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Web Based Management for Online Finance System

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Abstract: As web technology spreads, the number, variety and sophistication of web-based information services is literally exploding. These information services are as web technology is increasingly adopted. The management of the finances of a business or organization in order to achieve financial objectives. The key elements to the process of financial management are financial planning, financial control and financial decision-making. This study introduces a model to manage financial activities for individual and organization by proposing a web-based management system. Online Finance Management System is a web based application which is used to manage personal financial accounts. To design and develop the system existing finance management systems were analyzed to make the newly developed system more flexible and user friendly. Different software tools such as XHTML, PHP, CSS, Java Script, Photoshop, MySQL and Apache Server were used to develop the system. One E-R diagram, data model diagram and two use case model for admin and user were developed.

Key words: Online Finance System, WEB-based Information System, business, personal finance account, Online Database Finance System

INTRODUCTION

The use of the web is increasing in the recent years over the world. As the number of web users increasing it is important to develop an online personal or organization finance management system so that people can manage their personal finance via online without any cost. As the number of users accessing the web is steadily increasing, the day is not so far where we will see them using internet for the purpose of managing their finance (Lane and Williams, 2009). The motivation of this study has the following steps:

- To manage individual finance effectively
- To manage budgetary requirement and control purchase
- To visualize individual profit, total profit and loss account
- Utilizing finance management with technology
- Auto time is fixed to alert budgets
- User flexible
- Security label high

Major requirements of this study are to multiple user registration, set up any number of different accounts such as bank account, savings, cash, secured online daily/monthly transactions, online loans management, track budget management, generate monthly report, user and admin management of all operations. Online Finance Management System is designed and developed to meet the requirements of the users and also to remove the limitations of manual paperwork. Researchers believe there is still a lot of improvement scope of the system environments are so complex that they are so difficult to model by linear or nonlinear equations. In particular, the intelligence of robot is reflected by the policy. So, researchers must explore new modeling methods to derivate this policy.

MATERIALS AND METHODS

The system will enable anyone to manage personal income and expenses with ease via online. It will help users to control their finances understand where their money is going, pinpoint the areas of excessive expenditure and cut down unnecessary expenses (Townsend, 2011). It will help to track finances and generate report of all. They can access their account at anytime from anywhere via internet. Generally in this application there are two main modules.

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User view:

- Online user account registration; everybody will be able to register their profile by filling out a form
- Can add new account; user will be able to create account as much as they want
- Generate report: every registered user will be able to generate their daily or monthly report
- Can view online transaction activities; registered user will be able to view their financial activities in anytime from anywhere via online

Admin view:

- Admin profile; admin can create his/her own profile
- Check and manage users; admin will be able to renew or block users
- Generate report; admin will be able to check the number of monthly registered user, active user or inactive user (Fig. 1)

Phases of system development life cycle: System development life cycle presents the different approaches towards software development (Silberschatz *et al*., 2010). In this study the different phases and the related activities of system development life cycle are shown in Fig. 2 (Sadagopan, 2004).

System design: System design focuses on the technical or implementation concerns of the system. When a system designer wants to design the system, he or she should have has enough sufficient knowledge about the detail system. Few steps can simplify the task of designing coding of a system dramatically. Every designer should take time to complete each of the following steps (Al-Husainy, 2008):

- Describe precisely the core functionally and the system design using data model
- Normalization the system precisely the core functionally the system designs using normalization and draws the DFD of the system
- Describe precisely the core functionality and the system design using data model as DFD

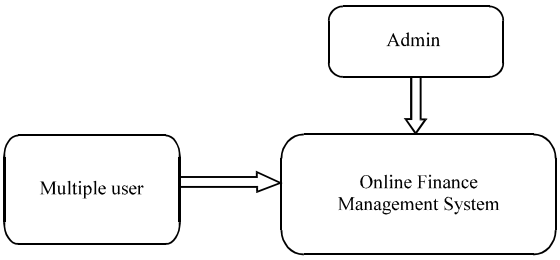

Fig. 1: System environment

Researchers now look at the database design requirements of the online personal finance management system. However, researchers have attempted to design every aspect of the database design of this system.

System study/Initial idea: System study is the first stage of system development life cycle. This gives a clear picture of what actually the physical system is? After completing the system study, a system proposal is prepared by the system.

To describe the system study phase more analytically, researchers would say that study phase passes through the following steps:

- Problem identification and project initiation
- Background analysis
- Inference or finding

Feasibility study: The feasibility study is basically the test of the proposed system in the light of its workability, meeting user's requirements, effective use of resources and of course, the cost effectiveness. The main goal of feasibility study is not to solve the problem but to achieve the scope. In the process study, the cost and benefits are estimated with greater accuracy.

The platform chosen are XHTML, CSS, Java script, PHP, dream waiver and photoshop platform for the Online Finance Management System. So, the Online Finance Management System is powerful, efficient and user friendly.

Requirement analysis: Requirements analysis is the process of understanding the user needs and

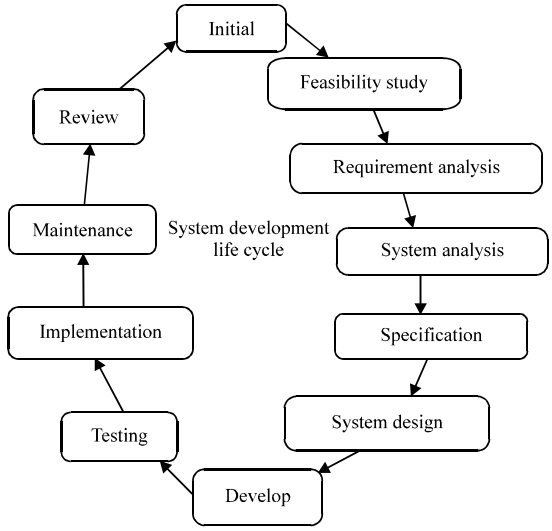

Fig. 2: Different phases of software development life cycle

expectations from a proposed system or application and is a well-defined stage in the software development life cycle model.

To properly build the system, researchers need to learn web site designing through XHTML, Java Script, Photoshop, Adobe Dreamweaver, PHP and CSS. For database researchers required MYSQL and Apache Server. Simply:

- Language: XHTML, CSS
- Script: PHP, Java Script
- Design: Photoshop
- Database: MySQL
- Server: Apache Server

System analysis: System analysis is an important part of the project. System analysis is needed for designing and implementation of the project. The problems are analyzed to determine the nature of the system. System analysis finds the different phases of a system and components of system design. Online technologies offer a new range of tool and strategies and some exciting possibilities for adding new dimension to the test it in online environment. These included:

- Greater flexibility as to where when and how assessment is conducted
- Improved capabilities for ongoing and continuous online activities in the environment
- Users are free of assessing online
- Users can recovery password and it is well protected with his/her financial activities and personal information

System design: Based on the user requirements and the detailed analysis of a system, the new system is designed. This is the phase of a system designing. It is a crucial phase in the development of a system. Normally the design proceeds in two stages.

Preliminary or general design: The primary goal was to create system Online Personal Finance Management System user needed to build a system with features of user accounts and online personal finance process.

Structure or detailed design: In the planning phase are described in the following:

- Selected System Platform: XHTML, CSS, Java Script, Photoshop, MySQL, Dream waiver, Apache
- Analyzed the system
- Created drawing showing the future site
- Planned which tools and forms to be used
- System creation started
- Created users to get feedback

Development/coding: After designing the new system, the whole system is required to be converted into computer understanding language. Coding the new system into computer programming language does this. The development occurred in following phases:

- Platform selection: XHTML, CSS, PHP, Java Script, Macro media Dream waiver, Adobe Photoshop, My SQL
- Observed a tutorial site of w3schools.com
- Created drawing showing the future system
- Planned which tools to be used
- Created design of the system
- Received user review

Implementation: After having the user acceptance of the new system developed, the implementation phase begins. Implementation is the stage of a project during which theory is turned into practice. During this phase, all the programs of the system are loaded onto the user's computer. After loading the system, training of the users starts. Main topics of such type of training are:

- How to registration?
- How to enter the data?
- How to process the data?
- How to take out the reports?

Testing: Software testing is an investigation conducted to provide stakeholders with information about the quality of the product or service under test. Several testing types are available:

- Unit testing
- Module testing
- User acceptance testing

Maintenance: Maintenance is necessary to eliminate errors in the system during its working life and to tune the system to any variation in its working environment. It has been seen that there are always some errors found in the system that must be noted and corrected.

The online finance management system is undergone regular changes that were required to modify the system. Navigation was made easier for the user and the design was made much more attractive than before.

Use case diagram: A use case is a description of set of sequences of actions that a system perform that yields an

observable result of value to a particular actor (Bittner and Spence, 2002). A use case diagram displays the relationship among actors and use cases. The two main components of a use case diagram are use cases and actors (Gomaa, 2011).

Use case nodel of admin: The admin has the following sets of use cases (Fig. 3).

Check user information of admin: Admin can check user information.

Initial step by step description: Before this use case can be initiated, the admin has already accessed the Online Personal Finance Management System:

- The admin will select check user information
- System will give the options of add block or renew options
- The admin will select one and the system will guide the admin according to
- The selection
- After saving selected action, admin can view his updated data

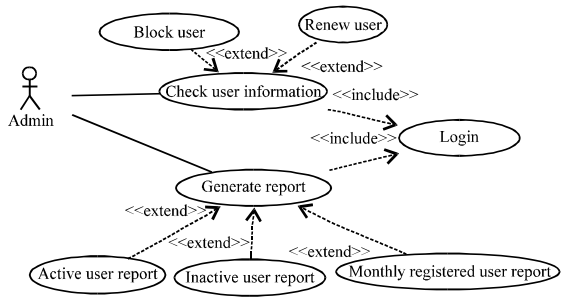

Fig. 3: Use case model of admin

Report generate use case of admin: The admin can generate various kinds of report for decision making. System will generate the reports instantly based on the selected criteria. This report will use for decision making and forecasting.

Initial step by step description: Before this use case can be initiated, the admin has already accessed the Online Personal Finance Management System:

- Admin will select the report
- System will give various options for generating report
- System will generate report according to the selection criteria and the admin can view and print the reports

Use case model of user: The user has the following sets of use cases (Fig. 4).

Add new account use case of user: User can create multiple numbers of new accounts.

Initial step by step description: Before this use case can be initiated, the user has already accessed the Online Personal Finance Management System:

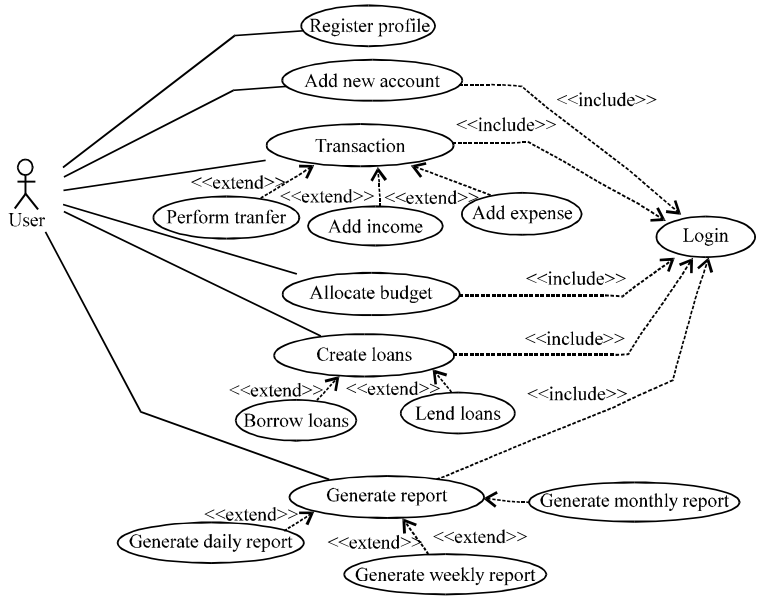

Fig. 4: Use case model of user

- The user will select for add new account
- System will give the form to fill account type, account name and initial balance to the user
- The user will fill the form and the system will guide the user according to the selection
- After saving action, user can view his updated data

Transaction use case of user: User can perform transfer. They can also add income/expenses.

Initial step by step description: Before this use case can be initiated, the user has already accessed the Online Personal Finance Management System:

- The user will select for transaction
- System will give the options of add income, expense, transfer options
- The user will select one and the system will guide the user according to the selection
- After saving selected action, user can view his updated data

Allocate budget use case of user: User can allocate his/her monthly budget.

Initial step by step description: Before this use case can be initiated, the user has already accessed the Online Personal Finance Management System:

- The user will select for budget allocation
- System will give the options of add income, expense for budget
- The user will select one and the system will guide the user according to the selection
- After saving selected action, user can view his updated data

Create loan use case of user: User can create loan.

Initial step by step description: Before this use case can be initiated, the user has already accessed the Online Personal Finance Management System:

- The user will select for loan
- System will give the options of lend or borrow for loan
- The user will select one and the system will guide the user according to the selection
- After saving selected action, user can view his updated data (Bittner and Spence, 2002)

E-R diagram of proposed system: The next step is to develop the logical design of the system. In the Fig. 4 and 5 researchers will encounter a style of E-R diagram (Pratt and Adamski, 2011).

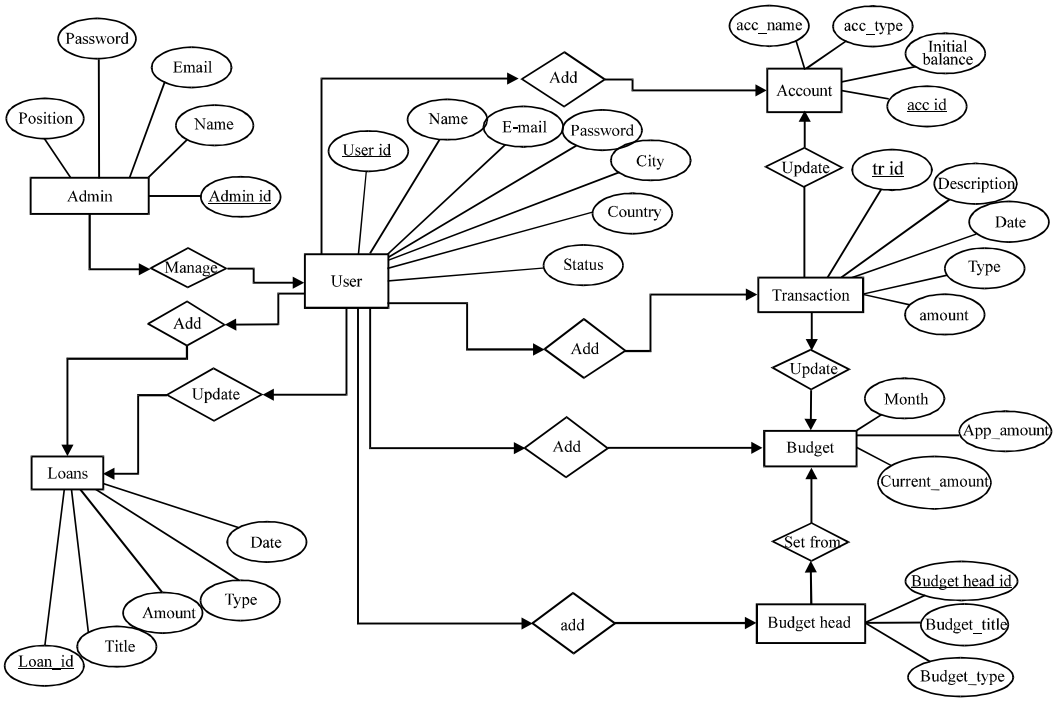

Fig. 5: E-R diagram of the proposed system

Data model diagram of the proposed system: The proposed system has the following data model view.

RESULTS AND DISCUSSION

A web site is a resource of information that is suitable for the World Wide Web that can be accessed through a web browser. The online personal finance management system has the following environment which has two active actors: Admin and user which are shown in Fig. 6 (Lane and Williams, 2009).

Each of these two parts is connected with each other through www (i.e., Internet). This connection required a suitable web page for each part. These web pages must be easy and have enough system. In the next study, researchers give a simple description for these web pages. This description just clarified the included information and operations that are required in the web pages for each part of the management system.

The login page is used for secure access of this system by authorized admin and user. Admin and user must need to log in using his/her email account and password for accessing the system.

In the finance management systems part (site), the web pages that are required for this part must enable each individual management system to do the following operations in its segment into the centralized database in the web-based management system part.

- Registered user can login to perform the desired activities and unregistered user find the registration form. User must have to register before sign in by filling out the registration form which ensures the authentication of the system
- After login, user can see the overall balance, last five transactions and a graphical representation of exceeded budget of the month
- User can add multiple numbers of accounts with account title, account type and initial balance
- User can edit or delete their accounts. User can create any number of budget categories by filling out the form
- User can set budget for any month by selecting budget type, budget category, month, year and approximate amount
- User can add a transaction such as income or expense. User can add a loan such as borrow or lend by filling loan type, loan title, loan amount and date
- User can see the graphical representation of monthly income or expense report. User can also see the budget (savings and expense) status report (Pratt and Adamski, 2011)

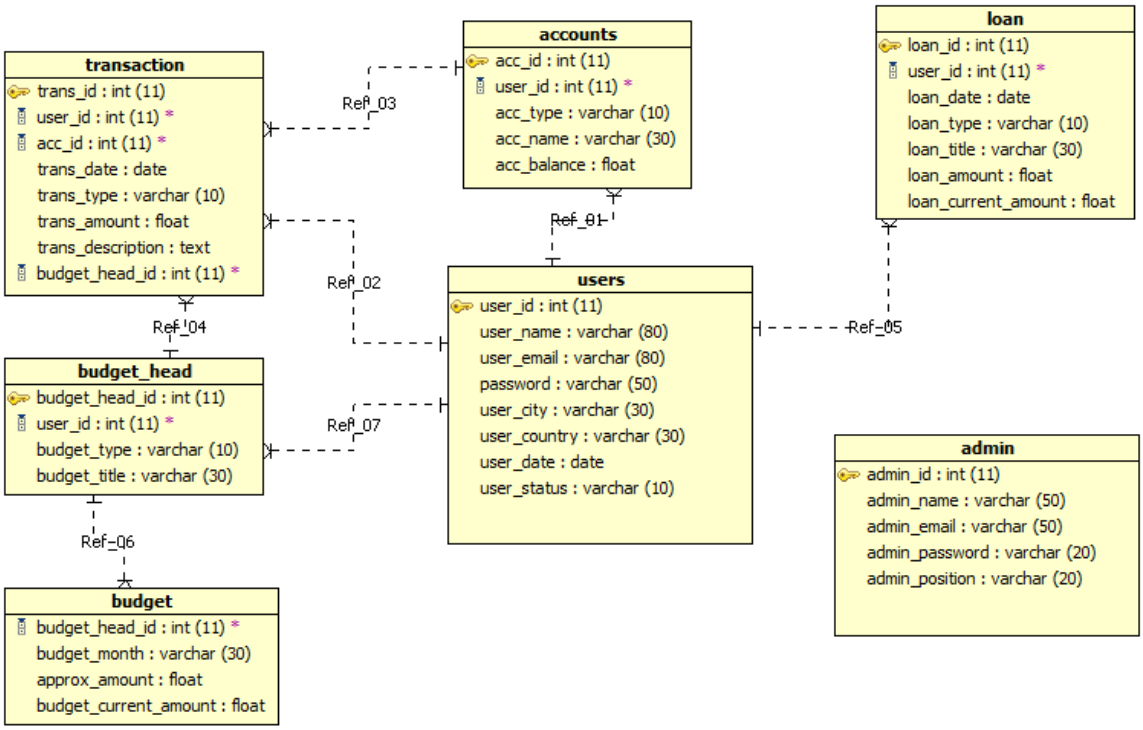

Fig. 6: Data model diagram of the proposed system

To improving the efficiency of a system, make sure that the process is well defined and well tested. When the integration of the system is completed then the entire system is given for testing. There are simple ways to make things go easier to test the system using computers and the errors can be overlooked. Testing ensures proper execution of system by checking errors.

Security testing: Security testing is the basic testing for a web based system. Security testing is the term of measure which protects against the disclosure of information to parties other than the intended recipient that is by no means the only way of ensuring the security:

- To access the system need user email account and password. So, it prevents normal hackers to access the system
- In case of security testing, this system is more securing since here we used MySQL and PHP which both are popular to maintain security. In PHP, researchers have created session that maintains the security of every page when session starts
- In this system the admin area is fully secured. Without knowing the right password nobody can enter the admin area. And without entering in the admin area nobody can change the settings and other features of the system

Test cases: Researchers have tested the software in three steps which are:

- Unit testing: Here, researchers complete small portion of a function and then testing it
- Module testing: Here, researchers test each function of the software
- User acceptance testing: After testing each module of the system successfully, researchers select some user and they use our software some days. Finally, when they inform us it works properly researchers confirm then it is successfully completed

This testing has been carried out to ensure that the program can meet the demands of the use. The test would point the areas that need to be modified and any omission or deficiencies that the way system works.

CONCLUSION

In this study, researchers presented a web-based management system to be used in managing a Finance Management System. The system is designed to satisfy two main goals; first this system will help the people to manage their huge income and expenses. People always want to find the way to make their life easy and comfortable. Currently, researchers depend on the web pages much for everything such as searching; purchase desire goods etc as there are many web applications depend on various requirements. Today's web applications are rich internet applications.

RECOMMENDATIONS

So, far researchers are confident that they have done this web application successfully but researchers have a plan to make this application more efficient so we think about some features that can be added for future development, ideas are followings:

- Researchers will try to make mobile version of the project so that everybody can manage their personal financial account using mobile
- The software will be improved further with enhanced functionality so that people of all languages can use it

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