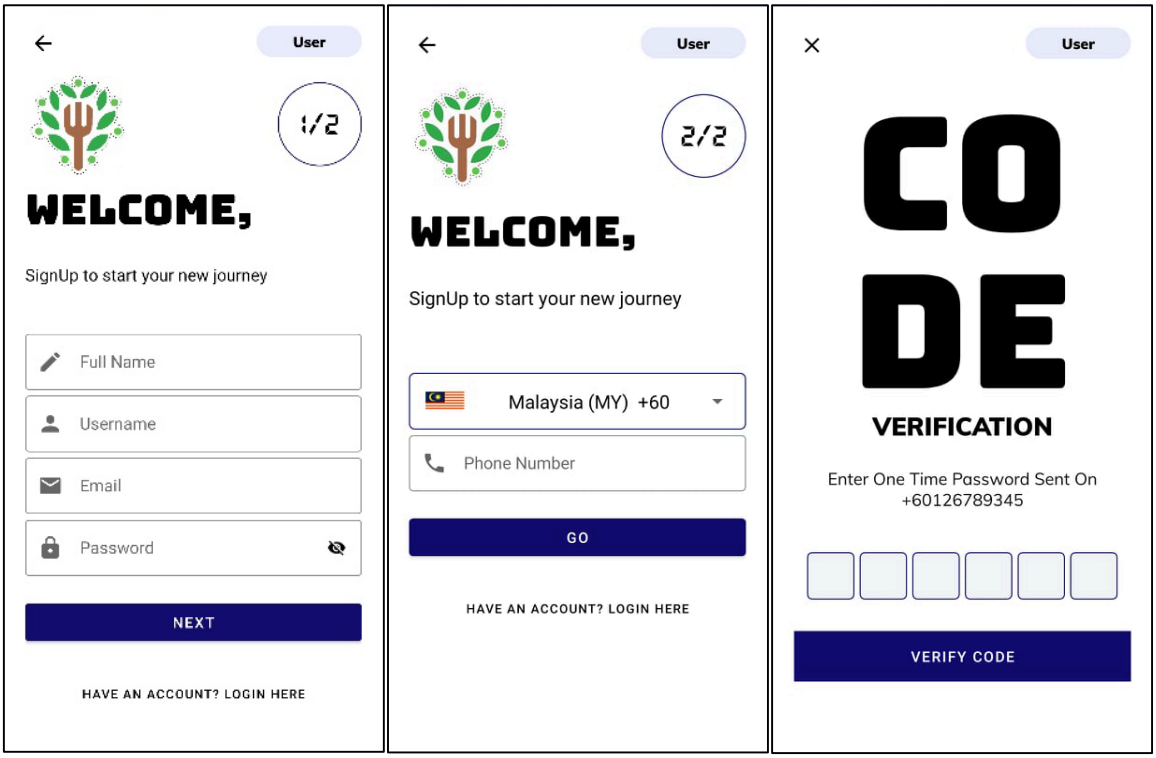

Figure 9: Register interface for Healthper mobile application

To ensure the professionals involved in the application are qualified, there are three types of account status for unverified, pending, and verified professionals. "Unverified" refers to the professional who does not apply for verification purposes. When the "unverified" professional submit their supporting documentation for verification purposes, the account status will change to"pending," whereas verified refers to a professional who has already been verified successfully by the Healthper administrator, as shown in Figure 10.

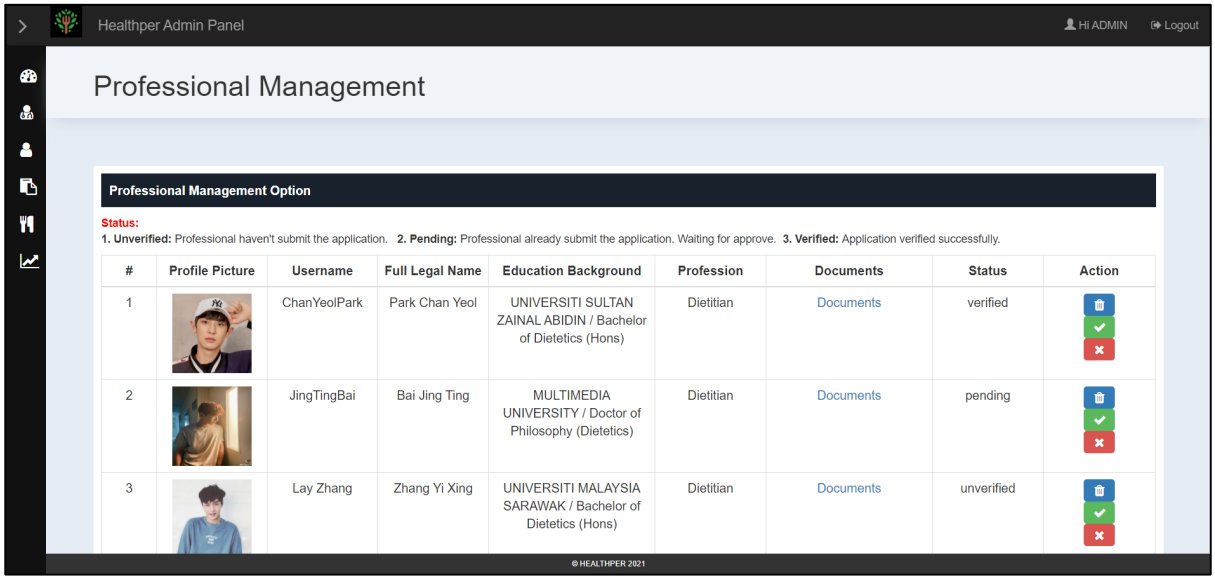

Figure 10: Professional management in Healthper Administrator Panel

Figure 11 shows the interface for the user to post their enquiry (left), the question list after the question is submitted successfully, and retrieved on the professional side (center). The professional can view the user's medical history before the question-and-answer session (right).

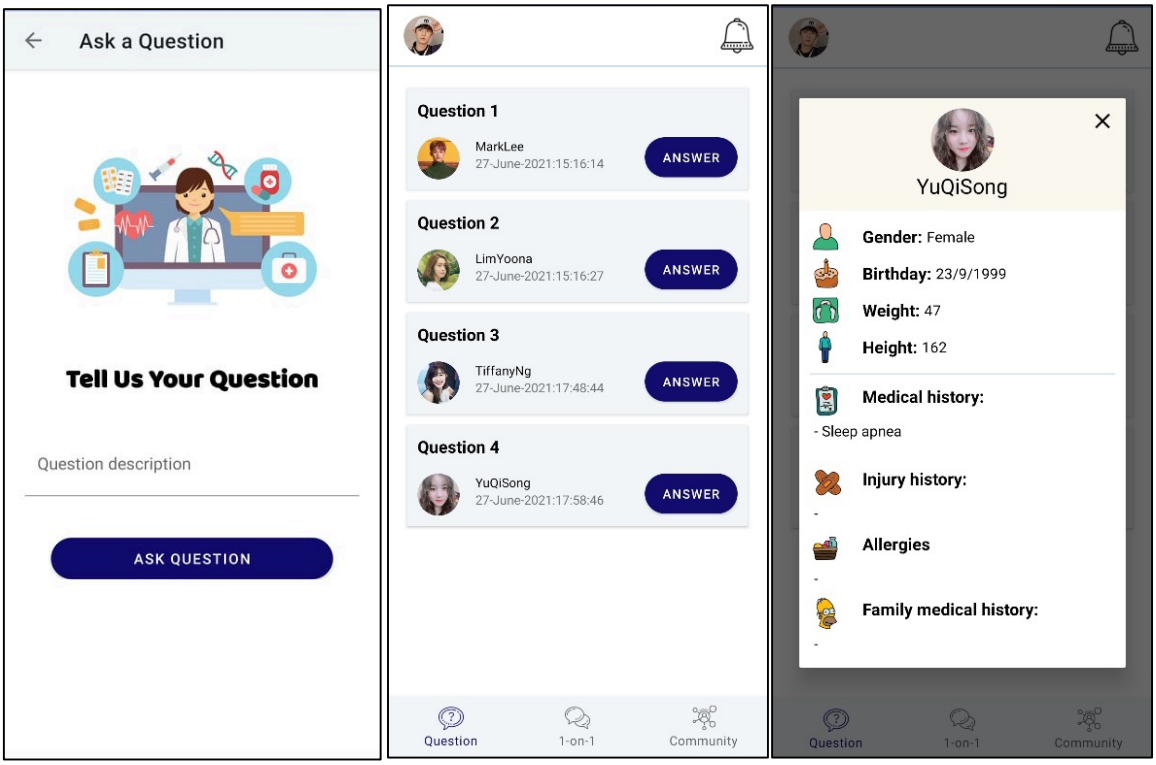

Figure 11: Personal enquiry interface for Healthper mobile application

Figure 12 shows the interface for the user to view the details of a professional before they make an appointment (left), consultation details will get after the user click on the 'make appointment' button (middle), and the appointment history will retrieve by the professional (right).

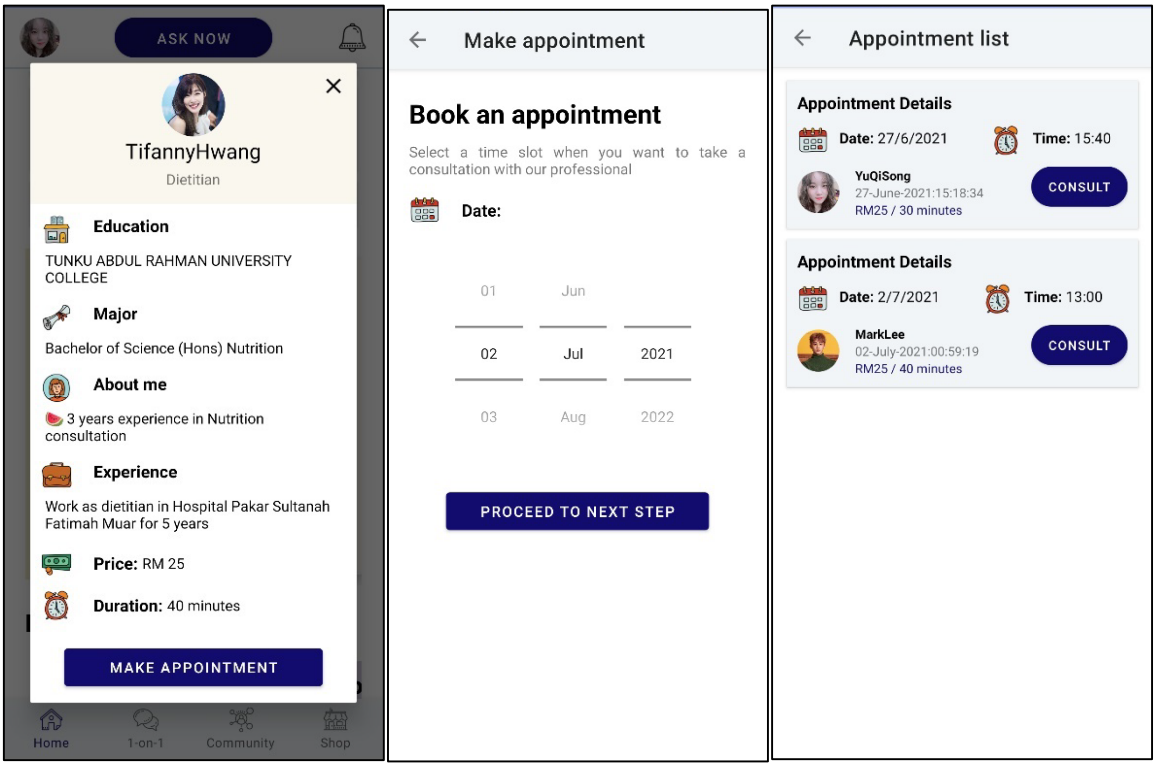

Figure 12: Consultation interface for Healthper mobile application

A social community function allows both user and professionals to share their feeling and experience when maintaining a healthy lifestyle. They can upload images or videos with descriptions, whereas other users can like or share their posts, as shown in Figure 13.

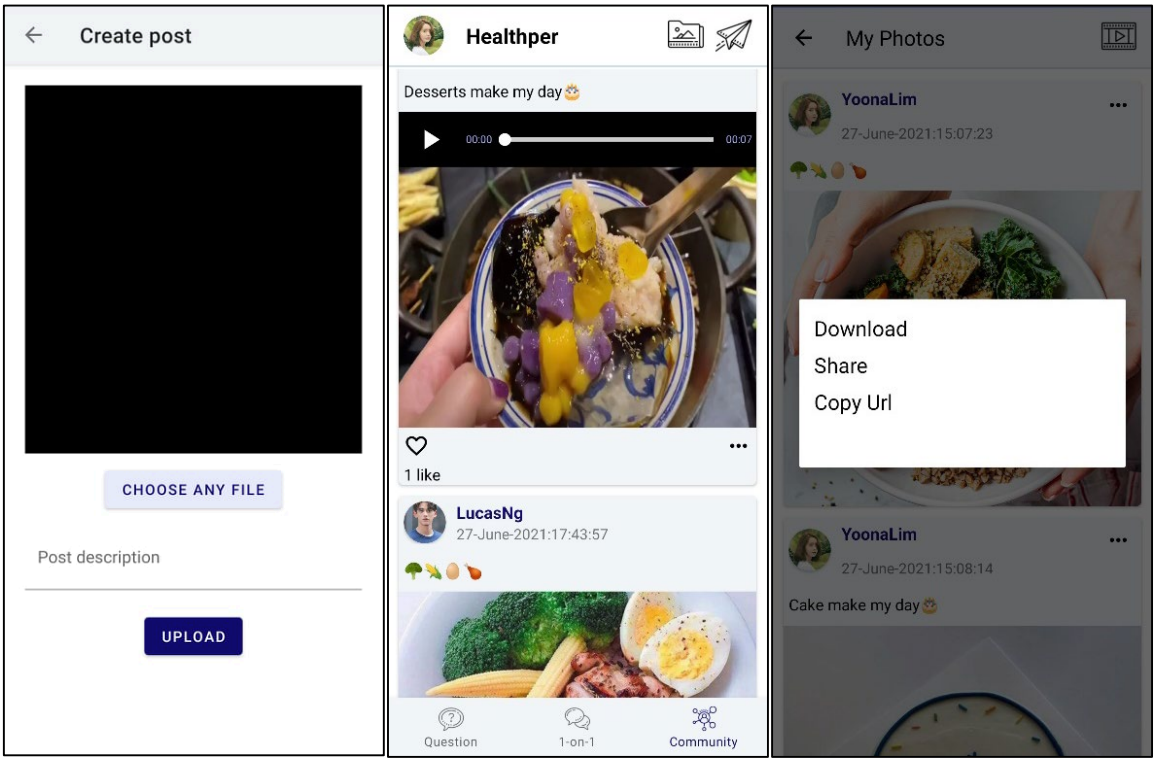

Figure 13: Post community interface for Healthper mobile application

Last but not least, the user will be redirected to the payment interface of the RazorPay platform after selecting the token packages available in the shop fragment as shown in Figure 14.

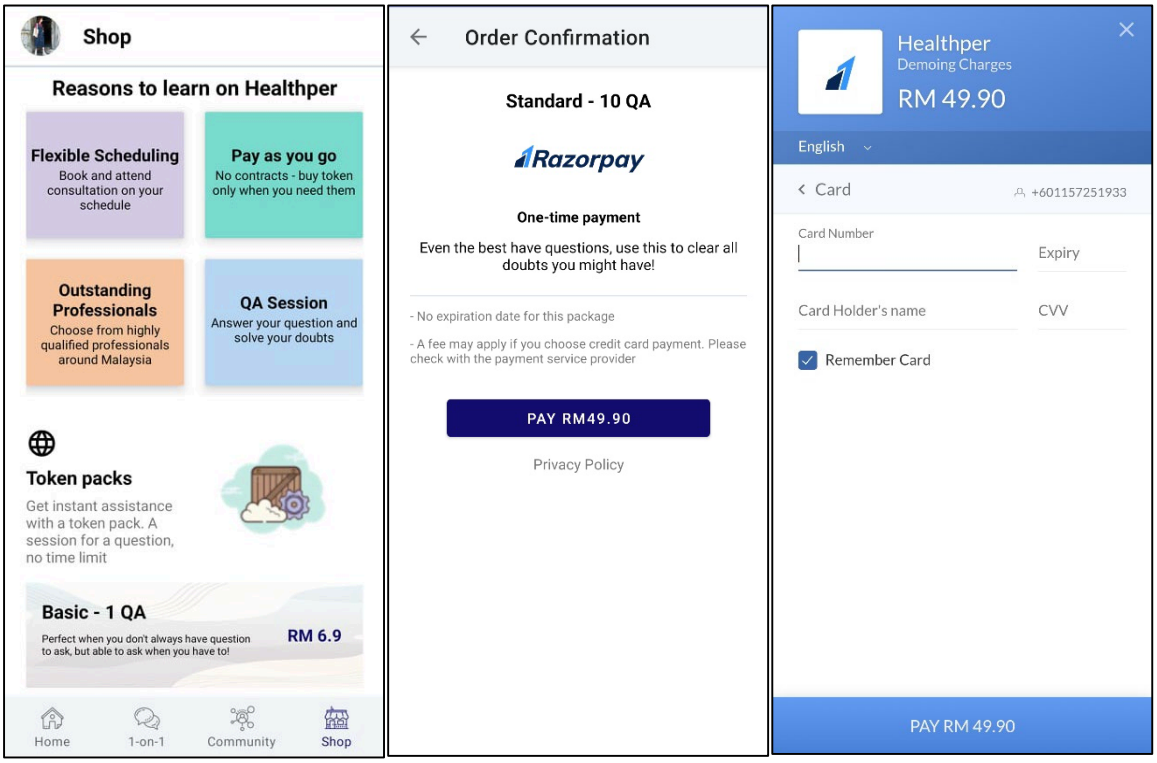

Figure 14: Payment interface for Healthper mobile application

The users can track their path with the total of questions asked and consultations made (left). In contrast, the professional can track the total of questions answered and consultations done, as shown in Figure 15(right).

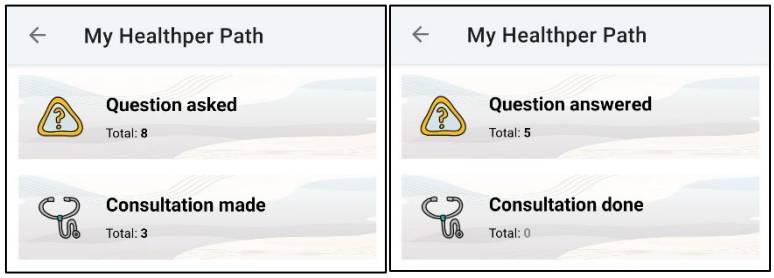

Figure 15: Account summary for user and professional

5.2 Application Testing

5.2.1 Functional Testing

The functional testing of the Healthper Application is shown in Table 3. The Test Plan supports the developer in determining the amount of effort required to confirm the application's quality. It aims to make sure that each module works appropriately and produces the intended outcomes. The functional testing was constructed after the implementation phase. Overall, all of the test plan's actual result for each module was successful.

Table 3: Test plan of the system module and results

Module	Functions	Test	Expected Result	Actual Result
User management module	Registration	Incomplete data input	An alert message will display if the text field is empty.	Pass
		Unique username, phone number, and email	An alert message if already exists	Pass
	Login	Complete input with invalid username or password	Alert message will display, and login request is rejected.	Pass
		Complete form	Login successfully and redirected to the homepage.	Pass
	Status of professional	Check the status of professional	Redirect to the different interface based on the professional's account status.	Pass
	User profile	Update user profile with valid input	The profile interface will show the changes if successful.	Pass
		Update professional account status	When unverified professional submits their application, the account status will be changed to pending.	Pass
	Forget password	Update password with validate username	An alert message will be displayed if the username does not exist in the database.	Pass

Table 3: (cont.)

Module	Functions	Test	Expected Result	Actual Result
	User medical history	Update user medical history with valid input	The user can update their weight, height, medical history, injury history, allergies, and others.	Pass
	Professional consultation details	Update consultation details with valid input	The professional can update the price, duration, about me and their working experience.	Pass
Communication between user and professional	Personal enquiry	Valid data input	The question will save to the database and recorded under question history.	Pass
	Consultation	View professional details	The professionals' details will be displayed if the user clicks on their profile picture.	Pass
	Social community	Valid data input	The photo or video and description will save to the real-time database and storage database.	Pass
Report	Summary	Calculate the total of questions answered	The total question answered will be count.	Pass
	Summary	Calculate the total of consultations done	The total consultation done will be count.	Pass
Payment	RazorPay	Correct amount	The correct amount in the payment interface when a different package of the token sessions was selected.	Pass
		RazorPay gateway	Redirect to the RazorPay SDK and proceed with the test mode process.	Pass
		Status of payment	The different interfaces will be shown on the status of the payment	Pass
Administrator panel	Dashboard	The administrator can view the data in the Firebase database	The administrator is allowed to create, read, update and delete the data from the database	Pass
	Professional list	Update professional account status	The administrator can update the professional's status to pending or verified.	Pass
	User list	Delete the user account	Confirm dialogue will be displayed. If the yes button is clicked, the user will be deleted from the database.	Pass
	Post management	Create a new post with valid data	The post is created and save to the database.	Pass
	Reports	Question list	All the questions that exist in the database will be displayed in a table	Pass

5.2.2 User Acceptance Testing

User Acceptance Testing (UAT) is a method of testing in which the end-user or customer verifies and accepts the software system before it is moved to the production environment. Due to time limitations, only 15 users have been involved in this testing: five professionals, five experienced users, and five newbies' users. The outcome is evaluated and presented in a graph after the data collected from the user, as shown in Figure 16 and Figure 17.

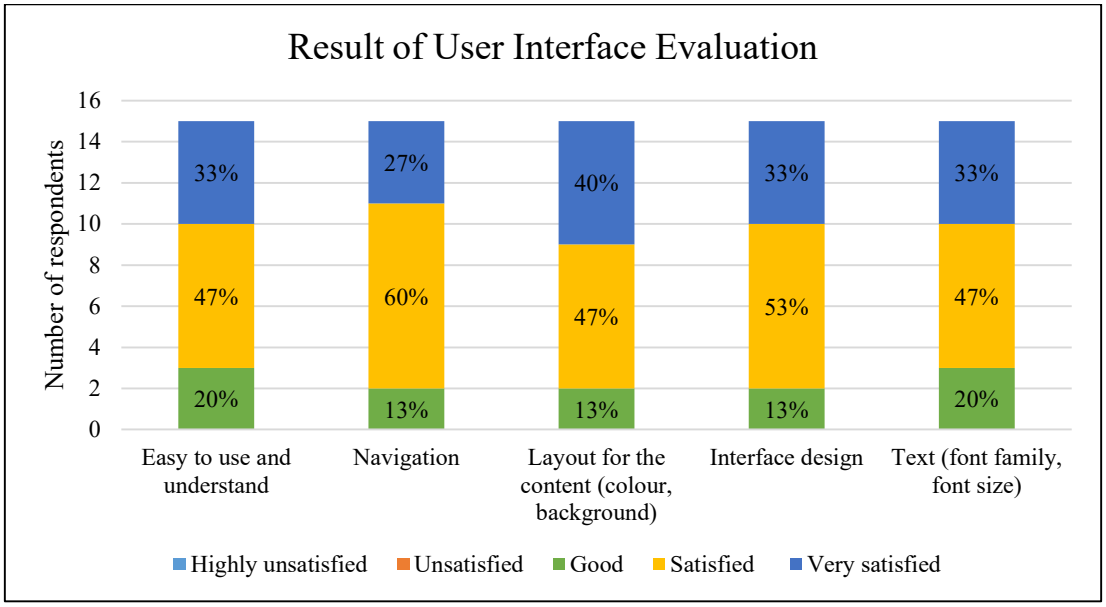

Figure 16: Result of user interface evaluation

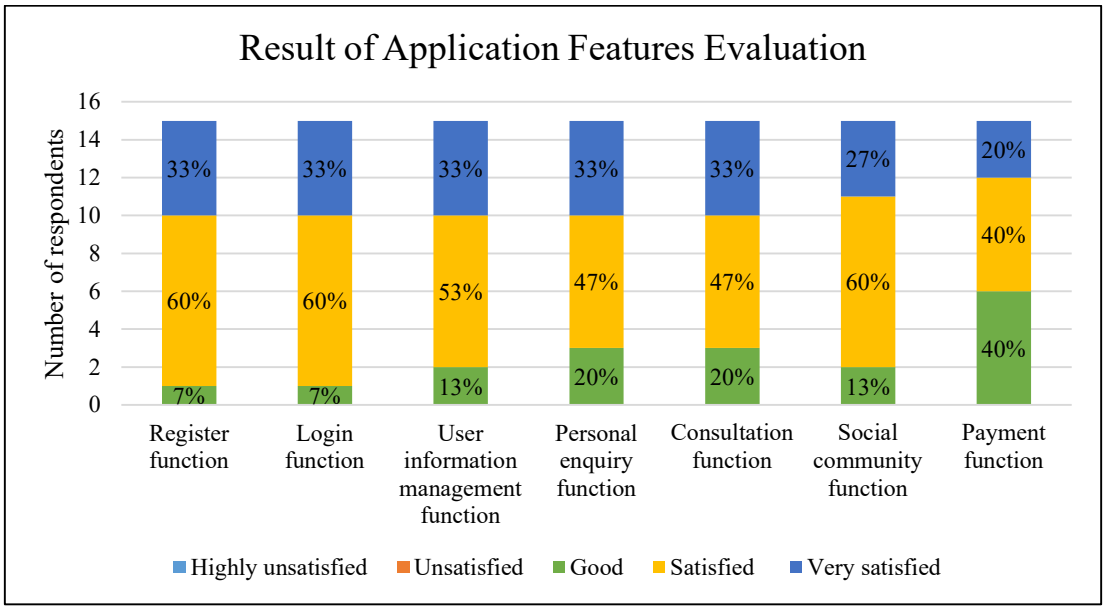

Figure 17: Result of application features evaluation

Based on Figure 16 and Figure 17, we can conclude that most users felt satisfied with the application's user interface, which includes the ease of use, navigation, layout for the content, interface design, and text. No one felt unsatisfied and highly unsatisfied with the interface design and the function of the proposed application. However, some respondents believe the payment function needs to be improved to increase functioning.

6. Conclusion

In conclusion, the Healthper application has been developed successfully. However, there are still some limitations to this application. The limitations of the application are it consists of deep scrolling in searching for their desired professionals in the list. There is no searching function implemented for users to search for it. Besides, there is only the basic information about the professional but no review and rating function from the experienced users. Moreover, there is only a RazorPay payment method implemented in this application. In addition, there is no notification function for this application, such as push notifications for chatting messages.

To improve the usability of the application, some improvements can be carried out in the future. The recommendation for improving the application is to implement a review and rating function, which will be required to fill in by the user after the personal enquiry and consultation session. Then, more payment methods such as online banking, credit, or debit card can be implemented to provide more choices for the user to proceed with their purchase. Furthermore, push notifications and reminders are also considered a function for both users and professionals as it would be beneficial in reminding them about their appointment made.

Acknowledgement

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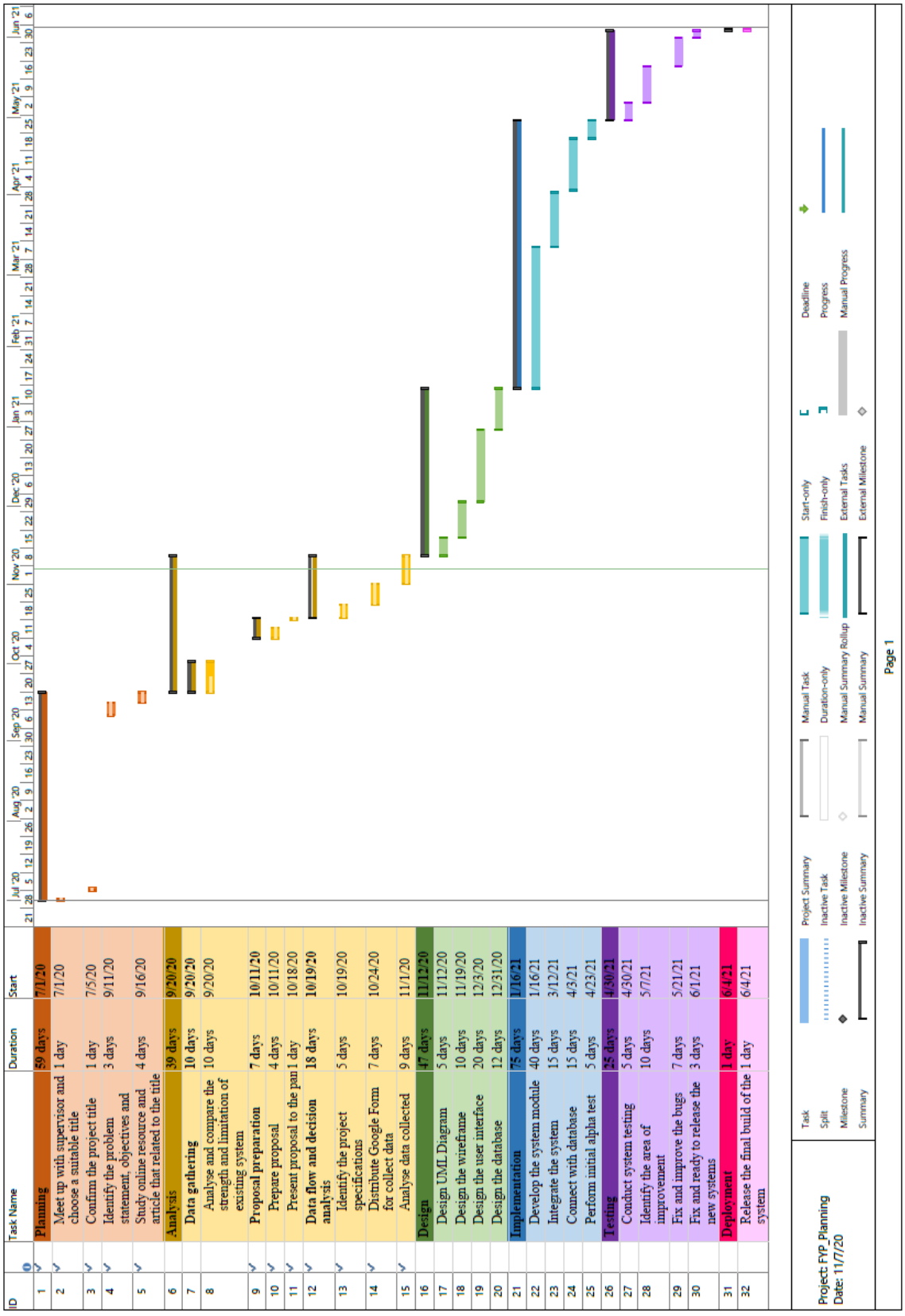
Appendix


ID
Task Name
Duration
Start
1 Planning 59 days 7/1/20
2 Meet up with supervisor and choose a suitable title 1 day 7/1/20
3 Confirm the project title 1 day 7/5/20
4 Identify the problem statement, objectives and 3 days 9/11/20
5 Study online resource and article that related to the title 4 days 9/16/20
6 Analysis 39 days 9/20/20
7 Data gathering 10 days 9/20/20
8 Analyse and compare the strength and limitation of existing system 10 days 9/20/20
9 Proposal preparation 7 days 10/11/20
10 Prepare proposal 4 days 10/11/20
11 Present proposal to the pan 1 day 10/18/20
12 Data flow and decision analysis 18 days 10/19/20
13 Identify the project specifications 5 days 10/19/20
14 Distribute Google Form for collect data 7 days 10/24/20
15 Analyse data collected 9 days 11/1/20
16 Design 47 days 11/12/20
17 Design UML Diagram 5 days 11/12/20
18 Design the wireframe 10 days 11/19/20
19 Design the user interface 20 days 12/3/20
20 Design the database 12 days 12/31/20
21 Implementation 75 days 1/16/21
22 Develop the system module 40 days 1/16/21
23 Integrate the system 15 days 3/12/21
24 Connect with database 15 days 4/3/21
25 Perform initial alpha test 5 days 4/23/21
26 Testing 25 days 4/30/21
27 Conduct system testing 5 days 4/30/21
28 Identify the area of improvement 10 days 5/7/21
29 Fix and improve the bugs 7 days 5/21/21
30 Fix and ready to release the new systems 3 days 6/1/21
31 Deployment 1 day 6/4/21
32 Release the final build of the system 1 day 6/4/21
Jul '20
Aug '20
Sep '20
Oct '20
Nov '20
Dec '20
Jan '21
Feb '21
Mar '21
Apr '21
May '21
Jun '21
Project: FYP_Planning
Date: 11/7/20
Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress
Page 1

References

[1] K. Narwant, "Malaysia and WHO call for more investment in primary health care the 21st century," World Health Organization (WHO), Kuala Lumpur, Malaysia, 2019.

[2] C. Berg, C. Larsson, "Dieting, body weight concerns and health: trends and associations in Swedish schoolchildren," BMC Public Health, p. 20, 2020.

[3] F. Almansour, A. Allafi, A. Aldughpassi, A. Al-Haifi, "Nutritional knowledge among coaches and personal trainers in Kuwait: A cross sectional study," Progress in Nutrition, vol. 22, no. 2, pp. 402-410, 2020.

[4] R. Rina, "A shockingly large majority of health news shared on Facebook is fake or misleading," April 2019. [Online]. Available: https://www.fastcompany.com/90301427/a-shockingly-large-majority-of-health-news-shared-on-facebook-is-fake.

[5] Hospital Putrajaya Malaysia, "Dietic food service," 2020. [Online]. Available: http://www.hpj.gov.my/portalv11/index.php/en/tutorials/dietetic-food-service.

[6] Florian, Sebastian, "Welcome to a healthier life.," 2021. [Online]. Available: https://www.yazio.com/en.

[7] Under Armour, "Lose Weight with MyFitnessPal," 2021. [Online]. Available: https://blog.myfitnesspal.com/.

[8] T. Henrik, G. Marcus, "Healthy living. Simplified.," 2021. [Online]. Available: https://lifesum.com/.

[9] K. E. Kendall, J. E. Kendall, Systems analysis and design. 9th ed., New Jersey: Pearson Education., 2014.

[10] G. S. Rajendra, A.R. Dani, "Comparative Study of Prototype Model For Software Engineering With System Development Life Cycle," IOSR Journal of Engineering, vol. 2, no. 7, pp. 21-24, July 2012.

[11] A. Tanwir, I. Junaid, A. Adnan, "Model-based testing using UML activity diagrams: A systematic," Computer Science Review, vol. 33, pp. 98-112, August 2019.