**Splitwise++**

**Project Description**

[Splitwise](https://secure.splitwise.com) is a free tool for friends and roommates to track bills and other shared expenses. Although the app is incredibly useful, it has few bugs that make the app unreliable. And hence, I intend to implement an improved version of the app. Essentially the app will be work exactly as Splitwise with common and annoying bugs fixed and some added features that I have explained below.

Problems I have with Splitwise:

* The balance bug: The app has this weird bug, where it fails to calculate the correct balance in certain situations. Consider x, y to be two users. Let x owe y some money (or vice-versa). Let this transaction be a part of some group g. Let y owe x some money (or vice-versa), however this transaction is not part of any group. In this case the app incorrectly calculates the balance x owes y. However, this case is not common, and may or may not occur always. This leads me to believe that, the bug may occur due to a random crash OR there might be some over-complication in how the transactions are represented.
* Participation Problems: For any set of items brought, it is not the case that everyone necessarily wants each item. Certain people may want certain items, others may not. The app however, assumes that all the people (in a group/ household) want each of the items brought. So, users need to manually (not a part of the app) specify what items they want to be included in. This leads to one bill being split into various sets of items, depending on what items, of one bill, people want to be included in. This leads to a huge added overhead, specially, if the bill contains a large number of items.
* No Concrete Record of Bills: Another problem with the above-mentioned complication is, since one bill is divided into separate, independent and disconnected pieces, there is no reference to the entire bill, with all the items, only a list of micro-transactions, that if joined together, will form the complete bill. However, the App UI doesn’t provide any such features.

I intend to develop an app that will fix these common issues/ bugs. Along with fixing these problems I wish to add new features like a budget tracking system.

Each user will be allowed to set a monthly budget. The app will keep track of how close the user is to achieving that budget. If the user’s expenses surpass the set budget the app will identify certain expensive items that the user can avoid the next month.

**Team**

I intend to work alone for this project.

**Use cases**

* As mentioned in the description, this app/ Project is for friends/ roommates so as to keep track of expenses, and ensure that every bill is split equally, and everyone gets paid.
* People who are trying to maintain a budget, to keep track of the money they spent, and what did they spend money on.
* The app can also be used as a general record of all the bills that we generated by a user.

**Intended Software Stack:**

1. DBMS: MySQL
2. Backend: Java
3. Frontend: Java Swing Applet.
4. Libraries: JFreeChart for Data Visualization, Connector/J for Database connection.