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## HEALTH AND FITNESS ANDROID APPLICATION

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### ABSTRACT

This app will help everyone to live a healthy life by helping them to implement good health habits in their life. In today's busy world, most of us forget about our health. It's vital to ensure a healthy body as it leads to a healthy environment which will eventually lead to a healthy nation. This app will provide various features such as: Drink water reminder, Diet planning, Calorie intake planning, Blogs related to healthcare, Exercise Time table. These features will allow the user to take good care of their body by drinking enough water, proper calorie intake, doing exercise.

**Keywords:** Health, Fitness, Diet, Calorie-Planning, Exercise.

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### I. INTRODUCTION

Our project title is Health and Fitness application. Although in the current era mankind has advanced quite a lot in the medical field and there are cures available for many of the diseases known till today, but as the saying goes "Prevention is better than cure". If we can keep ourselves healthy and prevent diseases just by following a basic set of rules or we can say habits, it is better than being treated. Our application does the same thing. It provides features like diet planning, calorie intake which can help in maintaining the shape of the body. Water is one of the most essential needs of a human and if taken in the right amount it can be a major factor in keeping ourselves healthy. Our application has a feature called drinking water reminder which reminds the user to drink water in frequent intervals.

### II. LITERATURE SURVEY

Our group did extensive survey on the topic of health and fitness, to find out the health related problems faced by most of the people. Obesity, cancer, diabetes, heart diseases, flu. Number 1 cause of death in the whole world is Ischaemic heart disease. Number 2 is Stroke.

There have been numerous long-term prospective follow-up studies (mainly involving men but more recently women also) that have assessed the relative risk of death from any cause and from specific diseases (e.g., cardiovascular disease) associated with physical inactivity.

Physical inactivity is a modifiable risk factor for cardiovascular disease and a widening variety of other chronic diseases, including diabetes mellitus, cancer (colon and breast), obesity, hypertension, bone and joint diseases (osteoporosis and osteoarthritis), and depression. The prevalence of physical inactivity (among 51% of adult Canadians) is higher than that of all other modifiable risk factors.

Recent investigations have revealed even greater reductions in the risk of death from any cause and from cardiovascular disease. For instance, being fit or active was associated with a greater than 50% reduction in risk.<sup>29</sup> Furthermore, an increase in energy expenditure from physical activity of 1000 kcal (4200 kJ) per week or an increase in physical fitness of 1 MET (metabolic equivalent) was associated with a mortality benefit of about 20%. Physically inactive middle-aged women (engaging in less than 1 hour of exercise per week) experienced a 52% increase in all-cause mortality, a doubling of cardiovascular-related mortality and a 29% increase in cancer-related mortality compared with physically active women. A little deeper survey was done to find if any platform is resolving this issue, but to the best of our knowledge, we could find only a couple of such websites/mobile applications but didn't have a wider reach.

### III. SYSTEM IMPLEMENTATION

#### A. EXPERIMENTAL SETUP

For this project, KOTLIN and XML languages are used. For the database, we have used Firebase. Short descriptions of the platforms required are mentioned below:

- **KOTLIN:** Kotlin is a general-purpose, free, open-source, statically typed “pragmatic” programming language initially designed for the JVM (Java Virtual Machine) and Android that combines object-oriented and functional programming features. It is focused on interoperability, safety, clarity, and tooling support. Kotlin originated at JetBrains, the company behind IntelliJ IDEA, in 2010, and has been open source since 2012.
- **XML:** Android layouts are written in eXtensible Markup Language, also known as XML. Much like HTML (or HyperText Markup Language), XML is also a markup language. It was created as a standard way to encode data in internet-based applications. However, unlike HTML, XML is case-sensitive, requires each tag to be closed properly, and preserves whitespace.
- **Firebase:** Firebase is a Google-backed application development software that enables developers to develop iOS, Android and Web apps. Firebase provides tools for tracking analytics, reporting and fixing app crashes, creating marketing and product experiment.

Sr. No.	Hardware and Software Requirements	
	Name of Equipment	Specification
1	Computer System	8GB RAM or more, 8GB of available disk space
2	Windows	Windows 8 or higher
3	Android Studio	Version 4.1 or above
4	Java Toolkit	JDK 1.8 or above
5	Android Emulator	Android 6.0 or above

**B. WHAT IS HEALTH AND FITNESS APPLICATION?**

As stated in the problem definition, a person can live longer if he follows some habits to keep him/her healthy. This can be done by controlling one’s diet and monitor the calorie intake and through this, the person can monitor his body’s metabolism rate. Another problem which a person faces is time issues. They cannot provide enough time in their already hectic schedules to maintain health. This problem is solved by reminder system of our application which will remind them to take care of their health. The application’s UI will be very simple so that the user can use it without the worries of learning how to use it first or wasting time. The user can also read some health blogs in the application. The uptake of mobile technologies in healthcare has grown rapidly in the past years. This opened entirely new opportunities and innovative ways to improve health and healthcare delivery . In general, term mobile health and fitness app is used to refer to any use of mobile applications (apps) and wearable devices for health. Compared to earlier computer-based or internet-based solutions, mobile health devices have novel characteristics that are specific to the field as they enable delivery of health-related services and applications through general-purpose tools such as smartphones or tablets . Smartphone-based passive sensing, in particular, has opened new possibilities for health and well being because data recorded by multiple built-in sensors can be combined with behavioral data. As such, smartphone-generated data can be used to address not only the health status but also the well being of an individual . On a more general ground and from a healthcare systems perspective, This app can be a powerful facilitator for addressing key challenges such as: accessibility and affordability of services and technology, cost efficiency and quality of services for people living in resource limited settings, sustainable matching of resources, and increased efficiency across the continuum of care. The range of uses of health apps is large. It includes, for example: exchange of medical information, access to patient data, implementation of clinical and personal services, support to diagnosis and treatment through integration with medical records, and monitoring of chronic conditions, e.g. in older adults

**C. BASIC FLOW OF ALGORITHM**

Project Architectural Algorithm:

**Step1:** At the start of the application user will be displayed with 4 options:-

- Drink Water Reminder
- Exercise Schedule
- Calorie Intake
- Diet Planning

**Step2:** If the user chooses to drink water reminder he/she will be given a reminder through the app for drinking water after a specific period so that the user’s body is hydrated.

**Step3:** If the user chooses the exercise schedule some exercises according to the user’s needs will be shown and a notification will be sent to the user reminding the user to exercise daily.

**Step4:** If the user chooses the calorie intake option then he/she can calculate the consumption of calories they have done in an entire day.

**Step5:** If the user chooses diet planning, then the app will show different diet plans according to the user’s requirements of losing or gaining weight.

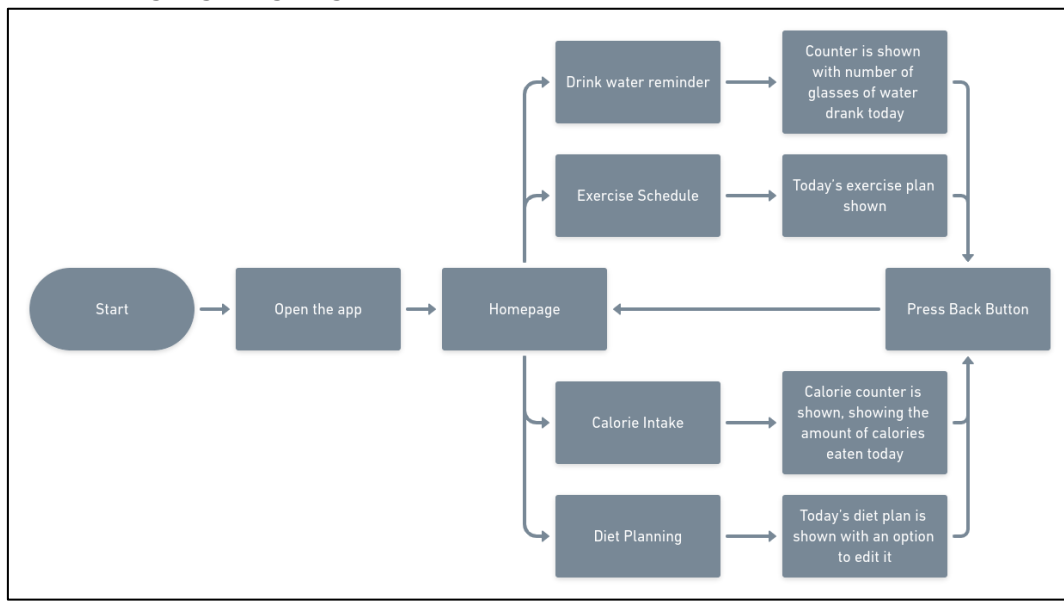


Figure 1: Project Architectural Flow

D. MODELLING AND ANALYSIS

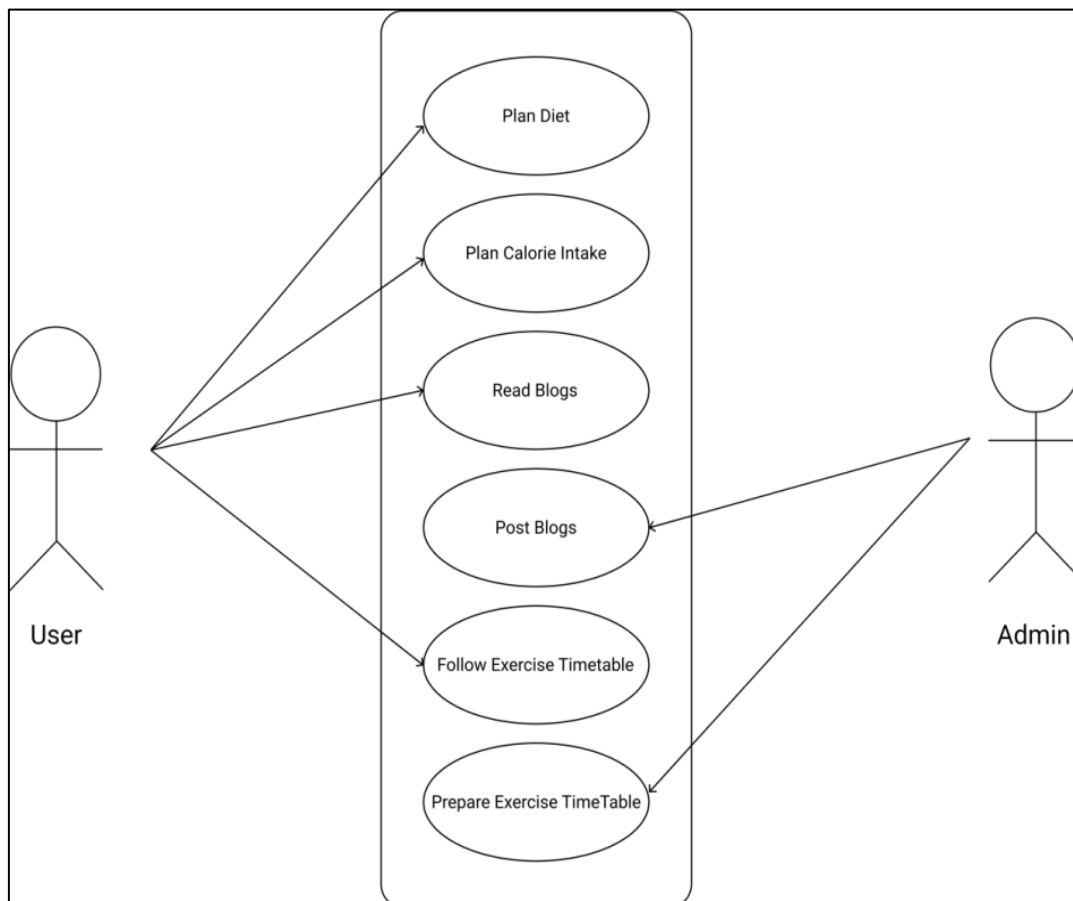
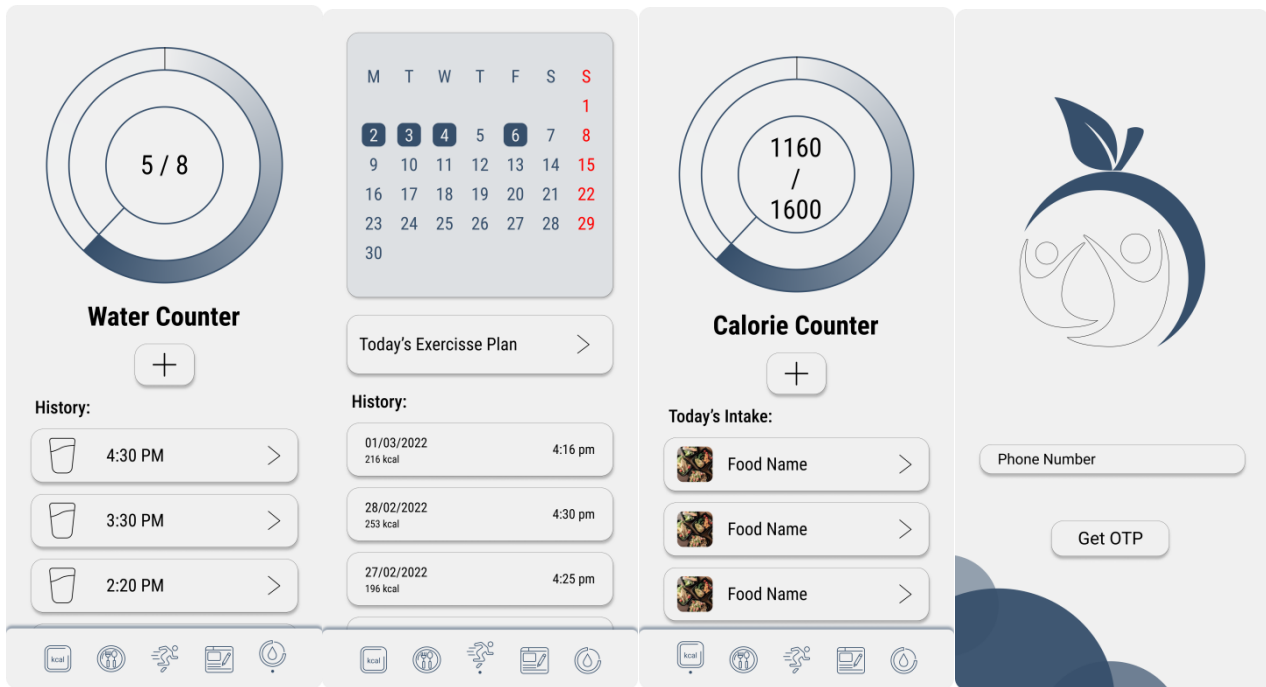


Figure 2: Use Case Diagram

• **User Interface Diagram**



**IV. CONCLUSION**

Mobile medical apps are changing the way the world and health consumers handle their health care. These applications allow the health consumers to track their health such as heart health and make their adjustments according to their lifestyles. The increased prominence of the use of technology in the health care arena poses predictable challenges for many lay users, especially people with low health literacy, cognitive impairment, or limited technology experience which can partially be solved by having a rich interface with different languages.

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