MINI-PROJECT

(2020-2021)

Interval Timer APP

(App Development)

MID-TERM REPORT

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Content

Abstract

We are developing a Interval Timer App. We are nowadays seeing people are suffering from diseases and we see immense crowd in hospitals. People are spending all the savings in the hospital for their treatments just to save life. So if we take out just 10-20 minutes for yoga or meditation we can maintain our health at great level. The idea came to develop app that will help you stay fit. Fitness Interval Timer App is an easy to use special app for high intensity interval Training. It has the ability to display the number and duration of rounds and cycles.

This project will give a very crucial contribution to the field of health care. It will help people improve their health which will help them maintain strong immunity. It will boost the quality of life and will become confident and energetic. It will maximize cardiovascular benefits, so it can quickly increase stroke volume, making your heart stronger and more efficient. It also maximizes the other benefits of cardiovascular exercise, including decreasing your risk of both heart disease and high blood pressure

Flutter helps in building apps very efficiently. Flutter allows developers to build apps for both major platforms, including Android and iOS, with a single code base, therefore allowing start-ups to save a high cost on development services. Flutter has an efficient yet portable GPU rendering UI that allows it to work on multiple interfaces.

Introduction

1.1 General Introduction to the topic

We are nowadays seeing people are suffering from diseases and we see immense crowd in hospitals. People are spending all the savings in the hospital for their treatments just to save life. So if we take out just 10-20 minutes for yoga or meditation we can maintain our health at great level. The idea came to develop app that will help you stay fit. Fitness Interval Timer App is an easy to use special app for high intensity interval Training. It has the ability to display the number and duration of rounds and cycles.

1.2 Area of Computer Science

Android App development is an open source operating system, based on Linux kernel and used in mobile devices like smartphones, tablets etc. Further, it was developed for smart watches and Android TV. Each of them has a specialized interface. Because it is Android Open Source Project (AOSP) licensed under the Apache license, many developers has been contributed in android development. The primary goal of the android project is to create product that can be implemented in user's life.

As the world's most popular mobile platform, Android powers hundreds of millions of mobile devices in more than 190 countries around the world. It has the largest installed base of any mobile platform and is still growing fast. Every day another million users power up their Android-powered devices for the first time and start looking for apps, games, and other digital content.

There are many languages to build android apps like **Java, Kotlin, Flutter.**

Why Flutter ?

Open-Source and Free to Use

Both Flutter and the underlying programming language, <u>Dart</u> are open-source and free to use. This empowers developers to view the documentation, post their queries in the open developer forum, and eventually, learn and implement the code.

Hot Reload Functionality
One of the biggest reasons why Google Flutter is preferred by mobile application development agencies is its hot reloading functionality.
The functionality makes it easier for anyone to make any change at the backend and view the difference at the front-end simultaneously. And this way, easily decide whether the change looks perfect with other elements of the application or not.

Lower Development Timeline and Cost

One of the prime benefits of focusing on Flutter development is that it renders opportunities to create native-like apps for both iOS and Android using a single codebase. Something that makes the <u>cost to create a Flutter mobile app</u> considerably low.

Support for Google Firebase
With the facility of Firebase integration, Flutter enables developers to add backend facility into the development environment.
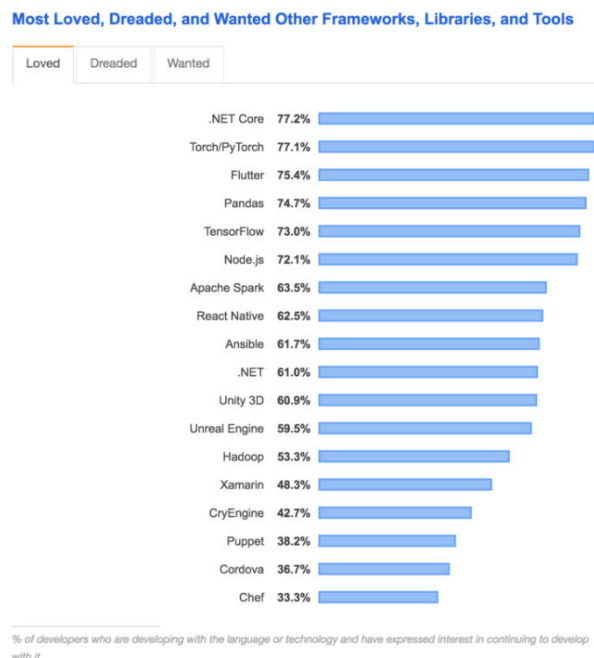
Flutter Testing Support

It is commonly known among the developers that Native Android tools support testing. Testing for native apps can be done using the command line of Gradle. One can add elements, integration and UI tests for Android apps. Numerous frameworks in Java and Kotlin are available got lower-level testing and also for UI testing. There are various levels of testing Android apps.

Flutter provides solid testing that allows quality analysts to write tests at various levels of such as unit, UI. One of the best features Flutters offers is Widget testing which runs UI test fast, equivalent to unit tests. If you are a beginner Flutter developer, you can refer to several levels of testing Android apps in this <u>shell</u>. It runs in a separate process that can be run on real devices or emulators. Flutter has a separate package called Flutter Driver to drives the test in an easy manner.

According to Stack overflow :

Flutter ranks higher with 75.4% and React Native also made the cut with 62.5% among most loved frameworks.

Most Loved, Dreaded, and Wanted Other Frameworks, Libraries, and Tools

Loved	Dreaded	Wanted

.NET Core	77.2%
Torch/PyTorch	77.1%
Flutter	75.4%
Pandas	74.7%
TensorFlow	73.0%
Node.js	72.1%
Apache Spark	63.5%
React Native	62.5%
Ansible	61.7%
.NET	61.0%
Unity 3D	60.9%
Unreal Engine	59.5%
Hadoop	53.3%
Xamarin	48.3%
CryEngine	42.7%
Puppet	38.2%
Cordova	36.7%
Chef	33.3%

% of developers who are developing with the language or technology and have expressed interest in continuing to develop with it

1.3 <u>Hardware Requirements</u>

1. **System Software**
   - Operating System (Windows 10, Linux)
   - Core i3 Processor (minimum)
   - Minimum 4 GB Ram

<u>Software Requirements</u>

1. **Application Software**

   - Android Studio

2. **Programming Language**

   -Flutter

<u>Problem Defination</u>

In our daily life we see that we are so busy in our daily activities that we have forgotten about our health which is the most important priority. During Covid we saw how people were suffering and so many people died also. This time made us think about the importance of health. How important it is to stay fit ? So keeping this in mind we came up with an idea to develop Fitness Interval Timer App.

Objective

The main objective of this app is for people who want to become consistent in their workout but they can't do due to lack of planning and laziness. People who are very conscious for their health we decided to make an app which will help them in maintaining their daily routine workout by setting a list of exercises and set a duration for each instructions. For example you have woken up early in the morning and decided to do some workout. You have planned a list of exercise that will be done on a particular day. This app will help you to follow those instructions by setting a timer for each exercises and tell you about ending of particular timer. It is important to have Interval training because it trains your heart to pump more blood to the muscles and it trains your muscles to extract that oxygen more efficiently, making all your other workouts easier to handle.
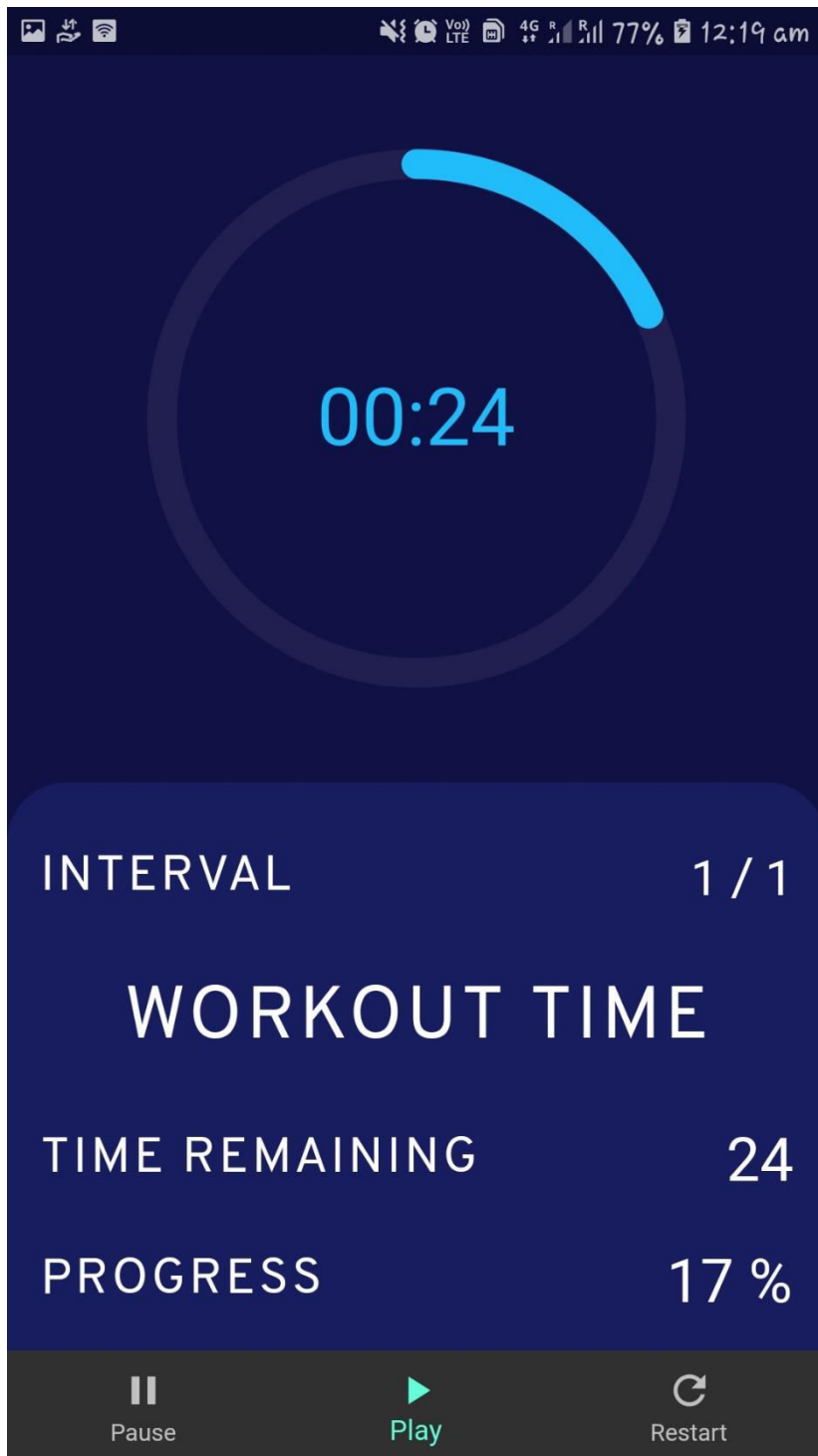
Implementation Details

1: Designing UI

- Matching colour combination
- Building Timer
- Making buttons functional

Progress

1: Building of User Interface

Phone screenshot (Interval Timer app):

00:24

INTERVAL   1 / 1

WORKOUT TIME

TIME REMAINING   24

PROGRESS   17 %

Pause   Play   Restart

VS Code editor screenshots:

EXPLORER
INTERVAL_TIMER
> android
> assets
> fonts
> images
> ios
v lib
  About.dart
  constant.dart
  main.dart
  SetTimer.dart
  Timer.dart
> test
> web
.gitignore
.metadata
pubspec.lock
pubspec.yaml
README.md

> OUTLINE
> TIMELINE
> DEPENDENCIES
master   322

File Edit Selection View Go Run Terminal Help

main.dart

lib > main.dart > ...
1   import 'pac
2   import 'pac
3   import 'Abo
4   import 'Set
5
    Run | Debug
6   void main()
7   runApp(My
8   }
9
10 class MyApp
11   @override
12   Widget bu
13   System
14   return
15   debug
16   title
17   theme
18   pri
19   acc
20   ),
21   initi
22   route
23   '/'
24   '/a
25   },
26   );
27   }
28 }
29

References:

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https://theninehertz.com/blog/do-flutter-app-development-dominate-android-by-2023

https://appinventiv.com/blog/flutter-vs-react-native/