The Design and Implementation of Personal Finance Management System Based on Android

Yu Xie [a]

Sichuan Information Technology College, Guangyuan 608040, China

[a]93322458@qq.com

Keywords: Personal, property, consumption, income and expenditure.

Abstract. With the rapid development of the Android mobile applications, people's daily life is more and more mobile applications. The system is based on the Android mobile application platform for personal financial management system, the system can easily make a record of personal real-time consumption, convenient user management of personal property, personal accounts, the daily, monthly, annual revenue and expenditure management, real-time understanding of the situation, to avoid blind consumption.

1. Introduction

With the continuous improvement of science and technology, smartphone has completely become necessary in people's life. Especially Android smartphones increase now on the 70% growth rate, the Android smartphone will occupy a lot of smart phone market share in the future, but the present Android mobile phone application is far from enough to satisfy users.

2. Systematic Development Background and Significance

With the rapid development of the Android mobile application, personal financial management also gradually integrates the mobile application, and grows up rapidly with fast development trend. Put simply, personal finance is what we usually call keeping accounts, keeping accounts is to record a person's income, consumption, and all the fund flow. By keeping accounts people can grasp the income and capital allocation and understand the existence of wealth; by keeping accounts, people can grasp how consumption produce, consumption happen in what time and where. Results and target of keeping accounts not only reflect the general bill condition, but statistics is carried on through the systematic analysis, accurately reflect a person's financial situation.

Personal finance software not only can help you keep account, more can be real-time help you master your income and spending, master your money change condition, at the same time, it can also count the main flow of money to more reasonably allocate funds.

The traditional personal finance software, there are a large amount of redundant function, this make the user will consume most energy on understanding complex interface and tedious operation, and lack of simple and clear characteristic that personal finance should have, personal finance software, users can devote most energy on the research of data, rather than meaningless operation.

3. Systematic Analysis and Design

3.1 Systematic analysis

Personal financial system APP is a APP focus on the personal financial management, it is for users to better manage their real-time consumption APP, when users have consumption or income, it can be immediately recorded, it is very convenient, quick, and real-time, replace the traditional paper-and-pencil records method, also beyond the slow and triviality of modern PC recording, it can record at any time, and this APP is easy and simple to operate, generally user who is familiar with Android system can operate, it do not need to have professional knowledge like PC. So the design of this APP's ultimate goal is to let more people have their own finance software and manage financial affairs easily.

© 2016. The authors - Published by Atlantis Press

3.2 Systematic Design

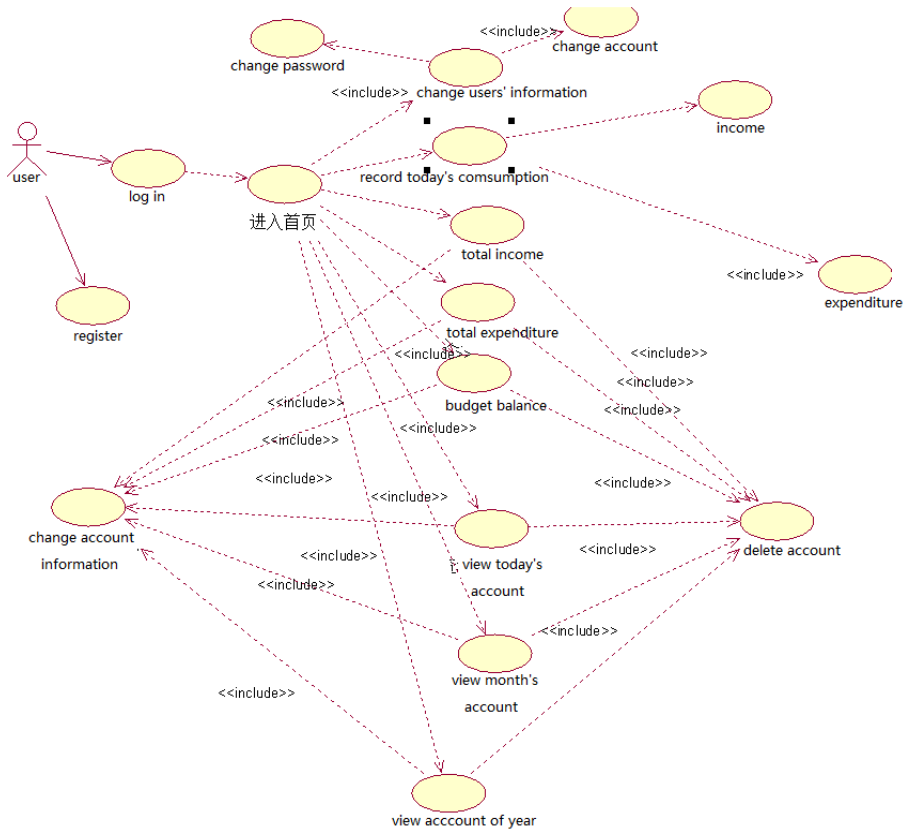

Fig.1 The case diagram of personal finance system

4. The Design and Implementation of System

4.1 Personal financial systematic function

The defects of personal finance software are summarized in our country; fully functional personal finance APP that is suitable for most of the Android users to accept is designed. In basic functions, the management of income and expenditure is main designed function and goal, considering the users' easy view, multiple pages are designed in the view function, you can see the recent income, expenditure, property balance, and view the income and expenditure ratio, check and other function.

This system is designed according to the requirements of the majority of users, it is a simple, convenient, easy to use mobile personal finance APP, users can record and view their consumption situation in anytime and anywhere, and can also view and change for past consumption record, it is easy to operate, users do not need to use too much professional knowledge can use, it is suitable for most people.

4.2 The main key code and implementation

4.2.1 Login module

The login interface of whole system project is implemented by Linear Layout and Relative Layout, during the login process, user name and password is judge correct or not correct, given the corresponding prompt, if the user name or password is empty also gives corresponding hint, if the input account is not correct also given hint. The code is as follows:

4.2.2 Registration module

Registration interface is designed for users to register and use, interface is simple, but it is the key of system entry. By registering user name and password to login system, when registering, if the user name and password is empty, the corresponding prompt are given.

Key code is as follows:

```
@Override
    public void onClick(View v) {
```

```
switch(v.getId()){
case R.id.bt_register_ok:
	name=mEditTextName.getText().toString();
	pwd1=mEditTextPwd1.getText().toString().trim();
	pwd2=mEditTextPwd2.getText().toString().trim();

	if (name.equals("")) {
		Toast.makeText(getApplicationContext(), " Account name cannot be empty！ ",
			Toast.LENGTH_SHORT).show();
		break;
	}
	if (pwd1.equals("")) {
		Toast.makeText(getApplicationContext(), " Password cannot be empty！ ",
			Toast.LENGTH_SHORT).show();
		break;
	}
	if (!pwd1.equals(pwd2)) {
		Toast.makeText(getApplicationContext(), " Confirm password is different！ ",
			Toast.LENGTH_SHORT).show();
		break;
	}
	persondbdao = new PersonDBdao(getApplicationContext());
	persondbdao.add(name, pwd2);
	Toast.makeText(getApplicationContext(), " Registered successfully ！ ",
		Toast.LENGTH_SHORT).show();
	finish();
	break;
case R.id.bt_register_cancel:
	finish();
	break;
}
```

4.2.3 Personal spending record module

The module is mainly is made record after the user consume or profit, after user record their spending data will be transmitted to the corresponding interface to store.

Consumption type selection is based on the definition of users own consumption, it is convenient for users to view their own asset consumption condition. After users add successfully the system will give the corresponding prompt, prompt the user to add successfully.

The code is as follows:

4.2.4 Bill management module

Bill management module is an interface that is available for the user to view and delete the recent consumption spending and income condition, bill management interface is divided into today's bills, bills of this month’s and this year’s. Code implementation is as follows:

```
public void TodayData() {
	intent = new Intent(this, SpecificData.class);
	intent.putExtra("name", name);
	intent.putExtra("title", "today’s bill");
	startActivity(intent);
    }
public void MonthData() {
```

```
            intent = new Intent(this, SpecificData.class);
            intent.putExtra("name", name);
            intent.putExtra("title", " this bill of month");
            startActivity(intent);
        }
    public void YearData() {
            intent = new Intent(this, SpecificData.class);
            intent.putExtra("name", name);
            intent.putExtra("title", " this bills of year ");
            startActivity(intent);
        }
```

4.2.5 SQLite data operation

The data operation play a very important role in the process of the whole system design, through data operation, the data is implemented to add, delete, and modify, SQLite database is Android own database, it can be directly call, operate and does not need to be downloaded.

4.2.6 cost-income ratio module

Balance ratio diagram can accurately reflect a person's consumption condition, income and expenditure proportion is proportional, it represents personal consumption stable, if the proportion of expenditure is greater than income, it represent recently excessive consumption, need to thrift. If the income is more than spending, you can freely consume.

5. Conclusion

Personal finance system as part of the mobile application, using a mobile terminal to manage personal finances, it is beyond the manual management and computer software management, it is easy to carry, anytime, anywhere, fast search, convenient look up, high reliability, huge capacity, well security, long life, low cost, etc. Personal finance system greatly improves the efficiency of the personal financial management, as well as personal scientific and normalized management, important conditions with advanced science and technology.

Through the Eclipse and SQLite database application, the systematic design is complete. Implements the personal property income, spending, balance budget revenues and expenditures change function and son on, the system operation is simple, it is suitable for most people operate and use, without tedious function and guidance.

References

[1] Zhang Bencheng, He Qinglin: Small and medium-sized enterprises data security network retrofit scheme [J], Sci-Tech Information Development & Economy 2005 (20).

[2] Chen Jin: The development and standardization construction of personal finance [J], Chinese Credit Card, 2005 (5).

[3] Xie Chenyang: Let experts money management into people’s life, Xinli Corporation developed bank personal expert financial management system [J], China Financial Computer of China, 2003 (9).

[4] Liu Guangbin: The design and implementation of family financial management system [D], Jilin University, 2012.

[5] Liu Guoyan: The design and implementation of family financial management system [D], Shandong University, 2012.