



## **Group Project Proposal**

**CPS 4951**

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## **Abstract**

This project focus on developing a daily calories record application for diet people. Diet application has widely developed nowadays. However, one of the vital important problems is that how to increase user stickiness and encourage users to keep on using this application to diet. Many users have a well beginning using the application to record their daily calories consuming but gradually losing interests or patient to record their calories. According to the experiment of Krebs et al. (2015), nearly 45% of participate has stopped using diet application due to high data enter burden and hidden cost. Thus, this project aiming at providing users an mobile application to encourage them keep on record their daily calories with humanize user interface, personalized features and diet related functions.

## **Application**

### **1.Implementation**

The simulated villain is actively provided by the customer, and the specific food is dragged to the vicinity of the villain in the form of dragging. When the user is not connected to the wireless network, the client caches the collected data in a local SQLite database. Otherwise, the client will upload the locally stored data directly to the backend web server. It accesses the web server in the form of standard HTTP protocol and JSON data format. When uploading or requesting data to the web server, the client only needs to pass the request method and call the service ID and JSON data object. Commonly used request methods include GET, HEAD and POST. After the web server has processed the request and received a response, it will disconnect. To sum up, this method greatly shortens the transmission time and reduces the data traffic.

## **2.Main function**

Diet evolves over time, being influenced by many factors and complex interactions. Income, food prices (which will affect the availability and affordability of healthy foods), individual preferences and beliefs, cultural traditions, as well as geographical, environmental, social and economic factors all interact in a complex manner to shape individual dietary patterns. Our software is designed to foster healthy habits through data observations about what people eat and consume. We have a changeable cartoon character to represent the user himself. Users can simulate their own eating process by "drag and drop" the cartoon food pictures below. The app records the user's caloric intake and shows the user how reasonable the diet is through the physical changes of the cartoon characters (fat or thin). Users can also simulate the exercise process by "drag and drop" the cartoon exercise equipment picture below. The cartoon characters are also "lose weighted" according to the magnitude of the exercise. Whether it is the simulation process of eating or exercising, we will provide users with certain suggestions as a reference to help users develop healthier living habits.

## Basic requirements

### 1. User experience

An attractive User Interface (UI) would be valued by users (Tang, 2015). However, user experience is not all about the UI, it's about how to give user delight using experience. It may include positive psychology, visual design and gamification. Here would be the details description of these features and please consider users are bunch of lazy people who is easily giving up. Moreover, understanding the target user is an vital important part.

Positive Psychology: This may be one of core issues in encouraging user to keep on using application. Think about some ways, communication symbols to promote users. It could be vocal and visual expression to give positive feedback. You can consider the application around you. For example, Nintendo ring fit promote users by showing up encourage narration while combing positive dubbing or you can consider the Like and YiJianSanLian system in Bilibili.

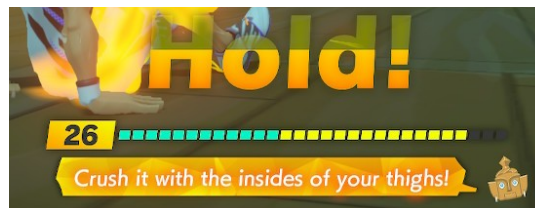


Fig 1: Positive narration in Nintendo ring fit



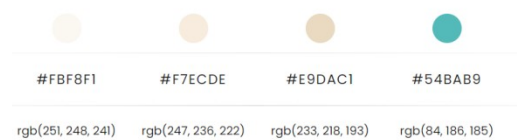
Fig 2: Like and YiJianSanLian system in Bilibili

Visual Design: User design is also vital important part in UX. Information Arrangement (IA) of application should be accessible to user which means that user could go to the desire page

in two or three steps. The color and the UI design of application should be simple and bright. Your application must include a boot start scene, personalization scene, main diet record scene, diet strategy scene and a setting scene. Here's some ideal suggestions.

a) Color

Please use light color and the number of color should not be too much. Also, for the security of user, please avoid flicker, strong irritating color and any possibility to trigger photosensitive epilepsy.



**Fig 3: light Color**

b) Visual Design

These information would influence the calories user should consume and diet strategy in the application. In the calories record part which is core function in this application, please read the main function clearly, your design should be appealing. The application should be design easy-to-use which means that the button arrangement should be designed properly, scene should be visual appealing and information could be expressed clearly and easily. Implementation of the gamification should be designed after considerate research.

User Interface Requirement
Boot Start Scene: In the boot start scene, you application should display the name of your application, icon and your group name.

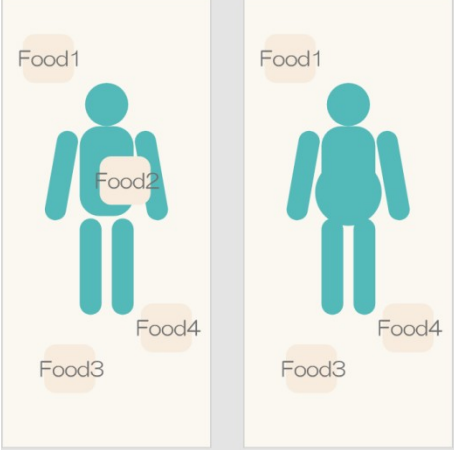


Personalization Scene: Allow user to enter their information such as height, weight, target weight, age, gender and so on.

A personalization form with a teal header and a light beige body. The header contains the text 'GOAL WEIGHT'. Below the header is a large white box with a teal border containing the text '60kg'. Below this box is a teal button with the text 'confirm'. Below the button is a table with user details.

WEIGHT	63kg
HEIGHT	170cm
AGE	22
GENDER	♀ ♂

Main Diet Record: This scene must contain a way to let user enter the food they have eaten, drag the food to the little man or women and corresponded animation.


<p>Diet Strategy Scene: This scene would allow user to check his or her suggested diet strategy any design is allowed.</p>
<p>Setting Scene: This scene would allow user adjust the setting of the application such as font size, language, history, report and so on any design is allowed.</p>

### c) Gamification

The application may need proper game mechanics to promote user to using it. Using example of HuJiang KaiXin CiChang which is an Japanese word learning application.



**Fig 5: The level selection interface and sign in page of HuJiang KaiXin CiChang**

This application has applied the point, level and ranking gamification elements to divide the user with different learnability and promote the user motivation and experience. In this project, the



gamification may display on how user enter their calories and how these actions would influence the scene, the little man or women, what reactions would they behave.

## 2. Hardware/Software

Software environment: Android 4.0 and above.

Hardware environment: dual-core 2GHz (and above) + 4G memory (and above) + 32G hard disk capacity (and above)

## 3. Budget

Since this is a mobile app development project, it doesn't require much money. However, you may need ask some help with your UI design. The budget table is provided below:

Item	Budget (RMB)
Android Phone	2000
UI Design	300
Medical Consult	500
Total	2800

## 4. Risks

### a) Poor UX/UI integration

The user interface and UX of an app are crucial for a mobile app development company.

Users tend to interact with applications that appear to be user-friendly and provide a great user experience. A decent interface allows users to traverse the web presence.

Potential Risk of Security Breach

Security issues can affect any form of mobile application. Hazards and protections seem to misunderstand the importance of having basic protections in local projects. Some businesses mistakenly believe that mobile applications are completely secure and thus fail to take necessary security precautions, hindering growth.

b) Develop an app that has no value to the user

What's the point of having an app that doesn't work for someone? Most of the time, mobile app development organizations make this common mistake when creating apps. When creating an application, always keep the end user in mind. It is a fallacy to ignore the end user when designing an interface.

The end user is an important factor that enhances the idea of the best mobile app. They are the main factor to consider because they will end up using the app. Most businesses think they have an idea of what their users need exactly.

However, it must be ensured that the individual doing the work knows their requirements best. This may involve activities such as refusing to implement well-documented security controls or misusing platform APIs.

## **5. Future evaluation**

(Updating along with the process)

**Reference**

Krebs, P., & Duncan, D. T. (2015). Health app use among US mobile phone owners: a national survey. *JMIR mHealth and uHealth*, 3(4), e4924.

Tang, J., Abraham, C., Stamp, E., & Greaves, C. (2015). How can weight-loss app designers' best engage and support users? A qualitative investigation. *British journal of health psychology*, 20(1), 151-171.

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