
Fitness Plan Recommendation System

Abstract

The motive of this project was to create a "Fitness Plan Recommendation System" for the Android users those don't know about which are the fitness plans that are suitable for them for workout. And based on age, height, weight this system can generate number of fitness plans that are appropriate for the individuals. This android application also accumulates all the data relevant to a user's workout. The overall intent of this application to enables all users to become aware of incompleteness in their everyday habits and will hopefully boost the user to self regulates towards betterment. Most of the user don't know how to do exercise according to the fitness plan. For that, this application also contain "Exercise Library" which comprise the information about the most of the fitness plans that helps users to understand the fitness plans. Using this application users can create their personal workout. If users finds any exercise too difficult to perform in their generated workout, then users can perform any of the exercises that come before it in the same category, and slowly make their way to the recommended exercise as their fitness improves. This document will totally describe the overall design, testing, development of the application.

INTRODUCTION

A fitness app is an application which will be downloaded on any mobile device and used anywhere to urge fit. As of 2015, the number of health-related apps released on the two leading platforms, iPhone operating system & iOS and Android, had reached more than 165,000. Apps can perform various functions like allowing users to line fitness goals, tracking caloric intake, gathering workout ideas, and sharing progress on social media to facilitate healthy behaviour change. They can be used as a platform to promote healthy behaviour change with personalized workouts, fitness advice and nutrition plans. Fitness apps can add conjunction with wearable devices to synchronize their health data to third-party devices for easier accessibility. Through using gamification elements and creating competition among friends and family, fitness apps can help incentive users to be more motivated. Running and workout apps like RockMyRun allow users to run or compute to music within the sort of DJ mixes which will be personalized supported the user's steps per minute, pulse or ideal cadence thus boosting and enhancing performance during exercise.

TECHNOLOGY CHOICE

SQLITE

SQLite is an in-process library that implements a self-contained, serverless, zero configuration, transactional SQL database engine. The code for SQLite is within the property right and is thus free to be used for any purpose, commercial or private. SQLite is that the most generally deployed database within the world with more applications than we will count, including several high-profile projects. SQLite is an embedded SQL database engine. Unlike most other SQL databases, SQLite doesn't have a separate server process. SQLite reads and writes on to

ordinary disk files. A complete SQL database with multiple tables, indices, triggers, and views, is contained during a single computer file . The database file format is cross-platform - you'll freely copy a database between 32-bit and 64-bit systems or between big-endian and little-endian architectures. These features make SQLite a well-liked choice as an Application File Format. SQLite database files are a recommended storage format by the US Library of Congress. Think of SQLite not as a replacement for Oracle but as a replacement for fopen() SQLite is a compact library. With all features enabled, the library size are often but 600KiB, counting on the target platform and compiler optimization settings. (64-bit code is larger. And some compiler optimizations such as aggressive function inlining and loop unrolling can cause the object code to be much larger.) There is a tradeoff between memory usage and speed. SQLite generally runs faster the more memory you provides it . Nevertheless, performance is typically quite good even in low-memory environments. Depending on how it's used, SQLite are often faster than direct filesystem I/O.

SQLite is extremely carefully tested before every release and features a reputation for being very reliable. Most of the SQLite ASCII text file is devoted purely to testing and verification. An automated test suite runs millions and many test cases involving many many individual SQL statements and achieves 100% branch test coverage. SQLite responds gracefully to memory allocation failures and disk I/O errors. Transactions are ACID albeit interrupted by system crashes or power failures. All of this is often verified by the automated tests using special test harnesses which simulate system failures. Of course, even with all this testing, there are still bugs. But unlike some similar projects (especially commercial competitors) SQLite is open and honest about all bugs and provides bugs lists and minute-by-minute chronologies of code changes. The SQLite code base is supported by a world team of developers who work on SQLite full-time. The developers still expand the capabilities of SQLite and enhance its reliability and performance while maintaining backwards compatibility with the published interface spec, SQL syntax, and database file format. The ASCII text file is completely liberal to anybody who wants it, but professional support is additionally available. The SQLite project was started on 2000-05-09. The future is usually hard to predict, but the intent of the developers is to support SQLite through the year 2050. Design decisions are made thereupon objective in mind. We the developers hope that you simply find SQLite useful and that we entreat you to use it well: to form good and delightful products that are fast, reliable, and straightforward to use. Seek forgiveness for yourself as you forgive others. And even as you've got received SQLite for free of charge , so also freely give, paying the debt forward.

ANDROID

Android may be a mobile OS supported a modified version of the Linux kernel and other open source software, designed primarily for touch screen mobile devices like smart phones and tablets. Android is developed by a consortium of developers referred to as the Open Handset Alliance, with the most contributor and commercial marketer being Google.[10]

Initially developed by Android Inc., which Google bought in 2005, Android was unveiled in 2007, with the primary commercial Android device launched in September 2008. the present stable version is Android 10, released on September 3, 2019. The core Android ASCII text file is understood as Android Open Source Project (AOSP), which is primarily licensed under the Apache License. This has allowed variants of Android to be developed on a variety of other electronics, like game consoles, digital cameras, PCs et al. , each with a specialized interface .

Some documented derivatives include Android TV for televisions and Wear OS for wearables, both developed by Google.

Android's ASCII text file has been used because the basis of various ecosystems, most notably that of Google which is related to a set of proprietary software called Google Mobile Services (GMS),[11] that regularly comes pre-installed on said devices. This includes core apps like Gmail, the digital distribution platform Google Play and associated Google Play Services development platform, and typically apps like the Google Chrome browser . These apps are licensed by manufacturers of Android devices certified under standards imposed by Google. Other competing Android ecosystems include Amazon.com's Fire OS, or Lineage OS. Software distribution is usually offered through proprietary application stores like Google Play Store or Samsung Galaxy Store, or open source platforms like Aptoide or F-Droid, which use software packages within the APK format

Android has been the best-selling OS worldwide on smart phones since 2011 and on tablets since 2013. As of May 2017, it's over two billion monthly active users, the most important installed base of any OS , and as of January 2020, the Google Play Store features over 2.9 million apps

Why we use android?

Android may be a fastest growing OS in smart phones market.[20] Android may be a Linux based OS it's designed primarily for touch screen mobile devices like smart phones and tablet computers. The android may be a powerful OS and it supports sizable amount of applications in Smartphone's. These applications are easier and advanced for the users. The hardware that supports android software is predicated on ARM architecture platform. The android is an open source OS means it's free and anybody can use it. The android possesses many apps available which will assist you managing your life one or other way and it's available low cost in market at that reasons android is extremely popular. The android may be a n OS and is a stack of software components which is split into five sections and 4 main layers that's Linux kernel, Libraries and Android runtime. The android uses the powerful Linux kernel and it supports wide selection of hardware drivers. The kernel is that the heart of the OS that manages input and output requests from software. This provides basic system functionalities like process management, memory management, device management like camera, keypad, display etc. the kernel handles all the items . The Linux is basically good at networking and it's not necessary to interface it to the peripheral hardware. The kernel itself doesn't interact directly with the user but rather interacts with the shell and other programs also like the hard ware devices on the system. The android has some advantages the are following:

- Android is Linux based open source operating system , it can be developed by any one.
- Easy access to the android apps.
- You can replace the battery and mass storage, disk drive and UDB option.
- Its supports all Google services.
- The operating system is able to inform you of a new SMS and Emails or latest updates.
- It supports Multitasking.
- Android phone can also function as a router to share internet.
- Its free to customize.
- Can install a modified ROM.

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- Its supports 2D and 3D graphics

SYSTEM WORKING FLOW

The criteria of the recommending system that we propose include: user profiles (personal information and nutrition), similar users and their recommendations, the evolution in time of each user, accomplishments of workout exercises and diet for a particular day.

The system also considers the unforeseen changes possibly inflicted by injuries, illness or other impediments or changes that can affect one's performance.

Firstly user have to visit our application which is based on android platform. If the user have an account then user can directly login in our application if user don't have an account the firstly user has to create an account. Once the user create an account then user can enter her/him Email id and Password and enter into application.

After user successfully login into application user face a main menu of our application. User can create a own workout. While user can do the exercise user can play the music. After creating a workout prescribe the details which is mandatory which is helps to starting workout. Information like age, height, weight etc. If the information provide by the user is correct then our system is generate workout for the user. Workout is generate based on the information which is prescribed by the user .Once the workout is generate our system prescribe exercise which is suitable for user.

After suitable workout is generate user have to visit exercise library. In the exercise library there is a lots of workout plans are given user has to start exercise which is prescribe by our system. Read the details of prescribe workout and start the exercise.

In our system there is a video player option is available which is helps to user to see some workout. In this user require some video's related to there exercise the they are watch the video.

CONCLUSIONS

The project titled Fitness Plan Recommendation System is an android based application that enables the user to keep an eye on their fitness regime. The project has been completed successfully with maximum satisfaction. The constraints are met and overcome successfully. The system is designed like it was decided in the design phase. The project gives a good idea on developing a user-friendly application satisfying the user. The system is very flexible and versatile. This application has a user-friendly screen that enables the user to use it without any inconvenience.

This project is more informative and more helpful for understanding the concept of android app development. This project automatically generates the user's workout based on the age, height, weight. And according to the generated workout user can easily do the exercise to stay fit and healthy. Some users don't have any ideas about how to do exercises. So for them we provide exercise library to understand about the generated exercises.

Hence we have developed android application for giving the various ideas about daily fitness to the users.

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