

## HW2 – HEURISTIC EVALUATION OF PENNY PINCHER APPLICATION

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### Usability Successes:

Problem	Heuristic
1. <a href="#">Simple Menu bars:</a>	Consistency and standards. Aesthetic and Minimalist Design
2. <a href="#">One transaction for multiple people</a>	Flexibility and Efficiency
3. <a href="#">Summary homepage</a>	Aesthetic and Minimalist design. Visibility

### Usability Problems:

Problem	Heuristic	Severity
1. <a href="#">First two icons in the bottom menu bar do not have clear affordances.</a>	Affordances	Minor
2. <a href="#">Feedback on adding names to a transaction</a>	Feedback Visibility of Status	Catastrophic
3. <a href="#">No back button when adding transaction</a>	User Control and Freedom. Efficiency and Flexibility.	Minor
4. <a href="#">Cannot edit or delete a transaction created</a>	Error prevention. User control and Freedom.	Catastrophic
5. <a href="#">Color coding of the amounts in the list of transaction is inconsistent</a>	Consistency. Natural mapping	Minor
6. <a href="#">Unclear and non-customizable ordering of transactions</a>	Efficiency and flexibility. Consistency	Minor
7. <a href="#">Cannot search for a transaction</a>	Efficiency and flexibility.	Minor
8. <a href="#">No feedback for toggling disputed/undisputed or settled/unsettled option</a>	Feedback. Visibility	Catastrophic
9. <a href="#">Doesn't allow for addition of comments or subject description when adding transaction or settling or disputing a transaction</a>	User control and freedom. Consistency	Major
10. <a href="#">Settings menu option leads to a download page</a>	Consistency. Matches the real world	Cosmetic
11. <a href="#">No validation on the amount inputted per each name in the transaction</a>	Error Prevention	Major
12. <a href="#">Cannot see all transactions paid by the user and keep track of the ones disputed</a>	Visibility. Efficiency and flexibility.	Major
13. <a href="#">Does not allow the user to settle full account with someone</a>	Efficiency and Flexibility	Major
14. <a href="#">Cannot add a transaction paid by someone else</a>	Efficiency and Flexibility	Minor

## Usability Successes:

### 1. Good: Simple menu bars:

**Heuristic:** Consistency and standards (L) Aesthetic and Minimalist Design

**Description:** The user interface has only 3 options in the bottom menu bar and just one home button in the top menu bar. The simplicity in menu options eases learnability. Also because there are so few menu options, each option on the menu bar is relatively larger, thus easing selection on a mobile device (Fitt's law).

### 2. Good: Allowing the user to enter one transaction shared amongst many people.

**Description:** This user interface allows the user to enter one transaction that he/she paid to be shared with many other users including him/her self. I think this is a great functionality that really increases the efficiency of the interface.

**Heuristic:** Flexibility and Efficiency (E)

### 3. Good: Home page shows a very useful summary of important information.

**Description.** I really like the summary in the homepage, because it provides an intuitive and consistent visual of most important information: How much the user owes to whom, and how much he/she are owed from whom.

**Heuristic:** Aesthetic and Minimalist design. Visibility (S)

## Usability Problems:

### 1. First two icons in the bottom menu bar do not have clear affordances.

**Description:** The first button can perhaps be more clearly inferred as adding a transaction but I found the middle icon a bit difficult to decode. I could only discover its functionality by clicking on it.



Figure 1: unclear what first but mostly second icon in this menu refers to

**Heuristic:** Affordances (L)

**Severity:** Minor. I think this is an important issue since the menu bar is the only way that the user can navigate the application and it appears on every screen. However, it is perhaps

not a major issue because there are so few options on the menu bar, so it's easy to learn and remember what each option is. Nevertheless, it's still an important issue to fix.

**Recommendation:** I think that this can be easily amended by just adding a label to each option on the menu bar.

## 2. When entering a new transaction, it is not very clear how to add a person as a member of this transaction and no feedback is given to adding a name.

**Description:** There seems to be an input field to search names or enter them. However nothing happens if a name is entered. It could be that option is just not implemented, but there is also no feedback about what it means to share the transaction with multiple 'Names'. Will these people be notified? If so what is the notification sent? Do these names have to be users that have the same application? How do you establish connection with these names?

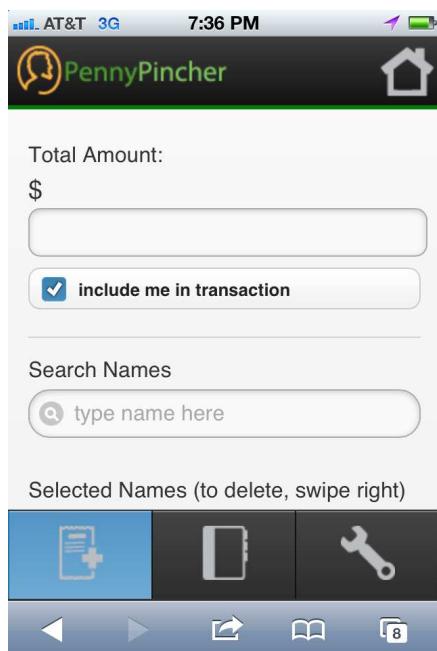


Figure 2: It's not clear what is happening with the names searched and selected.

**Heuristic.** Feedback (L). Visibility of system status (S)

**Severity:** Catastrophic I think this is a major problem because it really affects a crucial functionality of the user interface. When entering a new transaction with multiple names it must be clear, how to add names and what the application is doing with regards to each of those names.

## 3. No back button during multiple steps of adding a transaction.

**Description:** When entering the second step of adding a transaction there is no clear back button in case the user decides to modify the amount or the selected names. The user

would have to enter the page from the beginning, entering the users and amounts all over again.

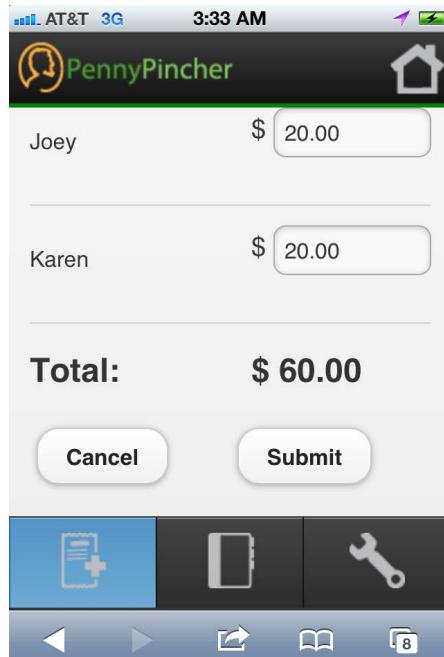


Figure 3: Only a cancel and submit button appears but no back button.

**Heuristic:** User control and freedom (S) Efficiency and flexibility (E)

**Severity:** Minor. Although this problem affects the efficiency and safety of creating a new transaction, the current process is simple and only two stepped so lacking a back button is not a major usability problem at the moment.

**4. Interface does not allow the user to edit or delete a transaction that has been created.**

**Description:** After adding a transaction, it is unclear how the user can actually edit or delete it. The user can perhaps go to each person, and settle each one but that seems like a very inefficient way of deleting a transaction.

**Heuristic:** Error prevention (S) User control and freedom (S)

**Severity:** Major. It's a major usability problem when the user interface does not allow the user to reverse or edit any action they make and without even warning them.

**5. The coloring of the amounts in the list of transaction is unclear and inconsistent with coloring in the home page.**

**Description:** In the list of transaction some amounts are colored in red and some are colored in black. It is unclear what the red is referring to at first. Upon investigation it

became clear that red is the amount that the user owes. However in the home page the amount owed is highlighted in blue while the amount expected is highlighted in yellow. So the color-coding is inconsistent.

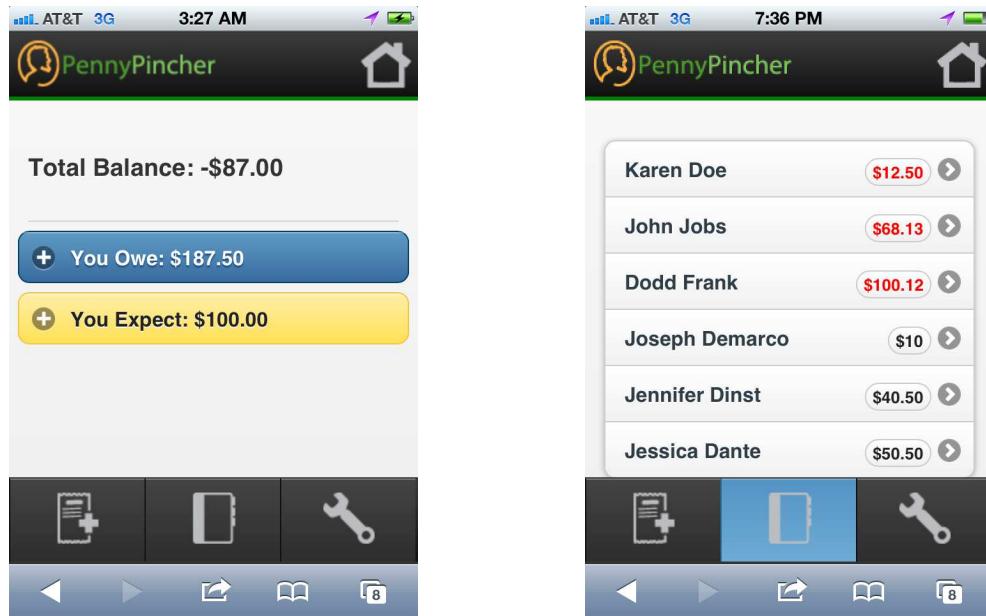


Figure 4: Color-coding in home page (left) is inconsistent with the color-coding when looking at the list of transactions (right)

**Heuristic:** Consistency (L). Natural mapping (L)

**Severity:** Minor. Although the coloring is somewhat unclear and inconsistent it doesn't seem to affect the usability very significantly.

**Recommendation:** I suggest making the coloring consistent and also ensuring there is a clear way of indicating what it means if the amount is red. For example if the color red means an amount you owe, then it can also be indicated with a negative value. This indicator would be consistent with how the overall balance value is shown (negative indicating you owe money)

## 6. The ordering of the list of transactions is unclear and cannot be modified or filtered

**Description:** In the first page it seems that the list of transaction is organized according to the people involved. So I can see the list of people whom I owe, or who owe me money. However it is unclear how the list of people is organized. Is it by date of last transaction, or by alphabetical name? Can this list be reordered or filtered? Again similar questions arise when clicking on a specific user, and seeing the list of transaction associated with them. When clicking on Karen Doe, it seems the transactions are organized by date, but the last one is listed at the end, which contradicts usual chronological ordering where the most recent is usually displayed at the top.

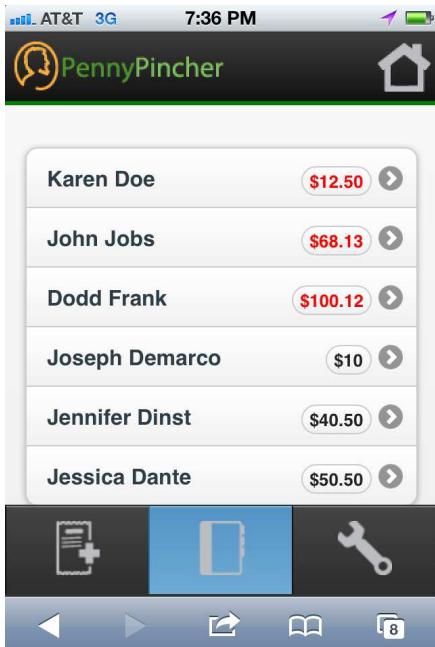


Figure 5: The ordering of the list of transactions based on all users is unclear. There is also no way of customizing it.

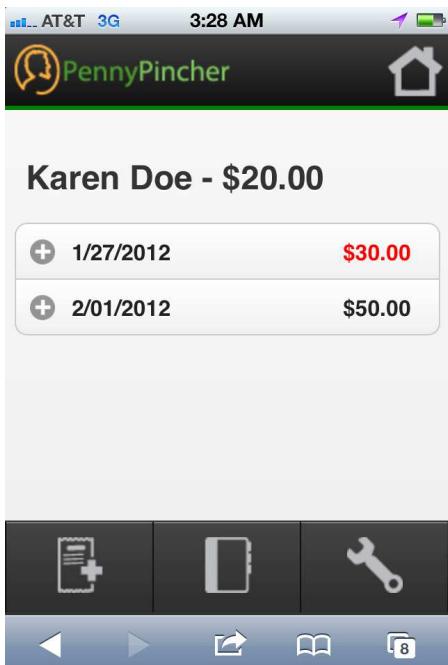


Figure 6: The ordering of the list of transactions for a particular user is unclear and cannot be customized. In addition it is inconsistent with the real world because it lists the most recent transaction at the bottom.

**Heuristic:** Efficiency and flexibility (E) Consistency (L)

**Severity:** Minor. I think it's a minor issue for the time being because the lists are not so long and are thus easy to navigate, but this can turn into a major usability issue with more data.

## 7. User interface does not allow the user to search for a specific transaction.

**Description:** You can check transaction related to each person, but it's difficult to search for a transaction that is made on a specific date for example.

**Heuristic:** Efficiency & flexibility (E)

**Severity:** Minor. I think it's a minor issue for now because there is little data, and it's not necessarily a frequent use-case. However this can be a major issue if the data increases, and becomes increasingly difficult to overcome.

## 8. The user interface does not provide any feedback for toggling the disputed/undisputed option or the settled/unsettled option.

**Description:** The user interface allows the user to toggle a disputed or undisputed option if he/she owes an amount. It also allows the user to toggle a settled or unsettled option if someone owes them an amount. However it provides no feedback on what these toggles do or mean. What happen when a transaction is disputed or settled? How do you keep track of these disputed or settled transactions?

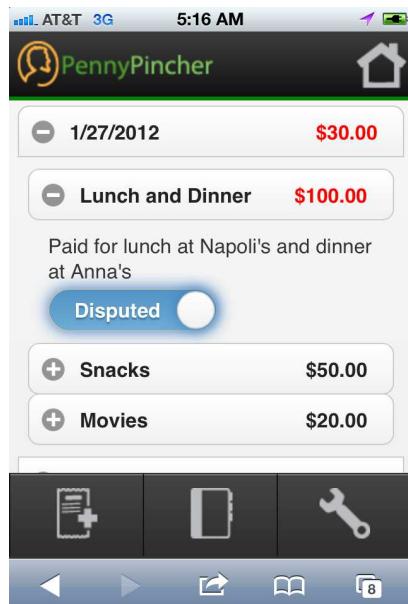


Figure 6: Nothing seems to happen when I claim a transaction as disputed.

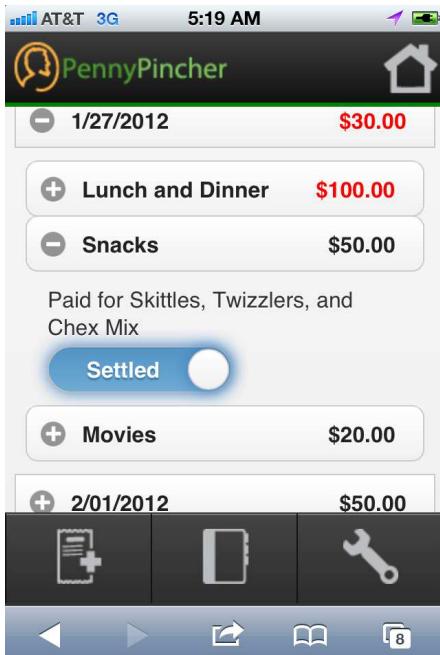


Figure 7: Similarly nothing happens when I claim a transaction as settled

**Heuristic:** Feedback (L) Visibility (S & L)

**Severity:** Major. Disputing or settling a transaction also seems like a major and frequent functionality of this application. It must be clear to the user what is done and how keep track of it.

#### 9. Interface does not allow additions of comments or subject descriptions when creating a new transaction or when settling or disputing a transaction.

**Description:** It seem imperative to store some details associated with each transaction. In addition, when looking at the list of transactions, there is a comment associated with each one. It is not clear when examining the list of transactions, how the comment is created or edited.

**Heuristic:** User control and Freedom (S). Consistency (L)

**Severity:** Major. Adding subject titles and comments seems to be an important aspect of documenting the expenses, so it's a situation that will frequently arise and must be addressed.

**Recommendation:** I think this problem can be easily amended by just adding some textboxes for entering comments or subject lines when a transaction is made.

#### 10. Settings menu option does not actually lead to a settings page but instead to a page that allows the user to download the application

**Description:** the icon image in the menu is universal for settings. However in this application it leads to page for downloading the zip file, which I don't think qualifies as part of the settings.

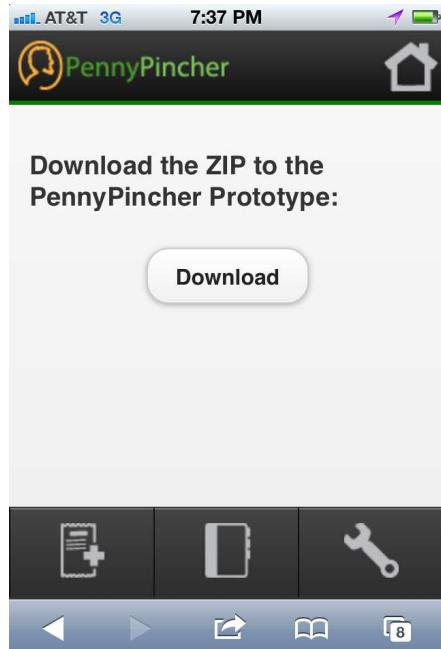


Figure 8: Settings option on the menu bar leads to this page.

**Heuristic:** Consistency (L) Matches the real world (L)

**Severity:** Cosmetic. This is not a major issue because so far it's not a major part of the functionality

## 11. There is no validation on the amount imputed in the transaction.

**Description:** The user can claim a certain amount, but then charge each person an amount that does not add up to the total amount claimed.

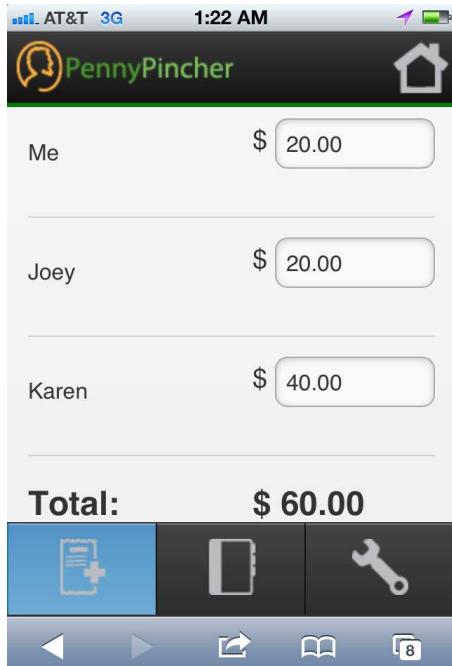


Figure 9: No validation for user inputs of amounts.

**Heuristic:** Error Prevention (S)

**Severity:** Major. Can result in a major error of functionality if not prevented.

**12. User interface does not allow the user to see all the transactions that he/he/she paid and to keep track of which ones have been disputed.**

**Description:** The user can see the transactions per other users and can dispute claims that he owes, but cannot keep track of all the transactions that he/she paid and whether they are settled or being disputed. He/she can see their claims if they click on a particular name to see how much this person owes him/her, but the user cannot see all of his/her transactions together. The user also cannot see any of the disputes that people have made against any transactions that he/she claimed to pay.

**Heuristic:** Visibility. Efficiency and Flexibility (E)

**Severity:** Major. It is very important for the user to also keep track of his/her transactions collectively as well as the disputes made against him/her as well.

**13. User cannot settle a full account with someone.**

**Description:** While I can settle each transaction if someone owes me, I can't settle a full account with Karen for example, if she just paid me \$20.

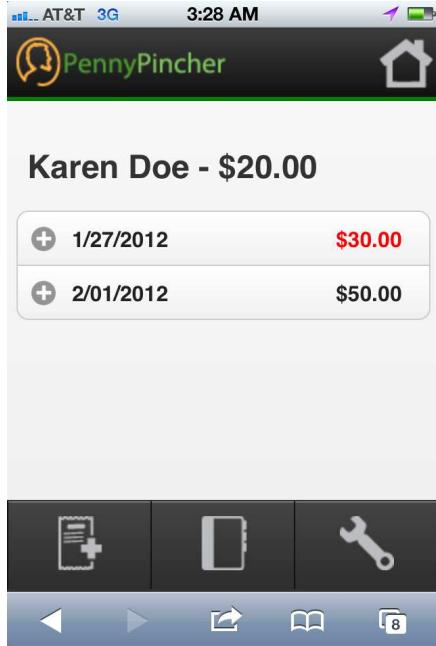


Figure 10: Karen owes me \$20 but the application does not allow me to settle all her accounts if she pays me the full balance of \$20

**Severity:** Major. Usually when settling accounts, you want to just pay the final balance you owe the person, so there should be a way of settling all the transaction by paying or receiving the final balance.

#### Heuristic Efficiency and Flexibility (E)

**Recommendation:** I suggest having an option that allows me to settle accounts with a person by clearing all the transactions they owe me, if they paid me the final balance.

#### 14. User cannot add a transaction paid by someone else.

**Description.** User interface seems to allow user to document a transaction that he/she paid, and to list how it should be shared among user names. However it does not seem to allow the user to document a transaction made by someone else. This might be a use-case for trying to keep track of how much you owe someone.

#### Heuristic: Efficiency and Flexibility (E)

**Severity:** Minor. Can be overcome if all the responsibility of recording transaction is on the payee.

Overall, I think your user interface does a great job addressing a very common problem. I can see myself using your app! I look forward to seeing the final product in GR5!