IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Health Hub Mobile Application

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Abstract:

A healthy lifestyle is most important in our life period. Everyone requires a healthy lifestyle to avoid unnecessary diseases and problems in our bodies. Most people don't care about their health, even if they know that is bad for our health, consuming a lot of foods, juices, etc. Due to this, their bodies are maintained perfectly, which results in obesity, diabetes, and also heart-related diseases. Healthy foods are grown naturally without any chemicals which contain some diseases. But unhealthy foods are made by humans artificially and also different problems are born with this. In recent years, a human lifetime is reduced up to 60 years, one of the reasons for this problem is unhealthy foods. And most of the people knows which are unhealthy food and healthy foods, even they consuming unwanted foods. We trying to implement new ideologies to avoid those unhealthy foods. Most of the patients are forgetting to take their medicine regularly, our application overcoming this problem by new reminding features. And also our application provides different types of diet plans and physical plans to maintain their health in good condition. Voice and photo recognition play a major role in speech to text and for scanning groceries list in a written paper by OCR with help of machine learning. And providing approximate values of their plans result with the comparison technique. Our application will work even in offline mode, a downloadable resources packs are available to download from our health hub.

Keywords: OCR, Sdk, android, voice recognition, image recognition, mobile, in-app messages

1. Introduction

The Health care hub is a health-tracking platform. Our application is a free-cost doctor for users. Its keep on updating our status by the way of pie charts, graphs, in-app messages, so user can in alert in eating an excessive amount of food. Those diet programs are unique in our application, which tries to give results at exact calculation. Technologies were developed these days, our apps work on versions above android lollipop. It gives a reminder notification for updating the app and shows in a dialog box for updating. In updates, there will be more new features in it.

The simple difference between a healthy diets is, it is a layer of protection against such diseases as diabetes, stroke, heart disease, and even cancer and an unhealthy diet is a lack of physical activities like sports, walking, running, etc. It leads our lives to death before our lifespan is completed.

Everyone should follow a balanced diet to avoid unnecessary diseases as much mentioned above. According to certain research, we came to know an average person requires 2000 calories to maintain our weight and diet is maintained perfectly. Consuming a portion of healthy food is all about feeling great, having more energy for the whole day, and also boosting your mood. Calories are not a danger to our health, our body requires calories to provide energy to us. But calories are bad for health when the calories are not burned through any activity, it leads to weight gain. In our current generation having most foods and drinks contains calories.

1.1 Objectives

One of the objectives of the health hub is to provide basic knowledge of healthy diet among peoples by providing facts of foods and merits and demerits of foods. And also we aim to increase focus on prevention from any diseases, health promotion, improves the quality and safety of our lives. And also trying to implement new digital lessons for reminding those fast foods are bad for health.

By providing a comparison between previous days and current day users knowing many facts about their body. In simple words, users know the status of their body at end of the day and user gets satisfied with their healthy diet plans.

Here we planned to use our application via manual, photo recognition by OCR, and voice recognition by using machine learning especially made for old people who live in rural areas and also for blind and physically disabled people.

Our application has downloadable resource files which have all preloaded physical and diet plans for those who’s comfortable to use in offline mode. This function helps mainly people who don't have proper internet connections.

The health hub has a reminder feature that performs a function as remind the user to intake the medicines at the perfect time. So users won't miss the medicines, they live healthy by taking medicines.

1.2 Problems Statement

Some of the people are not having knowledge of healthy foods but most of them are having much knowledge about healthy and unhealthy foods but consume more unhealthy foods. For unhealthy foods, many people get addicted and get diseases. This leads us to create new diseases like corona, maybe in the future new diseases arrives.

Users are choosing diet plans and following the plan regularly but the result was different from user predictions. Because, a user consumes extra foods in regular life like drinking tea, eating snacks, etc. So the user was not satisfied with their results and their diet plan is getting collapsed.

In this world many types of living like elderly people, younger people, blind people, etc. Most elderly people don't have the knowledge to use mobile applications they are suffering a lot. Elderly people must follow a perfect diet plan to increase their lifespan but they are not able to follow a diet plan in any applications due to improper guidance to use applications. And also blind peoples are not able to follow a healthy diet plan without the help of any people.

People are also living in hill areas, they don't have proper internet connections and our application is mostly working in online mode. They cannot use most of the features in our application.

Our users are mostly patients, whose taking treatment and medicines regularly. Some days for some reason they forget to eat medicines and get treated properly. This leads to getting more health-related issues..

2. Literature Survey

Many guidelines are followed in a healthy diet like different types of food, reducing calories through diet foods, increasing proteins and vitamins, and also fibers. (OCR) Optical Character Recognition was implemented, this algorithm contains the digitalization of words that are automatically identified from pictures/images and sentences that belong to a certain alphabet. It is very helpful old people over the age of 60, they don't have the proper knowledge to use now a days technologies, so this method is very useful to them. In current days, most of the people are getting new android mobiles which have OS above android version lollipop. Our application is working above the version of the lollipop, which was developed with new features. And also according to a survey from users, they give preferences to voice recognition which is developed with the help of machine learning.

3. Related Works

Now a days technologies were highly developed. In that way, android and iOS applications were developed. We are trying to develop an android application for android users. Currently, many of the applications are developed for physical and health-related apps. Some applications have physical exercises like yoga and also managing sports activities and providing basic challenges. Other applications cover the food section like providing simple diet plans for their users. So, overall functions are physical exercise, a healthy diet, and calorie intake via foods.

One of the main features of the health hub is enabling photo recognition for elderly people by using optical character recognition (OCR), voice recognition for blind people, and those who don't know to use applications and provide product pieces of information to users. Information's like fat, calories, vitamins, carbohydrate, proteins, etc. And also there are other functions such as daily, weekly, monthly challenges for physical and diet plans are provided. By the diet program, at end of the day user get their current day's values of calories intake and calories burnout through physical exercise plans.

Those who use the offline mode of our application can download current updates when they have proper internet connections. Once the users complete the tasks and they get rewarded with discounts, new features, cash rewards, etc.

Reminder features are only patients who take regular treatment and medicines in day-to-day life. Three ways users get reminders are Notifications, Alarms, and Messages, Extra thing is in-app messages.

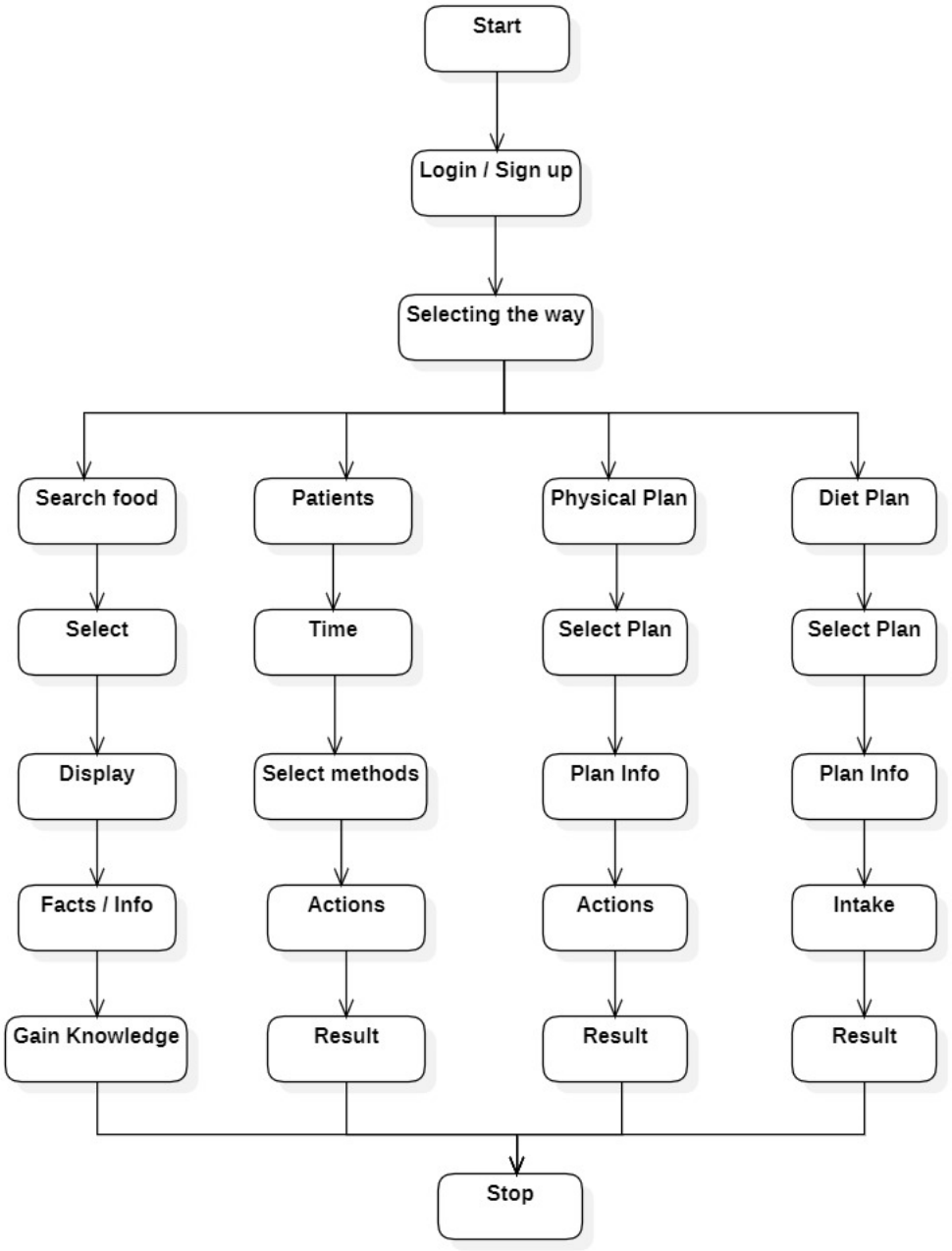

Figure 3. Flow chart of Health Hub

4. Existing System

Workflow of our health hub has conducted a review of mobile applications among users in the concept of a healthy diet with existing similar applications. After this comparative review, more algorithms were used to introduce foods into mobile applications. Food knowledge is mainly required for elderly people. Those objectives were achieved, then we developed the mobile application, and among the end-users carried out a satisfaction survey.

There are so many varieties of health care applications and those are available in the play store and app store at a certain cost. In this, some applications help patients and doctors communicate from afar, like sending descriptions and medicines details were shared via the applications.

And also many healthcare-oriented applications providing physical exercise plans to maintain physical fitness includes a healthy weight, maintaining healthy. Their objectives are to improve user health and long-term health benefits and regular diets lead to improve quality of life.

Other health care applications are trying to give health diet plans to maintain body weight and inputs are taken via users and those programs are pre-manipulated. Users get results of their diet plan at end of the week or month. And also existing applications are working only in online mode, many users were suffering from this method because they don't have proper internet connections.

5. Proposed Methodology

5.1 Facts and Info

Those new digital lessons are implemented via videos/audios, they were continuously reminded by in-app messages, new facts, and information's, showing the problems and diseases by certain unwanted foods and user can manually search the food items and they can refer the whole info about it.

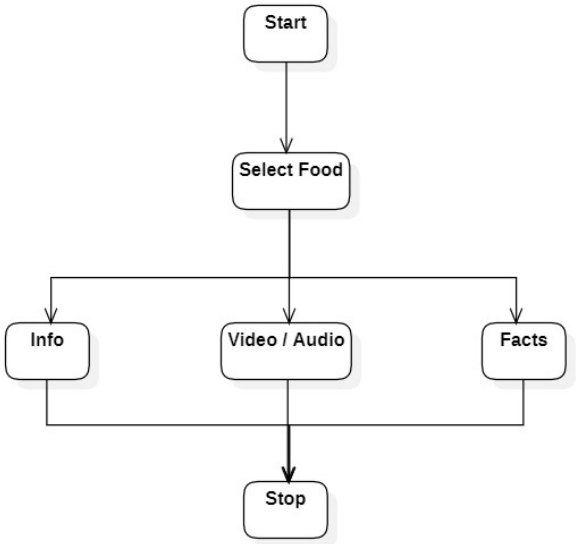

Figure 5.1 Work Flow

5.2 Comparison Status

Comparison depends on more than one thing that may be an object, food, anything. In our health hub applications, comparison of foods. We trying to compare previous day foods intake and current day foods intake to give the accurate status of the diet plan. These functions are giving more accurate values of the user's diet / physical plan.

5.3 Recognition's

Recognition is nothing but identifying the objects, things, etc. In our application we trying to make photo recognition and voice recognition. Those recognitions are useful for aged people and blind people who need to take any diet plans in our application. Both recognitions were implemented in our application with the help of machine learning.

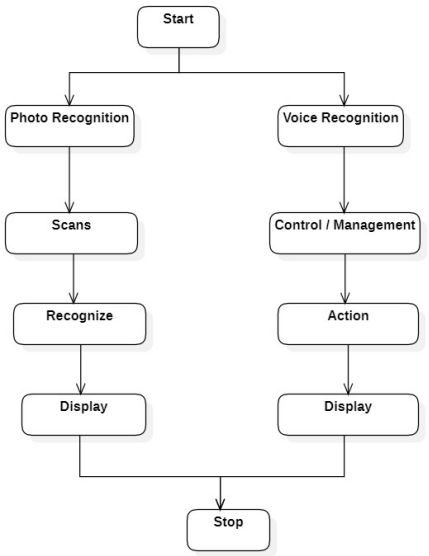

Figure 5.3 Work flow

5.4 Resource Files

Resource files are stored in our database, which has preloaded plans and functions, users can download resource files for the offline mode of our application. Those resource files contain low memory, users can download selectable resource files instead of all resource files.

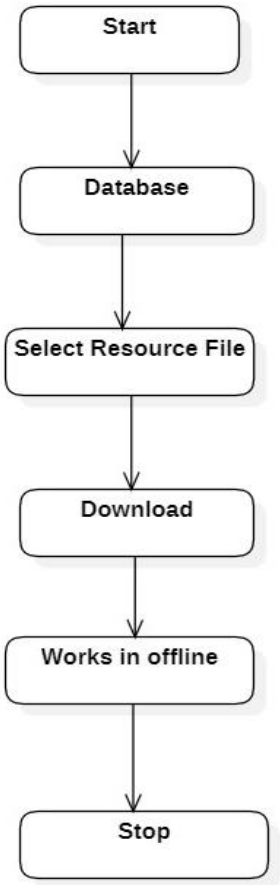

Figure 5.4 Work Flow

5.5 Reminder Feature

Reminding the treatment and medicines intake is done by cloud messaging, in-app messaging from our databases. It will get data from users and reminds automatically and users can operate the features manually.

6. Future Works

In the future, we are planning to implement a wristband that gathers the user's activities during physical exercises, those info's are shown in our application. It keeps on updating the user activities, if the tasks are completed our band starts vibrating for a few seconds. And also memberships will be introduced, if users subscribe to a premium membership, they get more benefits than ordinary membership users. More different plans are only available for premium users and they get guidance from the experts of both physical and diet plans.

7. Conclusion

Our application is user's friendly application and an easy to manage the application with help of inbuilt guides and customer care at any time and by using machine learning chatbot is also available. We have a unique diet and physical plan than any other application. And also users get rewards if their tasks are completed successfully. Patients are also taking medicines regularly without missing any dates. Old people are getting benefits by the voice and photo recognition, by photo recognition users can able to scan the groceries lists and they get whole facts and information of that certain foods. By the resource, files are using our application without internet connection, once they connected to internet connection user data's are stored in databases automatically. We take care of all our users by different functions and features in it.

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