



# HUSKY CRIME GUIDE

## Task Analysis and Design Sketches

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Assignment 3*

### I. Problem and solution overview

As members of the University of Washington community, we are informed of crimes in our neighborhood through e-mails and texts from the UWPD. This system, however, lacks 1) a way to view past criminal activities, 2) any features that engage or interact with the user, and 3) a method for actively preventing crime. The *Husky Crime Guide* will be a **centralized dashboard for informing UW students of reported crimes** in the U-District area and also an **panic button** for your mobile phone. This supplement to the UWPD's Notifications of Criminal Incidences will consist of an interactive map with color-coded pins pinpointing crime location and "severeness" of the crime. Students can filter these crimes by type, date, time, and location and details on a crime can be viewed by clicking on a pin. Additionally, students will be able to use the Husky Crime Guide to autodial 911 during an emergency.

**The combination of the Husky Crime Guide's mobile map and panic button will allow college students to better protect themselves against crime.**

### II. Task Analysis Questions and Current Versions of Tasks

#### 1. Who is going to use the system?

Students, faculty, and alumni who live in the U-District area (including on campus) will find the Husky Crime Guide useful.

#### 2. What tasks do they now perform?

The current system of receiving text and e-mail Notifications of Criminal Incidences by the UWPD allow UW students and faculty to perform a limited number of tasks:

- Through texts, students can receive **immediate notifications** of criminal activity

regardless of one's access to a computer. This is also especially pertinent to student when actions is required, such as building evacuations or notifications of runaway criminals.

- Through e-mails, students can read information on recent crimes. Information includes **date**, **location**, **case number**, and a **detailed description** of the incident. Students are provided with a **hotline** to contact the police with additional information about the crime. These e-mails also include **tips for preventing and reporting crime**. Students can archive these e-mails for later reference.
- Students can perform any task that their e-mail provider has, such as searching e-mails or filtering them by keyword.

In addition, Seattle residence are able to use sources like **spotcrime.com** and seattle.gov's **Online Crime Maps** to perform the following tasks:

- a. Users have access to an **interactive map** to observe locations of crime in the Seattle area. Crimes in this map can be **filtered** by category, date, and keyword.
- b. Information on these crimes includes **date**, **location**, and **category** of the incident. This information is organized into a table as well as included in the map.
- c. Users can see a **list of recent crimes** in the Seattle area.
- d. Users can see a **Google Street View** of a specific crime's location.
- e. Users can find information on **related crimes**.

### 3. What tasks are desired?

The results of our contextual inquiry suggested that the following three tasks would improve the student experience:

- **Easy Task: A student is about to walk home alone, but a crime is occurring near to his destination; the student is immediately alerted of this incident and would like to find someone to walk home with.** For example, students are constantly walking across campus for meals, to classes, etc. to meet with other students. If a crime occurred near a student's destination, he would like to become aware of it as soon as possible so that he can react accordingly (instead of an e-mail about the incident sent out two days later).
  - In the contextual inquiry, students said that UWPD Notifications were not up-to-date, especially due to the fact that notifications are through delayed e-mails.
  - These alerts do not have to be extremely detailed, but informing students of a location and crime type would be extremely useful.
- **Medium Task: A student needs to identify and avoid high crime areas.** For example, a student wants to find a quiet environment for his studies other than a dormitory. Or students might like to select the safest housing location.
  - In the contextual inquiries students had trouble connecting crimes with locations, remembering crimes, and finding key points of information.
  - Instead of texts, providing students with a map with information on all crimes reported by the UWPD would help them better remember crimes. Using the interactive map and filters, students gain a geographic perspective on only crimes that are relevant to them and can make life

decisions based on this information.

- **Difficult Task: While walking alone in the U-District at night, students who are experiencing or witnessing a crime will want to immediately notify 911 with their location.**
  - The UW offers a few night classes that usually end after 9 pm. Also, especially before midterms and finals, many students stay late at libraries working on their project. Walking back to dormitory or to a bus stop alone after nightfall becomes a dangerous task for students or faculty members, and men or women.
  - According to emails strings from UWPD, robberies happen more often in the U-District at night.
  - In the contextual inquiry, students said that they would feel safer if someone knew their location while walking at night in the U-District.
  - A panic button that contacts 911 with the phones' location could be used to deter criminals and prevent assaults.

**4. How are the tasks learned?**

Some of our tasks are learned intuitively. But, for tasks that are not immediately obvious, the Husky Crime Guide application will provide helpful balloons of information. These balloons can be exited and removed permanently if the user desires.

- The first task (receiving alerts) requires minimal learning. When the student receives the alert, the student reads the message, and then reacts in whatever manner they see fit. Finding friends is also very intuitive, because our design is similar to an instant messaging program.
- The second task requires some learning. The map will be very similar to Google Maps, so anyone who is comfortable with that application will understand how to use the Husky Crime Guide. The student must learn how to apply filters to the map, however, so an information balloon would aid them in this task.
- The third task requires the most learning. Users will need to know how to find their friends with the application and how to activate the panic button. An information balloon would provide this information to them.

**5. Where are the tasks performed?**

Most of these tasks would be performed anywhere in the U-District and especially on campus. Technically, since this is a mobile application, these tasks can be performed anywhere someone has access to a smart phone or computer. However, this application is most relevant when the student is in the U-District.

**6. What's the relationship between customer & data?**

In the map, the users have access to UWPD crime data. The users can use this data after it is conveniently organized by this application to make decisions about where to live, where to walk, etc. Access to this data either empowers the user to feel safer or warns the user about potential dangers.

**7. What other tools does the customer have?**

- Google Latitude
- UWPD Notification E-mail System
- 911
- [spotcrime.com](http://spotcrime.com)
- [seattle.gov](http://seattle.gov)'s [Online Crime Maps](http://seattle.gov/online-crime-maps)
- Nightwalk
- Mobile phone (for example, if a student texts a friend that they are about to travel home from the library at night)
- Find My Friends App

**8. How do customers communicate with each other?**

Customers of the Husky Crime Guide contact each other through the "Finding Friends" option. When a user turns this on, a select number of other users can watch them on their map. "Finding Friends" is a new feature that will be discussed in greater detail later.

**9. How often are the tasks performed?**

Tasks are performed potentially daily, but mostly on a need basis. The users would probably be more like to use the application at night because of more potential for periods of high crime. Similarly, researching crimes using the map would only occur when the student wants to learn more about an area. Alerts would usually happen only

when information on new crimes are releases, however the user could still potentially access the alerts database to see if he missed any alerts.

**10. What are the time constraints on the tasks?**

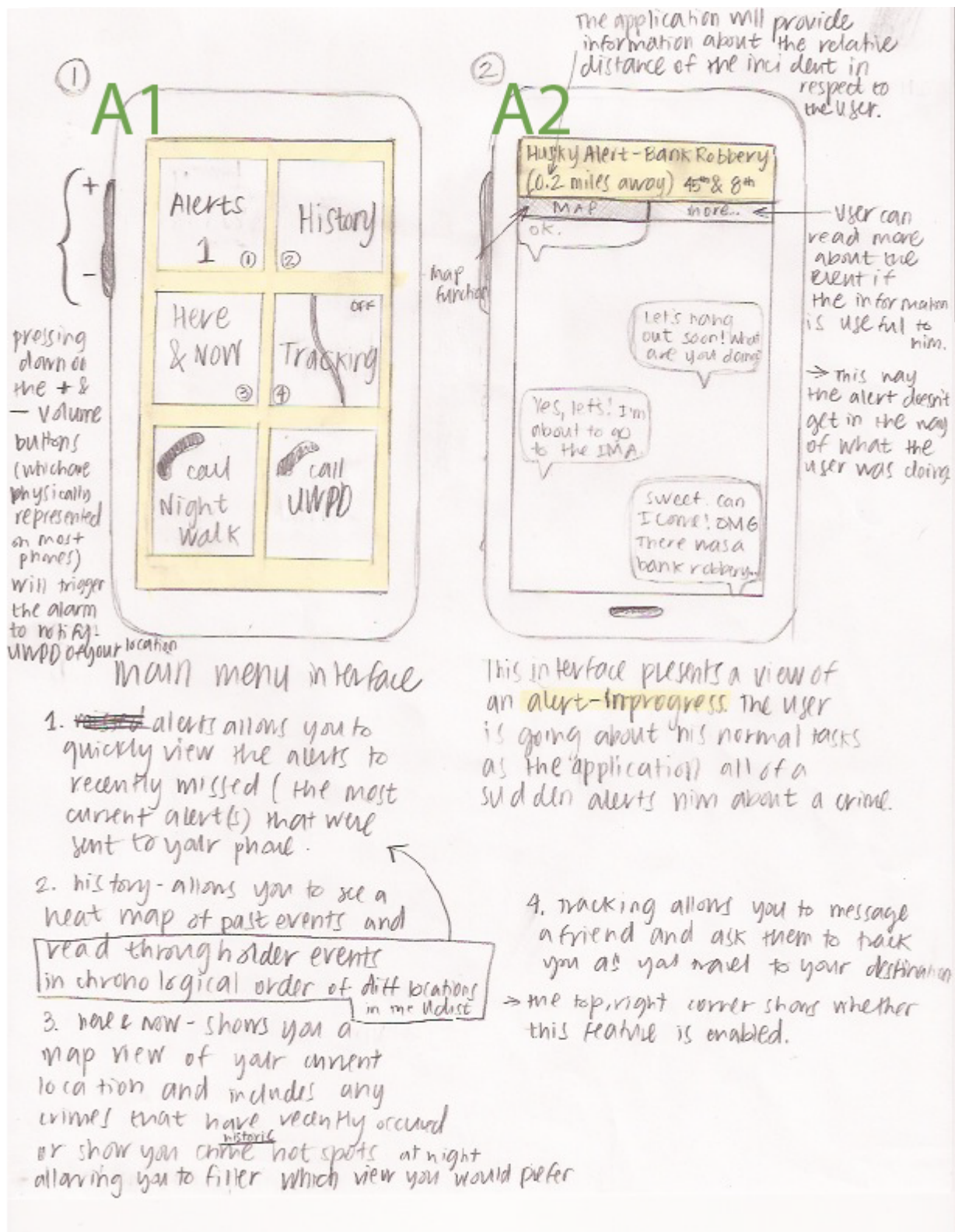
- The alerts must be immediate as possible (though of course these alerts depend on how fast the UWPD write the reports).
- The map must be up-to-date with the UW Notification system. As soon as an e-mail goes out to the UW community, the crime must show up on the map.
- The find friends feature must be real-time and access to 911 must be immediate.

**11. What happens when things go wrong?**

If alerts are not sent out in a timely manner, if the panic button does not work, or if the map is not up-to-date, students must rely on previous tools.

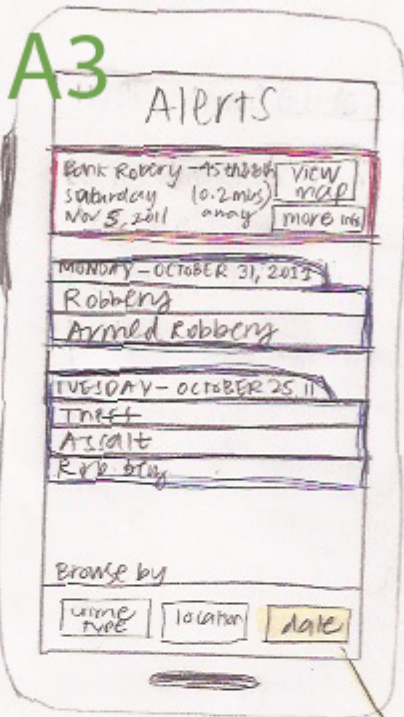
### **III. Storyboards for Three Interface Designs**

#### **Design A**



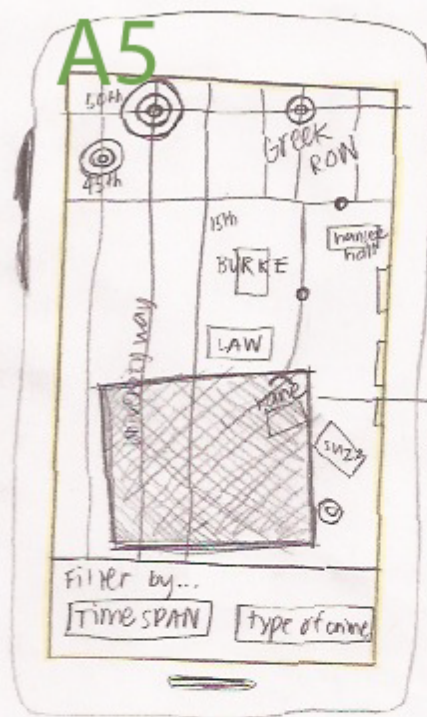


alerts interface



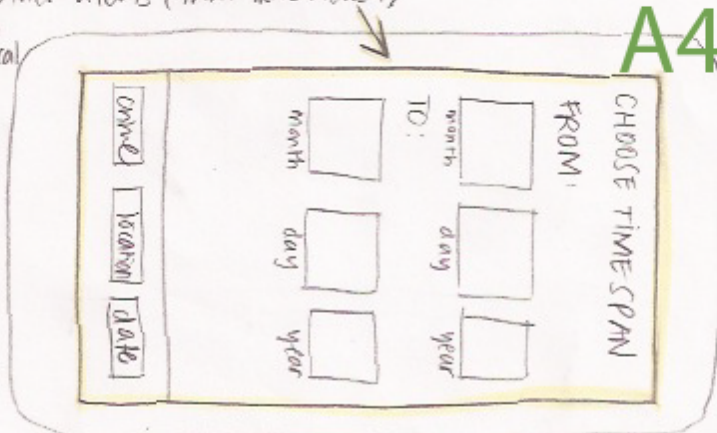
(partial view)

## history interface



— pinch to shrink or expand this square to identify the area you want to focus on

\* The default view will show the missed crime alert at the top and all other alerts (that were viewed) below, in chronological order.



# tracking interface

tap and  
slide up  
to 'off' or  
down to  
enable off

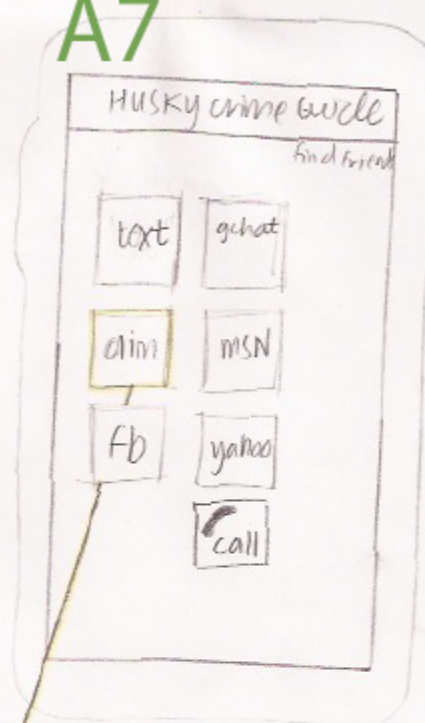
A6

shows  
map  
of where  
you are



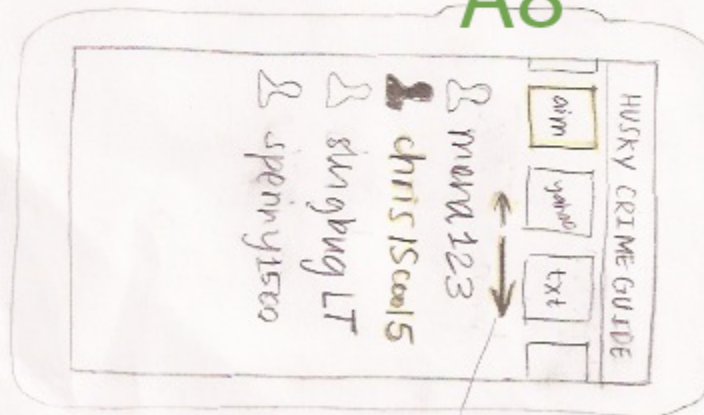
tracking interface

A7



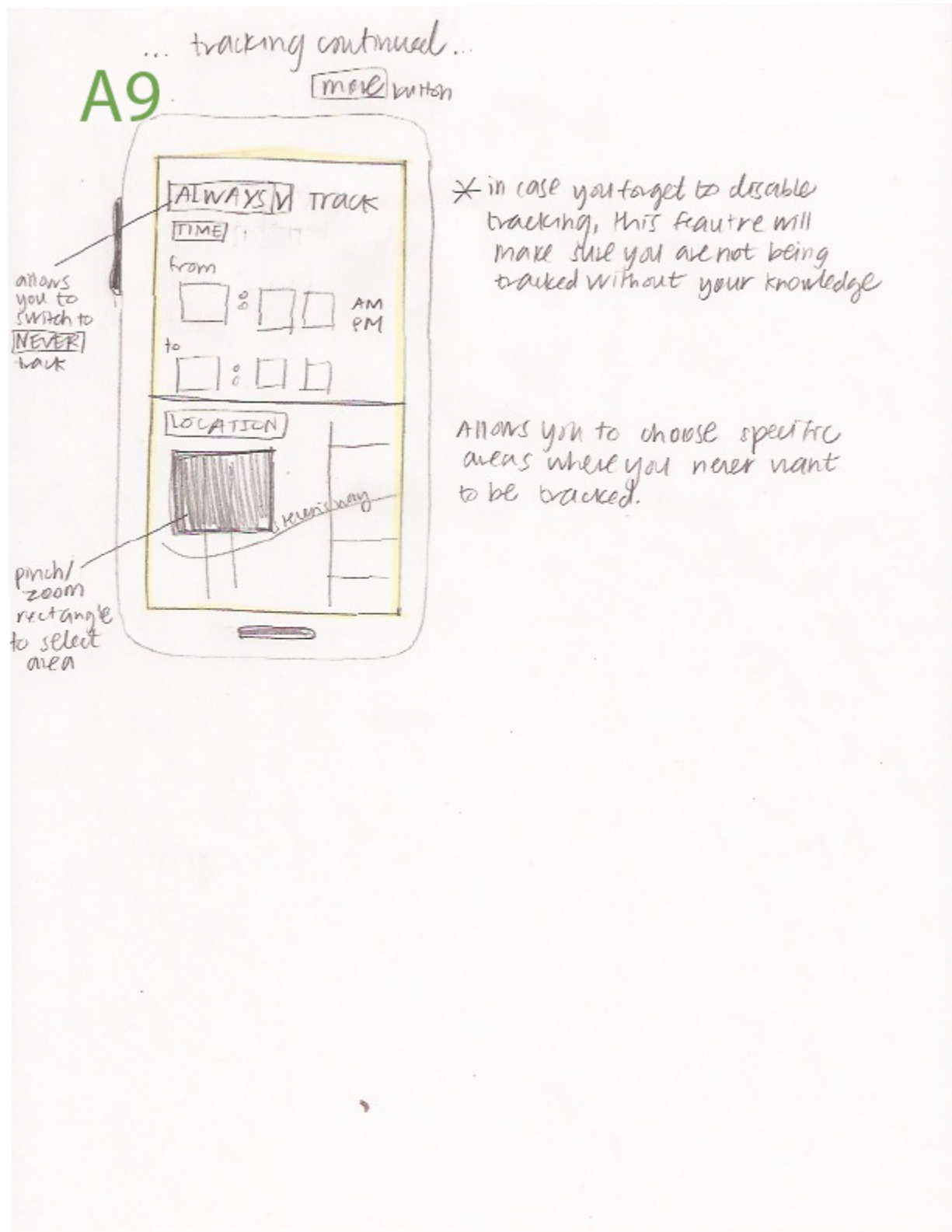
tracking interface  
Find friends

A8

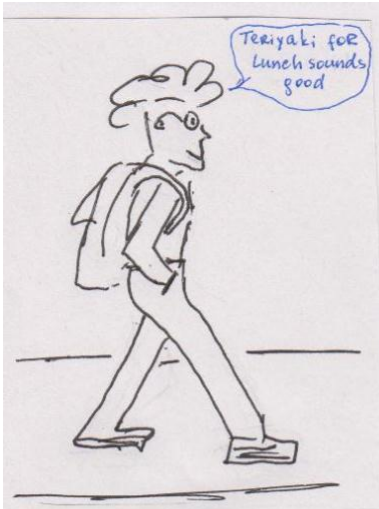


swipe  
back &  
forth to  
view  
others,  
if none  
are available





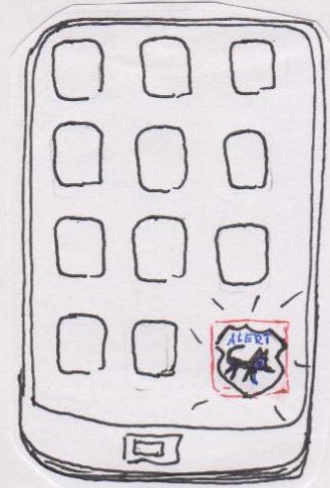
**Design B**  
Easy Task



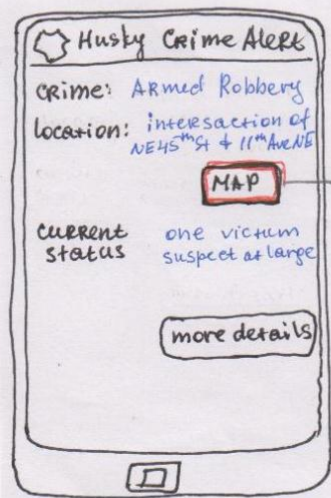
B1



B2



B3



B4



B5



B6

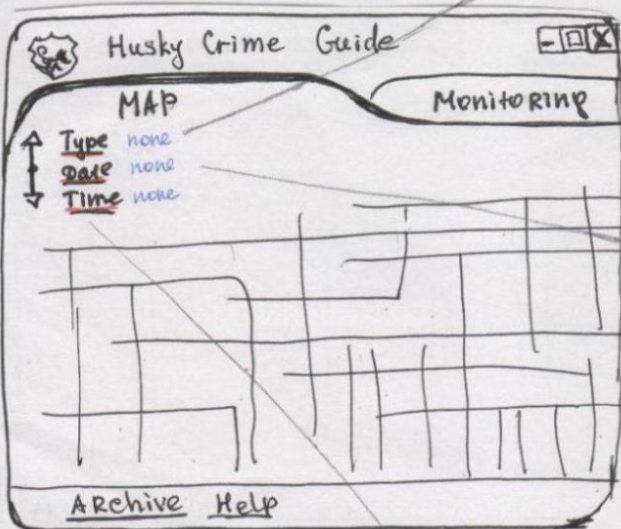
Medium Task



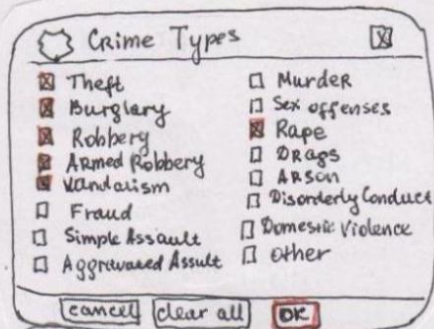
B7



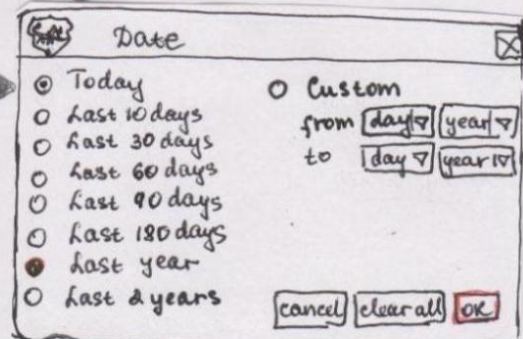
B8



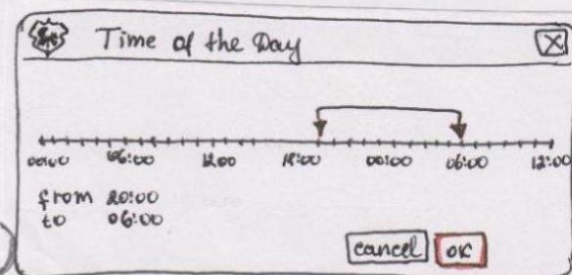
B9



B10

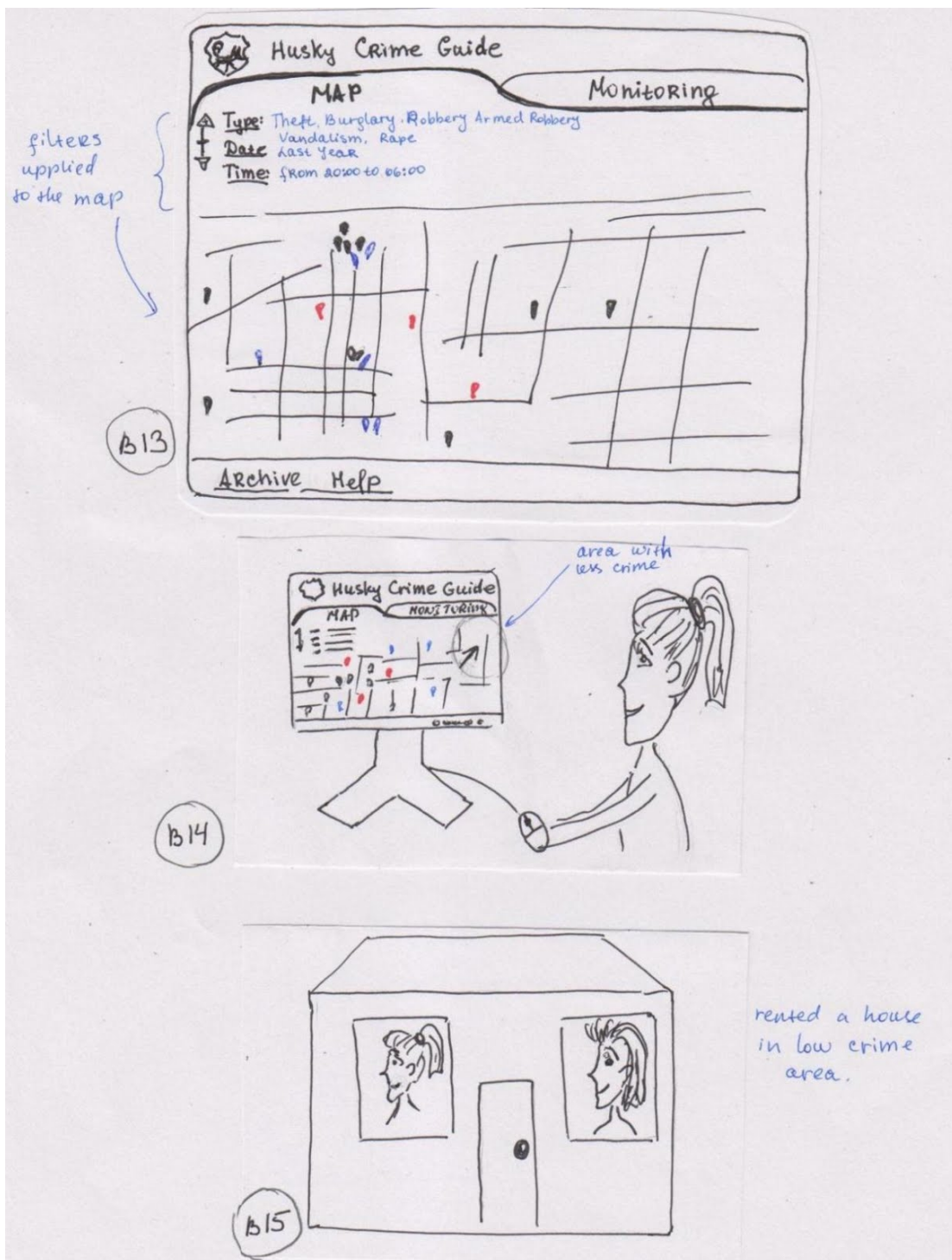


B11

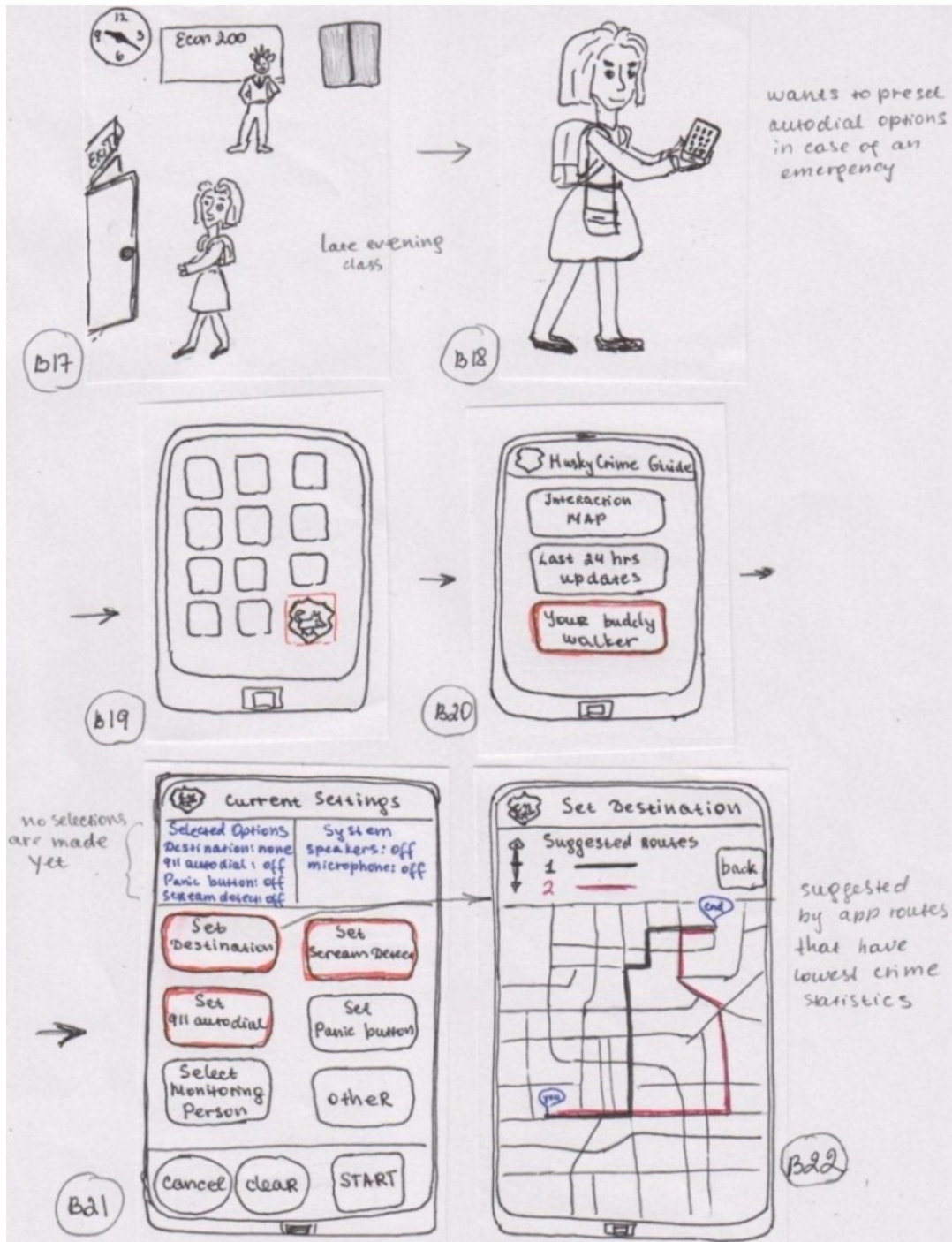


B12






Difficult Task





B23



Current Settings

Selected Options	System
Destination: set	Speakers: on
911 autodial: on	Microphone: on
Panic Button: off	
Scream Detect: on	

Set Destination

Set Scream Detect

Set 911 autodial

Set Panic button

Select Monitoring Person

other

Cancel

clear

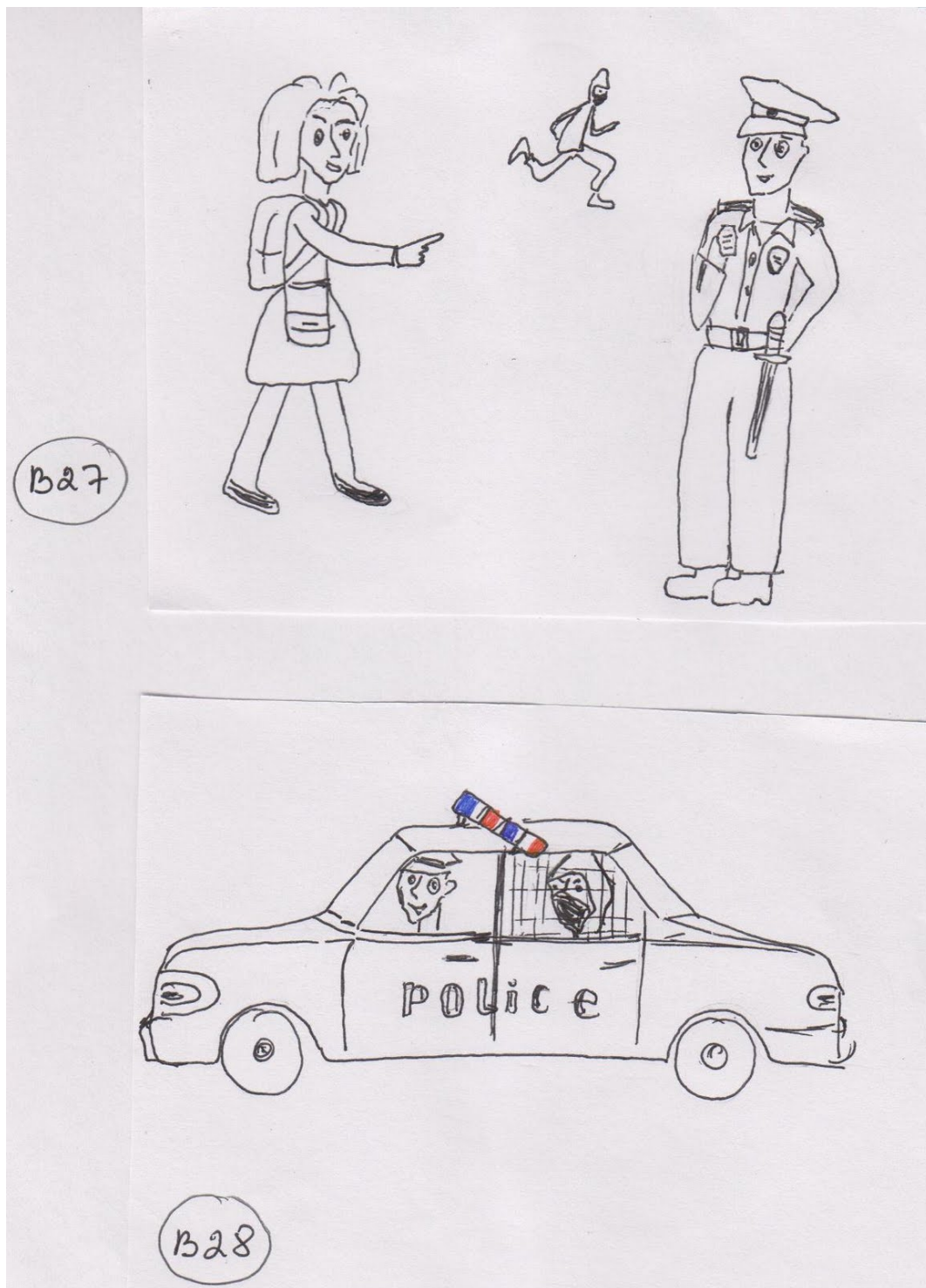
START

} options selected

B24

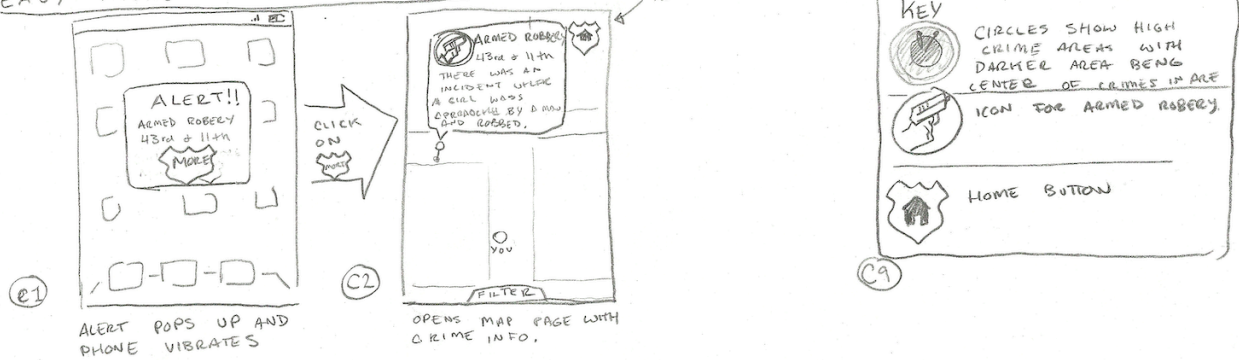


starts walking home with Husky Crime Guide in "Alert" status



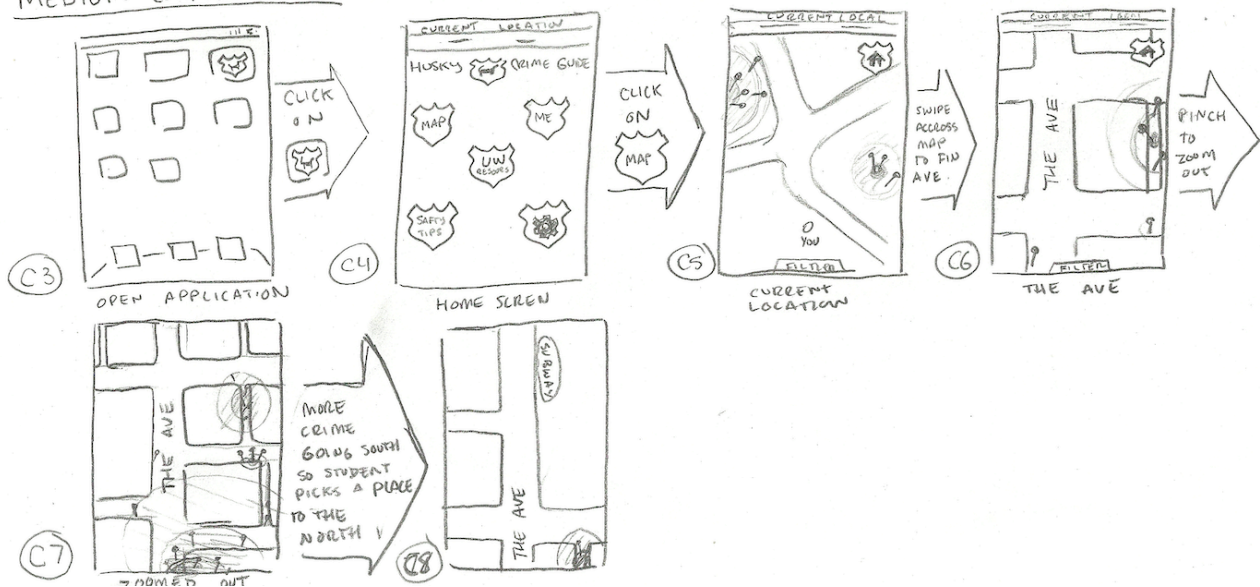
**Design C**  
Easy Task

EASY TASK: READ REPORT FOR DESCRIPTION; GETTING A CRIME ALERT



## Medium Task

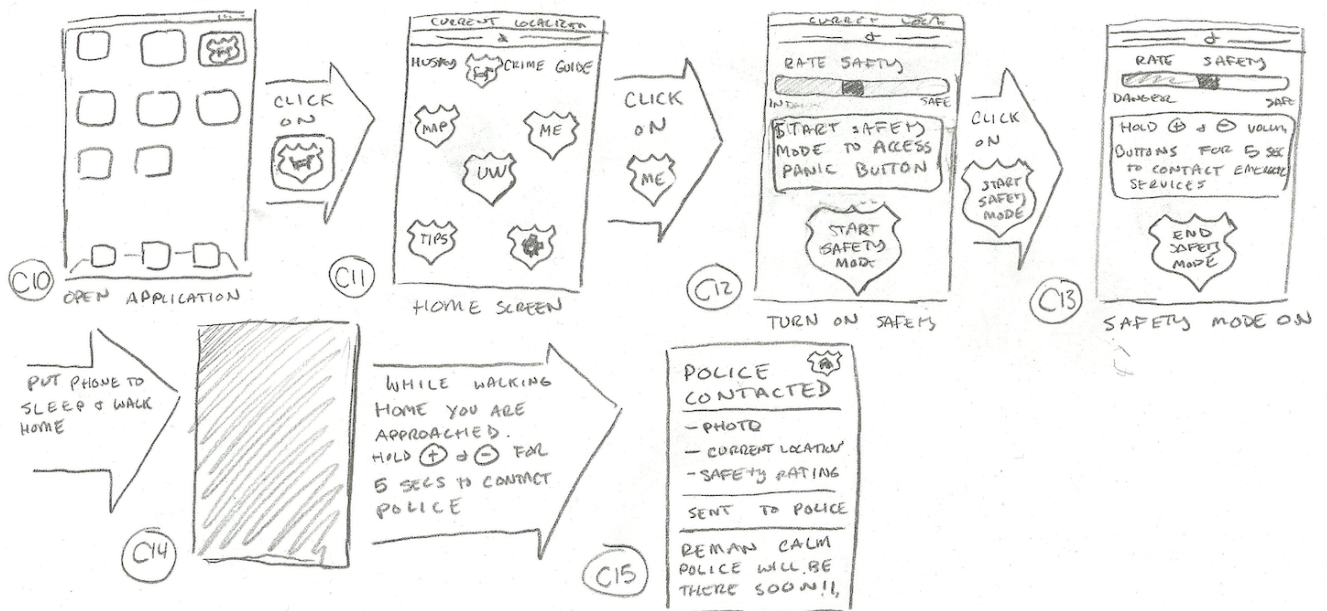
MEDIUM COMPLEXITY TASK: RESEARCHING SAFE AREAS.



## Difficult Task



DIFFICULT TASK : PUT PHONE INTO SAFETY MODE THAT HAS PANIC BUTTON CALL POLICE FUNCTION,



## IV. Selected Interface Design

### A. Which Design & Reasoning for Choice

We decided to choose a design that is a combination of all three of our sketched interfaces and also previous sketches. Because each design had a strength, we chose to incorporate those features into an entirely new design. The new design can be described as follows:

- First, the user sees a **Main Menu**. This main menu will be similar to that of Design A. This design was easy to use, readable at first glance, and included links to most of the features that we decided to include. We decided, however, to consolidate the "Here & Now" and "History" buttons into a single button called "Map." We also decided to replace tracking with "Find Friends," but this will be discussed in more detail in the following sections.
- The second main screen is the **Map**. This screen will be similar to that of Design C. We liked that the filter bar was less intrusive than other designs and that the "heat map" idea allows the user to get a general impression of crime rates. The brief information bubble when the user clicks on a pin is also easy to read, with not too much information is included. We decided, however, not to include the descriptive icons. It is a value sensitive design issue to create icons for every type of crime. For example, an icon for assault could potentially be offensive.
- Another main screen is the **Alert System**. This screen will be similar to that of Design A. We liked that the initial brief message at the top of the screen allows the user to glance at alerts; the "distance from location" gives the user a good perspective on the crime. Linking from there to a history of alerts allows the user to scroll through text on past incidences and prioritize them based on their interests. This also provides an option for users who prefer to read text rather than use the map.
- The **Panic Button** is also a main screen. This screen will be similar to that of

Design B. We liked that it gave the user options to customize their panic button, and the icons were simple and easy to understand without any user training.

- The last main screen is the **UW Resources**. This screen will be similar to that of Figure E. Because this design provided an entirely new screen for resources, we can potentially expand this section by adding more phone numbers or websites.

In addition to these screens, we also decided to supplement our design with “**Finding Friends**.”

- “Finding Friends” is a replacement for the monitoring system that was discussed earlier in this project.
- Because allowing users to be monitored would require us to create a whole other application (an application for not just the person being monitored, but also for the monitor itself), we decided to simplify this concept.
- The purpose of “Finding Friends” is to allow Husky Crime Guide users to communicate with each other. Unlike monitoring, turning on this option does not require the safety of the user to be monitored; instead, this option allows the user’s location to be publicised to a certain group of people and appear on their Husky Crime Guide map. It is then up to the discretion of those friends how to use information. For example, some users will use this to find friends to walk home with. “Finding Friends,” unlike monitoring, does not encourage the users to determine when a user is in danger.
- The design of “Finding Friends” is included at the end of the report in Figure D and explained in more detail in later sections.

## **B. Functionality Summary**

Our application has five main functions:

- a. Alerts for finding out immediate and past information on incidences,
- b. An interactive map for finding out information on crime geography,
- c. “Find Friends” for finding other Husky Crime Guide users,
- d. A panic button for calling 911,
- e. And a page of links to other safety resources.

## **C. Interface Description**

As we discussed earlier, our interface has five main screens. In this section we will break out interface into those main screens and describe them accordingly.

**C-1. The Main Menu:** Our application is available both on the web and on your mobile phone. These designs will be almost identical, except for the main menu. On both main menus, there will be links to the map, alerts, “Find Friends,” and UW resources. On the mobile application, there will also be a link to the Panic Button. The general design for the main menu can be seen in Figure A1.

**C-2: The Map:** This will consist of a map of the U-District (including a detailed map of the UW campus). The color of a location will be determined by the density of crimes at that location; thus, this is a heat map. The Husky Crime Guide map will be very similar to Google Maps, in that users can zoom and scroll. This allows the user to focus on certain areas. The overall design of this map can be seen in Figure C7. However, there will be some additional features:

- A pull up filter menu tab as seen at the bottom of Figure C5. When the filter is pulled up, the design will be similar to Figures B10-12. The user can choose to filter which crimes appear on the map by:
  - time of day,
  - type of crime,



- dates,
    - and keyword.
  - Users can also choose to display pins, which will allow them to look at specific crimes. By default, this option is turned on. When a user clicks on a pin, a brief description bubble pops up with information on the type of crime, distance from your location, and date as seen in Figure C2. An external link for more information on the crime and a scrollable list of related crimes are also provided here. Turning pins on/off is included in the filter section.
- The map will default to only show the last ten reported crimes.
- If you are outside the U-District or using the web application, the map will default to main campus.
  - If you are using your mobile application in the U-District, it will show your current location by default.

**C-3. Alerts:** Users will receive alerts through a pop up window at top of their phone, as seen in Figure A2. An alert will contain information on the type of crime, location of crime, and distance from your current location. This text pops up on the top of your phone no matter what you're doing (even while not using the application). When the user clicks on that pop up, they will be taken to a new screen containing a list of alerts. The alerts can then be organized by date, type of crime, or distance from you. This list of past alerts can alternatively be accessed by going to the main menu and clicking on the link to alerts. The design for the list of alerts can be seen in Figure A3.

**C-4. Finding Friends:** This part of the Husky Crime Guide must be password protected. So, when the user navigates to this screen from the main menu by tapping "Find Friends," they will be prompted to enter a password. As seen in Figure D, once past the password protection they can select a list of other Husky Crime Guide users to have access to your phone's location. They can search for other users by entering a phone number. When the user clicks on a friend from this list, they will be taken to the map and will be able to see that friend's location as indicated by a star. If the user taps on that star, that friend will be called. Find Friends is a similar concept to tracking in that it allows you to see your friends' locations, however we believe that it will provide more value to the user because none of the students we interviewed said that tracking would replace walking home with a friend. Another reason we decided to eliminate tracking, is because the feature lacks the ability to provide enough contextual feedback to sufficiently inform the tracker to help the trackee in a time of need. And, it would be inconvenient for the trackee to send updates to his tracker because it would require him to interact with his phone and potentially put him in danger. In addition, being unable to know the context of the user's setting could potentially misinform the tracker and lead him to jump to conclusions. For instance, if the trackee runs into an old friend and stops to talk for a long time, the tracker could potentially confuse this event as a sign that the trackee is in danger and call the UYPD to report a false alarm. Thus we are refraining from promoting the tracking feature in favor of having students locate their friends near by and have them coordinate walking home together.

**C-5. Panic Button:** When the user navigates to this screen from the main menu by clicking on "Panic Button," the user will be able to turn this feature on/off. Users have the option of either turning on "Scream Activation" (if the phone detects a loud scream, 911 is automatically called) or "Button Activation" (when the user presses the volume +/- buttons for 5 seconds, 911 is automatically called) to activate the panic button. The basic design for this can be seen in Figure B23.

**C-6. UW Resources:** When the user navigates to this screen from the main menu, they will be provided with links or phone numbers to UYPD, Night Walk, and Night Ride as seen in Figure E.

## V. Three Scenarios Corresponding to Your Tasks

### A. Easy Task: Finding Friends and Alerts

Mark, a sophomore at the UW, studying alone on the third floor of Odegaard Library. He has downloaded the Husky Crime Guide application for his phone. He receives an alert that Red Square is shut down due to an armed robbery of Suzallo Cafe. He is scared and would like to find some friends to walk home with.

- As soon as the UWPD sends out an alert about this crime, a short message
- appears at the top of his phone. This alert says “Husky Alert - Armed Robbery (0.1 miles away) Suzallo Cafe.”
- Mark goes to the Husky Crime Guide application and clicks on “Find Friends.” He types in his password and the locations of three of his friends are also displayed. One friend is in the Paul Allen Center, another friend is in Mary Gates, and the last friend, Denzel, is luckily also in Ode.
- Mark clicks on Denzel’s icon to call him, because he knows that they live near to each other. Mark then arranges for them to walk home together and he feels much safer than if he had walked alone.

### B. Medium Task: Crime Map

Stephanie is an out-of-state freshman at the UW who lives in the Lander dormitories. She is looking for new place to live that is close to campus, but is concerned about the safety of off-campus living. Luckily, her Dawg Daze leader told her about the Husky Crime Guide application. Stephanie is then able to use this application to find out about high crime areas in the U-District.

- She begins by using her computer to pull up the application.
- She clicks on “Map” which pulls up a map of the UW Campus with the last 10 crimes.
- She is interested in burglaries, armed robberies, assault that occurred in the last year. She clicks on “Filters” and selects those types of crimes, and adjusts the dates.
- She is also interested all of the U-District, so she zooms out.
- Stephanie observes that there is high crime near 50th, but identifies a safe area near 43rd and Roosevelt. She decides to check out apartments there!

### C. Difficult Task: Panic Button

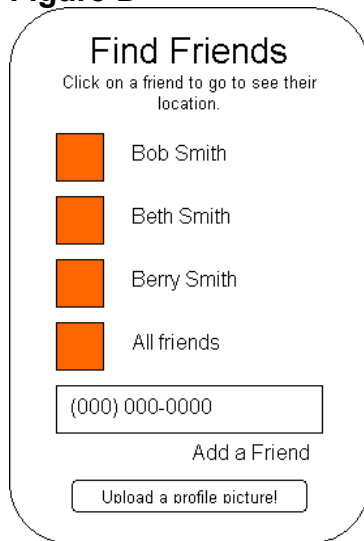
Jane is a senior, honors student at the UW. She is constantly staying late on campus to study and work on group projects. Jane, however, lives on 17th and 50th and must frequently walk back to her house at night. Her friends are usually home by the time she leaves campus, so she usually must make this walk alone. But, Jane just installed the Husky Crime Guide application for her phone.

- On her next trip home, she decides to turn on the panic button.
- She clicks on the Husky Crime Guide Application on her phone and taps “Panic Button.”
- She decides that she would like a physical panic button as well as one that is triggered by her scream.

- She selects “Set 911 autodial on.” Since this is the first time she is using this application, a bubble appears that says “Using this option, you activate the panic button by holding down the volume + - buttons for 5 seconds on your phone. Would you like to test this (this will not call 911)?”
- She wants to test this, so she taps “Yes” and holds down the volume buttons. A bubble that says “Panic Button Detected. Panic Button is now activated.”
- She then selects “Set scream detection on.” Since this is the first time she is using this application, a bubble appears that says “911 will now be called when a loud scream is detected.”
- After setting up the Panic Button, Stephanie starts her walk home. Walking up Memorial Way, an unidentifiable figure jumps out of the bushes. The figure yells, “Give me your money!”
- Stephanie screams loudly and 911 is autodialed by Husky Crime Guide. She is unable to answer the phone, so 911 dispatches police to her location and the crook is caught.

## VI. Appendix: Any additional sketches of important screens

**Figure D**



**Figure E**

