

Assignment 3:Gesture Report

Muzi Gao (mg3194)

gaomuzi@gmail.com

1.General Idea & Prototype

(1) General Idea

This idea comes from my experience of calling my one of my friends. Since we both use smart phones with large, multi-touch screen, (one is HTC inspire and the other one is iPhone 4s), we found that the "End Call" button may be pressed unconsciously, and the call was interrupted. It happens several times and it's really annoying. To some extent, touch-screen nowadays is a little bit "too sensitive", and even the touch of face may be the trigger of some execution. (This situation is even worse for me because my phone has larger "End Call" button, which is much easier to mis-touched).

Since then, I think the user of gesture may solve part of this problem. We provide a simple task for users before executing their goals in order to reduce risks. This is not to say that all the goals should be checked. Examination would be helpful when users cannot see the screen. For example, making a call without earphones, or putting mobile in their pocket with other stuffs.

Besides, I hope to add some shortcuts leading to new tasks when making calls. For example, I'm calling my friend on the road, I found there's is a squirrel in front of me, I feel surprised and want to share a photo with my friend since he has never seen a squirrel before. Generally, I have to take the phone out of my ear, and touch the home screen button, unfortunately, I don't have a the shortcut on the screen, I need to check my application list for camera, and finally, I start my camera, but the squirrel has already run away! In this case, a shortcut to camera with a trigger of certain gesture may be useful.

In this assignment, I simulate one senario of making a call, but operations such as answer, decline, turn on/off microphone and speaker phone, as well as end call are executed by different gestures. Besides, I try new feature of quick-photo and sending it to the other side of the call immediately.

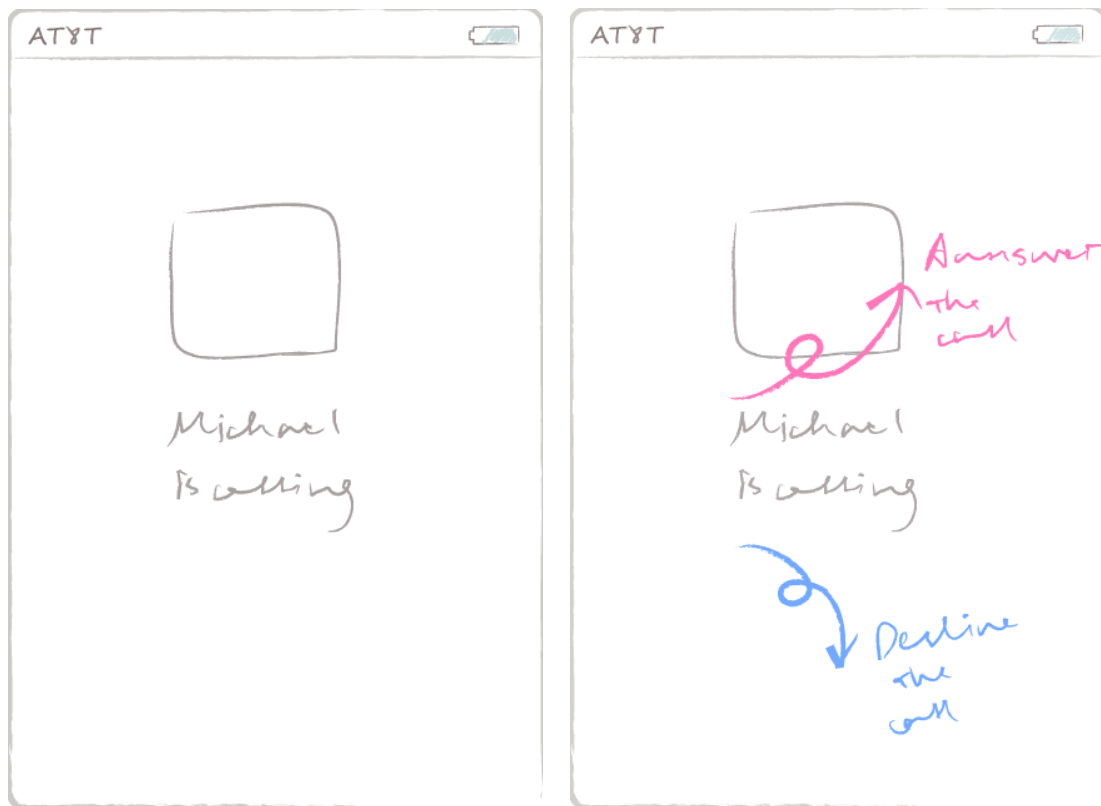
(2) Typical Senario

In this senario, Kathy, who is a first-year master student from China, is walking back home from library. She receives the call from Michael, who is also a first-year student from China, but lives in another city now.

When hearing the ring, Kathy takes her phone from bag, answers the call by execute "answer" gesture. They has a happy talk. Suddenly, Kathy notices that there is a lovely squirrel just in front of her. She is surprised since she only saw squirrel on TV programs. She tells Michael about the squirrel, Michael feels surprised, too. So Kathy decides to take a photo of squirrel and send it to Michael. She tells Michael about that and then removes her phone from ear. She executes "speakerphone" gesture to turn on it, and then executes "camera" gesture. She finds a perfect position, pressed "shoot and send" button, a beautiful picture will be sent to Michael. After that, Kathy execute "speakerphone" gesture again to turn off the speaker phone, and happily, Michael has already received her photo. They continue their talk until Michael says he has to have dinner. So Kathy execute "end call" gesture to end their call.

(3) Lo-Fi Prototype

Start screen:

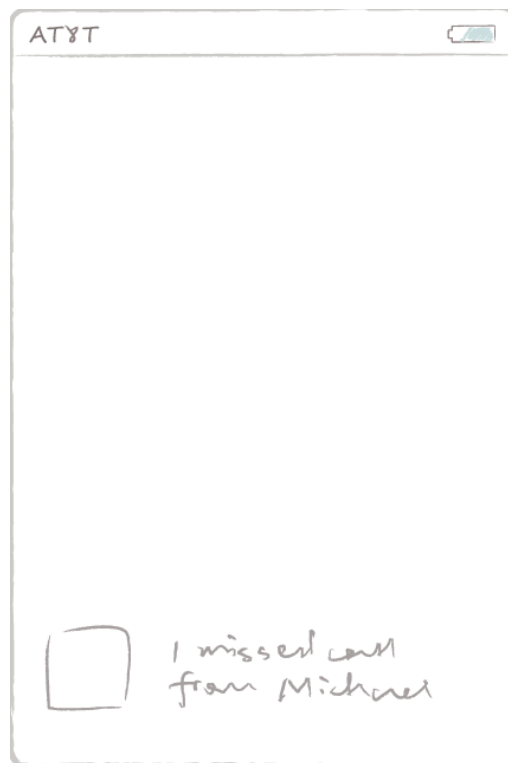


F1.1 "New Call Coming" on the screen

&

Answer/Decline the call

If declining the call, information of "missed call" will be shown



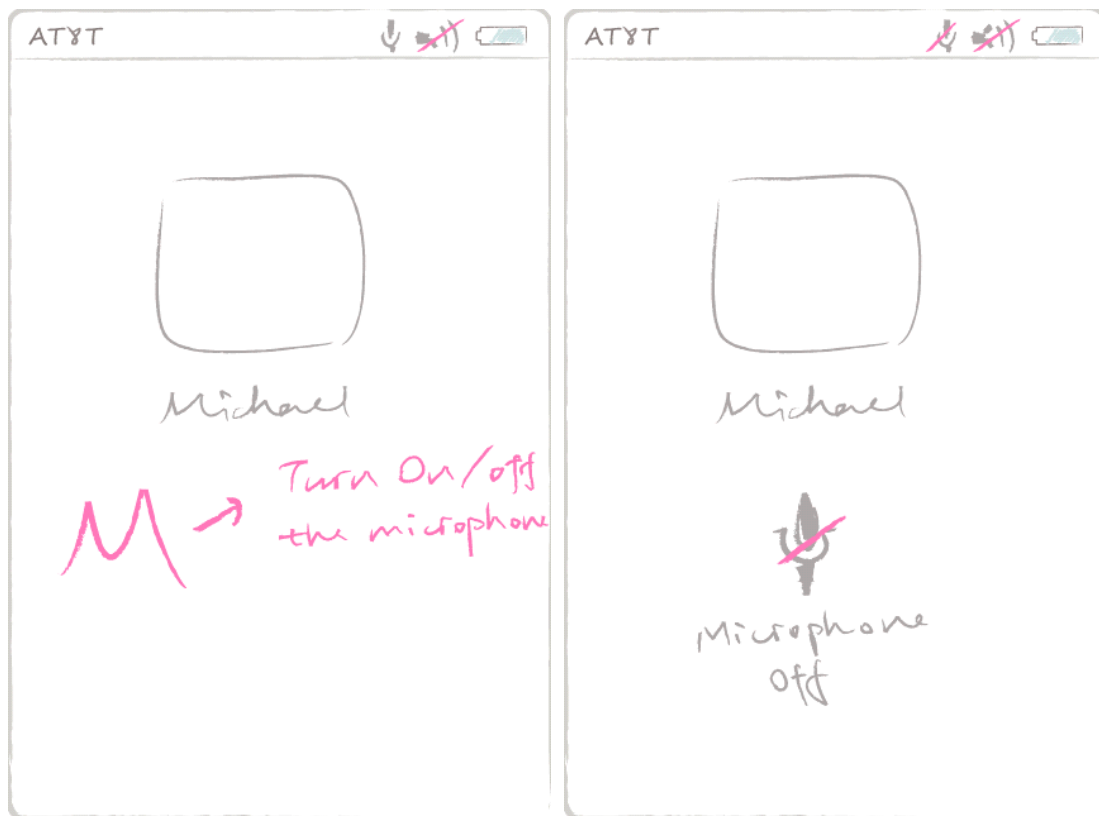
F1.2 Decline the call

Or if choosing to answer the call, automatically, the microphone is on and speaker phone is off. You may see icons on the top:

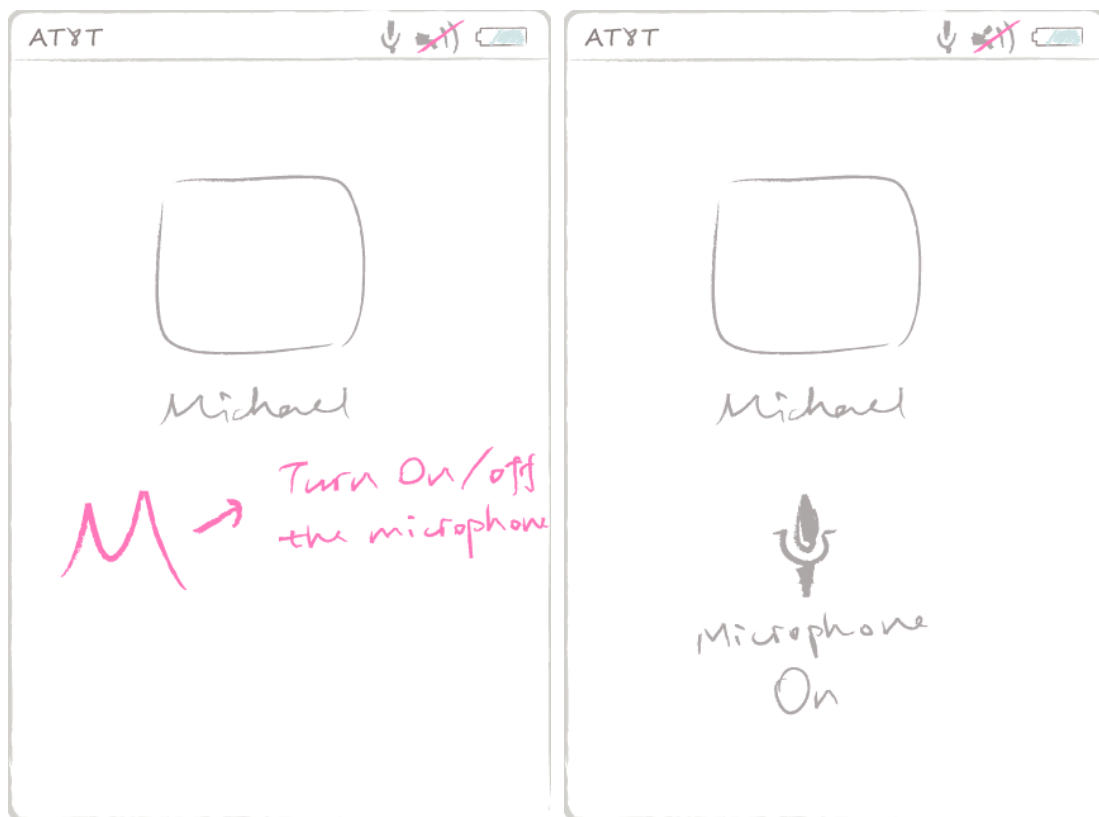


F1.3 Answer the call

To turn on/ off the microphone:

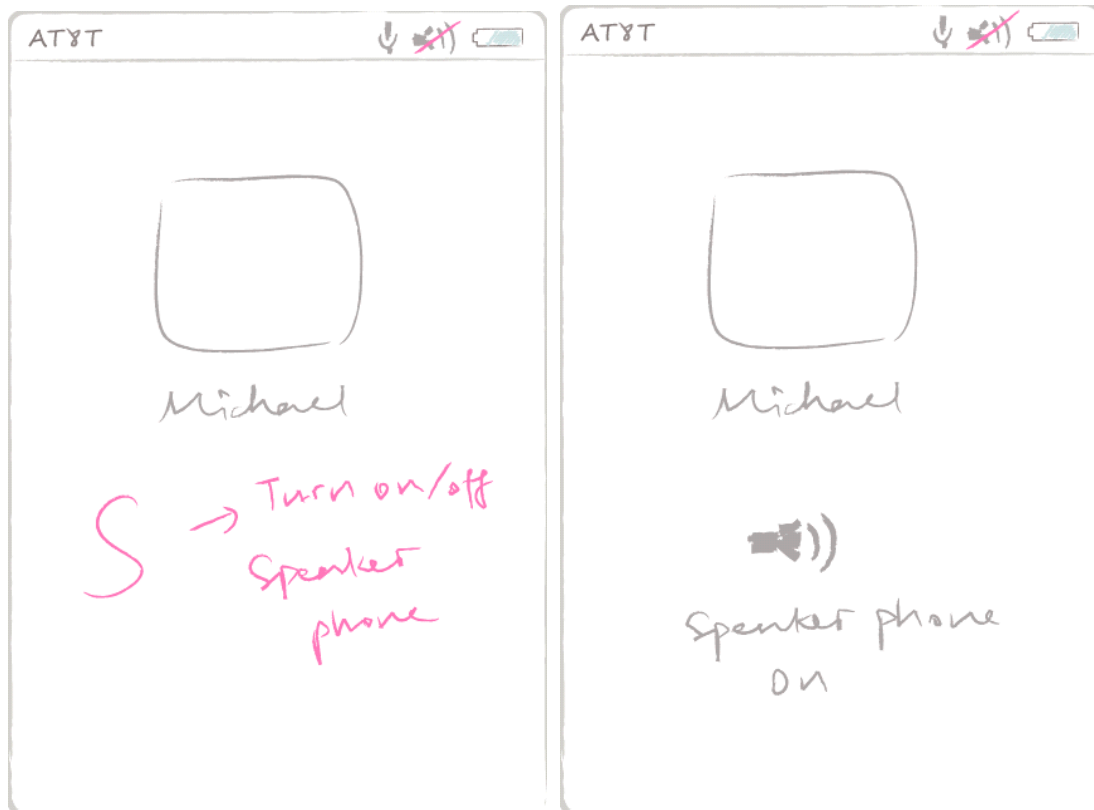


F1.4 To turn off the microphone if it's on

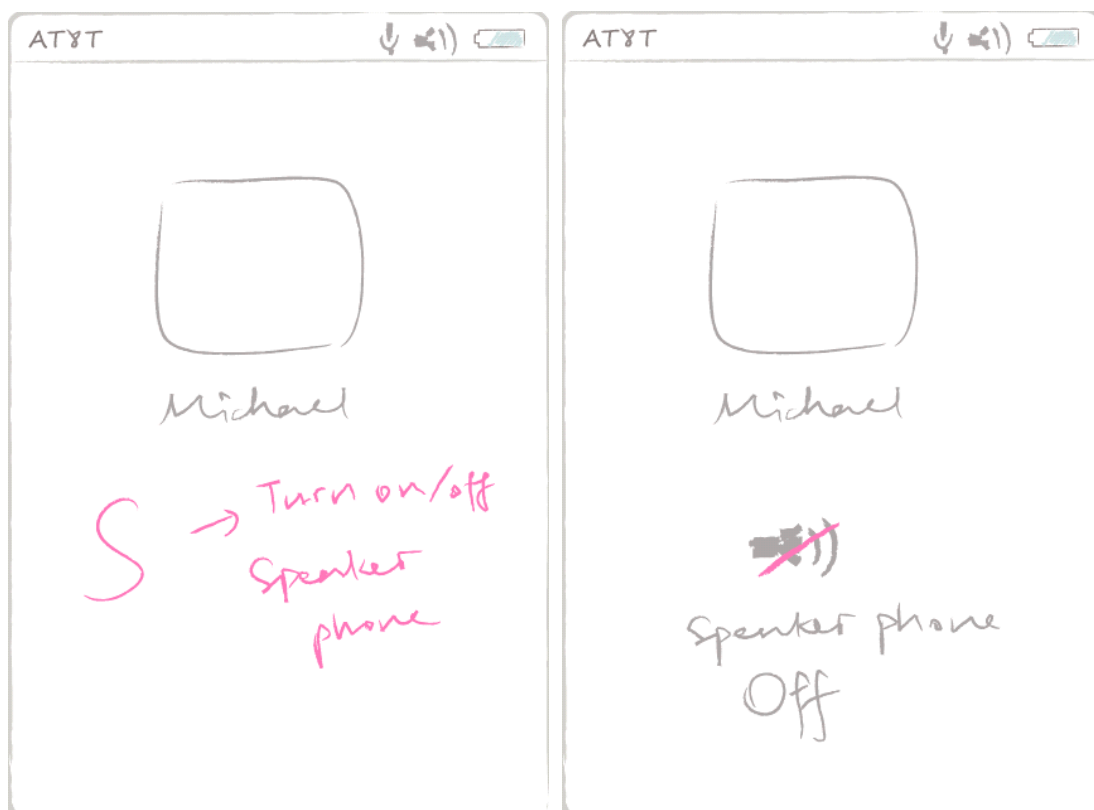


F1.5 To turn on the microphone if it's off

To turn on/ off speaker phone:

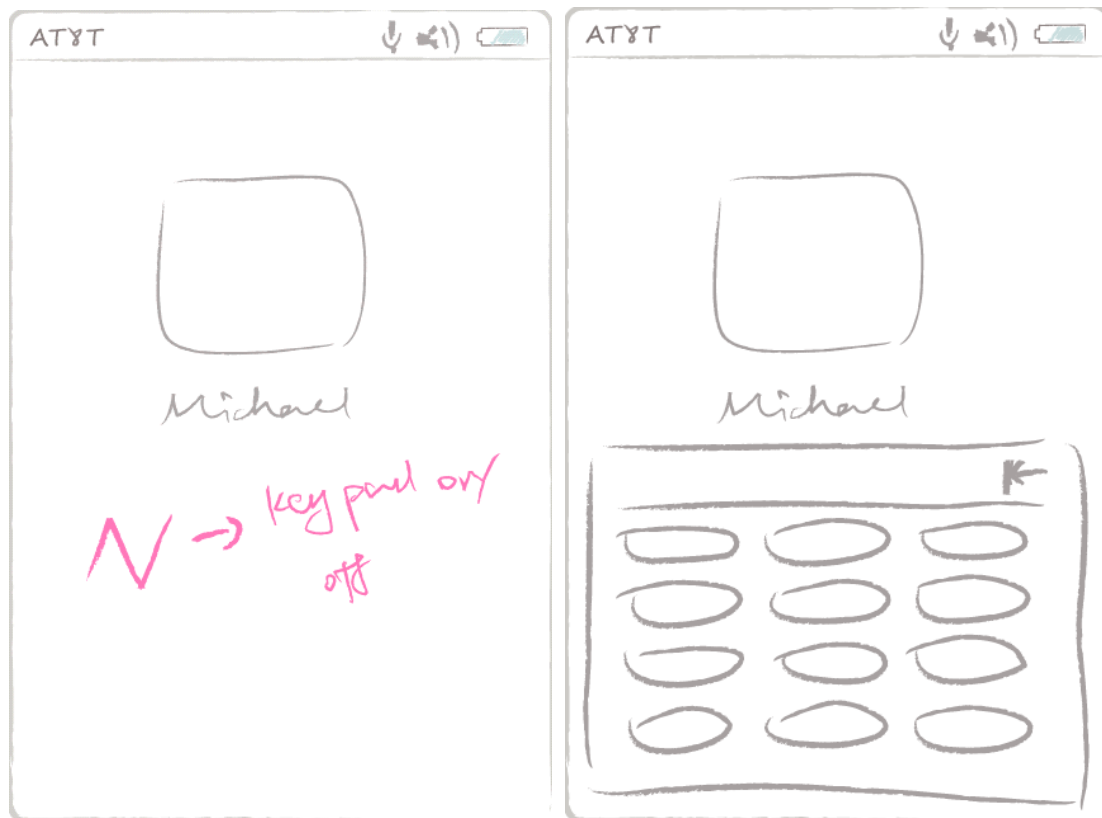


F1.6 To turn on the speakerphone if it's off



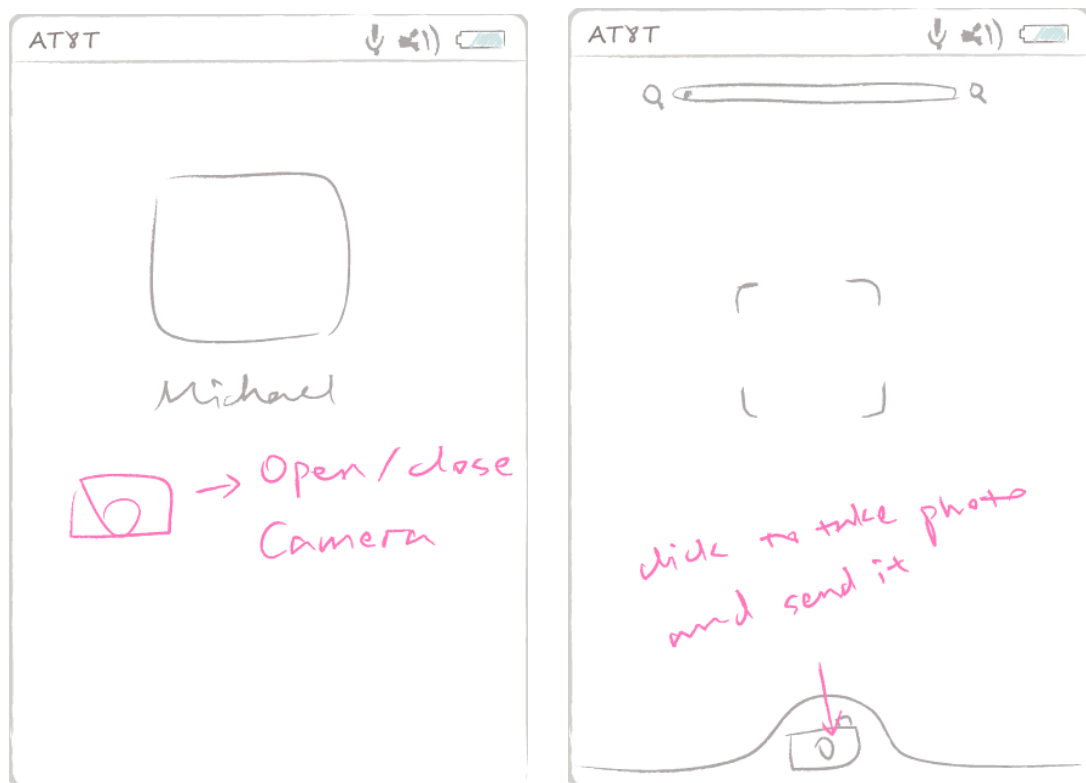
F1.7 To turn off the speakerphone if it's on

To open/close keypad:



F1.8 To turn on/off the speakerphone if it's on

To open/ close camera, take photo and send it by pressing "Shoot" button, and the other people will receive immediately:

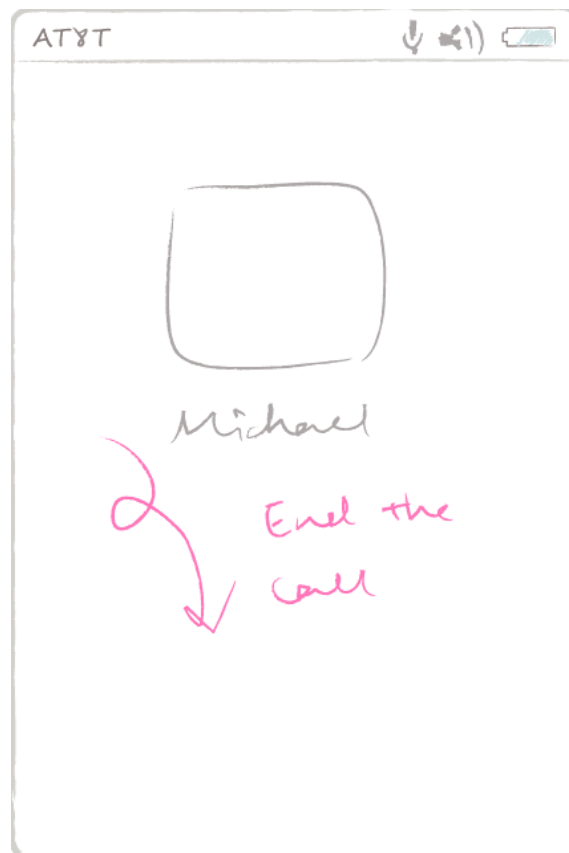


F1.9 Open/ close the camera, take photo and send it



F1.10 Receive photo








To end the call:



F1.11 To end the call

2.User's Guide

Basic gestures used in this application are as follows:

-  Answer the call
-  Decline the call
-  Microphone On/Off
-  SpeakerPhone On/Off
-  Keypad On/Off
-  Camera On/Off
-  End Call

The first two gestures ("Answer the call" and "Decline the call") are used when users have incoming calls. They can choose to answer it or decline it. It's easy to understand. People pick up the phone to answer the call, and leave it down to decline it.

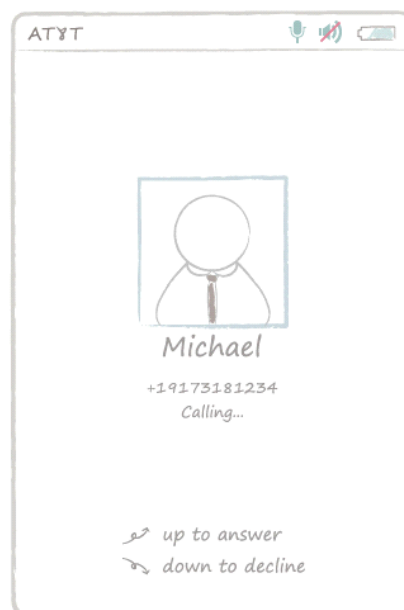
Once the user answered the call, he or she may choose to turn on/off the microphone and speaker phone during the call. I choose the first letter of "microphone" and "speaker phone" as gestures. Similarly, "N" is for displaying keypad or not.

The gesture controls the camera on or off is a sign of a camera. It's distinguished from other gestures, and the system can recognize it with a higher rate, so mistakes may be reduced. For the last one, I use the same gesture for "End Call" as that for "Decline the call". First, they will not be used simultaneously, so the recognition system will not be confused.

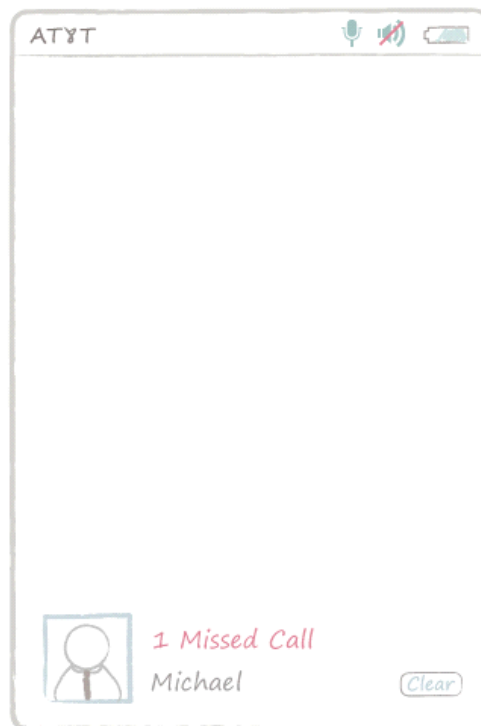
Besides, from my point of view, operations of "Decline the call" and "End Call" have similar meaning.

Here are screen shoots:

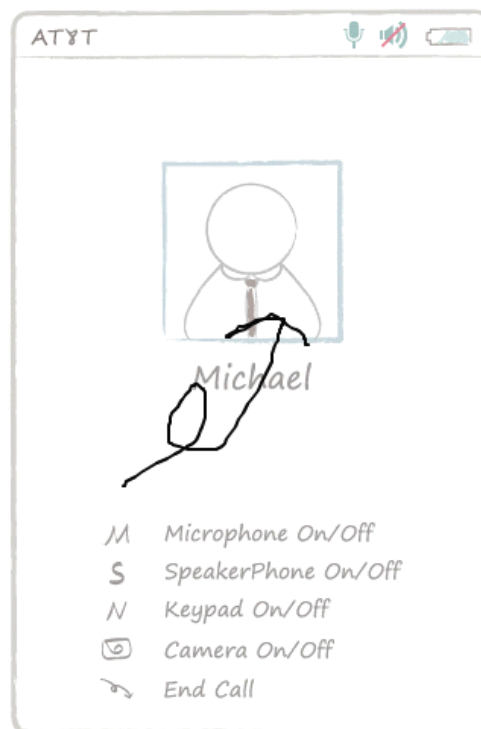
(1) "Answer the call" or "Decline the call" when there is an incoming call, tips are on the bottom:



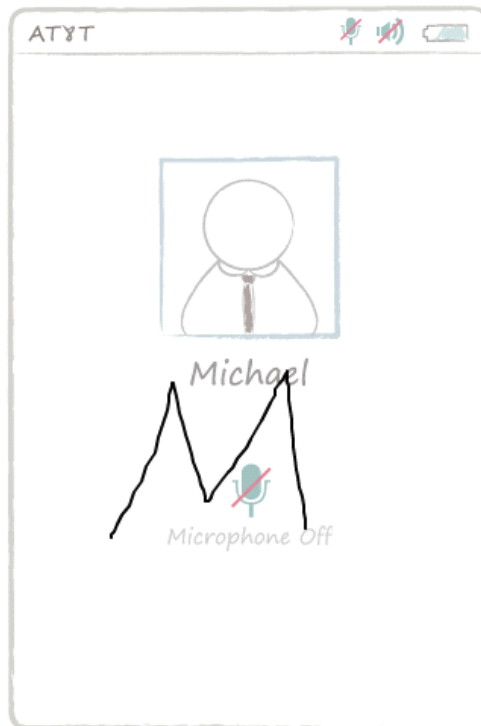
(2) If we choose to decline it, information of missed call will be shown:



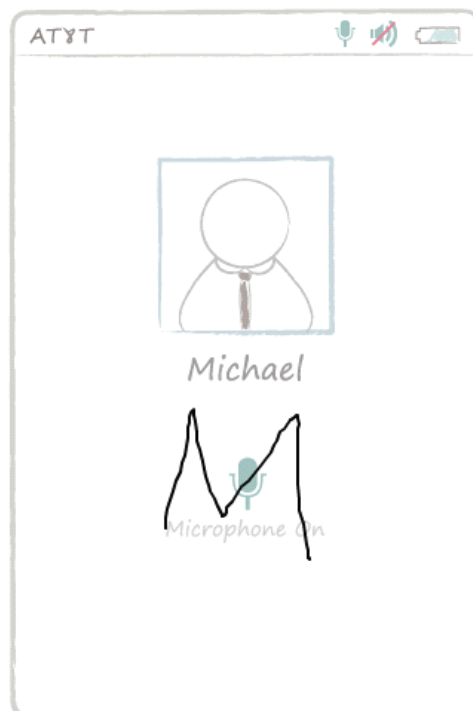
(3) If we choose to answer the call:



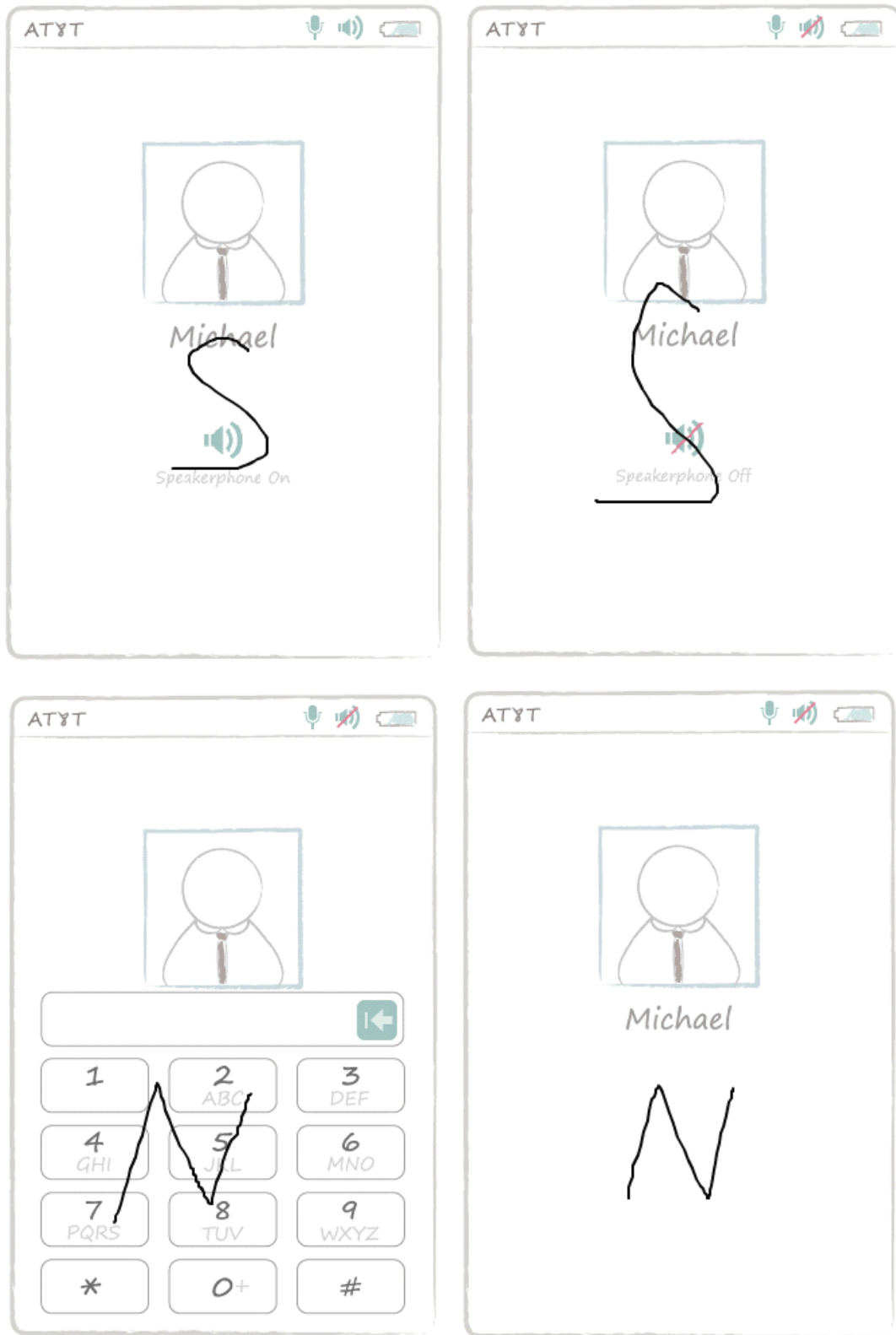
(4) Now, the microphone is on (you can see icon on top of the screen), if we want to turn off the microphone:



(5) If we execute the same gesture, we will turn on the microphone:



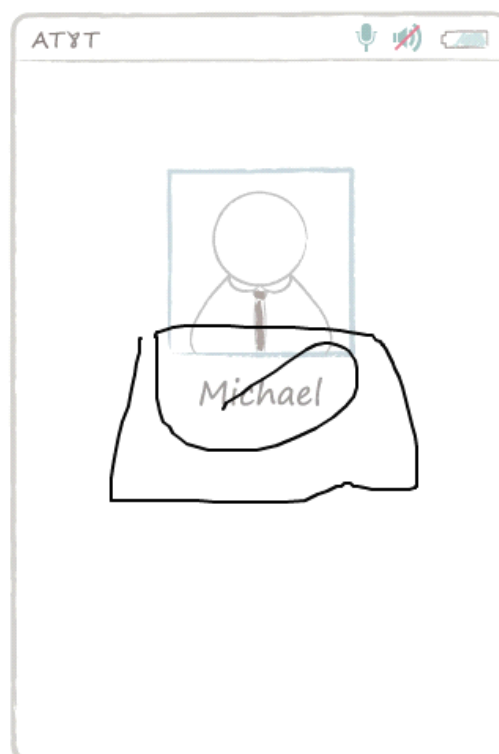
(6) Execution for turning on/off speaker phone and keypad are similar:



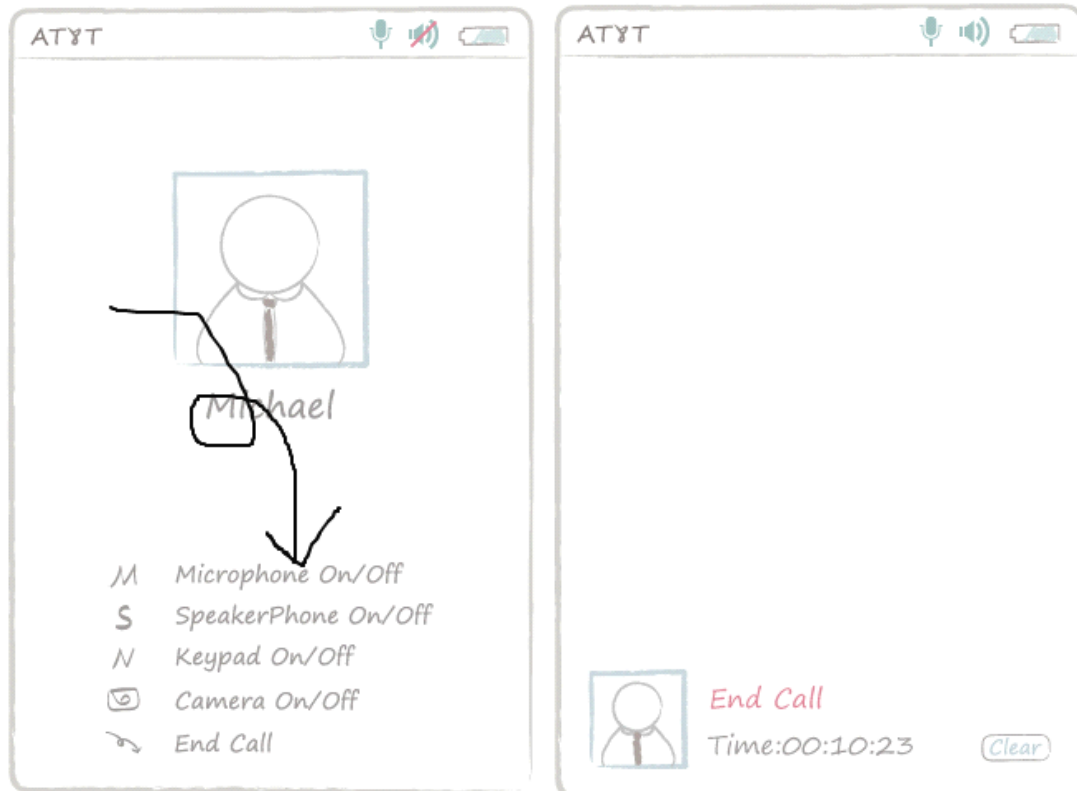
(7) If we want to turn on the camera, take a photo and send it, you may execute "Camera" gesture and press the "Shoot" button, and the other person will receive it immediately:



(8) Execute the "Camera" gesture again to turn off the camera:



(9) To end the call:



3.Heuristic Analysis

Since it's a really simple application, I consider heuristic analysis from several aspects:

(1) Consistency and standards:

I didn't do much about ui design, but I try to use similar shape and color for elements serve similar feature. For example, icons of microphone and speaker phone, photos for people remains the same in all screens.

(2) Help and documentation

Since I use gesture to execute most of actions, it's hard to help by using tooltips, so I listed gestures on the screen directly. Once the user is familiar with them, the tips will not appear on the scree.

(3) Error prevention

If and only if result for recognition larger than certain scores, gestures will be executed.

I found that if I use mouse to paint gestures, there will be more errors. But I think errors will be reduced if executed on touch-screen by finger.