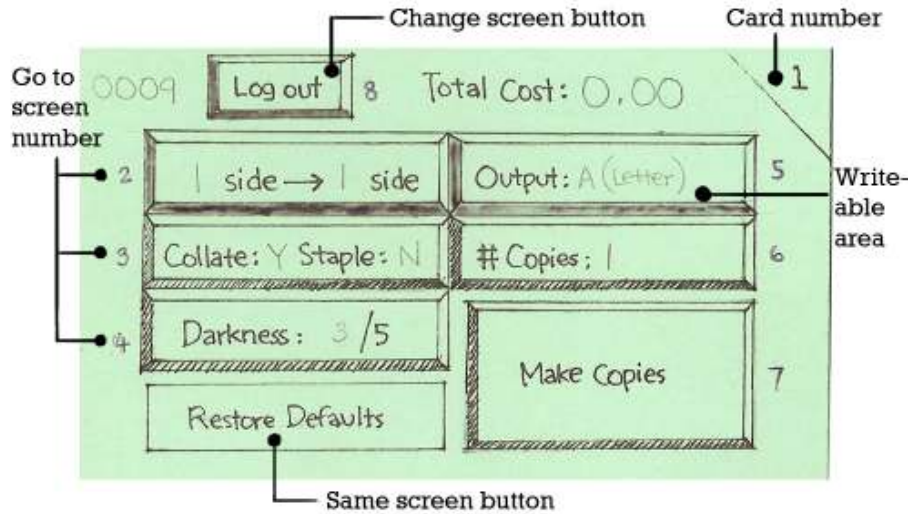


Paper Prototype and Instructions

This paper prototype uses 8 index cards to simulate the control panel of a copy machine with the following features:

- Lightness/darkness adjustment
- Up to 50 copies at a time
- Collating, when copying from a source that has more than one page
- Stapling (requires collate to be selected first)
- Original and copy can use one or both sides of each paper
- Select from three paper bins to make copies from: plain letter, plain legal, and colored letter.
- Cover sheet: If printing on plain letter paper and collating, can choose to have the first page of each copy be colored letter.
- Start button begins copying. It’s called “Make copies” here.
- Stop button, called “Stop and clear”, interrupts a run of copies before it finishes and returns you to the main screen.



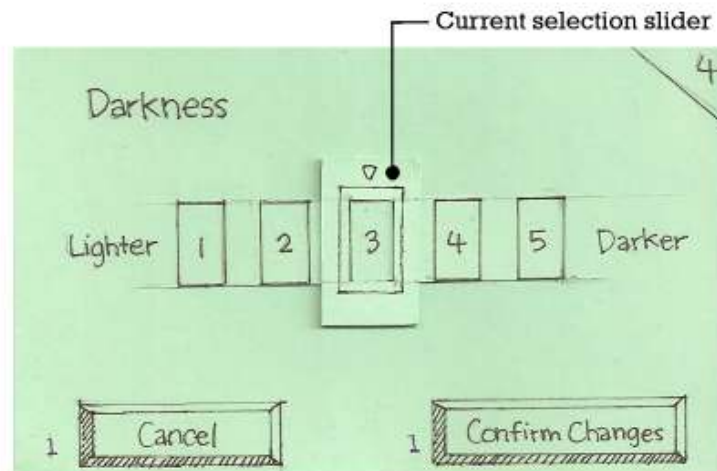
Card number: From 1 to 8, these represent different screens.

Change screen button: This button with a shaded lower and left side will take you to a different screen when you press it.

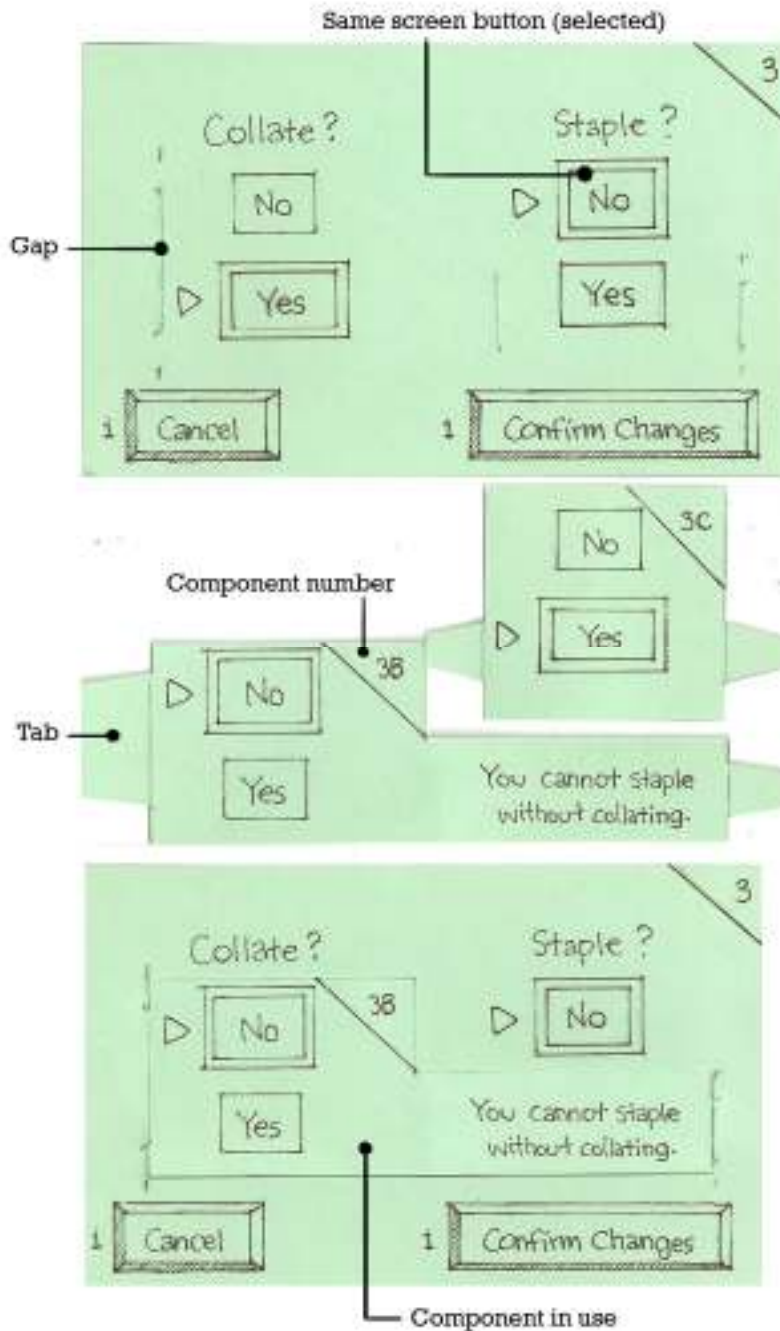
Go to screen number: When the corresponding change screen button is pressed, switch the prototype to the card with that number.

Same screen button: This button appears as a plain box, Pressing it changes the information on the current screen, but does not change the screen.

Writeable area: This area displays changeable information. Write the current information in it with a pencil and erase when you need to change it.

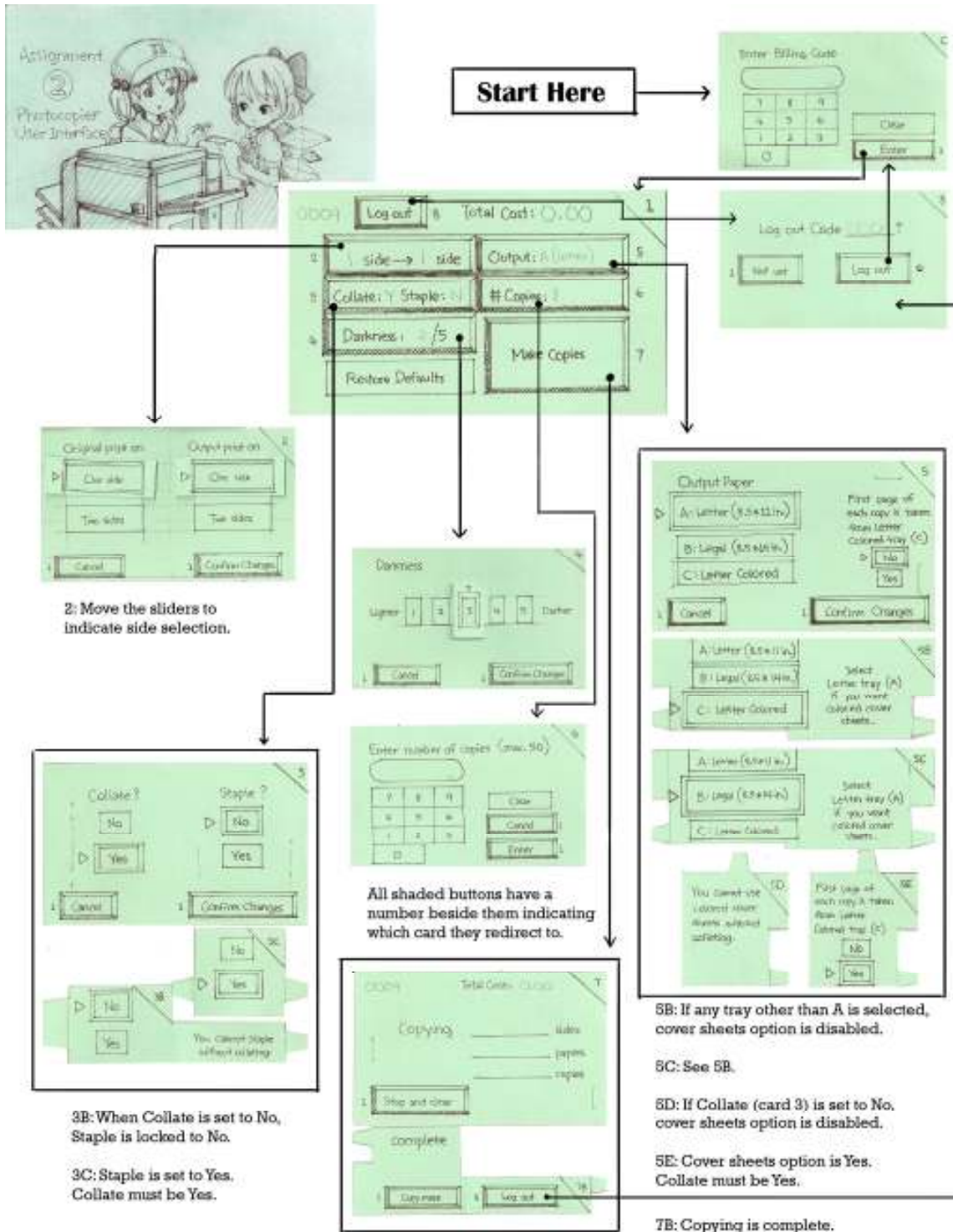


Current selection slider: Move the slider to whichever button in the group is currently selected.



Component in use: Other cards have components that can be installed on them to represent restrictions. For example, **Card 3** requires Collate to be Yes in order for Staple to be Yes. The component 3B, that represents Collate being No, prevents Staple from being Yes.

Gap and Tab: Tabs go into gaps. Each component for a given card uses at least one gap that is used by another component, making it so that no more than one component can be installed on a card at any given time.



The overriding idea behind this design is that the user has to see every feature of the copy being made, when he or she presses the Make Copies button. The main screen, **Card 1**, summarizes all information in one screen.

Tasks (to be given to testers)

You are a frequent user of the photocopier at the nearby convenience store, enough that you have a user account with the billing code **0009** to save you from having to insert money.

Easy Mode

You have a pencil sketch on a letter size paper that you want to make a copy of. You would like to make it a little darker though.

After entering billing code and getting to the main page, click on the Darkness button and set the slider to 4 or 5. Click Confirm Changes and then Make Copies.

Normal Mode

You have a hexagonal grid on a legal size paper that you want to make 100 copies of, however, you want to use only 50 pieces of paper, printing the grid on both sides of each paper.

Restore defaults. Click the 1 side – 1 side button then move the right hand slider to 2 side. Confirm. Then click the Output button and select Tray B (Legal). Confirm. Then click the # Copies button and enter 50. Confirm. Then Make Copies. After copying, select Copy More and Make Copies a second time.

Hard Mode

You have a 10-page document, actually 9 pages with a cover page, on 10 letter size papers each with print on one side. You need to make four copies of these. These copies have to be collated and stapled, and the cover page of each copy has to be on a colored paper.

Restore defaults. Click the Output button, select Yes to cover sheets. Confirm. Then click the #Copies button and enter 50. Confirm. Then Make Copies.



Rationale of Tasks

The tasks all together demonstrate every feature of the copy machine. The interface is designed so that the simplest possible task (one-sided letter size copy) can be done with the default settings on **Card 1**, so the easy mode task requires only one change (the darkness) from the default settings.

The normal mode task has a trick, based on the fact that the limit is 50 copies per run. Even if you are only using 50 papers in all, you are making 100 copies and you can't do it all in one run.

The hard mode task uses the very specialized cover sheet feature. What makes it hard is that you don't see where the cover sheet feature is by looking at **Card 1**. Also, you can block yourself from the cover sheets option by selecting the wrong paper tray, or by choosing not to collate.

Testers

For the first test, I laid out the cards on a table in the common area in our office and asked my co-workers to take a look and read the tasks. Most of my co-workers are programmers, but some are not, and I'm counting all of them as just one person.

For the second test, I asked one of the ladies who worked at the office next door to our company.

For the third test, I asked the concierge at the condominium where I lived.

Scan of raw notes

Don't need cancel/confirm
on darkness slider

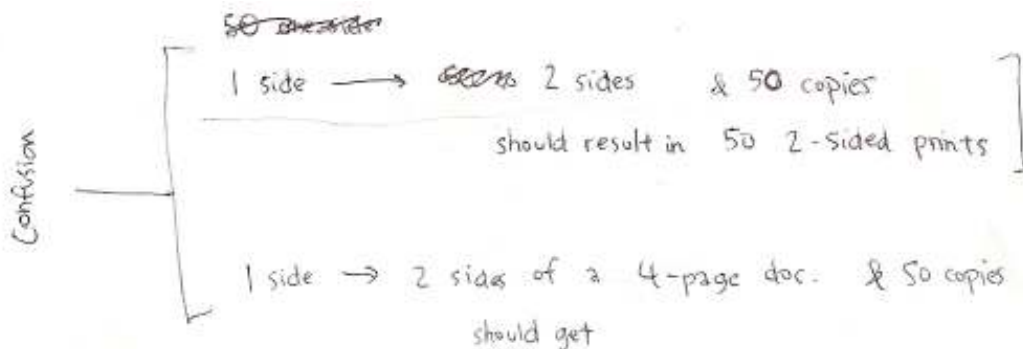
You do not need to know
who you are when logging out

Ambiguous language on
log out page

"It's free, so I don't need a code"

Not apparent that legal size is available

~~not~~ Log out & restore default after time



Not clear on what cover sheet is

copies
screen Looks like code entry

ambiguous "colored"

Staple & collate irrelevant
with 1 page

Proposed Improvements

1. Improve the wording in both the interface and the task description. I got comments like “It’s free, so I don’t need a code?” when presented with the billing code entry screen and “Can I make color copies with this?” when reading the colored cover sheet task. Also, the option to use a cover sheet *doesn’t say “Cover Sheet” anywhere*. The text on the log out page also caused confusion, and it should be removed completely leaving only the buttons.
2. Give Cover Sheet its own button on the main page. I had originally thought it was such a specialized task that it was okay to have to know the secret, but for first time users it was too hard to locate. *None of the testers ever used the Restore Defaults button*, so the Cover Sheet button can be put in its place.
3. Differentiate the code entry and #Copies screens. I had a user try to enter the billing code in the #Copies screens because *they look the same*.