

Design and Development of Sports Fitness APP based on Android System

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Abstract

With the rapid development of network technology and strong hardware computing power at this stage, it can meet some functional requirements of sports APP, so that many functions of apps can be easily realized. This paper designs a sports "fitness" APP software based on Android system, and discusses the commonly used framework, coding language, development and design principles of Android system in application development. This APP realizes the functions of motion trajectory drawing, motion data display, motion data browsing and so on, which can better meet the users' attention and understanding of their own motion data.

Keywords

Android System; "Exercise Fitness" App Software; Track Drawing.

1. Introduction

With the development of electronic technology and the progress of society, people pay more and more attention to their own health. People will carry mobile phones when they exercise, and they can open the sports app for training at any time. It is convenient for people to train not only in action guidance but also in sports data, which makes the development of sports apps have a good prospect. Many colleges and universities will hold Orienteering cross-country, which is also an international standard sports event in China. However, when students or athletes are in Orienteering Training, they can't remember the map location of their training and the places they have run. In order to solve this problem, this paper designs a sports app software based on Android platform. Due to the closeness of Android, various specifications of its application development, such as process specification, program specification, code specification, UI design specification, etc., are relatively fixed [1]. It can be seen that Android based system plays an important role in the design of all aspects of app development.

2. System Analysis and Design

2.1. Development and Design Principles

In the process of development practice, we need to consider the scalability of the app. In order to avoid adding a new function when developing a new version later, the whole app needs to be reconstructed. Therefore, we need to follow the principle of scalability and strive to minimize the coupling between various modules of the app. In this way, even if new functional requirements are added during the development of the new version, the corresponding functional additions and requirements changes can be carried out conveniently and quickly. On the basis of comprehensive app functions and beautiful interface design, we need to ensure that the project can run smoothly online. Therefore, we need to follow the stability principle, which requires the robustness of the code when we write the program in the development process. If this app is popular with the public, it not only has efficient stability and beautiful interface, but also needs to let users know what the corresponding function of the icon is. Therefore, we need to follow the principle of ease of operation in development. When the recorded track needs to

collect user positioning information, the operation can be continued only with the consent of the user. In addition, the generated track information adopts encryption technology to ensure the security of the information.

2.2. System Function Design

The main function design of the sports fitness APP is shown in Figure 1. In this APP, we mainly design the function in six modules:

2.2.1. Login and Registration Function

In the login registration module, users who already have this app account can log in directly through the login interface. If new users do not have this app account, they need to register. During registration, the new user needs to fill in his mobile phone number, password and user name. After successful registration, he will jump to the login interface. After successful login, Users can fill in their own details in the personal center interface of the app.

2.2.2. Data Display Function

In the sports data display module, the main page of the app is set with dynamic data to display the total steps of the user in recent 7 days and the daily sports mileage in recent 7 days.

2.2.3. Historical Data Browsing Function

Through the historical track browsing module, users can open the interface of historical track list, browse all the track routes stored in recent 7 days, and selectively view the track route of a certain section. At the same time, users can rename their historical track to facilitate the identification of this section of track. In addition to modifying the naming of track, users can collect and delete a certain section of track.

2.2.4. Data Recording Function

The core function of this app is the route track recording module. Through the motion track recording function, the app can draw the motion track in real time through the GPS and mobile network of the user's mobile phone, and give the corresponding motion data during the movement. Before recording the track, the user needs to judge whether the network permission is obtained, and then judge whether the positioning permission is obtained. Here, the user needs to manually turn on the positioning permission in the settings of the mobile phone, If you enable the location permission, you need to set to allow "Baidu map" to access the location information. At this time, our location will be displayed in the center of the map, otherwise we will not be able to record the track. Under the condition that both network permission and positioning permission are allowed, click OK on the track recording page to start recording the track. At the same time, app can also exit the function or end the movement and upload the track to the server.

2.2.5. Personal Center

The designed personal information interface contains some personal information of the user when registering the account. Here, the user can modify his own information, such as user name, account password and relevant settings in the app.

2.2.6. Provide News Function

In the designed sports news browsing interface, it provides how to standard and correct sports news and related sports events, which is convenient for users to learn and correct their own sports through news, as well as understand the national sports events.

3. Conclusion

Workflow diagram this paper introduces an app software related to sports designed and developed based on Android system. Through the built-in GPS positioning and network

positioning system of mobile phone system, the information related to sports is recorded in the process of sports, and real-time dynamic data display is provided, so that users can clearly understand their recorded sports data. According to the functional requirements of the app, the functions of each part are analyzed and divided. The functions provided include registration and login, motion data display, historical track browsing, route track recording, personal center and sports news browsing. When writing the software, it follows the principles of scalability, stability, ease of operation and security, and adopts Objective-C language. The purpose of designing this app is mainly for many outdoor athletes, whether students in school or sports athletes. Through the core function of motion track recording of this app, it helps to play an auxiliary role in people's sports. There will be new norms and standards in the application development of new versions in the future, which will be optimized to provide more functions.

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