Mobile Expense Management System

Group Members:

Haoyu Wang   104763720

Jinghua Long   104864306

Kerun Pan   104895029

Liangliang Xu   104760963

Rui Liu   104766936

Xiaoshuai Geng 104845608

Zekun Zhang   104947128

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1. Introduction

The mobile expense management system is an expense manage application on mobile devices with Android platform. It caters modern people's needs on managing daily expense and monitoring balance on their mobile device efficiently and conveniently.

The application will allow users to input their expense in different categories and make a record of the expense with different attributes. The application will not only get a total sum of expense but also add up each transaction by different categories. At the end of the month, the user will be provided with a report about the monthly balance and expense ratio on different categories with a presentation of a pie chart.

The application will be developed with android studio which is an official integrated development on google android platform.

2. Business Reasons

The mobile expense management system is a type of system that aims on people or employees who have interest and needs on recording and managing their daily money flows and expenses.

When there is a money transaction, there is always a record being generated for people to record their money flows. However, a volatile paper receipt might be lost or teared apart. Also, it takes a lot of time when people trying to have a transaction report by look up the information print on the receipts. A digital transaction recording system would be more reliable than what we did in physical approach.

The system will be able to help the employees to record their different types of expenses, generated reports within a time duration and help them claim the reimbursements from the company in an automated and more efficient way.

3. Business Requirements

As customer use our product, they should be able to upload their daily expense in different ways, and the system will be able to analyze these data to generate a summary for user. There is some requirement for functionality that we need to meet during the implementation:

1. The expense management system we are going to develop will be able to enable user scan the physical receipts and transactions with mobile camera
2. Upload information from the receipts and transactions, and then store them digitally for further use
3. retrieve an expense summary shown as a pie chart at the end of month

4. sent the summary report as a pdf file to user's company by email for further reimbursement
5. login and logout for personal account management(optional)
6. do basic modification for the stored data like sorting the expense record by date, delete any exiting expense record, modify the data for each exiting record

4. System Requirements (for phrase 2)

a. Functional requirements

ID	Requirements description	priority
RQ1	The system should allow user enter input of the detail of each transaction.	high
RQ2	The system should allow user to calculate the daily/monthly/yearly expense	high
RQ3	the system should be able to save user's entry.	high
RQ4	The system should allow user to abort an expense record.	high
RQ5	The system should allow user to erase the previous records.	high
RQ6	The system should allow user to choose what type of chart should be used for analyzing the expense data.	moderate
RQ7	The system should be able to construct an expense summary/report accommodate to user's requirement.	moderate
RQ8	The system should allow user to browse and re-enter the same entry from the user input history.	low
RQ9	Users can choose categories of the transactions, e.g. Travel, Food	moderate
RQ10	Users can import the receipt photo from phone gallery	moderate
RQ11	Users can enter the date of the expense or transaction	high
RQ12	Users can enter the amount of currency spent of the transaction	high
RQ13	Users can add description or comment on the expense entry	high
RQ14	Users can type the merchant name of the expense	high
RQ15	Users can select what kind of currency to use	high
RQ16	Users can a specific expense to the selected report	moderate
RQ17	The reports should calculate the total amount of expenses	high
RQ18	The reports should have the total amount of reimbursed values	high

b. Non-functional requirements

- **Operational:**
  - The software should be able to run properly on any Android devices
  - The software should be implemented in Java or Kotlin in Android platform

- **Performance:**
  - The system has a clear, simple-to-use graphic user interface
  - The system should only need internet connection when user submit their report
  - The system should work differently according to different types of users (employee / company)
- **Cultural / Political:**
  - The system should be able to switch into different currencies based on users' choice
- **Reliability:**
  - The system should have correct expense calculations
  - The system will save the modifying expense record as draft if user accidentally close the program or shun down the phone

5. Glossary

- Expense
  - Expenditure is an outflow of money to another person or group to pay for an item or service
- Category
  - Category is a drop-down menu in the expense management system, user can select one of the options to continue
- Expense ratio
  - The expense ratio (ER) is a measure of mutual fund operating cost relative to assets.
- Pie chart
  - Pie chart is a type of graph in which a circle is divided into sectors that each represent a proportion of the whole.
- Android studio
  - Android studio is a software development environment by Google that provide tools for developer to develop applications for android device
- Money flow
  - Money flow is a term about user's daily expense and income
- Login
  - Login is the processes by user gains access to a system, login should not be included in Use case during the analysis phrase
- Report
  - A collection of expenses created by users within a specific time duration.
  - User could submit this report to the company
- Reimbursement
  - A sum paid to cover the money spend by the employees. Company have to repay the amount of money that the employee has claimed.

6. Use Cases (for phrase 2)

Here is a brief use cases that explains how customers interact with the system