

CS5041 – Practical 2 – Android (Mobile Computing)

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ABSTRACT

This article is the report for the second assignment of the CS5041. The paper mainly describes the program's functions and the implementation of it. There will be three main parts of this paper. The first part is an introduction which is a brief description of the program. Then, the next part is the implementation, which involves the details of the program's implementation. In this section, there will be some subsections, because different subsections introduce a specific function. To show the information more clearly, there will be some original codes shown in the report. Moreover, some pictures of the functions' demonstration will also stick in this report. The last part is the evaluation of the assignment, both the advantage and flaws are involved in this section.

INTRODUCTION

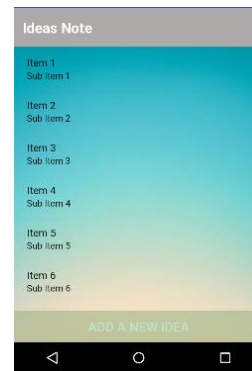
This program developed based on the Android platform, which aimed to create an application that can run on the Nexus 7 with the API in version 23. The primary function of the program is recording ideas. Users can write some ideas when there some brilliant inspiration appears in their brains. The function of this application is similar to the note-taking. However, this application is not only a notepad; users need to login to the application with the password when they use the application. That means this application has better information security for users. Sometimes, users will be fed up with printing username and the password every time they want to log in the application. Therefore, there will be a checkbox in the login page, that user can check that box to make application remember their username and the password. Also, to make users have a more convenient operation, users can return the fore page by finger slide right.

IMPLEMENTATION

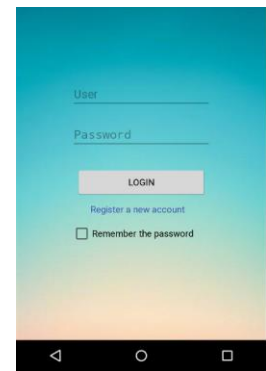
Layout

There are five activity files in the program; every activity displays one specific function. For example, the insert activity shows the page that users register the account. Moreover, the main activity is the main page of the program, that users can add new ideas or delete ideas by this page. Every activity page is constituted by some widgets like TextView, EditText, button. These widgets can display the data, and users can achieve different goals like alerting ideas or deleting ideas by these widgets. The picture 1-1 shows the main activity page; it is constituted by a TextView, a ListView and a button. The TextView on the top shows the name of the application. And the ListView displays every piece of the idea of the user. The user can click the button on

the bottom to add ideas. And the picture 1-2 is the login page. Users can log in the application by inputting the username and the password. If the user does not have an account, he can register by clicking the button; then the page will transfer to the register page.



1-1



1-2

Functions

Register

The button in the register page will trigger the event that inserts the new user information into the database. The username and the password will be catch and stored in the database. The value of the EditText can be caught by the method "findViewById()". The application stores the data in the database that build by the object MyDBHelper and the object SQLiteDatabase. Before inserting the new user information into the database, the database will check if the username has existed. The application will alert the user that "The username has been used, please change one" when the username has existed in the database. If there is no same username, the new user information will be added to the database. Besides, the input content will be checked before inserting the data into the database. The application will alert user "please input the username and password" if the user does not input anything. If everything goes well, the user will see the alert that "Register success" and the page will transfer to the login activity.

User Login

User login the application by the username and the password. User clicks the login button after inputting the username and the password; the button will trigger the login event. The system will select all user information in the database, then compare this information with the username and the password that inputted by the user. If the username and the password can be found at the same time, the user logins successfully. Also, the user will get some alert when they do

not input valid information, or the input information is wrong. There is a checkbox for the user's preference. Users can make application remember their username, and the password by checking the checkbox, the object `SharedPreferences` implement the function. The user will enter the main page to view all ideas after successful login.

View ideas

The user can view all ideas in the application in the main activity. Every piece of the idea is involved in the `ListView`. Every row of the `ListView` is one piece of the idea. Every idea's information is taken out of the database, and the data is written into an object map. After that, the map will be added to a list. Then the `ListView` will get the data in the list by the method of the object `SimpleAdapter`.

Create and update an idea

The user will trigger the add idea event by clicking the button on the button on the main page. Moreover, users can click the item in the `ListView` to view one single piece idea and modify the content of it. There will be a judgement that judges if the information is from a new idea or an updated idea because the same button will trigger the edit event and the insert event. If the event is insert event, the application will generate the time by the object `Date`, then insert the content of the idea and the time into the database. The user will get the alert "Please input the content" if the `EditText` is empty. If it is the update event, the application will execute update command.

Delete the idea

In the main page, users can delete the idea by a long click on the item of the `ListView`. The long click will trigger the on item long click event. There will be a dialog show up on the screen, which needs the user to confirm the request. The `AlertDialog` and the `dialog.Builder` implements this function. If the user confirms the request, the idea will be deleted from the database. Otherwise, the user can cancel the request.

TECHNOLOGY COMMENTARY

The benefit of the application is information security because users need to input the username and the password to login the system. If the information of the database can be stored in the server online, the user can get their ideas although they use different devices. However, the application cannot share ideas to other applications or other users. This makes the application does not have good flexibility.