Project Phase III Report
On
Android Based Expense Management App
Submitted for the requirement of Project course
BACHELOR OF ENGINEERING

COMPUTER SCIENCE & ENGINEERING

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ABSTRACT

Keep in mind that many people face problems with expense management. So, we took the initiative to build a app for customers which helps in managing the expenses and getting it used at right time, and avoiding unnecessary expenses. Users can set budget on the app. They can easily monitor it through visualized graph. They can search when was expenses over the budget/deadline, it will also tell how much time is needed to neutralize the expenses. This app shows detailed information about expenses on daily basis. This application provides login to the user. They can see their previous and current expenses. Using our service, customers can more efficiently handle its expenses. Not only can this program help users handle their expenditures, but it will also help marketing executives organize campaigns according to user needs. With advanced features such as auto scan for receipts, it stands out as a quick but effective solution for controlling and maximizing the expenses of the company. This makes the analysis and cost flow smoother, with the recording of expenses offline without internet will not be a burden.

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Feature/characteristics identification

Intuitive dashboard :

An expense report consists of several moving parts. User need to submit receipts and create expenses.

All of these processes make an intuitive dashboard a must-have software feature. A dashboard gives you insight into your expense reporting processes, breaking down the various components into easily digestible information. Most software programs have a dashboard. The trick can be finding one that's easy to use and understand. A valuable dashboard shows you:

- The status of each employee's expense report
- Missing or denied expense reports
- Policy violations
- Spending limits

You should also be able to take action directly from the dashboard and easily:

- Approve or deny expense reports
- Add or edit expenses
- Identify spending trends

Mobile app :

User may need to submit expenses while traveling or working remotely. That's why it's important to have an expense management solution with mobile accessibility.

Most software providers offer some form of mobile functionality, but an app is usually the most convenient. With a mobile app, users can create, submit, and manage their expenses right from their phones. Your managers can also securely review and approve expense reports from any location.

Look for a solution with a user-friendly app that can be easily navigated. A cloud-based app that connects to database and payroll system in real-time is also helpful. This way, you'll be able to monitor spending and provide assistance even when your employees are away.

Expense tracker

Consider expense management systems with built-in mobile trackers. user can enter their budget, and the software will automatically calculate their mileage and resulting reimbursement amount. This saves time and also helps you ensure that their mileage is accurate.

Automated workflows:

An online expense management app gives employers the freedom to customize their policies and approval workflows as desired. With a well-defined approval workflow, expense reports are approved and processed like clockwork. Saving your time and money.

Continuous compliance:

Expense management software can help user stay on the right side of compliance with expense and getting out of budget. User can easily place expenses into categories, like office, travel and mileage, and tag them appropriately.

Automatic categorization of expense and allocation of cost center data:

The entire premise for wanting an automated expense management software is to automate and streamline certain aspects of expense management. With one click approvals on submitted expenses, approvers can just approve or reject expenses without wasting time on validating individual spends. Some expense management software also provide the option of customizing approval hierarchies with multi-level approvers, where required.

Built - in Privacy Protection :

An expense management app shouldn't just think about its users, but also its data. That's why it's important to invest in a expense management that is built to protect privacy. Some privacy-related features to look for include:

- Data encryption– The data is encrypted both at rest and during transmission.
- Data purging– Surveillance data should be automatically purged at regular intervals in accordance with industry best practices
- Anti-profiling– Expense Management systems should be built to prevent profiling by race, age, gender or national origin.
- Firebase provide all these feature in the backend so that the data is safe.

Cost :

What is the cost of developing the expense management from scratch? And the answer is that it depends on the project requirements. As we describe it above, there are many variables that comprise the total price but we are making it totally free .

To offer the client the best solution to meet challenges, our company enters such projects with the Investigation Stage aimed at the following:

- Income objectives analysis
- Data analysis and identification of the scope of work
- Definition of high-level architecture and appropriate tools and technologies selection
- Risks identification
- Building proof of concept
- Definition of the expected results as well as costs and resources estimation.

Risk :

Expense management system also carries other risks, such as errors, which could, for example, lead to loss of data. And as with any android system, we should be concerned about whether the algorithms, formulas and data sets are free from bias, and have clean, complete and representative training data.

Importantly, user expense technologies in android also goes some way to normalizing the severity of data loss. It’s possible the knowledge they are being tracked in this way could impact some users wellbeing.

Benefit :

Expense management system is a application that can benefit users including increasing safety and security and for making best budgets. Here are some pros of this application:

- Fast and Simple Process.
- Less Errors and Delays.
- Improved Efficiency in Operations.
- Expense Policy Enforcement.
- Improved Visibility.
- Enhanced Fraud Prevention

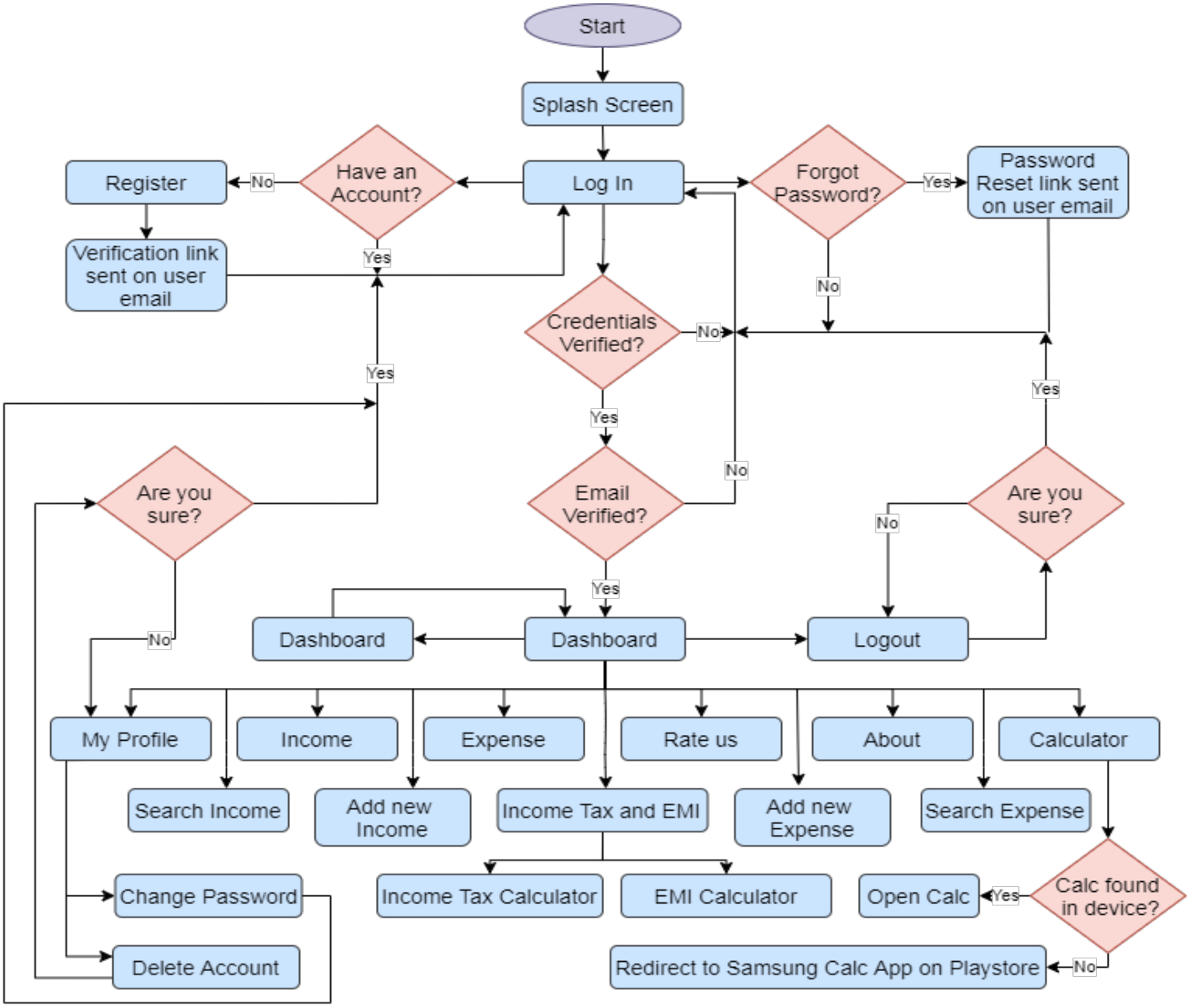
Scope and time:

1. The present work is an android application titled ExpensO that was taken up as part of the student project. It aims at expense management among students who travel in groups and would like to have a tool to ease the process of managing their expenses. Based on existing apps and literature survey, hash-maps proves to be an efficient mapping technique in Android apps for handling large amount of data.
2. ExpensO uses hash-maps for the similar reasons and the results are quite satisfying. This app will save a lot of time that people manually waste on these calculations.
3. Hoping that this application does better in the future there are enhancement plans for the application.
4. Currently, the app is working for a single user to make the calculations and shares the results with its group members through emails. This could be enhanced by providing a link through which the other users could download the application and have the details of the events saved.
5. In future ,there could also be a direct connectivity between applications running on multiple devices for that event. Thus, notifications could be sent easily. Money transfers could be implemented by linking it to some e-wallet and make payments across accounts through mobile numbers or actual bank account numbers.

Analysis of features and finalization subject to constraints:

ExpensO has been tested with 30 volunteers who used and were instructed to use the application for managing their expenses. They were provided with the apk file and the instructions about the usage. All volunteers used the application for their expense division and management. A feedback was taken from each volunteer individually. The overall satisfaction level was found to be 95% and a number of suggestions to make it more user friendly was received. Volunteers suggested that if there is some expense which is to be divided only among a few in the group then provision for doing so should be available. For this, a provision was made to include only a few among the members for a particular bill. It was also noted that a person who paid multiple bills had to calculate the total and then enter it in the application, responding to this a calculator was added in the billing module.

ER DIAGRAM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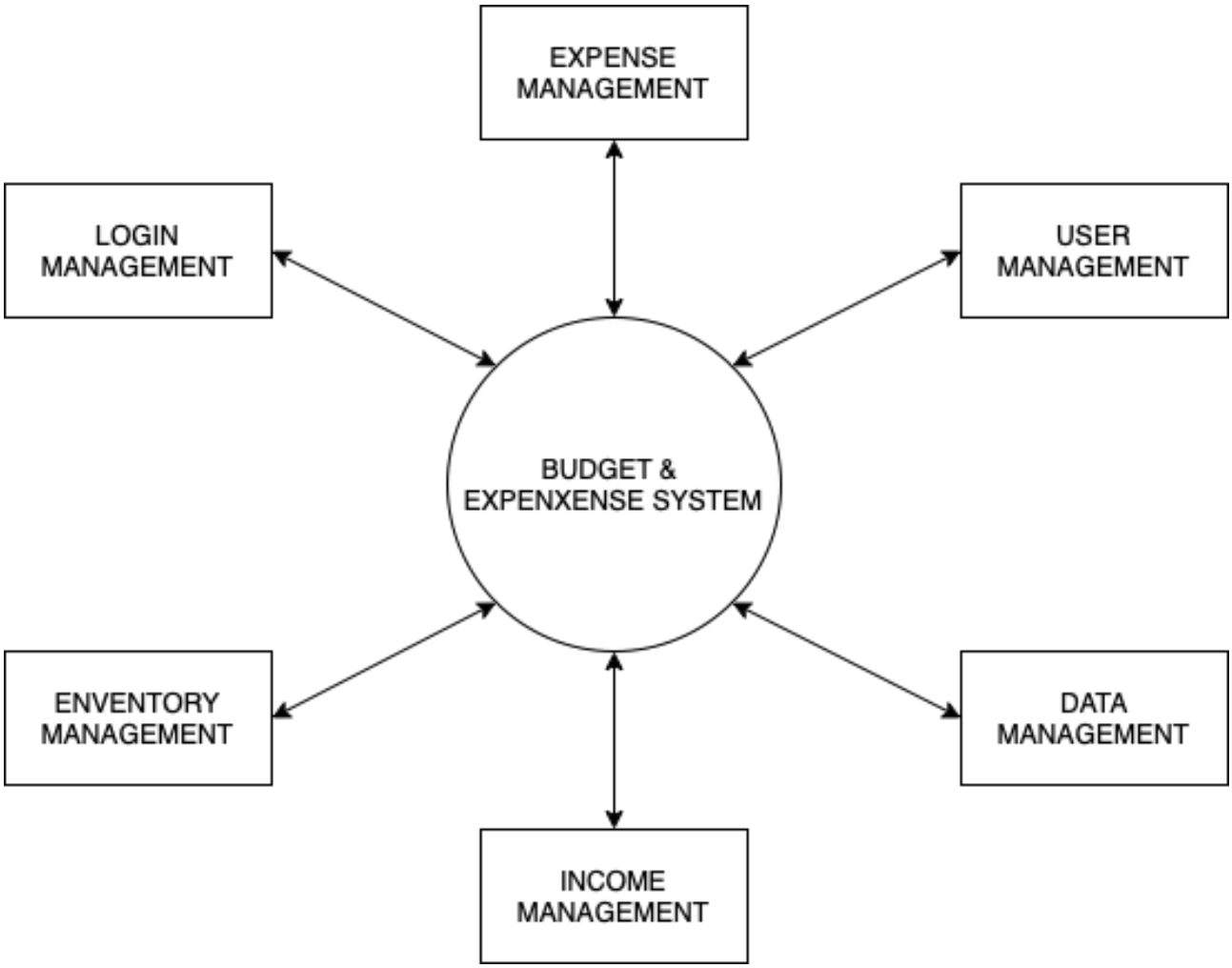
Data Flow Diagram Symbols

LEVEL 0



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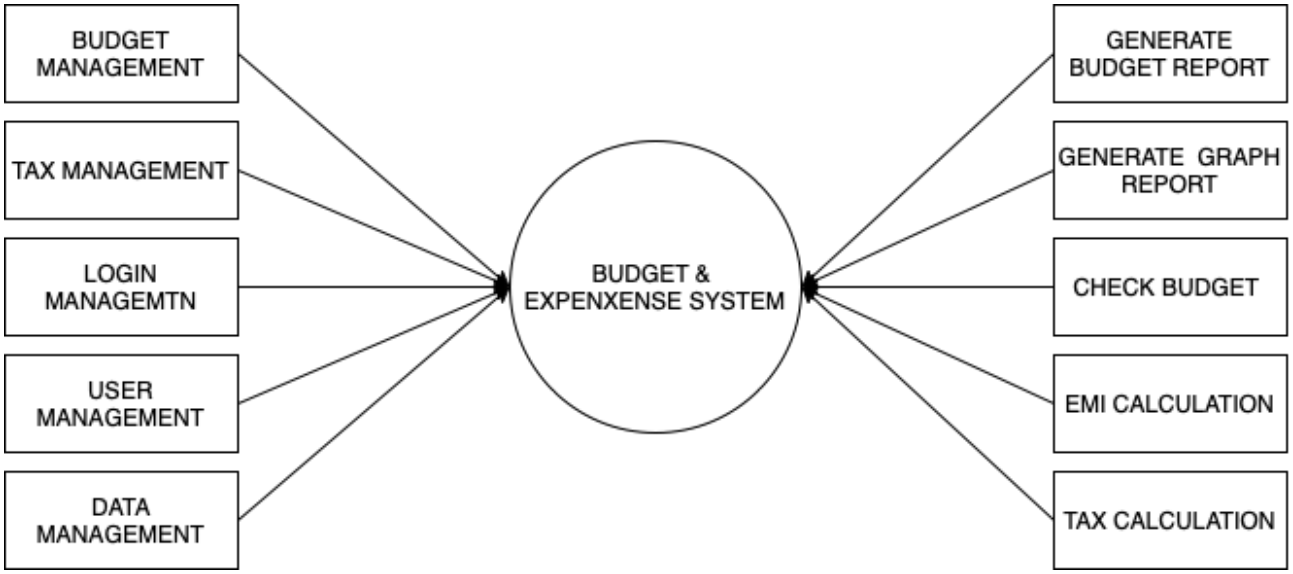

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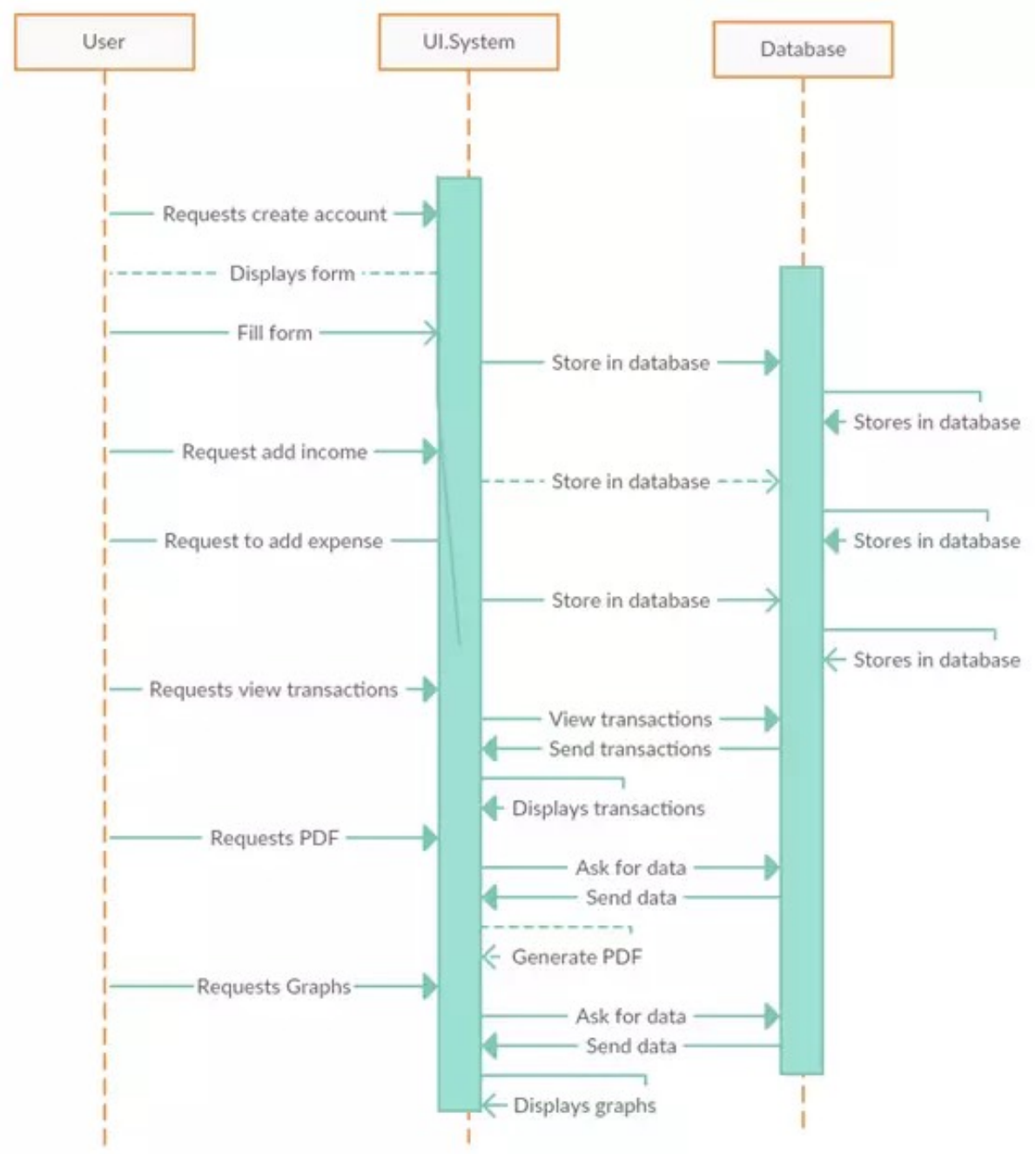

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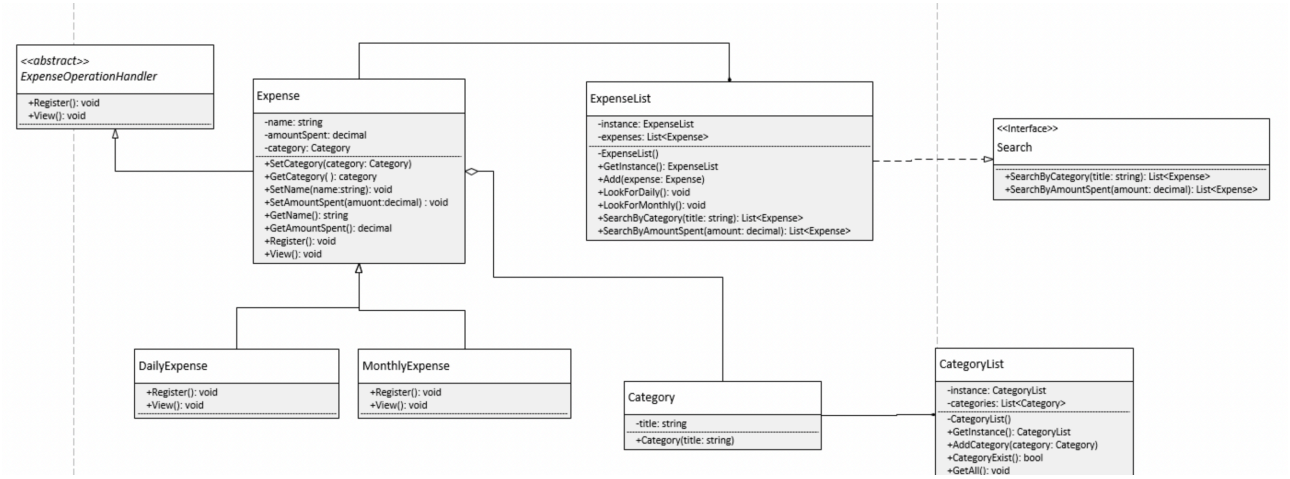

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