



CSE3999: PEMBANGUNAN APLIKASI BERASASKAN WEB

MONEY SAVING SYSTEM

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OVERVIEW

In this era, financial planning has become more and more important. However, the people of the country still lack financial discipline. They are also unsure of where their money is spent. Thus, a computerized method to allow them to record their financial transaction and let them to know where their money is usually spent is uttermost important to alert them the ways they spend their money. Budget planning is important for everyone who want to spend their money wisely. This system aims to increase the awareness of the importance of money literacy and reduce poverty as a result from overspending.

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CHAPTER 1: SOFTWARE PROJECT MANAGEMENT PLAN (SPMP)

1.1 Problem Statement

There are several problems faced by the people that inspire us to make this system:

- People often lost track of where they spend their money.
- People tends to overspend money.
- People lack the discipline to control their budget.

1.2 Problem Solution

- The system will let user to differentiate their money into 3 sources,
 - User can choose according to 3 sources, which are cash, accounts, and cards.
- The system can let user to categorize their spending to various category.
 - User can categorize their spending into entertainment, food and beverages, services, groceries, etc. to have a clear picture where they spend their money.
 - They are also able to track their expenses using the system.
- The system can let user to create a budget.
 - User can create a budget according to each category and the system will give the percentage of the budget reached.

1.3 Objective

- The system is designed to help users track financial spending by discovering where money is spent and how much money is spent.
- The system is designed to help user create a budget to protect themselves from overspending.
- The system also designed to help the user to verify their balance, expenses and income for each month.

1.4 Scope

The scope of the project is to make the system development process easier. The scope of the system is: -

- User can record income and expense.
- User can categorize income and expenses into many categories.
- User can set a budget for each category to make sure they do not overspend.
- User can be able to verify their saving and balance for the month from their expenses.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The literature review is evaluating the previous research and documentation related to compare with the current system. The purpose of this literature review is to evaluate the current money system according to our knowledge and make a new system to surpass them. This chapter will review and compare the existing system and the ways to improve in the new system.

2.2 Review on the Existing System

Before the development of the system, we research on some other money management system that are available on the internet. The first example is from a well-known bank in Malaysia, MAE and Money Manager Expense & Budget by Realbyte Inc.

MAE provides users to see where they spend their money using the Maybank Debit Card. They categorize the expenses based on various category and sum it up and display the total expenses for the user knowledge.

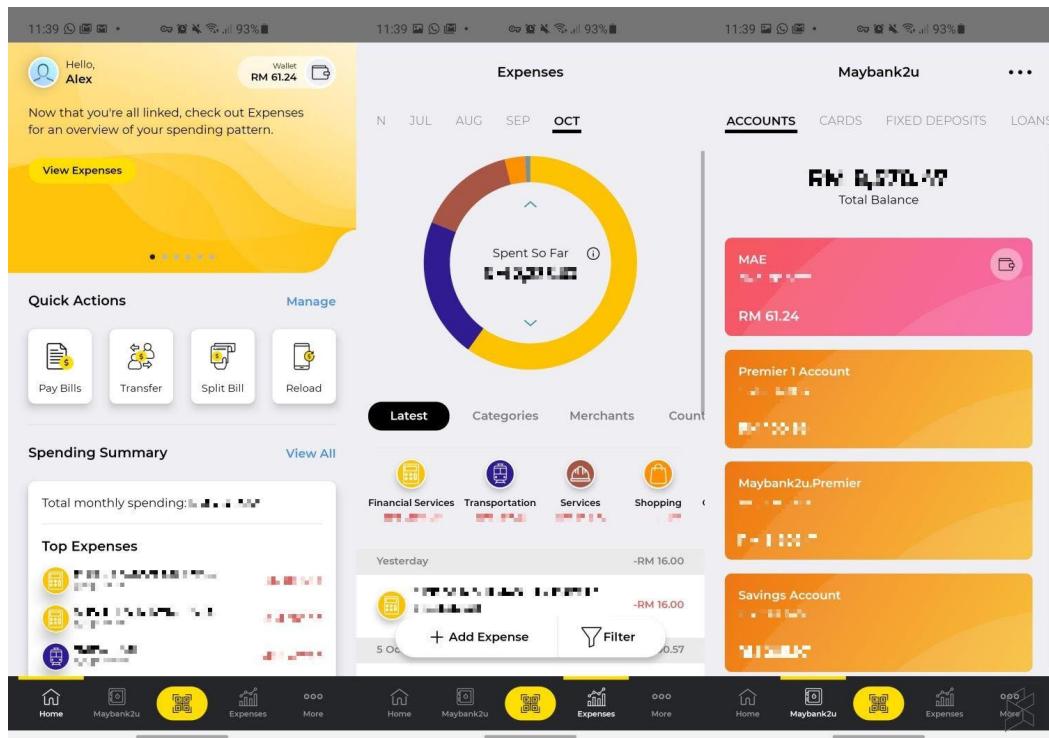


Figure 1 Interface of MAE by Maybank

Money Manager Expense & Budget is the second example we examined. The system allows you to key in your transaction and it will generate a financial statement of the total expense and total income based on various categories.

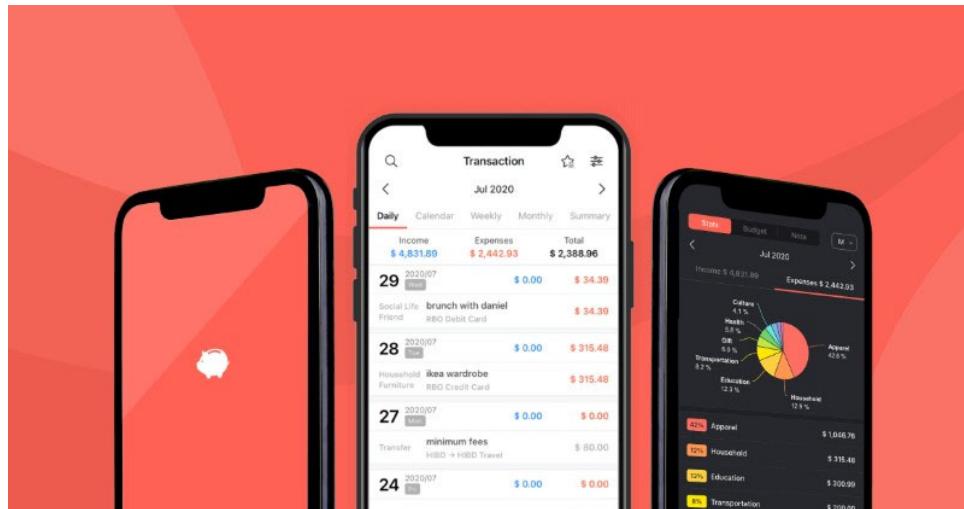


Figure 2 Interface of Money Manager Expense & Budget

2.3 Discussion

In this section, we will be comparing the system proposed to the existing system that had been reviewed.

	Money Saving System	MAE by Maybank	Money Manager Expense & Budget
Allow yourself to write the transaction	Yes	No	Yes
Able to differentiate the money spent from various source	Yes	No	Yes
Able to differentiate the money spent from various category	Yes	Yes	Yes
Sum up the total transaction	Yes	Yes	Yes
Able to set budget for various category	Yes	No	No

Table 1: Comparison of various system of Money Manager

As shown in the system, as MAE is a banking app, it does not allow user to write the transaction themselves, while Money Manager Expense & Budget allows. MAE is unable to record money spent from different source again as it is a banking application and Money Manager Expense & Budget can differentiate the money spent from various source. MAE and Money Manager Expense & Budget can differentiate money spent from various category and sum up the total transaction. However, both MAE and Money Manager Expense & Budget are unable to set budget for various categories.

CHAPTER 3: METHODOLOGY

3.1 Introduction

Methodology which known as a set of procedure. This chapter will cover how the system will be developed based on the System Development Life Cycle (SDLC), to make sure the system achieves all the objectives as mentioned earlier. There are various development model classes such as Structural development, Rapid Application Development (RAD) and Agile Development. Each class have its own development method such as waterfall, parallel, phase, prototyping and SCRUM. This methodology that we choose must be appropriate and suitable for the development of the system. This approach plays a major role to deliver the system successfully.

3.2 Software Model

After some studies for suitable model for developing the software, we decided to use the waterfall model. The waterfall model is the earliest SDLC approach that was used for software development. It is also referred as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed before step into next phase and there is no overlapping in the phases.

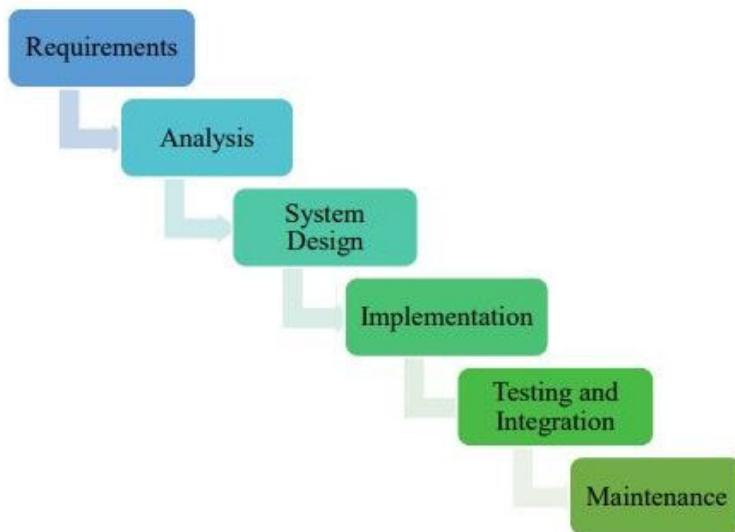


Figure 3 Waterfall Model

3.2.1 Requirement

In this phase, we tried to understand the requirements needed and planned to develop our money manager system. Hereby, we managed to have an interview session with our stakeholders. From the able to list out all the requirements needed. Then we arranged a team discussion to discuss all those listed requirements, we able to sort out the requirements and shared ideas on developing our system accordingly. With the understanding of the requirements, we able to define the problem statement, objectives and project scope of the system that going to develop. Referring to the existing system developed, we came out with a new system which is more efficiency and effective regarding the requirement that have identified.

3.2.2 Analysis

In this phase, analyses have been made. After the interview, the requirements of the proposed system are gathered. The requirements include functional and non-functional requirements which are essential for the development of the system. Next, a use case diagram needs to be developed to show the process of the system and the function of the actor involved. Use case that we develop must be able to illustrate the activities performed by the user of the system. Besides use case diagram, class diagram also needs to be developed based on user's requirement document and use case diagram as well. After both user and system requirements are clearly defined, system development can proceed to the next phase of the waterfall model.

3.2.3 System Design

According to the waterfall model study, design of the system must be completed before implementation phase. Therefore, decide the design of the user interface before continuing to implementation phase. Mainly, the interface of the system must be interactive so that the user can attract to the system and the function of the system must be stated. The consistency of web elements such as background color, font type, font size and layouts must be contrast and maintained. This will attract the users and make them comfortable on using the system.

3.2.4 Implementation

Implementation is the most critical and complicated phase in SDLC. The first version of the system development should begin in this phase. Therefore, initial system is developed based on requirements that state at the early phase. Moreover, the drafted document will be used as a guideline, also the function and features identified must be fulfilled in this phase.

3.2.5 Testing and Integration

Once the system has been developed, testing shall be performed to ensure either the output is as expected or not. As a developer we should double check on the backhand works meanwhile, to we will let the user to try and enter the system. From here we can know that if cause any error. More than that, we able to verify both users and system requirement. In case of any unexpected error occurs, it will be recorded so that will be easy to evaluate. In term of not attractive system also will be take note in this phase before release the whole system.

3.2.6 Maintenance

This is where the system met the user requirements. Once the system tested and evaluated it will be launched on the market. Therefore, to ensure the developed system works correctly without errors and keep updated here the maintenance phase will play the huge role. Here, we able to improvise the enhancement of the system services as new requirements discovered. This improvisation and development also will be documented. It will help the user to understand the system better and user friendly.

3.3 Software Architecture

This section will cover about software architecture of the project. Software architecture will represent the system organization and backhand workflow of the system. There are few types of software architecture and we have chosen 3-tier architecture in our project.

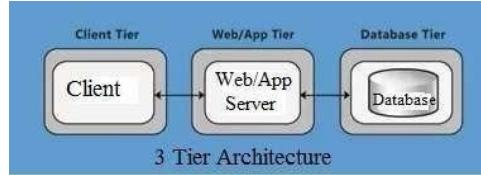


Figure 4 Diagram of 3-Tier Architecture

There are few features about 3-tier architecture. Firstly, 3-tier architecture is used in web-based applications. Then, has three layers of viz whereby client tier, application tier and database tier.

- Client layer

Client tier is the topmost level of the software which has the presentation layer components. The presentation layer provides interfaces for user to interact with the system.

- Application layer

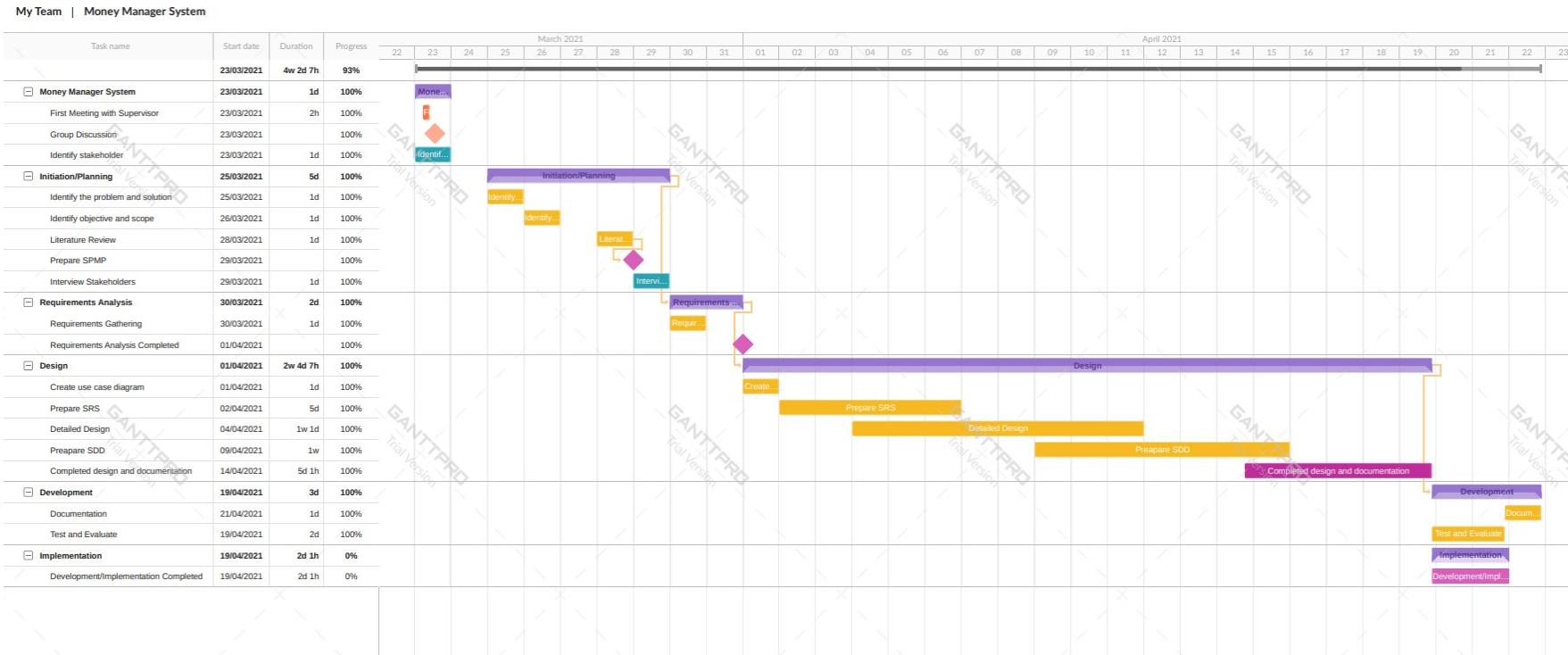
Application tier or business logic layer is the middle tier of the system where business logic and the component of the application placed. Therefore, it is the interface between client and data layers. Meanwhile, all the logics such as validation, calculation, data related operations exist at business layer. It also contains method to connect database.

- Database layer

Data tier is often referred to the database of the system. It is responsible to hosts the database that the application required. It is a center point for any data to access which either creating, updating, deleting or retrieving.

3.4 Project Management Plan

3.4.1 Project Schedule(Gantt Chart)



CHAPTER 4: EXPECTED OUTCOME

After the completion of the system, our group sincerely hope that this system can play a vital role in Malaysia to help the citizen to spend money wisely and not spend money on rash decision. This Money Saving System will make the life of those who make record transaction in the system to be more aware of their spending habits. This will really help those who are greatly affected by the pandemic to spend money wiser as the debt among Malaysia citizens are getting higher and higher. Although the system is made with Malaysian citizen in mind, people from other country can also use this system to make it work in their own country with some minor modifications.

CHAPTER 5: ENTREPRENEUR

5.1 Business Plan

a. Executive Summary

Money Saving System is a system that help user track expenses and income. In this system allow user to enter financial transaction anytime, anywhere in just couple of taps. The interface with the option that allow user to set a budget allocation for each category of spending and manage their income and expense. This helps user to keep track their expenditure and saving in daily basis. This system aims to managing personal finance with easy step in just one platform.

b. Services

The system provides a user entry bookkeeping system that record transaction. This system also provides a platform expense and budget management function. The user can see the amount of user's expenses against their budget by viewing expense history.

c. Target audience

The target audience for money manager system is for people who often lost track of their spending behavior. This system can help them to manage their personal finance in an easy way. They can easily record financial transactions, review daily financial data and manage their budget.

5.2 Business Model Canvas

Key Partner - Financial advisor	Key Activities - Manage personal financial - Manage budget	Value Proposition - Managing personal finance. - Create budget plan.	Customer Relationship - Email - Telephone support	Customer Segment - User that had lost track of their spending. - User who wants achieve budget plan
	Key Resources - Community of user - Website of the system		Channels - Web-based application	
Cost Structure • Software maintenance • Cloud service		Revenue Stream • Service-based revenue • Subscription		

The Business Model Canvas (BMC) is an overview of business idea or concept from every perspective. There are 8 components in the BMC, the right side focuses on the customer while the left side focuses on the business. Table above show the overview of business model canvas.

5.3 SWOT Analysis



Figure 5 SWOT Analysis for Money Saving System

5.4 Pricing Plans

	Monthly	Annually
User (RM)	5	50
Details of Financial Advisor (RM)	100	1000
Agreement	1 Month	1 Year

This system will be subscription based for the user for a fee of RM 5 per month or RM 50 per annum. Charges will also be given to the financial advisor who wishes to place their ads details for the user to contact. A month of RM100 will be charged to those who wish to place their name in the Financial Advisor Webpage. If they wish to place their details on the webpage for a year, a lump sum of RM1000 will be charged.

5.5 Terms and Condition

All people from different races or culture can place their ads on the webpage. However, the agreement is that only financial advisor can only place their advertisement on the webpage and no other business can do so, such as entertainment and gambling. The developer has the right to remove to advertisement if the party found out that the contact leads to other business and the payment to place the advertisement must be made in a lump sum.

CHAPTER 6: SOFTWARE REQUIREMENT SPECIFICATION (SRS)

6.1 Requirement Gathering

Interview technique

- Identify on what are the requirements that user is looking for in a new system.
- The interviewer should have a general interview plan listing the questions to be asked in the appropriate order and provide follow-up with them.
- During interview progresses, it is important to understand the issues that are discussed.
- The interviewer should briefly explain what will happen and promise certain features which is needed in the new system.
- Summarize the key points that the interviewee is communicating to avoid misunderstanding.

Questionnaire technique

- Identify the individuals to whom the questionnaire will be sent.
- Questions should be relatively consistent in style and simple questions usually can be more misunderstood.
- Multiple Choice Question is the best options when it comes to answering the question because it is easy to select and understand.
- Stakeholder should clearly explain why the questionnaire is being conducted and why the respondent has been selected to make the citizen more understanding.
- Google form also can be used during questionnaire.

Brainstorming

- Form a group and ask a short brief that has been given.
- Make a mind mapping to see the flow of the project.
- Brings together diverse ideas to see their own strength and weakness.
- Review the ideas and select the most interesting and make a discussion how to lead, combine and improve the ideas.

Prototyping

- Gather preliminary requirements that use to build an initial version of the solution.
- Sketches to illustrate the idea tell them what it your imagination during planning.
- Think about the kind of prototype that makes the most sense and that would most effectively answer the question.
- Note down the key components of your idea.
- Role-playing allows the design team to explore scenarios within the system are targeting physically and expressing the users' emotional experience of using a product or service.

6.2 Functional Requirement

- The system shall allow user to display their transaction history.
- The system shall allow user updates their financial expenses and income.
- The system shall allow user to record and categorize the expenses and income according to various categories.
- The system shall allow user to create a budget for various expenses categories.
- The system shall notify the user when their spending exceeded 90% of the budget.

6.3 Non-Functional Requirement

1. Security requirement

- The user should enter user id and password to login to the system.
- Only the user can update their transaction details.

2. Performance requirement

- The system must be able update the user transaction in 5 second or less.

3. Availability

- The system must allow users to access the money saving system 24 hours a day, 365 days a year with a downtime period of maximum 1 hour for backup and maintenance.

4. Reliability

- The system is designated for 10,000 users to access the system at the same time without causing system to overload.

5. Operational

- The system will operate in Google Chrome, Microsoft Edge and Mozilla Firefox
- The system should automatically back up at 2:00am of each day.

6. Maintainability

- Updates will be provided at least once per month to ensure the smoothness of the system to reduce bugs.
- Updates will be provided within 2 days if errors that causes system to crash.

6.4 Use Case Diagram

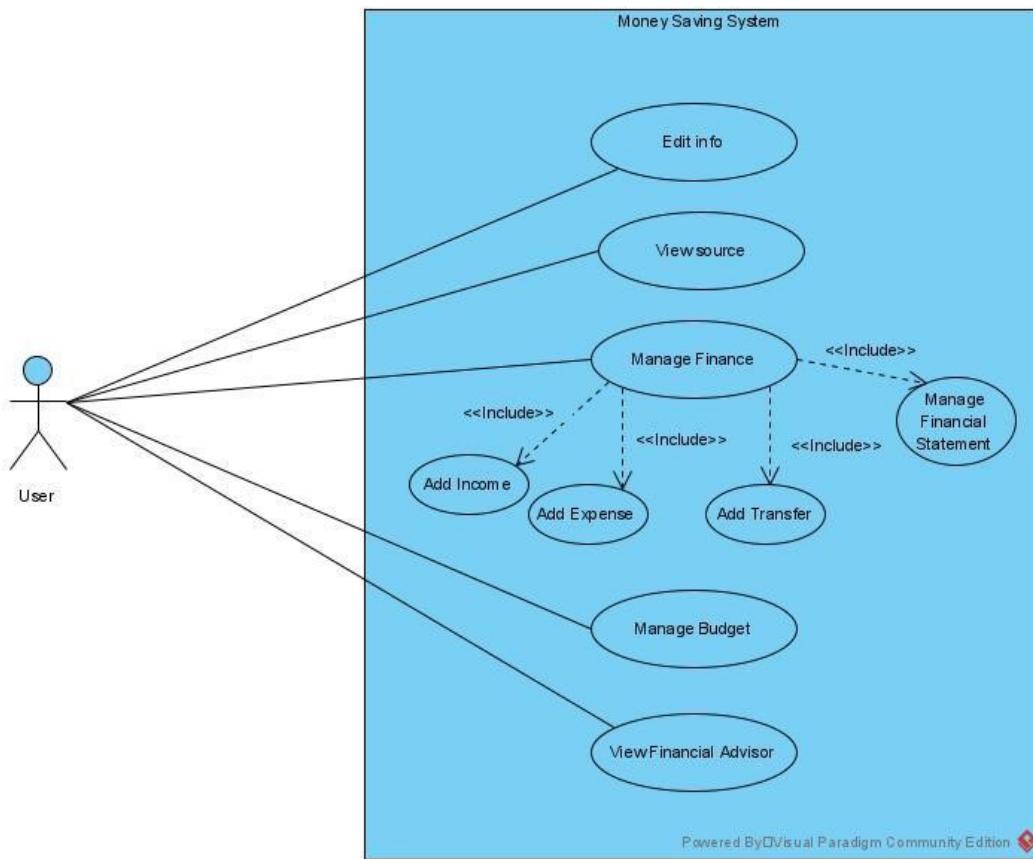


Figure 6 Use Case Diagram of Money Saving System

6.5 Use Case Description

Use Case ID	UD_1
Use Case Name	Edit Info
Actor	User
Description	In this use case, how user can edit info is recorded.
Event Trigger	User want to edit their info
Relationships	-
Flow of Events	<ol style="list-style-type: none">1. The user selects the edit info page.2. The user can change their full name on the system.3. The user can edit their email address on the system4. The user can type a new password to replace their current password.
Sub-Flow	-
Alternative Flows	-

Use Case ID	UD_2
Use Case Name	View source
Actor	User
Description	In this use case, how user can view the money in each of their source.
Event Trigger	User want to view the money in each of their source
Relationships	-
Flow of Events	<ol style="list-style-type: none"> 1. The user selects to view source. 2a. The system shows cash balance. 2b. The system shows account balance. 2c. The system shows card balance. 3. The system shows total balance.
Sub-Flow	-
Alternative Flows	-

Use Case ID	UD_3
Use Case Name	Add Income
Actor	User
Description	In this use case, how user can add income is recorded
Event Trigger	User wants to add income transaction
Relationships	-
Flow of Events	<ol style="list-style-type: none"> 1. The user selects to add income. 2. The user selects the date of transaction. 3. The user selects the source of transaction. 4. The user selects the category of transaction. 5. The user writes the amount of transaction. 6. The user writes the details of transaction. 7. The system saves the transaction of transaction.
Sub-Flow	-
Alternative Flows	-

Use Case ID	UD_4
Use Case Name	Add Expense
Actor	User
Description	In this use case, how user can add expense is recorded.
Event Trigger	User wants to add expense transaction
Relationships	-
Flow of Events	<ol style="list-style-type: none"> 1. The user selects to add expense. 2. The users select the date of transaction. 3. The user selects the source of transaction. 4. The user selects the category of transaction. 5. The user writes the amount of transaction. 6. The user writes the details of transaction. 7. The system saves the transaction.
Sub-Flow	-
Alternative Flows	-

Use Case ID	UD_5
Use Case Name	Add Transfer
Actor	User
Description	In this use case, how user can add transfer is recorded.
Event Trigger	User wants to add transfer transaction
Relationships	-
Flow of Events	<ol style="list-style-type: none"> 1. The user selects to add transfer. 2. The user selects the date of transaction. 3. The user selects the from source of transaction. 4. The user selects the to source of transaction. 5. The user writes the amount of transaction. 6. The user writes the details of transaction. 7. The system saves the transaction.
Sub-Flow	-
Alternative Flows	-

Use Case ID	UD_6
Use Case Name	Manage Financial Statement
Actor	User
Description	In this use case, how user manage financial statement is recorded.
Event Trigger	User wants to manage financial statement.
Relationships	-
Flow of Events	<ol style="list-style-type: none"> 1. The user selects to manage financial statement. 2. The system shows the financial statement details. 3. The user select action that the user wants. <ul style="list-style-type: none"> • SF1: Edit statement • SF2: Delete statement • SF3: Filter statement
Sub-Flow	<p>SF1</p> <ol style="list-style-type: none"> 1. The user selects to edit statement. 2. The user edits the date. 3. The user edits the source. 4. The user edits the category. 5. The user edits the amount. 6. The system updates the changes. <p>SF2</p> <ol style="list-style-type: none"> 1. The user selects to delete statement. 2. The system updates the changes. <p>SF3</p> <ol style="list-style-type: none"> 1. The user select the month. 2. The user select the year. 3. The user selects filter the transaction.. 4. The system updates the changes
Alternative Flows	-

Use Case ID	UD_7
Use Case Name	Manage Budget
Actor	User
Description	In this use case, how user can manage their budget is recorded.
Event Trigger	User wants to manage their budget
Relationships	-
Flow of Events	<ol style="list-style-type: none"> 1. The user selects to manage their budget. 2. The system shows the budget. 3. The user decides to edit the budget. <ul style="list-style-type: none"> • SF1: Decide to edit • SF2: Does not want to edit
Sub-Flow	<p>SF1</p> <ol style="list-style-type: none"> 1. The user selects the category the user wants to edit. 2. The user edits the limit. 3. The user submit the changes. <p>SF2</p> <ol style="list-style-type: none"> 1. The system reach the end
Alternative Flows	-

Use Case ID	UD_8
Use Case Name	View Financial Advisor
Actor	User
Description	In this use case, how user view the financial advisor is recorded.
Event Trigger	User wants to view financial advisor.
Relationships	-
Flow of Events	<ol style="list-style-type: none"> 1. The user selects to view financial advisor. 2. The user views the financial advisor name. 3. The user views the financial advisor contact.
Sub-Flow	-
Alternative Flows	-

6.6 Activity Diagram

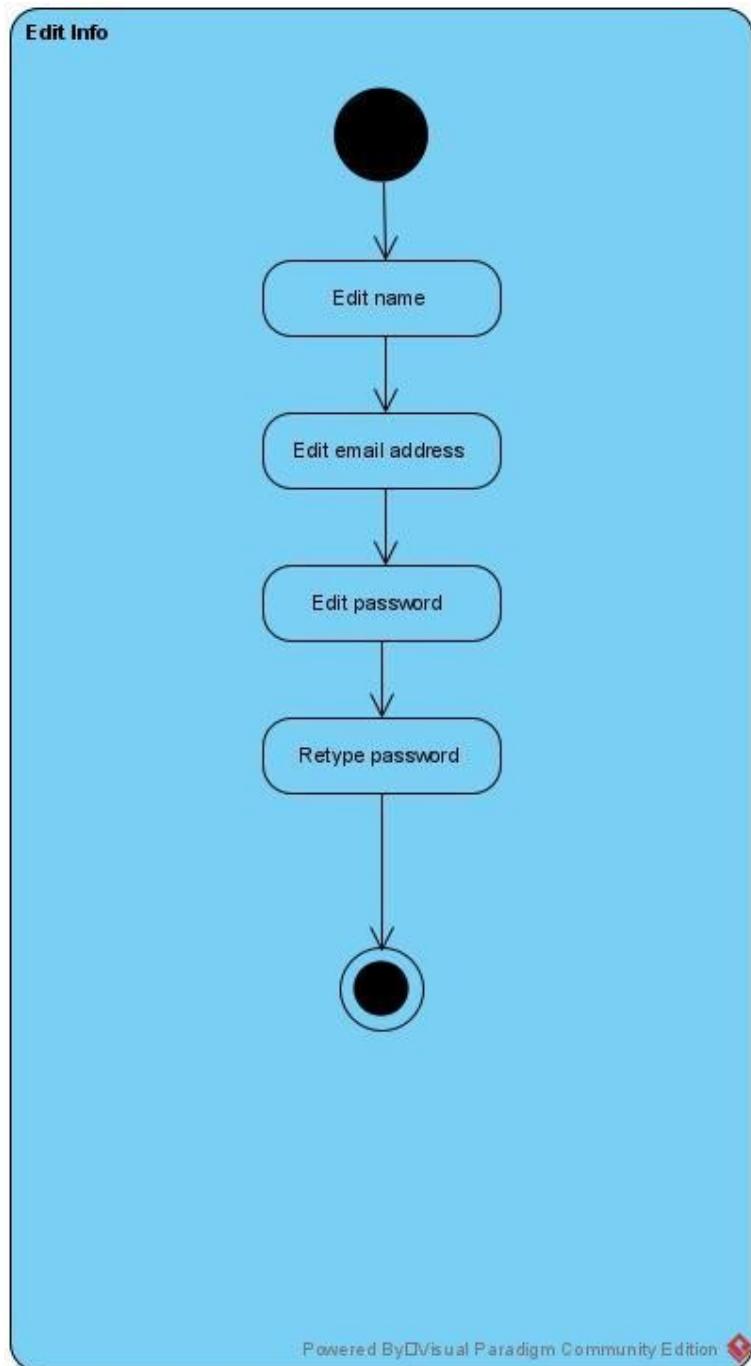


Figure 7 Activity Diagram of Edit Info

ViewSource

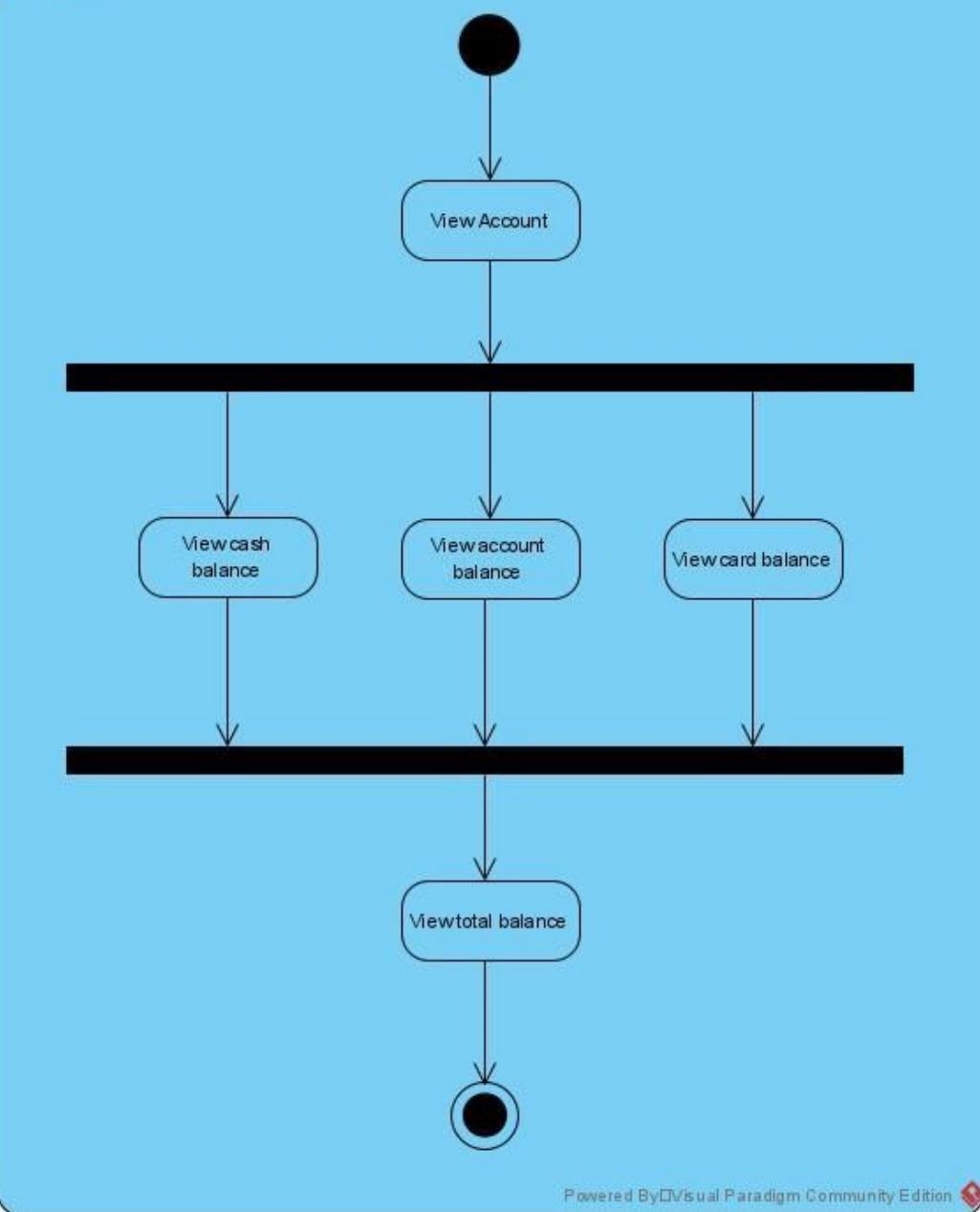


Figure 8 Activity Diagram of View Source

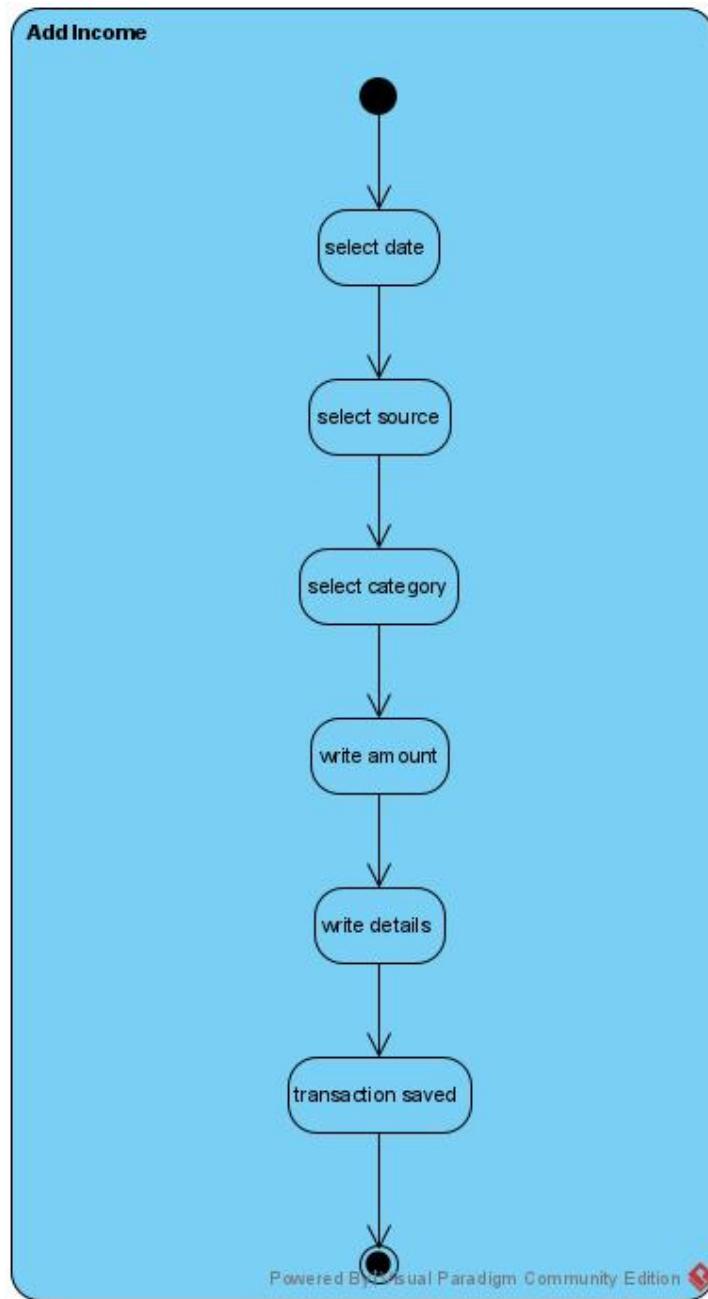


Figure 9 Activity Diagram of Add Income

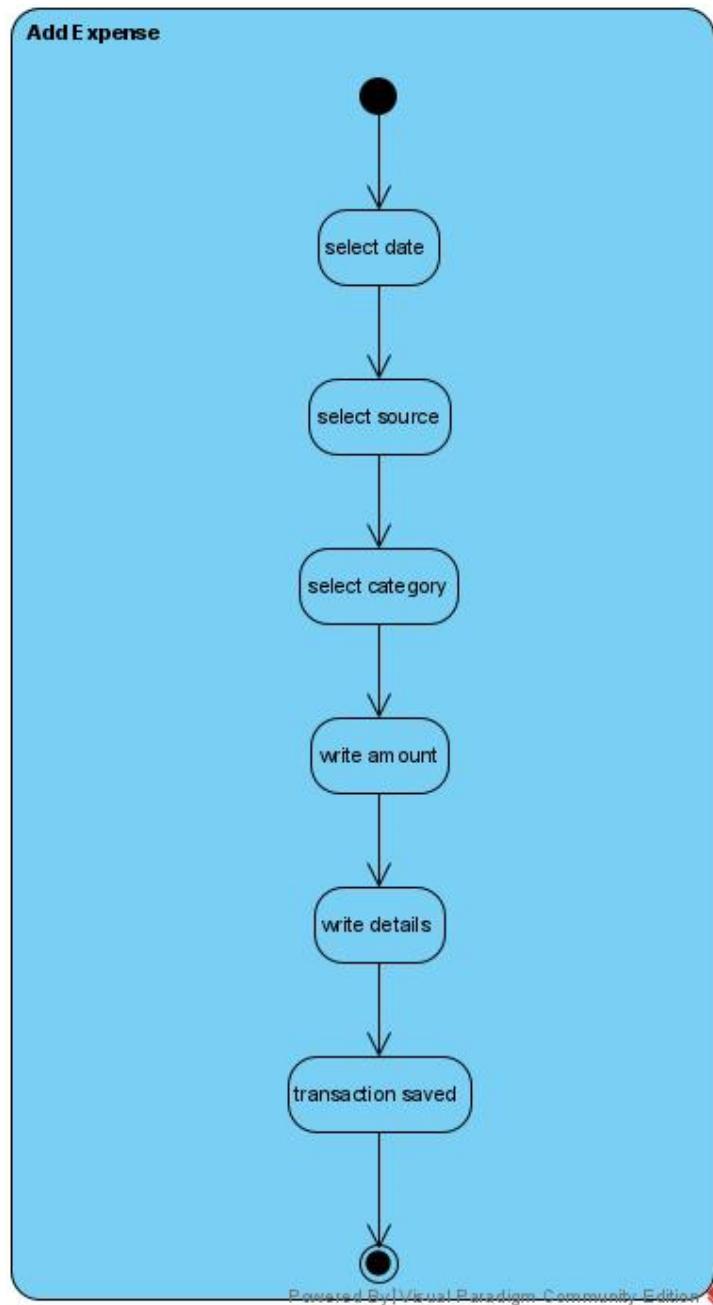


Figure 10 Activity Diagram of Add Expense

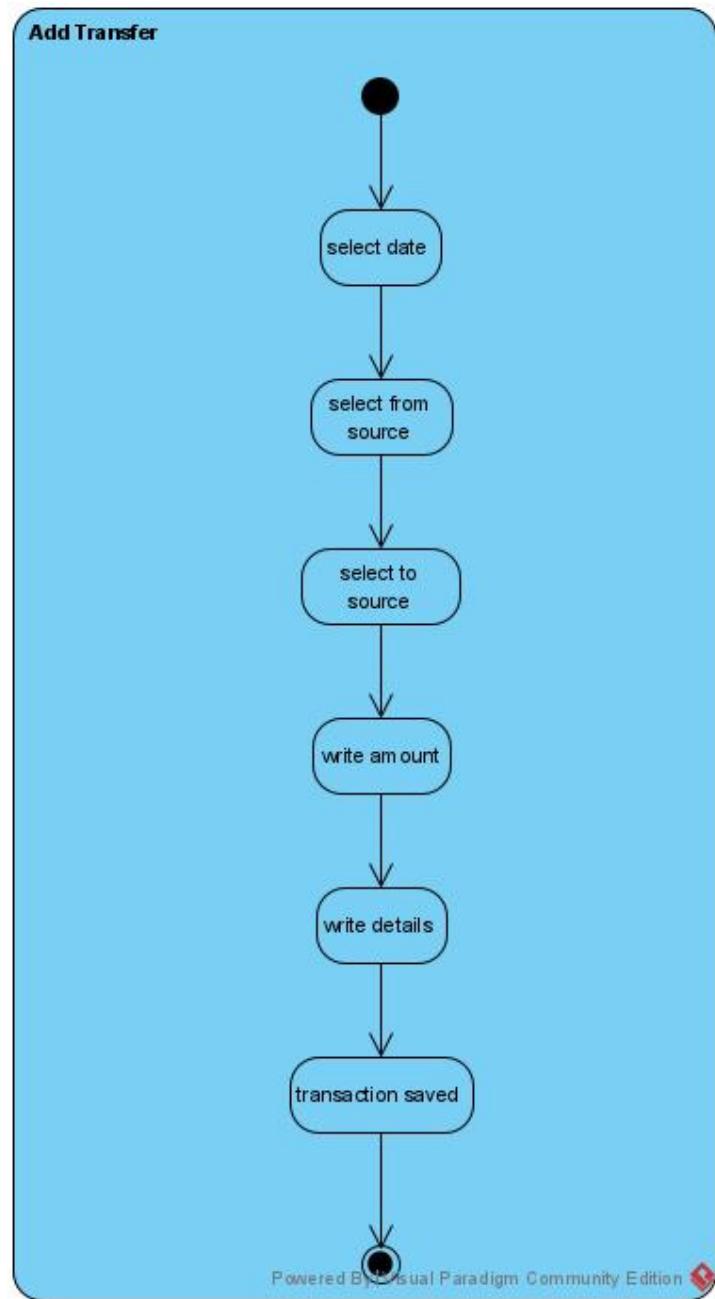


Figure 11 Activity Diagram of Add Transfer

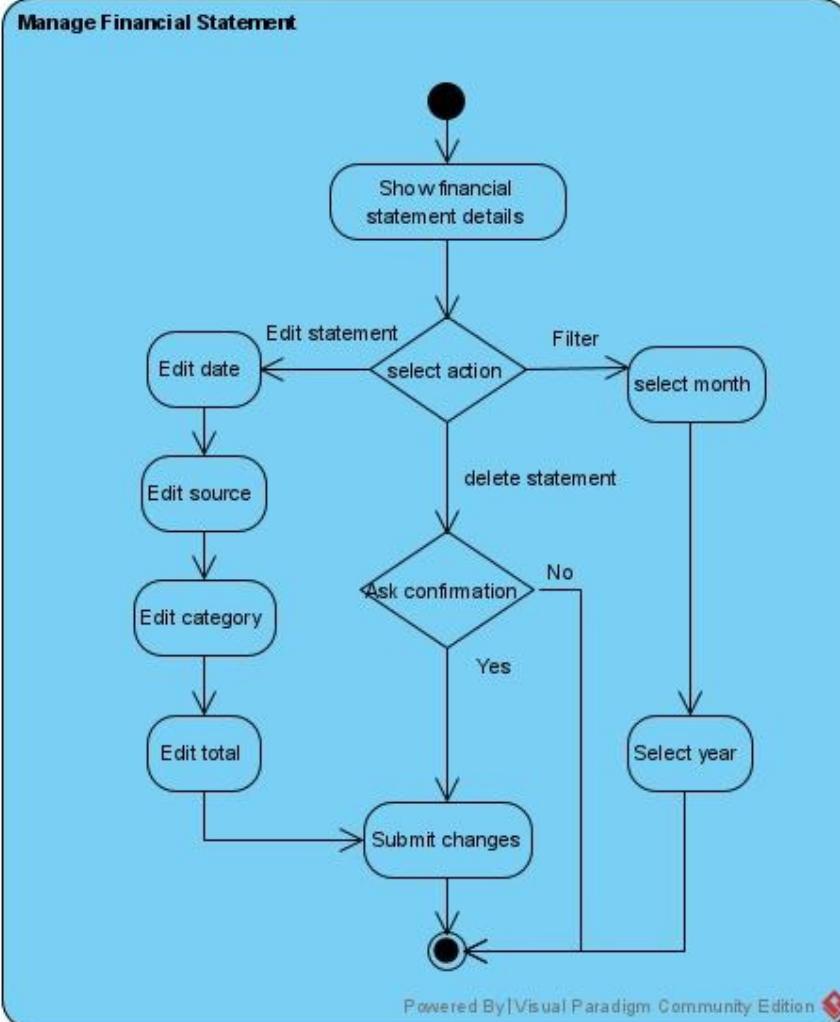


Figure 12 Activity Diagram of Manage Financial Statement

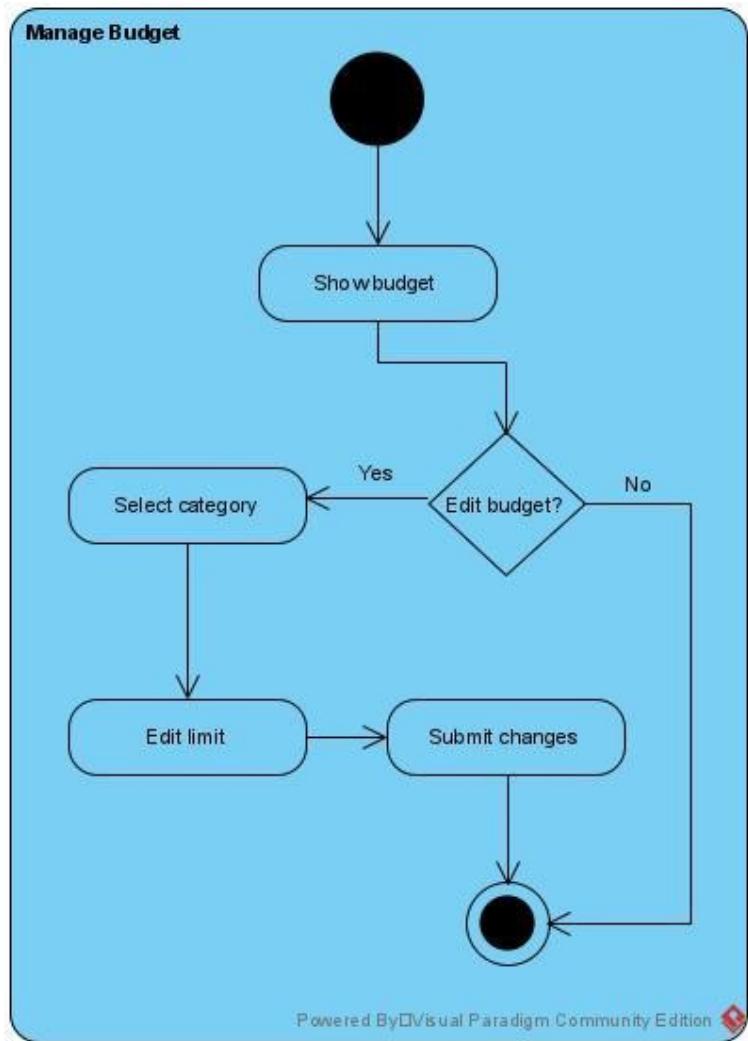


Figure 13 Activity Diagram of Manage Budget

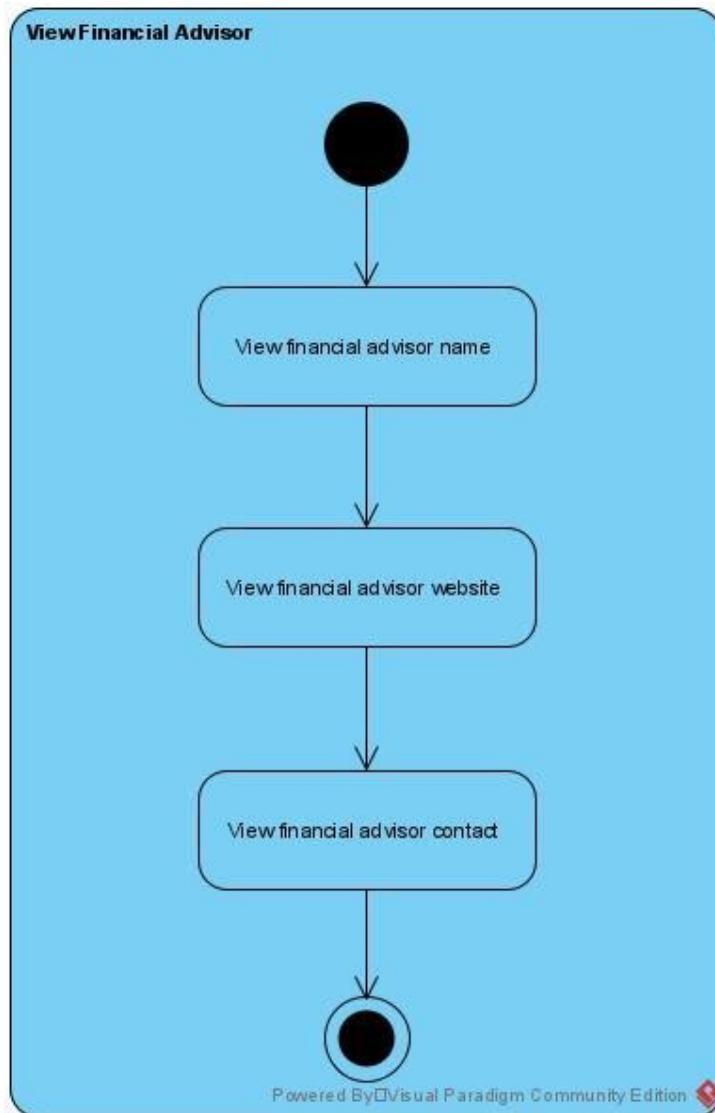


Figure 14 Activity Diagram of View Financial Advisor

6.7 Class Diagram

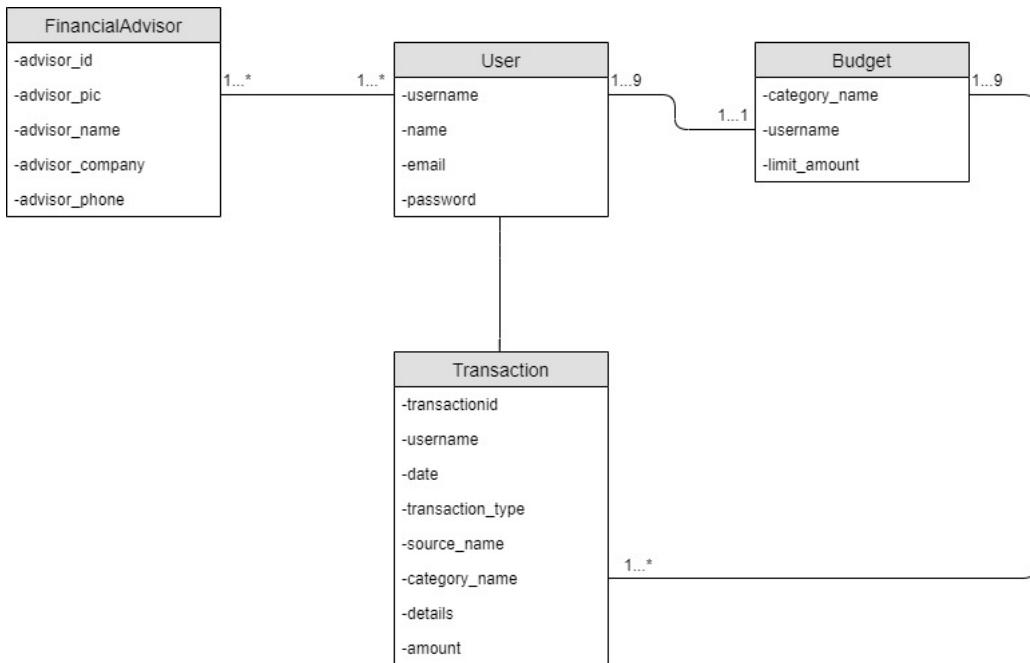


Figure 15 Class Diagram of Money Saving System

6.8 Sequence Diagram

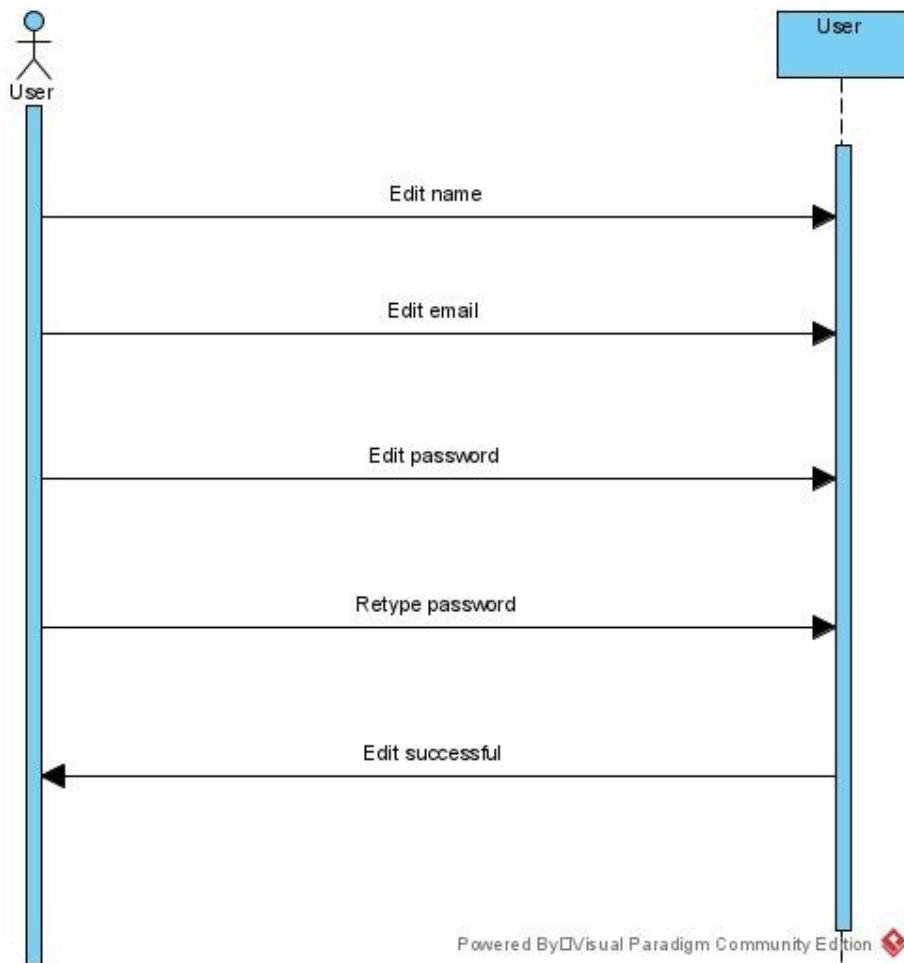


Figure 16 Sequence Diagram of Edit Info

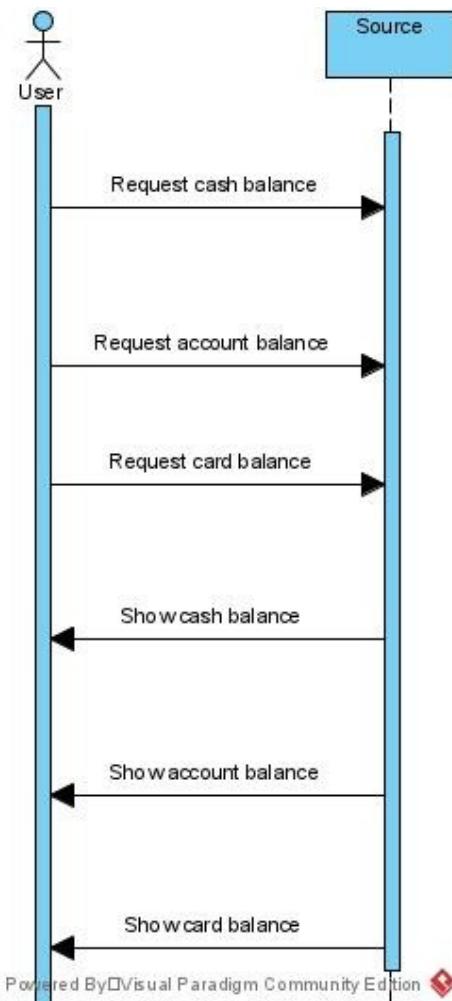


Figure 17 Sequence Diagram of View Source

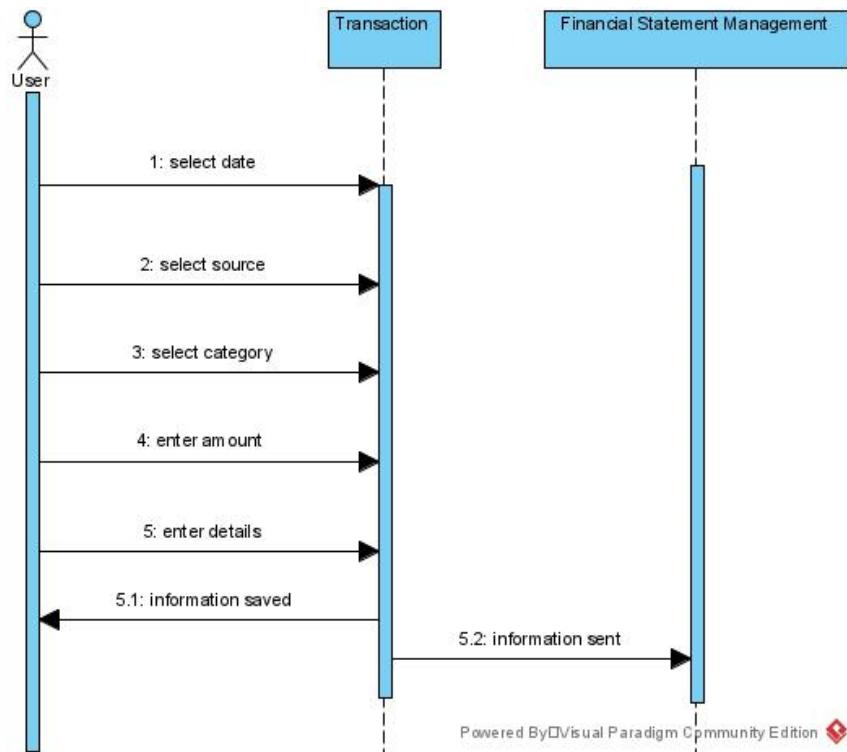


Figure 18 Sequence Diagram of Add Income

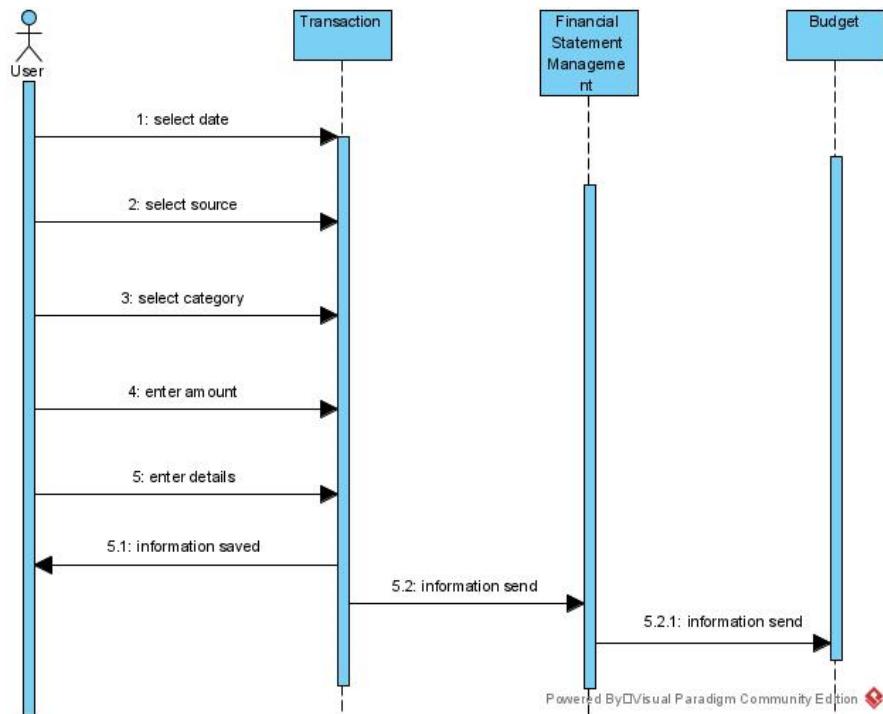


Figure 19 Sequence Diagram of Add Expense

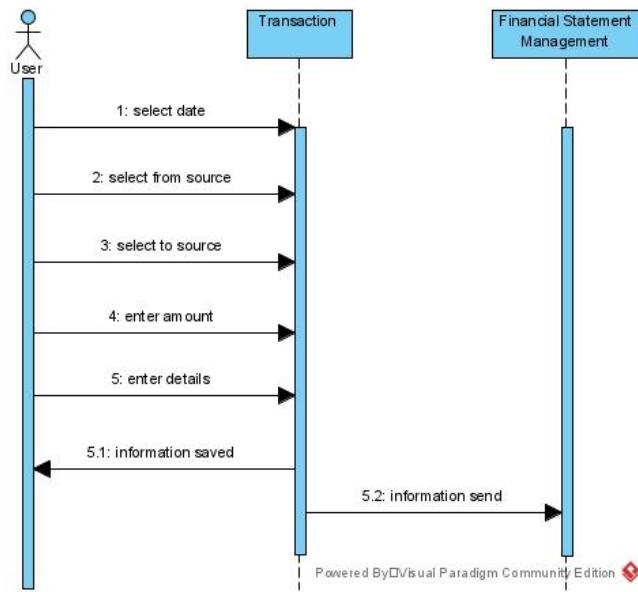


Figure 20 Sequence Diagram of Add Transfer

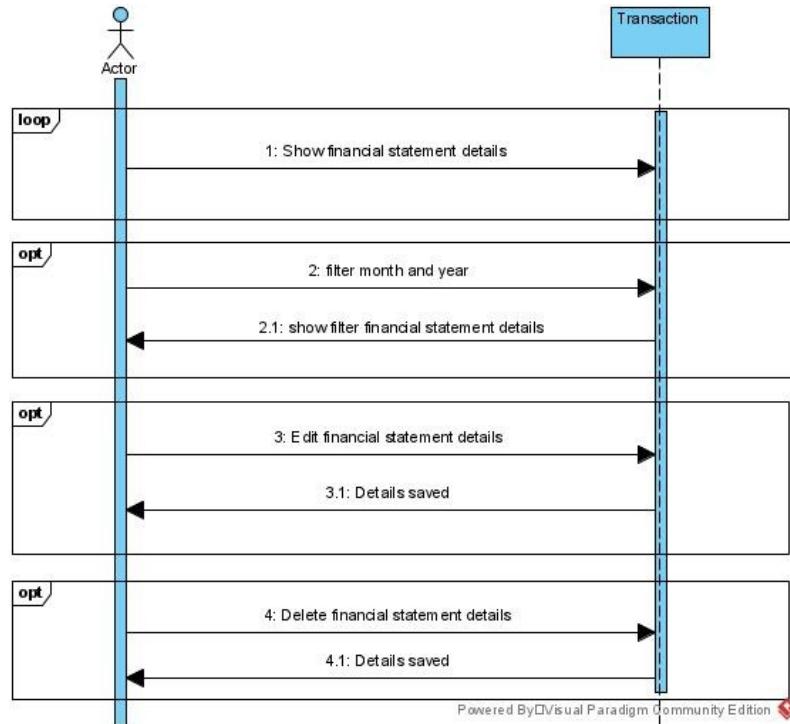


Figure 21 Sequence Diagram of Manage Financial Statement

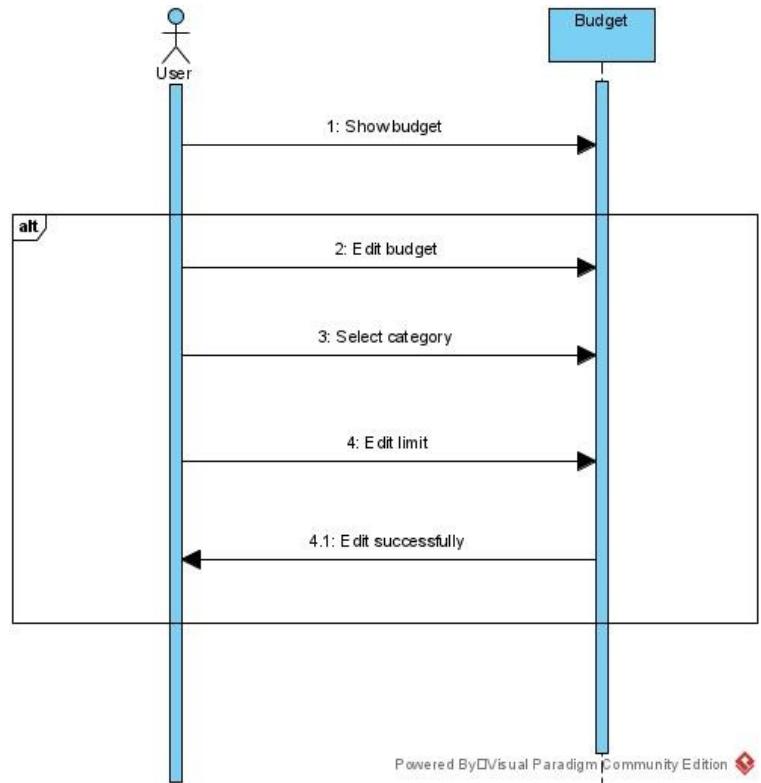


Figure 22 Sequence Diagram of Manage Budget

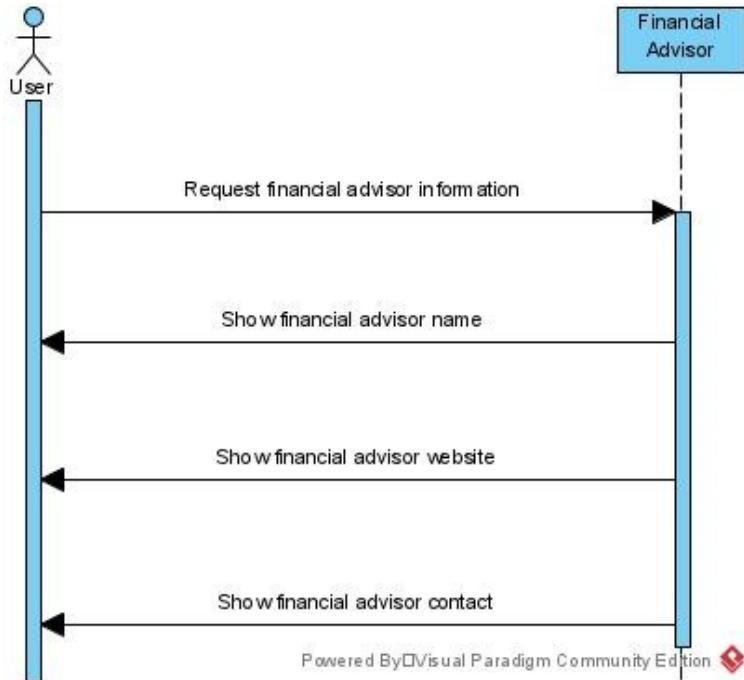


Figure 23 Sequence Diagram of View Financial Advisor

CHAPTER 7: SOFTWARE DESIGN DOCUMENT (SDD)

7.1 Entity Relationship Diagram

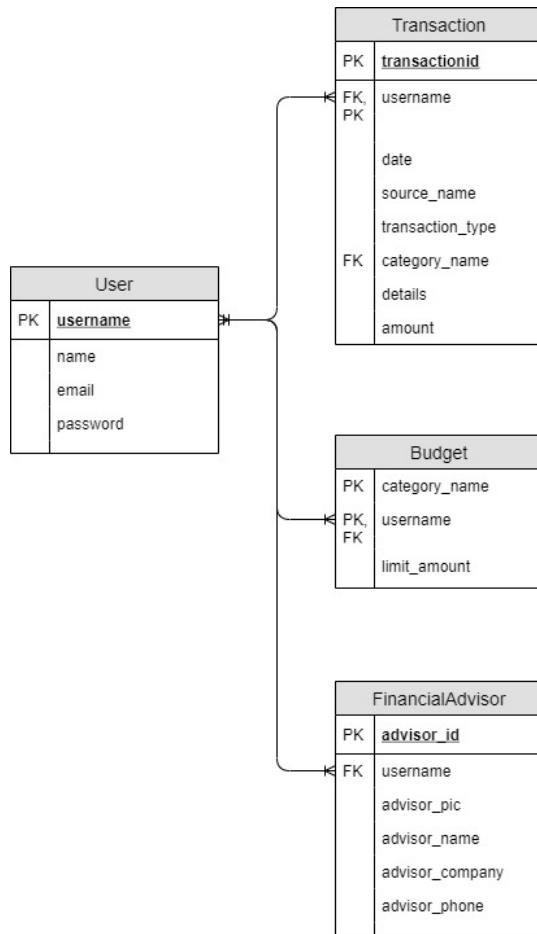


Figure 24 Entity-Relationship Diagram of Money Saving System

7.2 Data Dictionary

User

Field	Description	Date Type	Constraint	Remark
username	Username of user	VARCHAR(20)	Primary Key	
name	Name of user	VARCHAR(100)		
email	Email of user	VARCHAR(100)		
password	Password of user	VARCHAR(100)		

Budget

Field	Description	Date Type	Constraint	Remark
categogry_name	Type of category	VARCHAR(100)	Primary Key	
username	Username of user	VARCHAR(20)	Primary Key, Foreign Key	Refer to table User
limit_amount	The limit expense of the category	DOUBLE(9,2)		

Transaction

Field	Description	Date Type	Constraint	Remark
transactionid	ID of the transaction	VARCHAR(10)	Primary Key	Auto Generated by DBMS
username	Username of user	VARCHAR(20)	Primary Key, Foreign Key	Refer to table User
date	Date of the Transaction	VARCHAR(20)		
transaction_type	Type of the transaction	VARCHAR(100)		
source_name	Type of the source	VARCHAR(100)		
category_name	Type of the category	VARCHAR(100)	Foreign Key	Refer to table Budget
details	Details of the transaction	VARCHAR(100)		
amount	Transactio n amount	DOUBLE(9,2)		

Financial Advisor

Field	Description	Date Type	Constraint	Remark
advisor_id	ID of financial advisor	INT(11)	Primary Key	Auto Generated by DBMS
advisor_pic	Picture of financial advisor	LONGBLOB		
advisor_name	Username of the advisor	VARCHAR(100)		
advisor_compan y	Branch address of financial advisor	VARCHAR(100)		
advisor_phone	Phone number of financial advisor	VARCHAR(100)		

7.3 Mapping Table

User

Username	name	email	password
muhammadali	Muhammad Ali bin Abdullah	muhammadali@gmail.com	adminadmin
Dokzuabooii	Oh Dok Zua	dokzua@gmail.com	admin123
kalyani2020	Kalyani Kumar	Kalyani2020@gmail.com	adminttoo
katoactually88	Taka Garou	katotaka@gmail.com	admin12
Twicenayeon	Im Na-yeon	twicenayeon@gmail.com	admin321

Budget

category_name	username	limit_amount
Social life	muhammadali	500
Food	muhammadali	1000
Self-development	muhammadali	100
Food	kalyani2020	1000
Self-development	kalyani2020	100

Transaction

transactionid	username	date	transaction_type	Source_name	Category_name	details	amount
TI0001	muhammadali	2020/02/12	Income	Cash	Transportation	Driver	700
TE0002	muhammadali	2020/02/12	Expense	Amount	Food	KFC	20
TI0003	muhammadali	2020/02/12	Income	Card	Self-development	Programmer	3000
TE0004	muhammadali	2020/02/12	Expense	Cash	Self-development	McDonald	20
TI0005	muhammadali	2020/02/12	Income	Card	Social life	Gathering	100

Financial Advisor

financial_id	Advisor_pic	Advisor_name	Advisor_company	Advisor_phone
F00001	Mohd Amirul.jpeg	muhammad ali	Bank Islam Klang Branch	03-8203928
F00002	Soh Eu Jhern.jpeg	muhammad ali	Bank Islam Klang Branch	03-8203928
F00003	Riya Sahani.jpeg	muhammad ali	Bank Islam Klang Branch	03-8203928
F00004	Lee Ah Beng.jpeg	muhammad ali	Maybank Puchong Branch	03-2019283
F00005	Tan Khoo La.jpeg	muhammad ali	Maybank Puchong Branch	03-2019283

7.4 User Interface

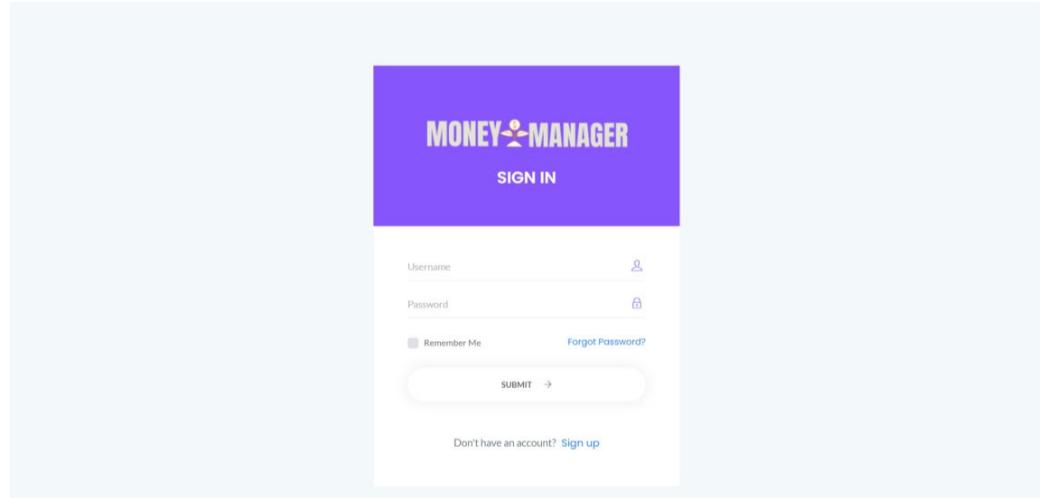


Figure 25 Webpage of Login Page

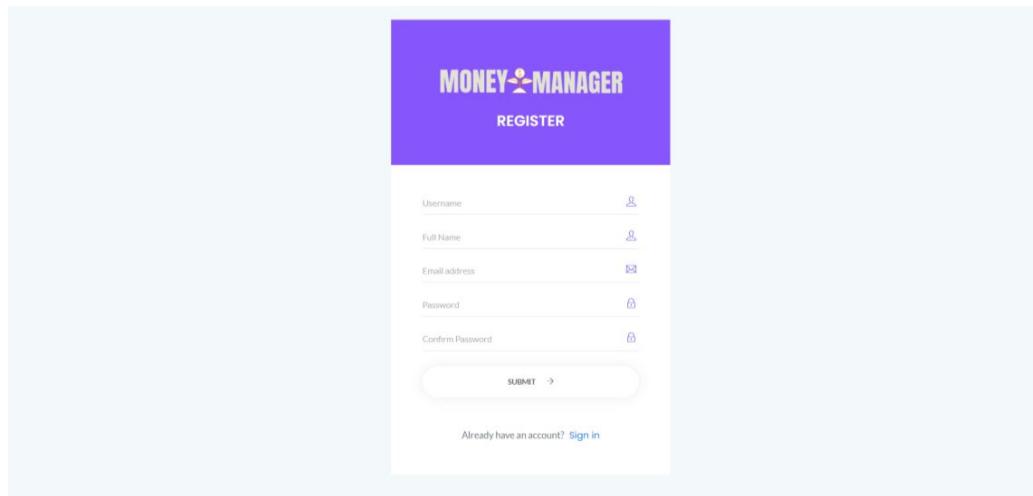


Figure 26 Webpage of Register Page

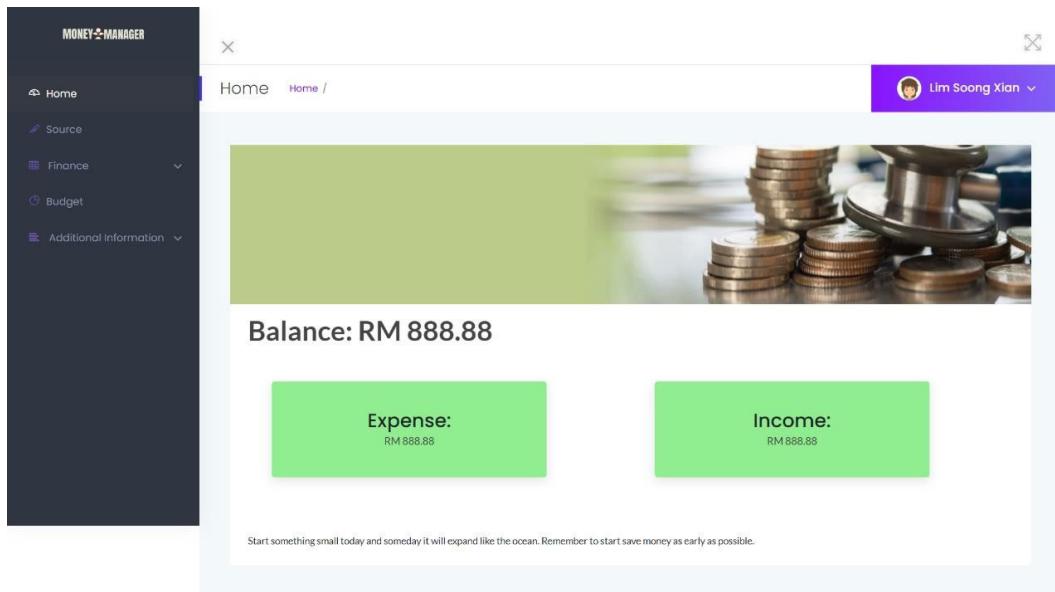


Figure 27 Webpage of Homepage

A screenshot of the Money Manager Edit Info page. The left sidebar is identical to the homepage. The main content area has a light gray background and is titled "Edit Info" with a backlink to "Home / Edit info /". It contains several input fields: "Username" (soongxian), "Full Name" (Lim Soong Xian), "Email address" (s54235@ocean.united.edu.my), "Password" (empty field), and "Repeat Password" (empty field). At the bottom right is a "Submit" button. A small copyright notice is at the bottom center: "© Copyright 2021. All right reserved. Template by Group 2".

Figure 28 Webpage of Edit Info

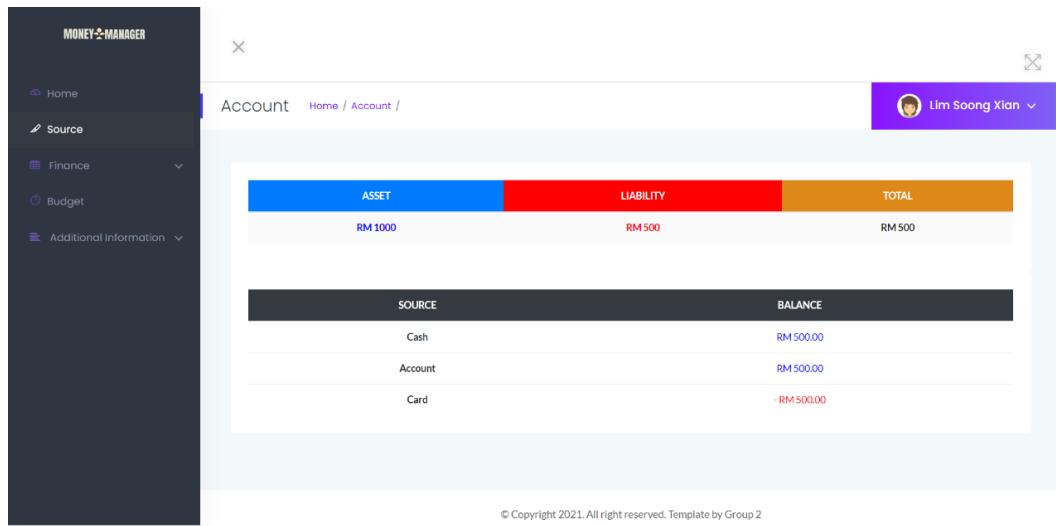


Figure 29 Webpage of Source

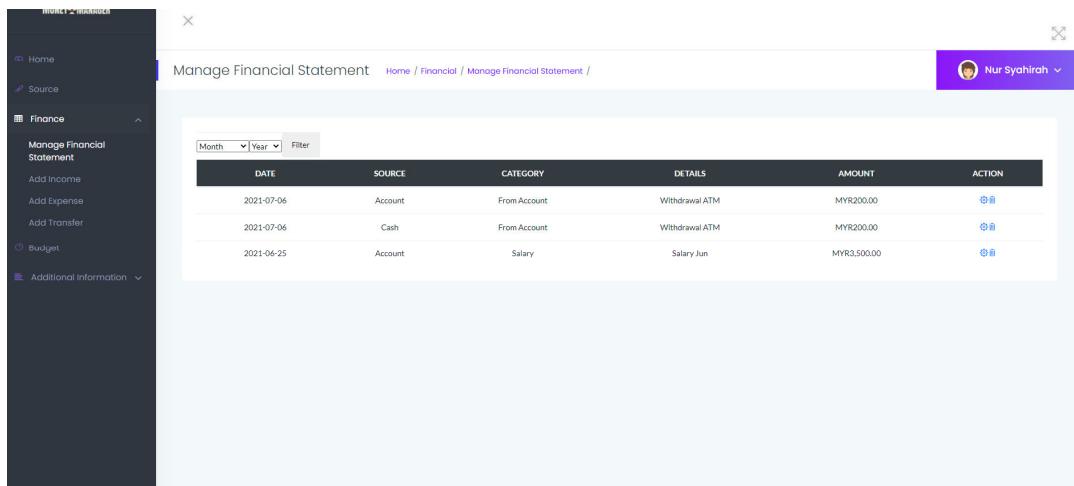


Figure 30 Webpage of Manage Financial Statement

Add Income

Recurring: No

Date: dd/mm/yyyy

Source: Cash

Category: Salary

Amount: RM 88.88

Details:

Submit

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Figure 31 Webpage of Add Income

Add Expense

Recurring: No

Date: dd/mm/yyyy

Source: Cash

Category: Food

Amount: RM 88.88

Details:

Submit

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Figure 32 Webpage of Add Expense

The screenshot shows the 'Add Transfer' page of the Money Manager application. The left sidebar has a dark theme with categories: Home, Account, Finance (selected), Add Income, Add Expense, Add Transfer (selected), Manage Recurring Transaction, Budget, and Additional Information. The main content area has a light background. It displays a form for adding a transfer:

- Recurring:** No
- Date:** dd/mm/yyyy
- From Source:** Cash
- To Source:** Cash
- Amount:** RM 88.88
- Details:** [Empty text area]

A 'Submit' button is located at the bottom right of the form.

Figure 33 Webpage of Add Transfer

The screenshot shows the 'Budget' page of the Money Manager application. The left sidebar has a dark theme with categories: Home, Account, Finance, Budget (selected), and Additional Information. The main content area has a light background. It displays a table of budget items:

CATEGORY	LIMIT	CURRENT	REMAINING	PERCENTAGE	EDIT
Food	RM 100.00	RM 50.00	RM 50.00	50%	✎
Social Life	RM 100.00	RM 50.00	RM 50.00	50%	✎
Self-development	RM 100.00	RM 50.00	RM 50.00	50%	✎
Transportation	RM 100.00	RM 50.00	RM 50.00	50%	✎
Household	RM 100.00	RM 50.00	RM 50.00	50%	✎
Beauty	RM 100.00	RM 50.00	RM 50.00	50%	✎
Health	RM 100.00	RM 50.00	RM 50.00	50%	✎
Gift	RM 100.00	RM 50.00	RM 50.00	50%	✎
Other	RM 100.00	RM 50.00	RM 50.00	50%	✎

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Figure 34 Webpage of Budget

The screenshot shows a web application interface for 'MONEY MANAGER'. On the left, a dark sidebar contains navigation links: Home, Source, Finance (with a dropdown arrow), Budget, Additional Information (with a dropdown arrow), and Financial Advisor. The 'Financial Advisor' link is highlighted. The main content area has a purple header bar with the text 'Financial Advisor' and a purple button on the right labeled 'Suvie'. Below the header, there is a message: 'Find us for any help, direct the given number and find your consultant to provide good service on your problem.' A scroll bar is visible on the right side of the content area. The main content displays four rows of consultant information, each with a small profile picture and two columns of text: Name and Phone Number.

	Name: Chan JY Phone Number: 0123628172
	Name: Loong PE Phone Number: 0127293827
	Name: Ng YC Phone Number: 0123729182
	Name: Chiew HY Phone Number: 0192837291

Figure 35 Webpage of Financial Advisor

CHAPTER 8: USER MANUAL

8.1 Introduction

The user manual contains all essential information for the user to make full use of the information system. This manual includes a description of the system functions and capabilities, contingencies and alternate modes of operation, and step-by-step procedures system access and use. This will be very helpful on end user to utilize and understand the whole system.

8.2 Money Manager System Guide

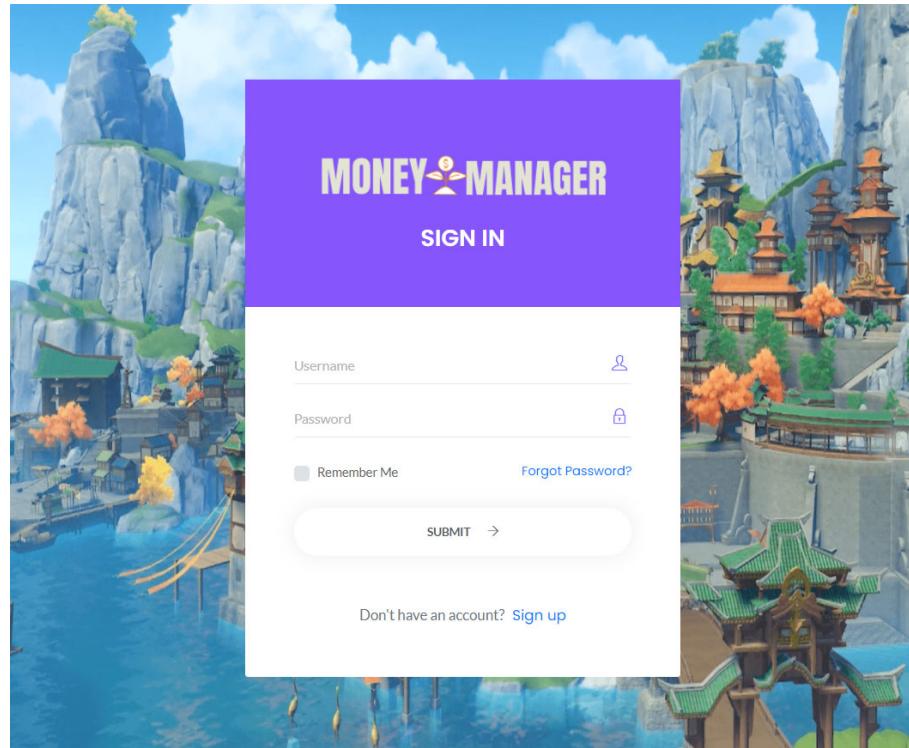


Figure 38 Login Page

Here is the login interface. Hereby the end user can login into the system using registered username and password. The signup button will lead you to have a registered account, if the user hasn't registered for the account.

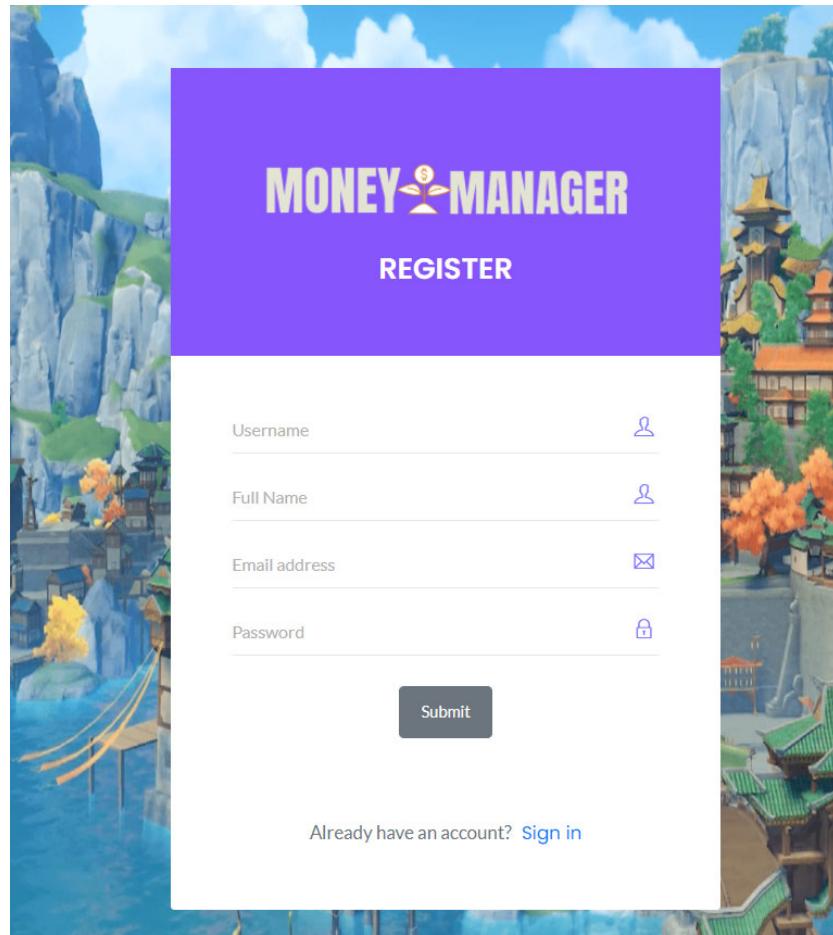


Figure 39 Register Page

Above diagram shown signup interface to register into a new account. Once registration done successfully, by pressing sing in button the page will direct the end user to login using verified username and password.

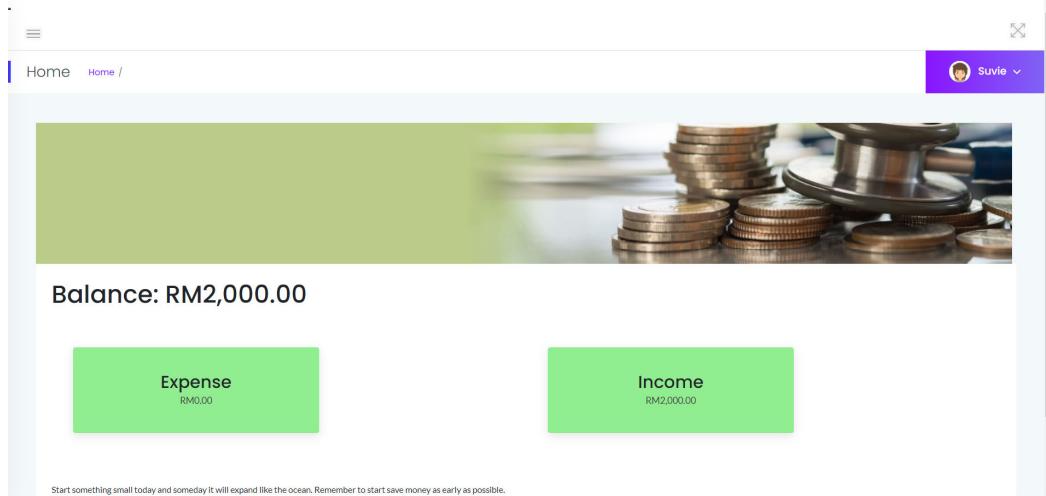


Figure 40 Homepage of Money Saving System

Figure 40 shows the home page of our Money Managing System. From here the end user could be able to see their account balance after expenses. This page will also display the expenses and income amount. To make sure the end user is using the correct account, at the left corner of the page will appear the registered user account name.

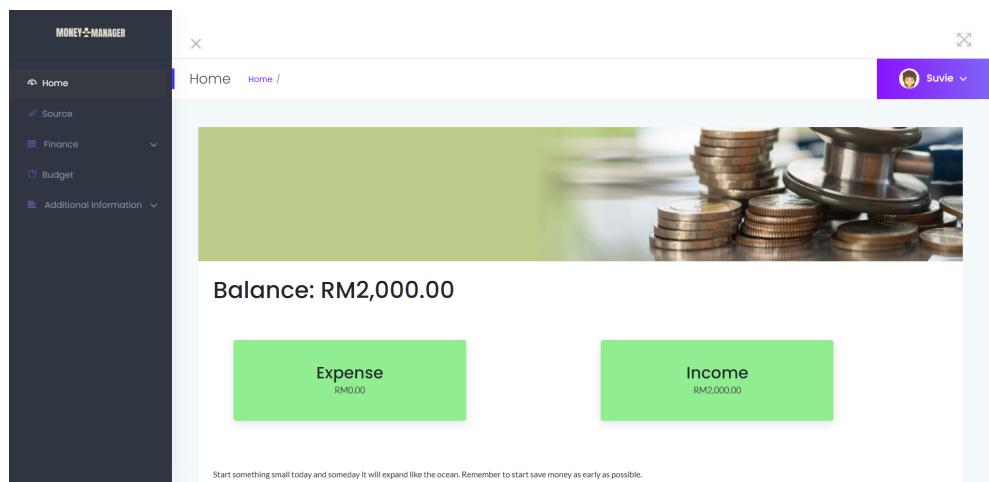


Figure 41 Navigation Panel of Money Saving System

As shown in the above diagram, end user will be able to direct the page using navigation bar guidance.

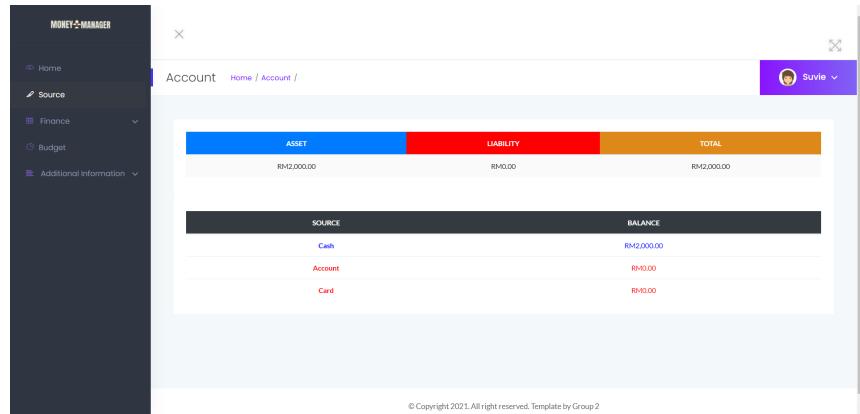


Figure 42 Source Page of Money Saving System

Here is the source page, where the end user can check their asset, liability and total amount. Besides, the amount also will be displayed as per source of transaction made. This will be automatically update as per the end user finance management.

The screenshot shows the 'Add Income' page of the Money Saving System. The left sidebar shows 'Finance' selected. The main form fields include: 'Date' (dd/mm/yyyy), 'Source' (Cash), 'Category' (Salary), 'Amount' (RM 88.88), and 'Details' (a text area). A 'Submit' button is at the bottom right.

Figure 43 Add Income of Money Saving System

The add income interface is to update the end user's income. Fill the form that has been prepared by entering date income issued, source, category, amount and details as notes to the end user itself. Then submit to update into the system.

The screenshot shows the 'Add Expense' page of the Money Saving System. The left sidebar has a dark theme with categories like Home, Source, Finance (selected), Manage Financial Statement, Add Income, Add Expense (selected), Add Transfer, Budget, and Additional Information. The main area has a light blue header with 'Add Expense' and a purple navigation bar with 'Suvie'. The form fields include 'Date' (dd/mm/yyyy), 'Source' (Cash), 'Category' (Food), 'Amount' (RM 88.88), and a 'Details' section with a text input field. A 'Submit' button is at the bottom.

Figure 44 Add Expense of Money Saving System

Add expenses interface will help the end user to take note of their daily, monthly expenses accordingly. Here the end user should complete the form to verify their expenses by entering date, source, category, amount and details. Then press submit for further budgeting. Here the end user also can update each time when they spend money.

The screenshot shows the 'Add Transfer' page of the Money Saving System. The left sidebar is identical to Figure 44. The main area has a light blue header with 'Add Transfer' and a purple navigation bar with 'Suvie'. The form fields include 'Date' (dd/mm/yyyy), 'From Source' (Cash), 'To Source' (Cash), 'Amount' (RM 88.88), and a 'Details' section with a text input field. A 'Submit' button is at the bottom.

Figure 45 Add Transfer of Money Saving System

Add transfer interface is to help the end user to know the transaction party and also purpose. By that, they won't be lost at the end of the month. To complete the add transfer interface, user should complete the form given by entering date, from source, to source, amount, details. Then submit to be added in the financial management table later.

The screenshot shows the 'Manage Financial Statement' page. On the left, there's a sidebar with navigation links: Home, Source, Finance (with 'Manage Financial Statement' selected), Add Income, Add Expense, Add Transfer, Budget, and Additional Information. The main area has a header 'Manage Financial Statement' with a back arrow and a user profile 'Nur syahirah'. Below the header is a search/filter bar with dropdowns for 'Month' and 'Year' and a 'Filter' button. A table lists three transactions:

DATE	SOURCE	CATEGORY	DETAILS	AMOUNT	ACTION
2021-07-06	Account	From Account	Withdraw ATM	MYR820.00	
2021-07-06	Cash	From Account	Withdraw ATM	MYR20.00	
2021-06-25	Account	Salary	Salary Jun	MYR3,500.00	

Figure 46 Manage Financial Statement of Money Saving System

This is where the user can view all the financial income and spending of their transaction. They can also choose the specific year and month in which they wish to see and filter.

The screenshot shows the 'Budget' page. The sidebar includes 'Home', 'Source', 'Finance' (selected), 'Budget' (selected), and 'Additional Information'. The main area has a header 'Budget' with a back arrow and a user profile 'Suvie'. Below is a table of budget items:

CATEGORY	LIMIT	CURRENT	REMAINING	PERCENTAGE	EDIT
Beauty	RM30.00	RM0.00	RM30.00	0%	
Food	RM30.00	RM0.00	RM30.00	0%	
Gift	RM100.00	RM100.00	RM0.00	Nan %	
Health	RM0.00	RM0.00	RM0.00	Nan %	
Household	RM0.00	RM0.00	RM0.00	Nan %	
Other	RM0.00	RM0.00	RM0.00	Nan %	
Self-development	RM0.00	RM0.00	RM0.00	Nan %	
Social Life	RM0.00	RM0.00	RM0.00	Nan %	

Figure 47 Budget of Money Saving System

Here the end user can set their own limit of their expenses by choosing the category. This system will also keep reminding the user how much been spent on the stated categories.

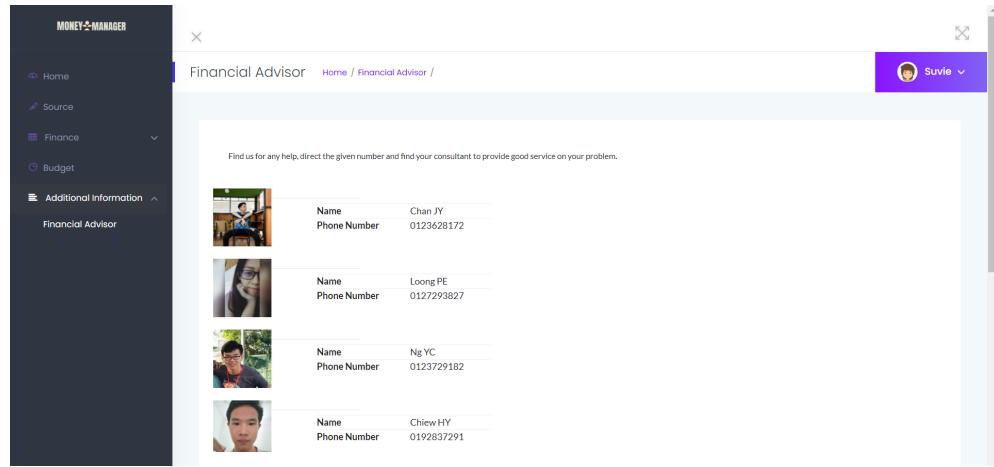


Figure 48 Financial Advisor of Money Saving System

Using the financial advisor interface the end user can be able to direct them to get financial advices.

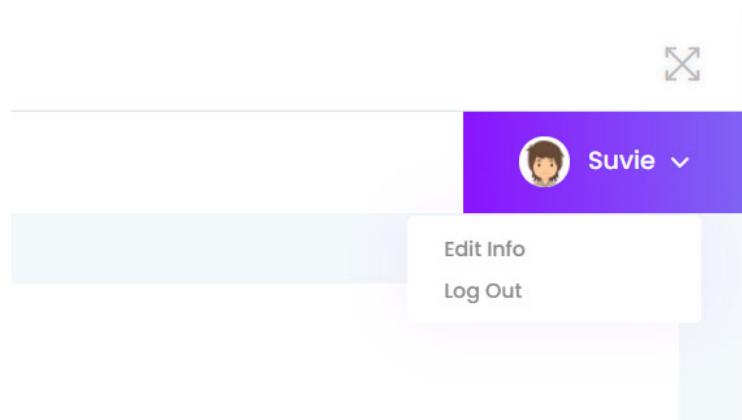


Figure 49 User Panel of Money Saving System

At the right corner, user can see the avatar. Below that provided an access to the user to edit their own profile.

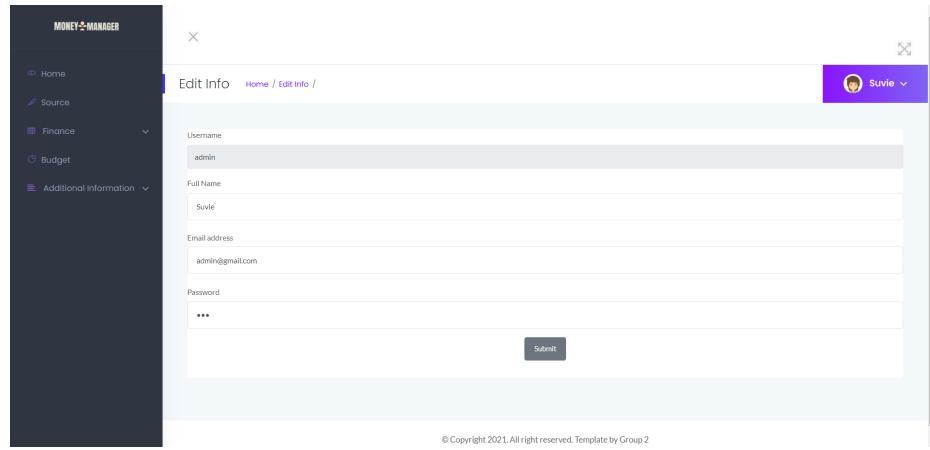


Figure 50 Edit User Info of Money Saving System

When the user enters the edit info interface, they can see the username is frozen and other details are open for editing. Once the edit is complete, make sure to click the submit button to store the data in the database.

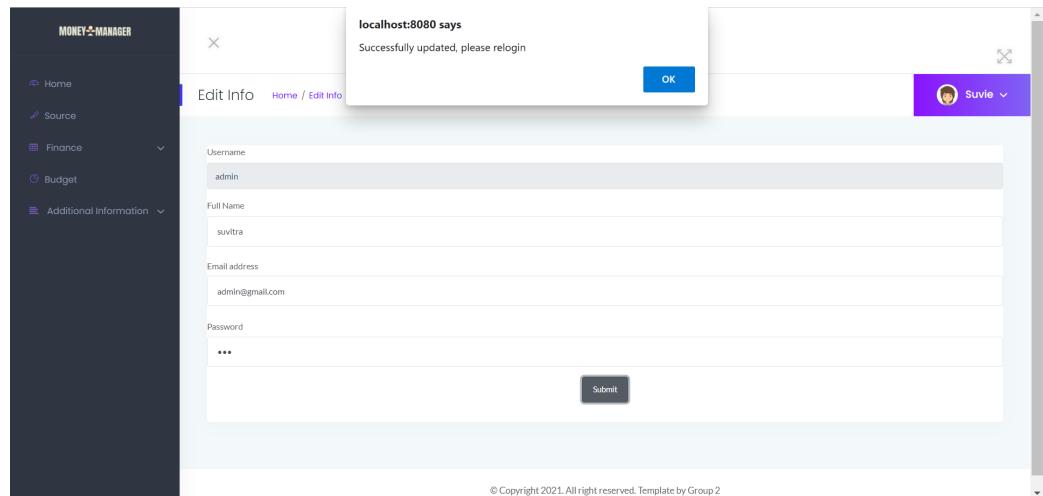


Figure 51 Alert of Successfully Updated User Info of Money Saving System

Press the OK button to re-login into the user account with updated profile details.

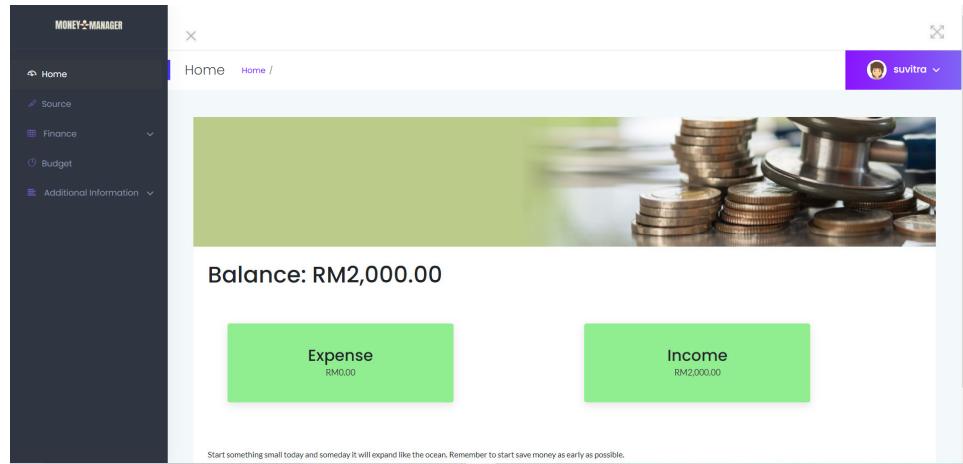


Figure 52 Homepage of Money Saving System

After the end re-login their account, as usual can be able to see the homepage as being displayed.