Faculty of Computer and Mathematical Sciences

SOFTWARE REQUIREMENT SPECIFICATIONS

SEMESTER	: 4
COURSE NAME	: SOFTWARE ENGINEERING (CSC577)
LECTURER	: ASSOC. PROF. DR. NORDIN ABU BAKAR
SYSTEM NAME	: BUDGET PLANNER (CASH FLOW)
PROGRAM NAME	: BACHELOR OF COMPUTER SCIENCE (CS230)
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DATE OF SUBMISSION	17 MAY 2018
ACTUAL DATE OF SUBMISSION	24 MAY 2018
NO OF DAYS LATE	7 DAYS

Table of Contents

List of Figures

1.0. Introduction

1.1 Background Study

1.1.1 What kind of system

Cash Flow is a money management / budget planner application to assist users track and manage their everyday expenses. This application will keep track of every expenses
made by users separated by category for user to better track where their money goes and manage their expenses better. This app also keep track of user's saving with added 'Wishlist' functionality which is an item that user wanted to purchase outside of their daily expenses. 'Wishlist' is dependent on saving functionality which means users can see how much saving they accumulated and if its enough to be used to purchase the item in 'Wishlist'.

1.1.2 Who needs the system

General population specifically adults that have troubles keeping track of their expenses.

1.1.3 Why they need the system

- With the increasing cost of living nowadays, people needs to be smarter in spending their money.
- However, it is hard to keep track with your expenses using without the help of an organized system.
- People are busy to create their own system to track their money and savings.

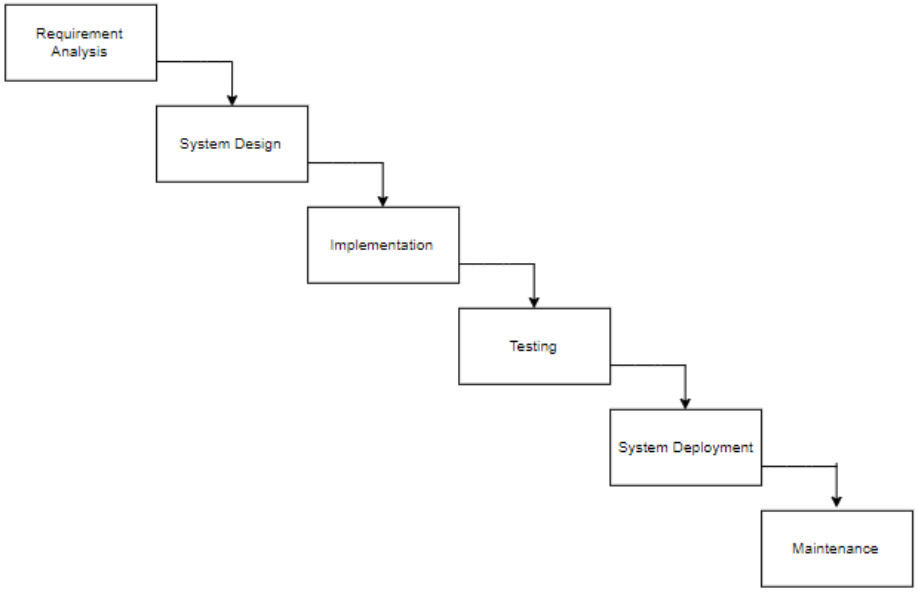
1.1.4 How the proposed system can improve their activities

- Provide an organized system that tracks every transaction made by user.
- User-friendly interface and graphical representation allow easier understanding of user cash flow.
- Monthly statistic that allows user to plan their expenses better.

1.1.5 An existing or similar system developed for other organizations

- Goodbudget
- Wallet
- Monefy
- Money Manager

1.2 Development Methodology (Software Process Model)



1.2.1 Requirement Analysis

This phase is crucial phase of the project. During requirement analysis, end users and project team itereatively communicate to decide what is the problem that needs to be address. The following techniques can be used to gather requirements:

- Identify requirements of Cash Flow system.
- Build multiple use cases to describe each action that a user will take in the system.

1.2.2 System Design

This phase is done by transforming what have been gathered in requirement analysis and focus on how to tackle the problem by designing the Cash Flow software using a design plan called the Design Specification.

1.2.3 Implementation

In this phase, Cash Flow prototype system are developed based on the system design.

1.2.4 Testing

The prototype system were tested to find any bug.

1.2.5 System Deployment

The Cash Flow system is deployed

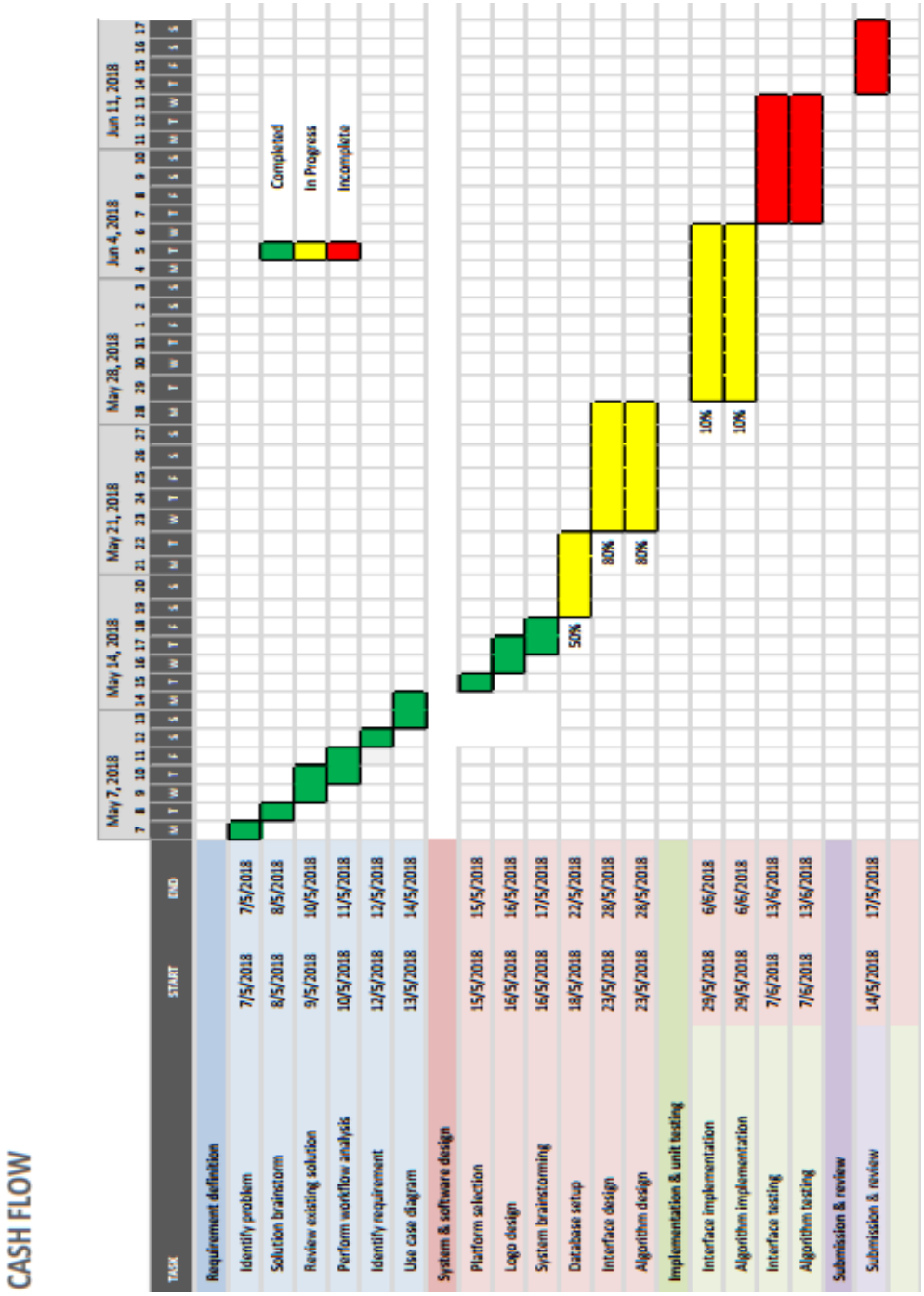
1.2.6 Maintenance

Cash Flow system improvement based on new requirement will be done from time to time.

1.3 Project Milestones and Deliverables

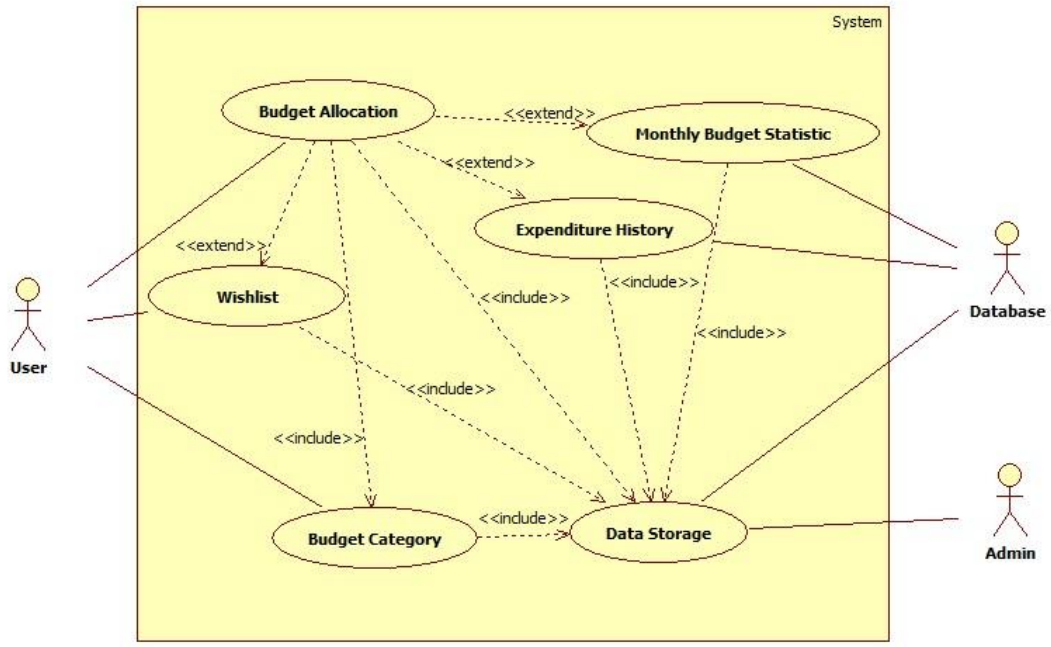
MILESTONE	PLANNED	ACTUAL
Initial Requirement	7 May 2018	7 May 2018
Software Process Model	11 May 2018	11 May 2018
Use Case Description	14 May 2018	14 May 2018
Sequence Diagram	15 May 2018	15 May 2018
System and User Documentation	16 May 2018	21 May 2018
Report of the system	18 May 2018	23 May 2018

1.4 Project Schedule



2.0. Functional Requirements

2.1 Overall UseCase Diagram



2.2 Details of Each Use Case

Use Case Name	Budget Category	
Scenario	Budget Category	
Brief Description	The total budget are divided into several category to ease users in managing their money efficiently	
Triggering Event	Budget Allocation	
Actors	User	
Related Use Case	Budget Allocation, Data Storage	
Stakeholders	Database, System	
Precondition	None	
Postcondition	Budget and expenses for each category can be allocated	
Flow of Events	Actor	System
	1. Users add the desired categories. 2. Users may add and drop category any time the users desired.	1. Display the available category with brief description of each category. 2. Available category is: • Food & Dining.

		• Bills. • Personal Care. • Auto & Transport. • Shopping. • Kids.
Exception Condition	1. User wants to create new category that is not available,	

Use Case Name	Budget Allocation	
Scenario	Budget Allocation	
Brief Description	User allocates budget for different categories and it will be displayed in a form of pie chart	
Triggering Event	Opening the application	
Actors	Users	
Related Use Case	Expenditure History, Wishlist, Budget Category, Monthly Budget Statistic, Data Storage	
Stakeholders	System, Database	
Precondition	Budget Categorisation	
Postcondition	Budget Pie Chart Exist	
Flow of Events	Actor	System
	1. Users open the application. 2. User input the monthly income. 3. Users provide the budget allocated for a category. 4. Users input their monthly income. 5. Users input the expenses for each category everytime user spends money on the category.	1. The systems will display the existing budget allocated in the form of pie chart and monthly income in the form of vertical progress bar. 2. The form of the pie chart and progress bar will change depends on user's expenses. 3. Calculate total expenses in a month. 4. Calculate saving based on this formula: Monthly Savings= Monthly income- Total expenses in a month
Exception Condition		

Use Case Name	Wishlist
Scenario	A list of desired, non-essential item that user would like to purchase.
Brief Description	Wishlist enables user to list all the desired item that user would like to purchase. At the end of the month, user would be able to see whether their saving is enough for them to buy the item in their wishlist.
Triggering Event	None.

Actors	User.
Related Use Case	Budget Allocation, Data Storage
Stakeholders	Database
Precondition	None
Postcondition	Wishlist exist.
Flow of Events	Actor 1. User input the following info for item desired in the wishlist: • Description of item. • Price of item. 2. User can remove item from wishlist user want to. System 1. The system will display all the wishlist that has been input by users. 2. Each wishlist will have progress bar to show whether users have enough money to buy the item or not.
Exception Condition	1. Multiple item in wishlist with same price will have same progress level (Up to user to choose which item to purchase first).

Use Case Name	Expenditure History
Scenario	History of all expenses made in a month
Brief Description	Every expenses inputted by user will be recorded and can be viewed in the expenditure history to better track users money flow
Triggering Event	None
Actors	Database
Related Use Case	Budget Allocation, Data Storage
Stakeholders	Users, System
Precondition	Expenses need to exists and be input by users in budget allocation.
Postcondition	History exists and can be viewed.
Flow of Events	Actor 1. Save user input from budget allocation. System 1. Retrieved all the data regarding budget allocation from database. 2. Display the data for user to view them.
Exception Condition	

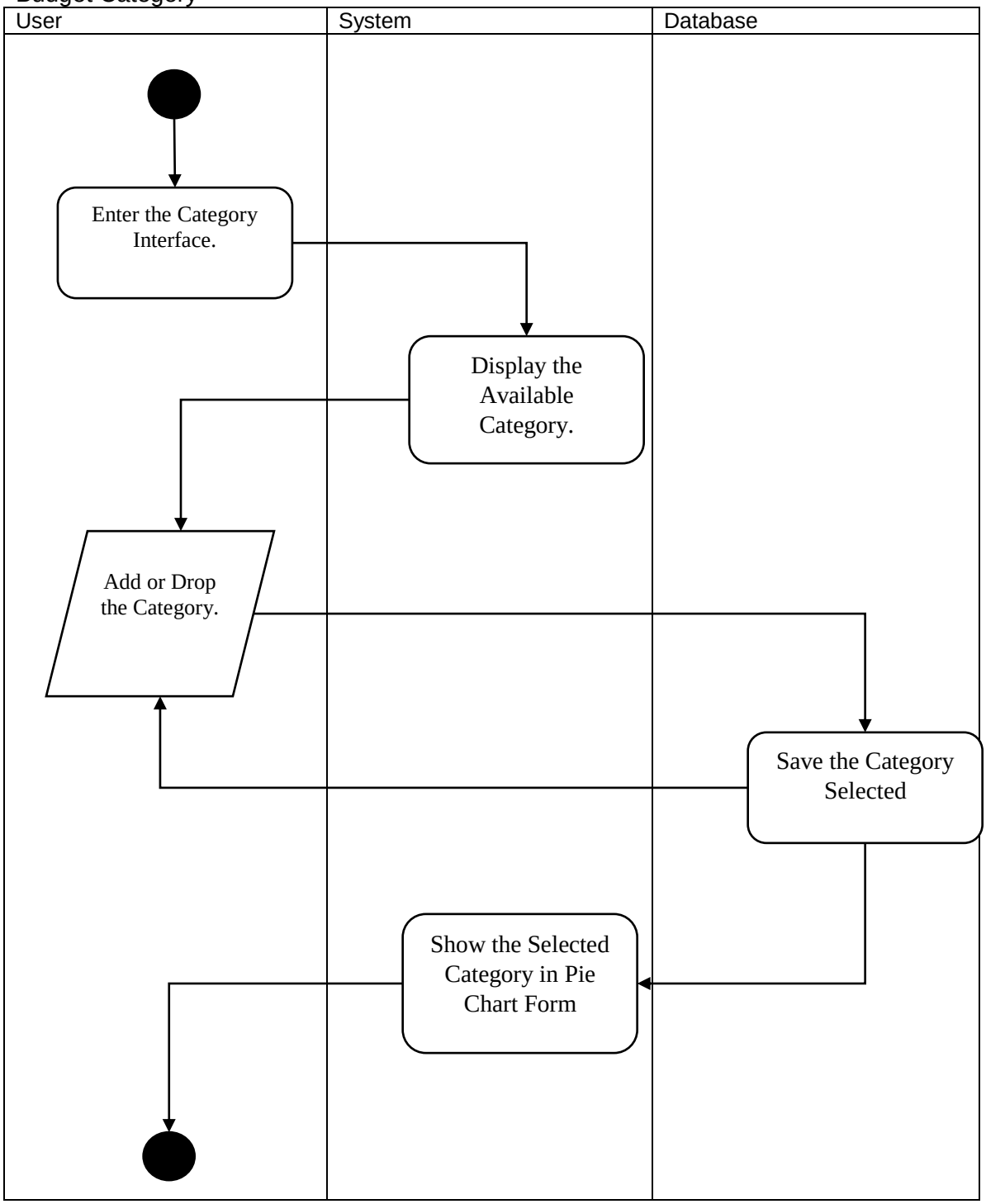
Use Case Name	Monthly Budget Statistic
Scenario	Statistic of monthly income and expenditure.
Brief Description	At the end of every month, the system will calculate and display the month income and expenditure so users can see whether they saved some money or overspent.
Triggering Event	Budget Allocation, Date(1st day of every month).
Actors	Database.

Related Use Case	Budget Allocation, Data Storage.
Stakeholders	User, System.
Precondition	The application is used for a month.
Postcondition	The monthly budget statistic exists.
Flow of Events	Actor: 1. Collect the accumulative amount of expenses for a month and the income for the same month. System: 1. Display the data in the form of bar chart.
Exception Condition	1. Data might not be accurate if user does not input every expenses.

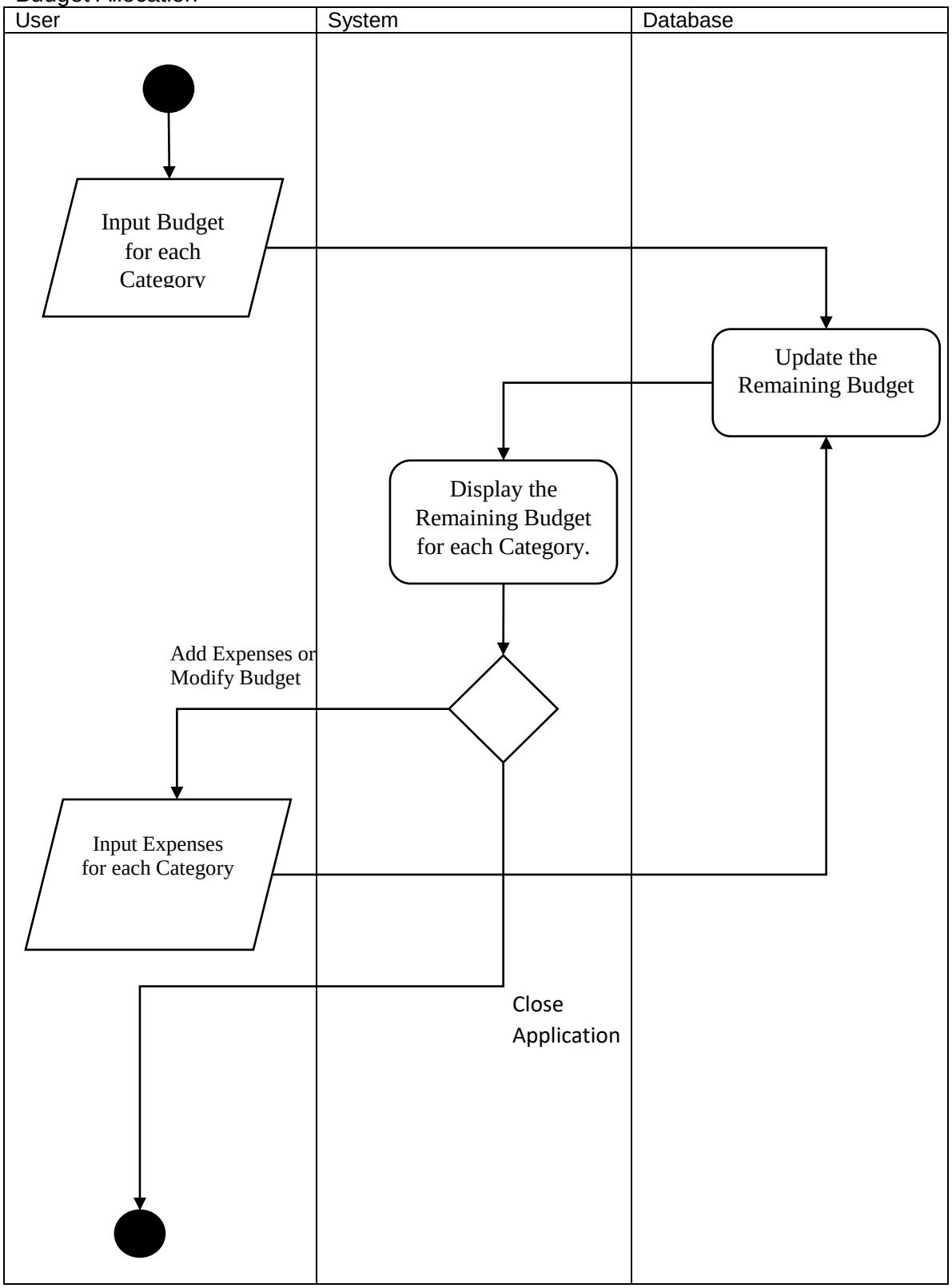
Use Case Name	Data Storage
Scenario	Storage of all data regarding to the user and restaurant
Brief Description	All information of restaurant and user is stored in an internal database setup by admin
Triggering Event	None
Actors	Admin
Related Use Case	Budget Allocation, Monthly Budget Statistic, Expenditure History, Wishlist, Budget Category
Stakeholders	Database, User
Precondition	Database is setup by admin, users input data regarding their income and expenses
Postcondition	Data regarding income and expenses of users exists.
Flow of Events	Actor: 1. Setup database. 2. Fetch data input by user. 3. Store the data. System: 1. Retrieved data from database for various function.
Exception Condition	1. User switch to a new phone, all data will be lost 2. Corrupted database

Activity Diagram

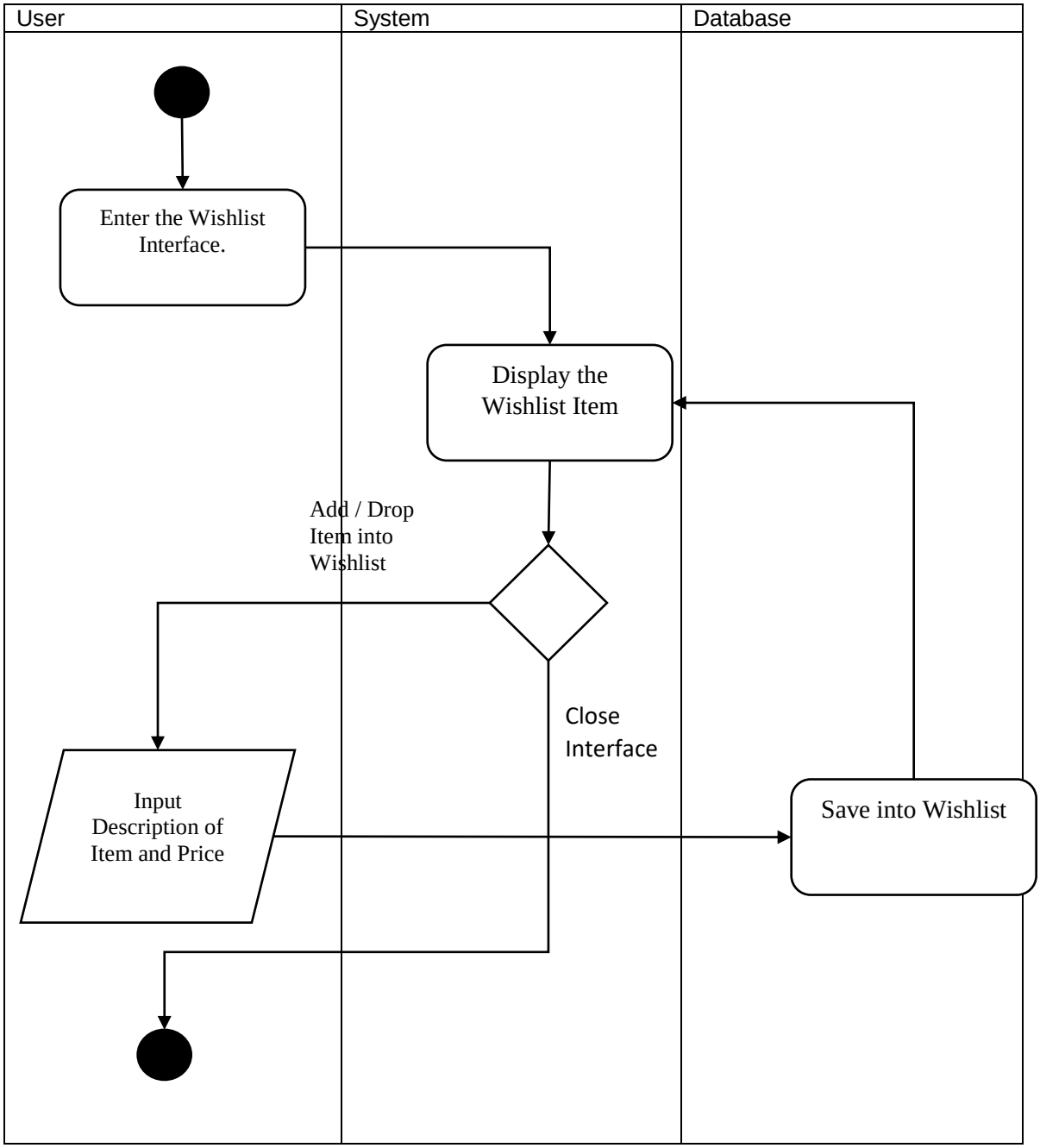
Budget Category



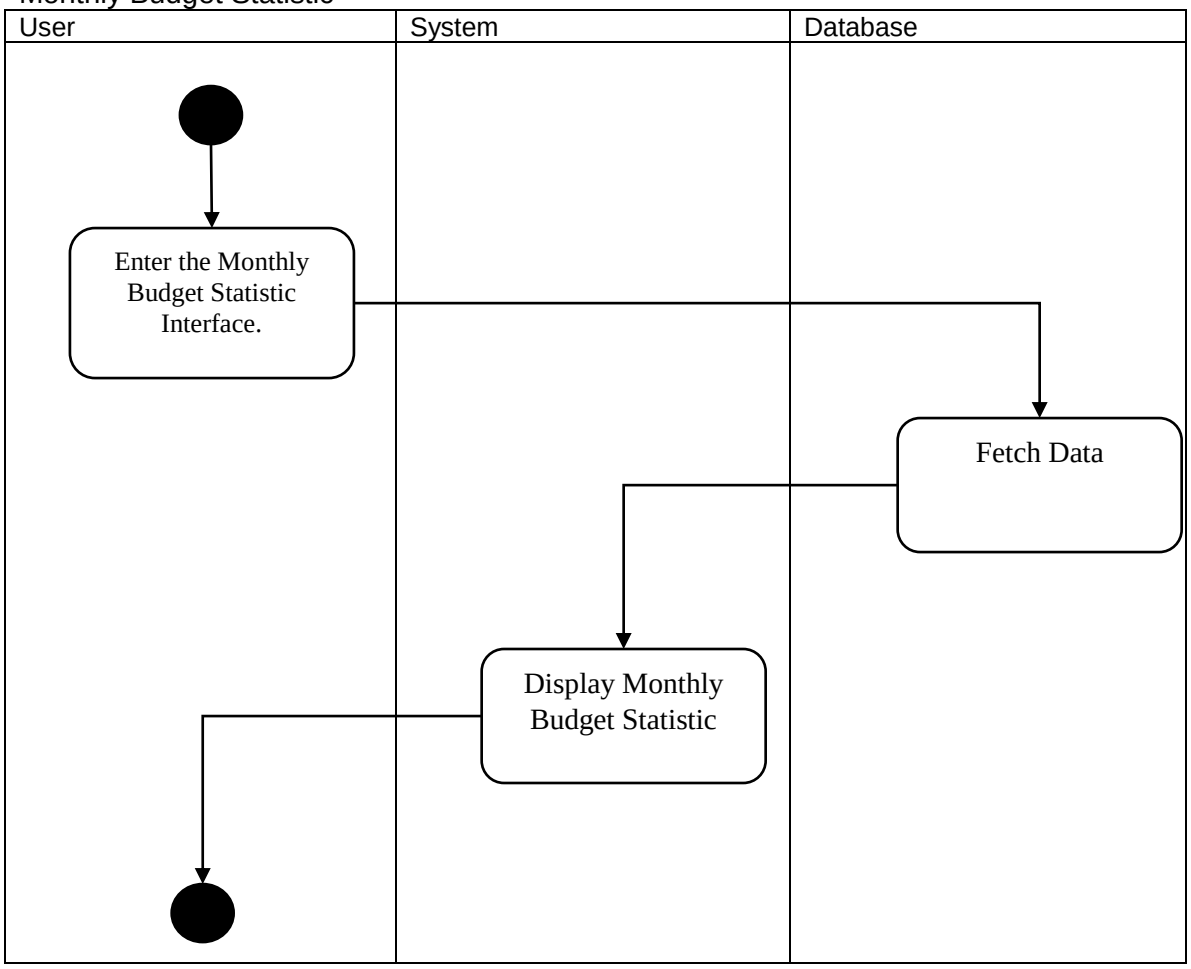
Budget Allocation



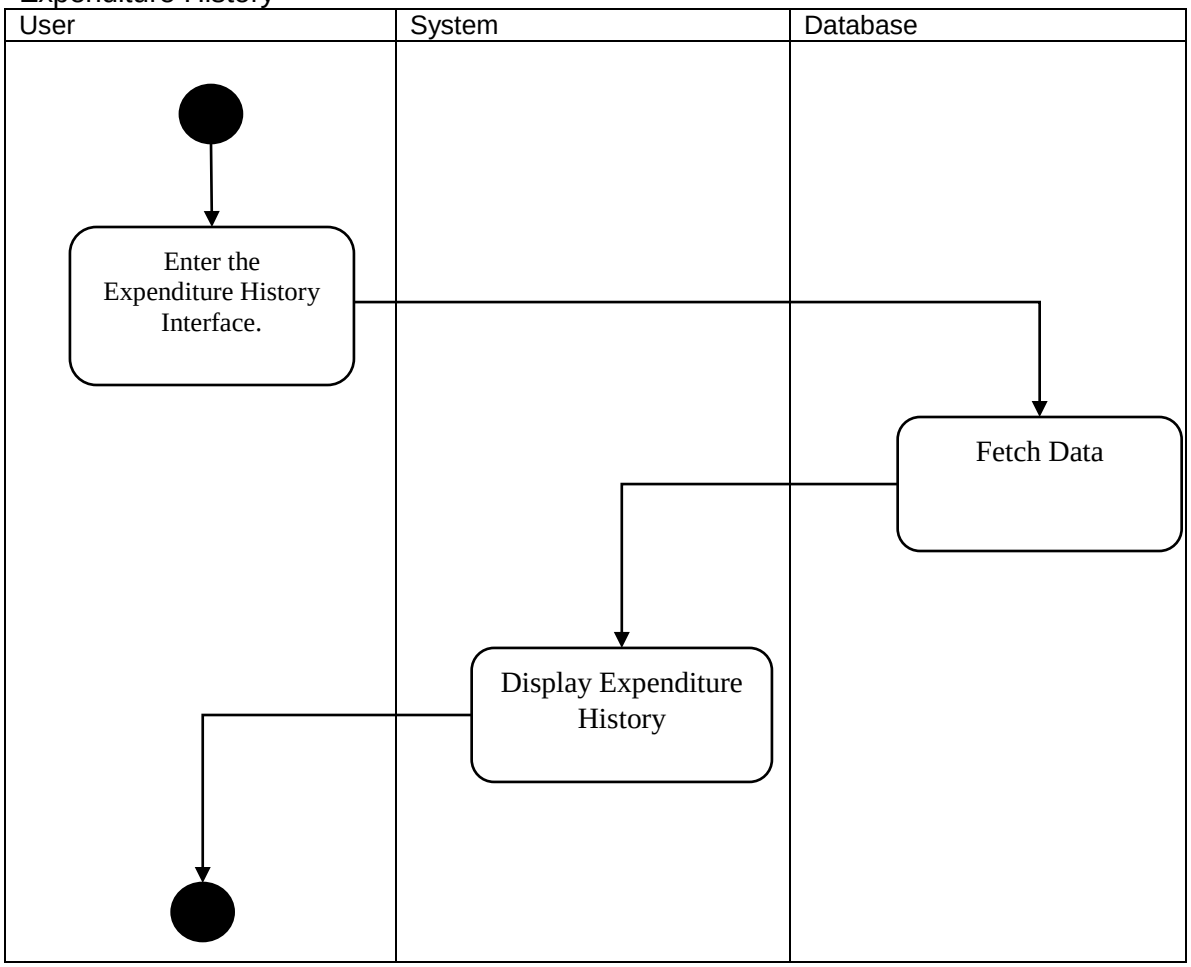
Wishlist


User
System
Database
Enter the Wishlist Interface.
Display the Wishlist Item
Add / Drop Item into Wishlist
Close Interface
Input Description of Item and Price
Save into Wishlist

Monthly Budget Statistic



Expenditure History



3.0. Nonfunctional Requirements

3.1 Availability

- Apps is only available on Android for prototype version.
- Future implementation on IOS and Windows Phone

3.2 Security

- Every data are stored in internal database and encrypted.
- Application does not require any personal information of user.
- Application does not retrieve any data from users phone.

3.3 Performance

- The user interface should be friendly and easy to use, easy to understand
- More than 100 MB storage is needed.
- Device with any type of processor and size of memory could use the application without crashing.

4.0. Requirements Reviews

Use Case Name	Completed by	Reviewed by	Review Results
Budget Category	Shahrul Raimie	Dr. Nordin	
Budget Allocation	Shahrul Raimie	Dr. Nordin	
Wishlist	Faiz Ikhwan	Dr. Nordin	
Expenditure History	Faiz Ikhwan	Dr. Nordin	
Monthly Budget Statistic	Muhd Hidayat	Dr. Nordin	
Data Storage	Muhd Hidayat	Dr. Nordin	