PERSONAL FINANCIAL APPLICATION BASED ON HYBRID MOBILE PLATFORM (UTILIZE SOCIAL MEDIA ACTIVITY)

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Abstract— Nowadays, mobile phone is not only used by many people to communicate, but also used to manage some informations. One of several informations that can managed in mobile phone is the financial transaction. Managing the information about financial transaction is the basic activity in personal financial management. The financial transaction is used to analyze the personal financial resources, set financial budget, manage tax, cash, credit card, borrowing, investment, career and retirement planning. There are many ways to record the financial transaction, write note about the transaction in the notebook, collect the transaction bill are some of them. The purpose of this paper is to develop a hybrid mobile application to help people manage their personal financial, utilize social media activity like update status as the trigger to record the financial transaction and support the mobility of user in either online or offline internet connection.

Keywords— Personal Financial Application, Hybrid Mobile, Social Media

I. INTRODUCTION

Personal financial is the study of personal and family resources considered important in achieving financial success, it involves how people spend, save, protect, and invest their financial resources. Topics in personal finance include financial and career planning, budgeting, tax management, cash management, credit cards, borrowing, major expenditures, risk management, investments, retirement planning, and estate planning. A solid understanding of personal finance topics offers a better chance of success in facing the financial challenges, responsibilities, and opportunities of life. Such successes might include paying minimal credit cost, legally reducing income taxes, purchasing automobiles at low prices, financing housing on excellent terms, buying appropriate and fairly priced insurance, selecting successful investments, planning for a comfortable retirement, and passing on our estate with minimal transfer costs. The best of all the successes is the sense of freedom from financial worries that comes with effectively planning your personal finances [1].

Basic activity in personal financial management is record financial transaction like income and expense when transaction is occured [2]. The best way to record the financial transaction is use mobile device application (app) like mint, quicken, iBank and YNAB which more effective and efficient. Nevertheless, recording the financial transaction is not easy, it need more effort and motivation which not all people want to do this. Recording financial transaction is not only unfamiliar for some user, but also not interesting for them. Many user indifferent about their financial transaction. The use of social media tools have transformed the way individual and organization communicate. using real time connection has obviated limitation to communicate, nowadays every single person can communicates with another person in their social media community in every time, everywhere.

Based on Nadkarni research [3], people use social media such facebook is motivated by two primary needs, the need to belong and the need for self-presentation. Demographic and cultural factors contribute to the need to belong, whereas neuroticism, narcissism, shyness, self-esteem and self-worth contribute to the need for self-presentation. In this open information era, many people talk about their financial matter in public area like social media forum or group discussion. Social media is increasingly important for individuals interested in building financial capacity [4]. In 2015, six of top ten most used apps globally are dominated by messaging apps which are support social media activity [5]. From 85% internet user, 31% use pinteres, 28% use instagram, 25% use linkedin, 23% use twitter and 72% use facebook [6], it shows the social media app is the most interesting app.To provide requirement of the mobile user, developer should develop app for iPhone, Android, and Windows phone. However, since these devices are based on different technology platform, development for multiple devices inevitably mean significant duplicated effort as application code cannot be shared between them. HTML5 provides developer with a new set of powerful technologies to mitigate this problem. By using HTML5 and web sevice, developer can cut out wasted effort and build cross-platform app which work on all current mobile device, this technology is called hybrid mobile platform [7].

This paper proposes an application which is build based on hybrid mobile platform to provide user manage their financial transaction by utilize social media activity like status sharing, photo sharing and location sharing. User will feel like use facebook meanwhile they record the transaction in either online or offline internet connection.

II. RELATED WORK

Adlina et al. [8] proposed a design of personal financial application which used to record expense, income and add goal in IOS Platform. Their research purposed to design a personal financial application which enable user to write the financial transaction. Adlina et al research similar to another personal financial application in google play store and app store like mint, quicken, iBank and YNAB. Mint as a free personal financial application provides user to record their expense and income in the app menu. In mint user also able to backup data from app to another storage such cloud, direct connection to bank account in USA, bill payment, budget plan, credit card management, mortgage management, exchange rate information, cash flow report, current financial status, and available in google play store and app store.

Quicken is similar to mint, but minus in bill payment and plus in tax report. iBank also provide similar menu like mint provide too, but minus in mortgage management, cash flow report and only available in app store. Meanwhile, YNAB minus in direct connetion to bank account. Three of the last apps are pay to access.The closest work to our own came from mint, but our work app is utilize the social media to record the transaction, which another similar app did not provide.

III. PROPOSE APPLICATION

This paper proposes an application which Utilize social media as the trigger and apply hybrid mobile technology to record the financial transaction. Personal financial is the main process of the propose app. The propose app records the financial transaction and process the financial data into financial report. Hybrid mobile is the applied technology to develop the propose app, within this technology we able to develop app in multi or cross platform, that mean the final app can be operate in ios, android, windows phone and web browser [9][10].

Social media have a role as a trigger to support the main process such record financial transaction. The propose app uses social media sharing to share public content to media social app like facebook, twitter, google plus, instagram and linkedin while save the financial content to app database. The propose app utilizes social media to record the financial transaction because of two primary needs of mobile user, the need to belong and the need to presentation theirself [3].

APPLICATION ARCHITECTURE

The propose application can operates in either online or offline internet connection. This architecture scheme designed to support mobility of user, so user can post or update their status wherever they are and whenever they want without worry about internet connection.

Once user device disconnected from internet, data will be store in phone local storage and once user device connected to internet data will be store to social media and database in real time. The data which is store to social media is contain social content data like name, status, location and photos and data which is store to database contain financial data like transaction type, account, categories and amount, so there is no transaction information will be publish. To give user the best experience while operate the propose app, we included the main process (recording transaction) into update status activity and then we dispart the data to the specific location. So update status data will contain social content and financial content.
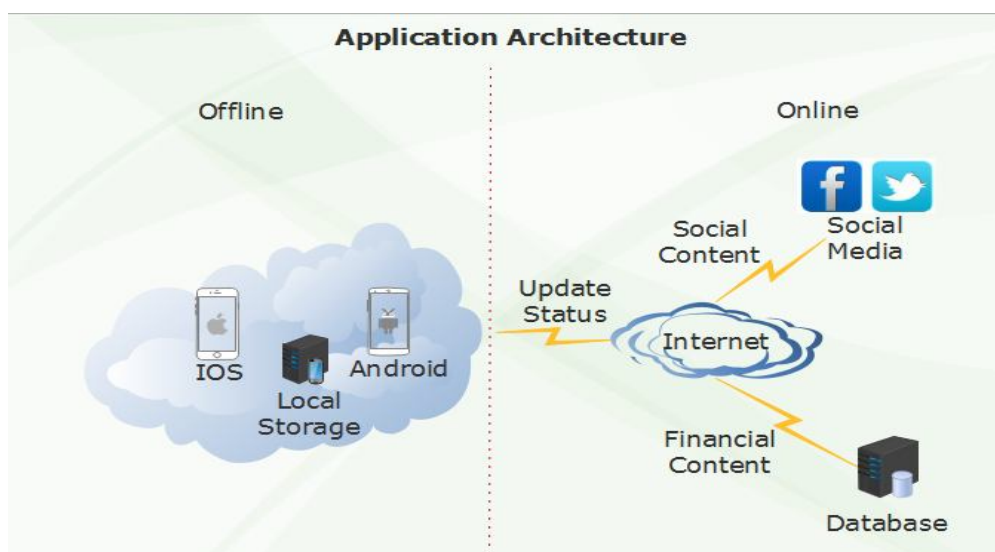

Figure 1 : Application Architecture

SHARE INFORMATION

In this propose app we absolutely realize about the confidential of data. Although we utilize social media to trigger the financial transaction but we also consider about the user confidential. The propose app dispart the user access into three user access, public access, group access, and personal access. Public access restricted from financial data, there is no financial data can be access in the public access. Public access content just show the information about status activity, time, location and photo. Group access can access the member financial data of the group, but cannot access more transaction detail. The financial data which is able to access in group access only the summary of transaction, transaction detail restricted to group access. Personal access can access all the financial data which has been recorded by user. In this access user also able to create, edit or delete their financial data. This access enables user to update their profile user.

OFFLINE / ONLINE SITUATION

To provide the mobility of user, we concern about the internet connection of user device. We provide User the app that can be use wherever they are and whenever they want. So, we designed the architecture of internet connection in offline connection and online connection. Offline connection is the situation where user device is not connected to internet. In this case, we provide user able to use the app to update their status (record transaction). Once user device not connected to internet, the app switches the storage location to phone local storage. So, the new data will keep for a while in phone local storage and not yet store to social media and database. Once user device connected to internet, the app switch the storage location to the basic method and the data in phone local storage will store automatically to social media and database.

Online connection is the situation where user device is connected to internet. In this case, the app will run the process in the basic method where social media app and database as the storage location. So, when user updates their status, the data in their device will be store automatically to social media app and database, where the social content will store to social media app and financial content will store to database.

WORKFLOW OF APPLICATION

Considering the experience of user, in this propose app we provide our user the best practice of social media activity. Just like another social media, when user open the app, they will initiate to login if they are not logon, the app will provides user to the public area (news feed), the interface where are they can read another user activity as the next interface after login. In public area, user able to post their update status and share to social media directly. In this interface, user also able to communicate with another user who connected to them (friends or family) by comment, like and view the posted status. To monitor their personal financial transactions, user can access their personal tracking. In this interface they can view the detail transactions while had been created.
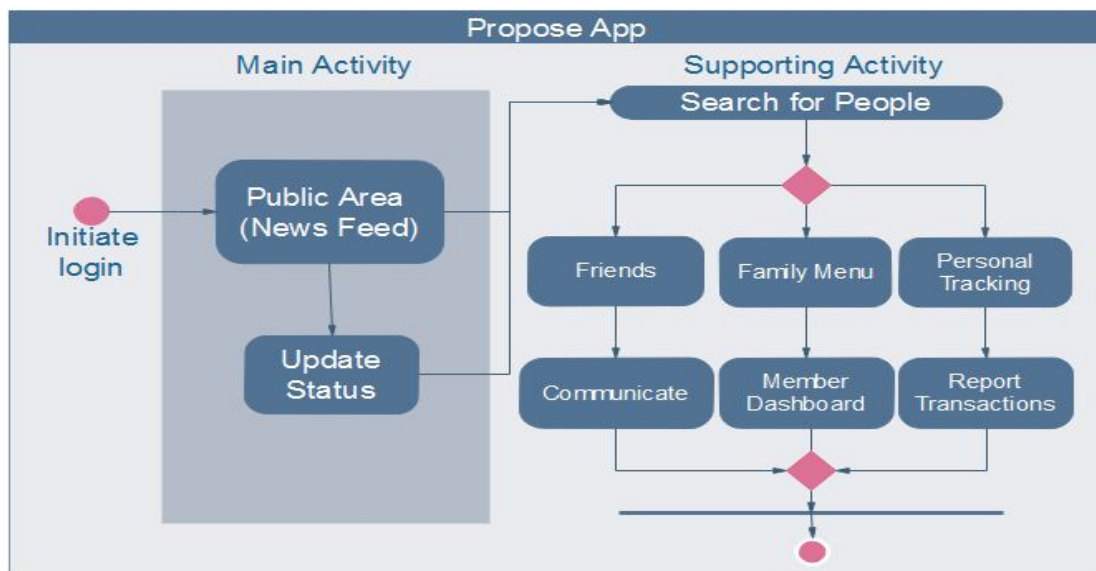

Figure 2 : Workflow of Application

IV. DEMONSTRATION

This section demonstrates the validity and realibility of the propose app with test the main process in IOS platform interface and Android platform interface. We will test the app to updates a status and check wheter the app can records the financial transaction automatically. In update status interface, we will fill the app with some testing data like username (automatic), transaction type, account, category, location, amount and select social media.

If update status process success, social media interface will shows the social content and personal tracking interface will shows the financial transaction from the update status data.

Attribute	Value
Username	Rendy Marojahan
Transaction Type	Expense
Amount	Rp. 100.000
Category	Nongkrong
Location	Starbucks
Account	BCA

Table 1 : Testing Data

UPDATE STATUS

This native IOS interface will show content like username, userphoto, social media selection icon, take photo icon, transaction type selection icon, account selection icon, check in location icon, category selection icon, input amount icon, status or note textarea and "Post" save button. The interface will communicate automatically when user do an action and arrange a complete sentence when complete datas had filled.
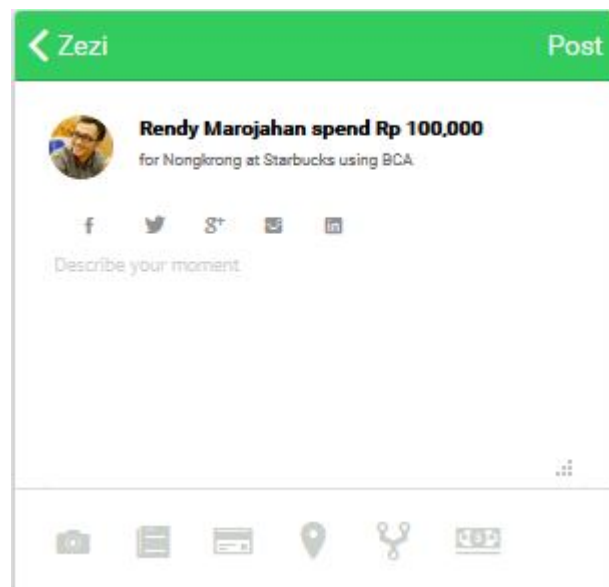

Figure 3 : Update Status Interface

Based on figure 3, we had filled the complete data and interface has arranged a sentence "Rendy Marojahan spend Rp 100.000 for nongkrong at starbucks using BCA". This sentence mean, Rendy Marojahan as (username) spend (transaction type as expense) Rp 100.000 (amount) for nongkrong (category) at starbucks (location) using BCA (account), and we select the facebook icon to share our activity in facebook social media. When "Post" save button click datas should be automatically stored.

SOCIAL CONTENT IN SOCIAL MEDIA

Once social content shared to social media app, we can view the information in the native social media app interface where we shared our activity. Information that we share to native social media app not contain financial data, this means, there are no one can view our financial transaction in social media.In this demonstration, we selected facebook as social media where we shared our activity. Facebook as selected social media will create a new status based on our category data as facebook status and attach our propose app URL in facebook user page who had logon before in user device, so user in propose app can be different in social media app. If user device is not logon as one of facebook user account, facebook will ask for login or create new account but if facebook not yet installed in user device, this process will be abort.

Figure 4 : Facebook Interface

Figure 4 shows the interface of native facebook in native Android device. Based on our data test in update status process. Facebook interface just shows "Nongkrong (category)" and application URL data. It is show that the propose app can dispart the update status data.

PERSONAL TRACKING

Personal tracking is the interface to shows detail transactions which had been recorded. This menu restricted from another user and only can access by the owner of transactions.

Figure 5 : Personal Tracking Interface

Personal tracking interface show detail transactions per transactions created date. Summary of the transactions will be show as current balance and cleared balance. Current balance shows the difference of the expense and income. Cleared balance shows the latest difference of the expense and income when the expense and income had been cleared. Summary also shows the comparison of the total transaction and total cleared transaction. The cleared transaction use to monitor the created transaction, claim it or not.

The owner can create, edit, clear and delete the transaction detail. Cleared transaction will be displayed in grey, uncleared transaction will be displayed in white. Based on figure 5, the interface shows the transaction datas which had been recorded before in update status process. In this section we will check the transaction datas based on our update status test. At the first row we can find the transaction datas is similar to the update status datas. The transaction datas show the category (nongkrong), location (starbucks), username (Rendy Marojahan), amount (Rp 100.000), and account (BCA). This demonstration shows that the propose app able to record the financial transaction automatically based on update status activity process.

V. CONCLUSION AND FUTURE WORK

Utilizing the social media as the trigger is able to record the financial transaction. One single click posting can be useful to motivate user, no more double task and give user the most efficient way to record their transaction. Using this app, user can monitor their financial transaction, analyse their financial transaction, and use their money in the right way. Our future work are to develop personal financial analysis based on recorded financial transactions data to give our user the best information and the best advise how to use their money.

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