

# Flowey

Kangwei Ling (kl3076) Zefeng Liu (zl2715) Kunyan Han (kh2931) Xi Yang (xy2390)

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	Server-Side	Client-Side
Deployment Platform	Linux	iOS
Language	Python 3	Swift

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## Background

“Emmm, where does my money go?”, “How much should I pay you? So we’ve spent 56.25, you paid 21, and Jiang paid 35.25, let’s figure that out .....”

We find that an intelligent expense tracker is badly needed among various people and small groups of people, especially among us students. This is often the case that someone pays the bill after meals, since many restaurants do not support money splitting. Or when a group of people would like to hang out, go shopping, and even hold parties, they eventually need to split the expenses with friends. However, when a lot of people are involved, the debt relation could be too complicated to figure out in a short time. Meanwhile, people cannot track their everyday expenses under such circumstances, lead to inconvenience in their money management.

## Proposal

Flowey plans to provide people with better experience on expense tracking, easy bill splitting and debt management. Complicated bills and multiple debts are reduced to simple money flows between users, allowing them to track expenses more intelligently and clearly, and pay off debts easily.

We’ll use a **Client-Server architecture**. The server is a **RESTful** service provider with access to a **MySQL** database, where stores data of users, transactions, etc. Also, At first iteration, all logic and computations will be done on server.

For the client side application on iOS, Internet access is needed, thereby the client app will be just a collect data and display content. Later, if time permits, offline features with online synchronization may be supported.

## User Stories

1. As a user, I want to **register** an account and then use this account to **log in** so that I can use this application.
2. As a user, I want to **add transactions** for my personal bills so that I can **keep track of my personal expenses**. These transactions must be **viewable** in some place like a dashboard in the application.

3. As a user, I want to be able to use a friend panel to **send friend request** to other users and **view debt status** between me and my friends. Other users have the right to reject the friend request and stay unconnected. With friends, I want to be able to add bills that should be **paid by other users or by shared payment**. Bills shared with others need to **be approved** before becoming effective.
4. As a user A, I want to **create/join a group** that also includes user B, C.... I can post bills that is shared among all group member with **equal** or **customized amount**, the bills must be approved by all group member in order to take effect. Different from just sharing bills with friends, groups have **independent expense tracker** that can be viewed by all group member.
5. As a user, I want to have all group bills and personal bills reduced to simplest form of **money flow between two people**. The **number of transfers** needed to clear all debts must be minimized. The due money flows can be cleared by issue a request for clear from either side of the flow.
6. As a user, I want to see the statistics and analysis over different time ranges of my expenses tracker or group expenses tracker so that I understand the spending trends.

# additional (if time permits)

7. As a user, I want to add tags to some of the expenses so that I can track and analyze the expenses in some specified tags.
8. As a user, I want to have some account management utilities, including changing name and password, setting a avatar and personal profile.
9. As a user, I want to have new expense entries automatically added to my account when I agree that another user had paid for me.