

Adaptive & Personalized Fitness App

Mayank Sharma Dixit¹, Mohammad Shad¹, Arman Tyagi¹, Abdul Qadir¹, Mr. Dev Baloni²

¹Student, ²Assistant Professor,

^{1,2}Computer Science & Engineering, Uttaranchal University, Dehradun, Uttarakhand, India

ABSTRACT

Project delivery is a robust application called the ADAPTATION & PERSONALIZED FITNESS APP. which will provide three main modules for users to use. First, users can do exercise wherever they like by using the Exercise section where it contains different types of exercises and exercises that can help them and help them live a healthier life.

However, a healthy lifestyle cannot be done entirely with exercise because the role of diet is also very important. Users will be able to keep track of what they have eaten and eat the right foods by looking at the statistics related to their bodies in the diet category. Finally, users can do yoga at home.

Basically, all of the above activities are intended to help users stay away from serious illnesses so that they can enjoy a healthier life with their loved ones. For a clearer picture of fitness apps, there is a fitness app updated for this project which is Runtastic Running & Fitness. Therefore, the life cycle model of repetition and multiplication is adopted in this project in order to determine the feasibility. Few needs cycles, design and implementation phases will pass while other features will be added to the application up to the project.

KEYWORDS: Health, Fitness, diet and lifestyle

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1. INTRODUCTION OF ADAPTIVE FITNESS

The frustrating aspect of stamina is that the results are not immediately obvious, since they must be months and years away. Therefore, one of the problems affecting society these days is that they have poor tracking ability when it is difficult to keep track of their exercise statistics such as calories, distance traveled, speed, and steps taken. It is almost impossible to keep track of all these statistics for a number of reasons such as the lack of measuring tools and the effort to do the job consistently that will cause them to give up in the end. Some of them find it very difficult to motivate and continue to exercise regularly because exercise is completely voluntary. Besides, people should not forget that food plays an important role in achieving a healthy lifestyle but it is also a difficult task when it comes to storing the food they eat depending on what they eat and how much they spend every day. Therefore, all of the problems mentioned above lead to the construction of this project. By building this fitness app called Fitness Freak, people can keep track of their daily fitness level with the app by monitoring previously completed exercise numbers and adjusting the correct routes, where the app will play a role in helping users' daily lives while providing information such as diet, exercise and more.

1.1. Project Scope

After discussing the above problems, project delivery is a solid mobile app called Fitness Freak in users can use the app to keep track of their exercise, food and water such as calories, distance traveled, nutrients consumed, volume to drink water, and so on. In the meantime, tons of information will be available on the mobile app so that users can be provided with practical and practical health tips to make their lives healthier. There are many details of the modules and features involved in this project as shown below

Recipes module:-

This module allows the user to take healthy food and have a recipe for cooking videos with videos. According to this app the user can make a good eating process, which is very helpful in his health.

Gym module:-

This module has the first two parts one is the upper body module and the second is the lower body module, in the upper body module you can do high exercise such as chest, biceps, back, shoulders, triceps and lower body module you can exercise the legs

Yoga module:-

This module has two parts one is Adaptability and the other is Stress Reduction, yoga module helps you lose focus and helps reduce stress, this module is very helpful for *** heat.

Programs:-

This module has special cardio programs, cardio exercises for abs or abortion ***, this module has three types of module One Upper body toning, Second Lower body cardio, third At-Home Abs Workout .

1.2. Project Objectives

The objectives of the project are specified, the first objective is that users will be able to track their current exercise, food and water through the continuous use of the app, this means that all information related to their health, will be entered and stored in a database for continuous process and shown to users where needed. Users can have a better view of their lives because they can keep track and view the information stored in an orderly fashion. There are 4 main modules in the app, namely Gym, Yoga, Ripes and Module Programs that aim to support and help users live a healthier life because each category enters and provides different information to users. As such, the second goal is to help users get used to exercising and maintaining their diet should always be based on analyzed results from the data stored in the database by encouraging them with extreme motivation. Obviously, that can be a big problem if people eat whatever they want and eat a lot of calories every day but don't do enough exercise, obesity and other chronic illnesses that came to them recently. The fact is that a person eats more than his body needs and should feel satisfied instead of focusing on the end of the meal.

Finally, the biggest problem that needs to be addressed with this program is lack of knowledge and motivation. People often do not provide enough information to adhere to the latest health information and get a clear idea of what to do and how to access it.

1.3. Impact, Significance, and Contribution

The eligibility app to be developed will be able to track user data such as food, recipes, statistics, etc. after continuous use of the app. There is a dedicated section that shows all kinds of statistics in a systematic way for users whenever they wish to view details about their progress. On the other hand, people today do not even know the full scope of their condition, which is the emergence of chronic diseases. Speaking of user health, the final delivery of this project is to encourage and motivate users to lead a healthy lifestyle through a built-in social media platform and the concept of naming as leaderboards so that they do not think exercise is meaningless when there is no internal motivation.

1.4. Background Information

People often overlook the importance of maintaining their dignity at a higher level or higher in today's society. Obesity and other diseases come in without much warning because people are always busy with their jobs and their health, all they can take care of is the money they earn and the people they love. All of these diseases should be considered as the growth of diseases is inevitable and highly protected by lifestyle changes (World Health Organization, 2000). Even though they see the danger they face, they do not have enough time to rest or encourage them to die from serious illness. So, the app to strengthen the solution to this problem

because the personal thing that is closest to modern people is the smartphone and mobile apps installed inside it.

2. LITERATURE REVIEW**2.1. Runtastic Running & Fitness**

This app is built by Runtastic, it is a running tracker that turns the tracker so that users can track their runs and see their progress while completing their fitness goals. The app's

main screen features a dashboard-like monitor that displays performance-related values such as length, distance, calories, height, clock, and steps. Users will be able to track prices and location as they run or run on the current route, in this app includes a pedometer which also tracks your daily steps.

2.2. The Role of Social Media on Motivating People to Exercise More

Social influences from anonymous peers on the Internet are far more effective than promotional messages for the development of exercise. The study conducted a study by dividing a group of people into 2 groups, namely peer groups and health groups. Peer groups receive promotional messages such as motivational exercise videos and sketches containing tips and tips for fitness while healthy groups of buddies are exposed to social media with other peers.

Notes regarding resilience achievements and progress were regularly exchanged by members of a peer group who were unfamiliar with each other. For example, a person will be notified by email when other people sign up for yoga. However, the results were not impressive enough as people lost their motivation after some time. In contrast, significant growth was observed in health-care groups as members were connected to peer-to-peer networks. As a result, good work ethic can be promoted by connecting the user to each other on social media.

3. PROPOSED WORK**3.1. Methodology:-****3.1.1. Waterfall Methodology:-**

Waterfall method is a popular methodology among the traditional software methods while it consists of several sequential phases as shown in Figure 4.1 below:

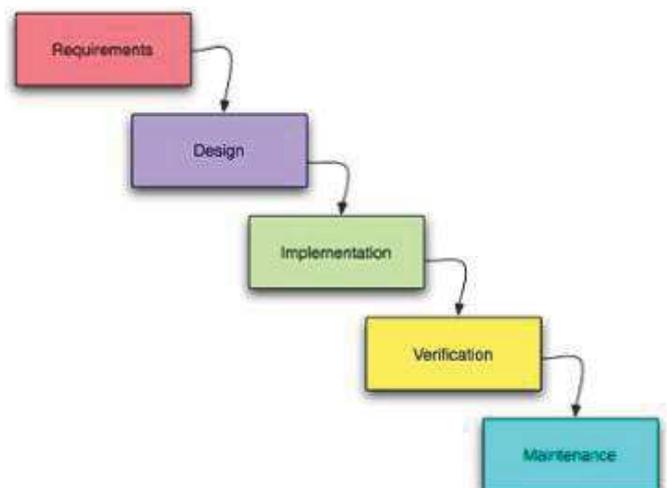


Figure 4.1 Waterfall method

Each stage must be completed before moving on to the next stage to ensure that all the goals can be achieved. However, the process cannot be reversed because all operations are performed in line flow in the specified sequence. In terms of

benefits, the waterfall method is easy to understand and works on many projects because of its robust nature. Unlike other time-consuming routes, the waterfall route saves a lot of time because there is only one road system. However, this approach does not allow it to be organized in the testing phase and makes the tasks much more difficult for developers. And it is not possible to get a project result as prototypes or models are not needed during the project

3.1.2. Rapid Application Development:-

Rapid Application Development is an abbreviated development process that produces a high quality system with low investment costs. The investment cost of the system is low because the RAD allows for quick adjustment during the process development process. In addition, this approach can be divided into four categories, namely needs requirements, user design, construction and cutover as shown in Figure 4.2 below. RAD is designed to engage the user in a program development process while highlighting active user participation. Interestingly, the user and construction stages will be repeated until clients agree that all requirements are met. In terms of benefits, engineers will assist clients in taking quick updates so that they can provide their key developer errors as customer feedback is always encouraged to improve.

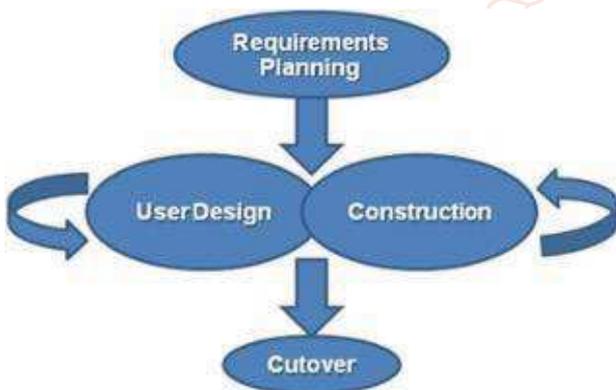


Figure 4.2 Rapid application development

3.1.3. Iterative and Incremental Methodology:-

This approach utilizes the breakdown of the developmental life cycle which will be the small and practical modules of the project. Thereafter, the entire module will go through the requirements, construction, implementation, and testing stages so that the quality of each module is guaranteed. Additional features and functions will be added to the module more and more as the module goes through each cycle and the module will be integrated or further developed until the project is completed. There are several advantages to this method, the first advantage is the time to make the operating software much shorter and much smaller in the SDLC because some stages of the life cycle have to be repeated several times until the project is completed. Besides, it is also easy to check and correct errors during each cycle as the module is divided into smaller pieces which will lead to a shorter development time. In addition, the risks are easy to control because of the nature of this approach as risks are identified and adjusted in advance during each cycle. In terms of change, this model also makes the chances of change or need less expensive due to the changing nature.

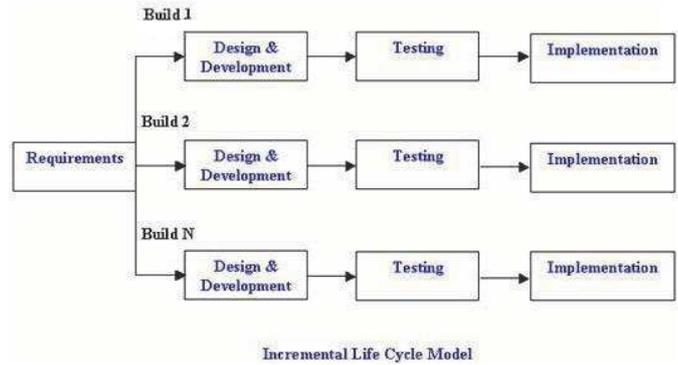


Figure 4.3: Iterative and incremental methodology

3.1.4. Selection of Development Methodology:-

In view of the methods discussed above, the repetition and addition methods will be chosen to make this project because the size of this project is very large. The program can be divided into a few modules so that the development process is more complex compared to the rest of the system. The short duration of the project is one of the reasons for choosing this approach as it is a flexible environment that allows for a change in needs throughout the development process, if possible. After that, after passing a few cycles of construction and development, testing, and implementation process, some features will be added to the project further and final construction will be the delivery of a project called ADAPTIVE & PERSONALIZED FITNESS mobile application.

3.2. Development Tools:-

The project scope mentioned above has stated that the deliverable of this project will be a fitness mobile application that enables the users to practice a healthy lifestyle. Thus, this section will discuss about the system requirements that are essential to the deliverable. The tools that are going to be used in this project will be discussed below:

1. Android Studio:-

Delivery will be compiled using Android Studio. The main reason is a simple, easy-to-navigate built-in user interface that allows for great efficiency while developing this project. In addition, a software development kit (SDK) that is essential for mobile application development is also provided to the software so that developers do not have to search elsewhere. It is also very stable compared to other IDEs like Eclipse because the hardware requirements for Android Studio are very low so they will not always be cracked or unresponsive. As such, the features and functions contained in Android Studio also exceed the current level of project development because it is a state-of-the-art software used by millions of Android developers around the world.

2. Android Virtual Device & Smartphone:-

Also known as Android Emulator and smartphone will be used as fully mobile device testing tools throughout the project development process.

3. Firebase

Firebase is a platform developed by Google that supports iOS, Android, Unity, the web, allowing developers to develop applications with great integration and interoperability between different platforms. Many products.

3.3. Implementation Issues and Challenges :-

There have been a number of implementation challenges and challenges encountered in this project which have slowed down progress and the current technical skills have intervened to overcome the problems. First and foremost,

because the application requires a server side configuration to access and store data in a database, it was difficult to configure the server without basic knowledge of steps and processes. After searching the Internet for a solution, the issues were finally resolved but that results in an investment of the most valuable time in the process.

On the other hand, there are some modules in the app that include complex Android encoding when it comes to key functions such as location reporting. This function requires certain APIs that were previously uneducated because this is not included in the course syllabus. In addition, the animation contained in the app makes the task very difficult because the animation results were difficult to achieve with limited knowledge and experience but those effects can make the app look appealing to the user. However, after some trials and errors, the challenges have finally been resolved.

CONCLUSION

In fact, some modern-day citizens do not have the proper exercise habits and find it difficult to keep track of their physical development for a variety of reasons, such as lack of knowledge and experience. It is also fair to say that they also have a job, as if you are not stressed enough to balance their jobs and healthy lives. Clearly, the loss of motivation is one of the biggest problems that people tend to stop exercising regularly. That means people will feel bored as they can no longer be motivated unless there is an incentive to re-motivate them to make more effort. That being said, only people who are determined and active in some way can keep their heads up to stay healthy without the need for the help of a firm app.

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