Project Design – CSC540 – Spring 2018 – 10 points
Document due Feb. 27, 12:30 pm – Presentation Feb. 27/29

Presentation: Each team will give a very short presentation to the class using parts of your Design Document. Details about the presentation are given at the end of this instruction sheet.

Document Instructions: Add the requested information to this document. You will need to add space for each part but do not change the headings or the order of the parts. Submit one copy of this document for the team on Canvas and one printed paper copy for the team in class. (Everyone on a team will receive the same grade.) You may not collaborate with students not on your team or use outside sources of help. By submitting this assignment, you agree that you have abided by the UNCG Academic Integrity Policy.

Type the names of the team members here:
1. Logan Stanfield 2. Michael Resnik 3. Thomas Pedraza

Project: *Enter the project that you signed up for here (such as how to make bread).*

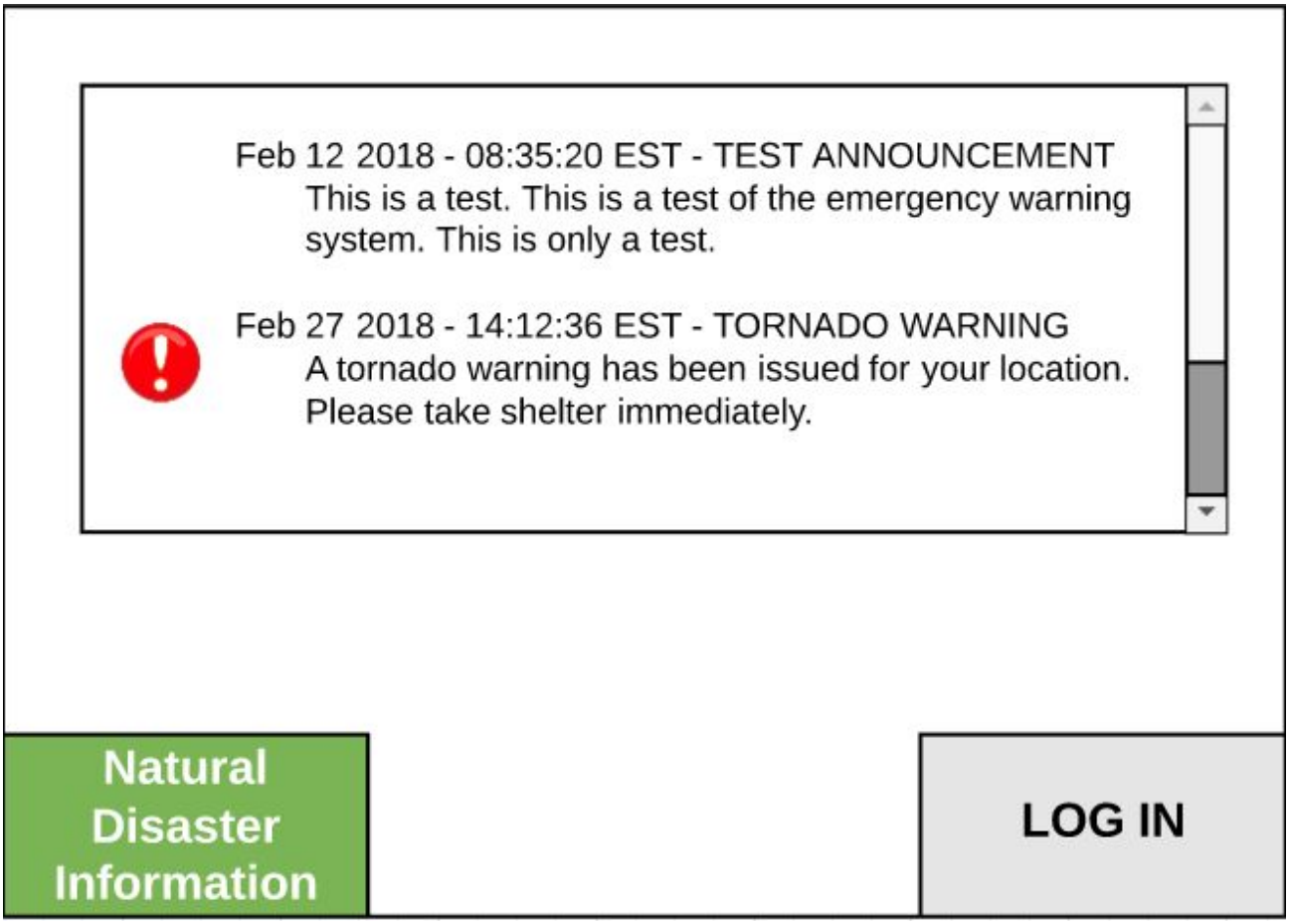
I. Introduction: *Give a short description of the product: the purpose, the user characteristics, usability goals, and use cases. (Length: about 1/2 page per number of students on team, single-spaced, 11 or 12 point font.)*

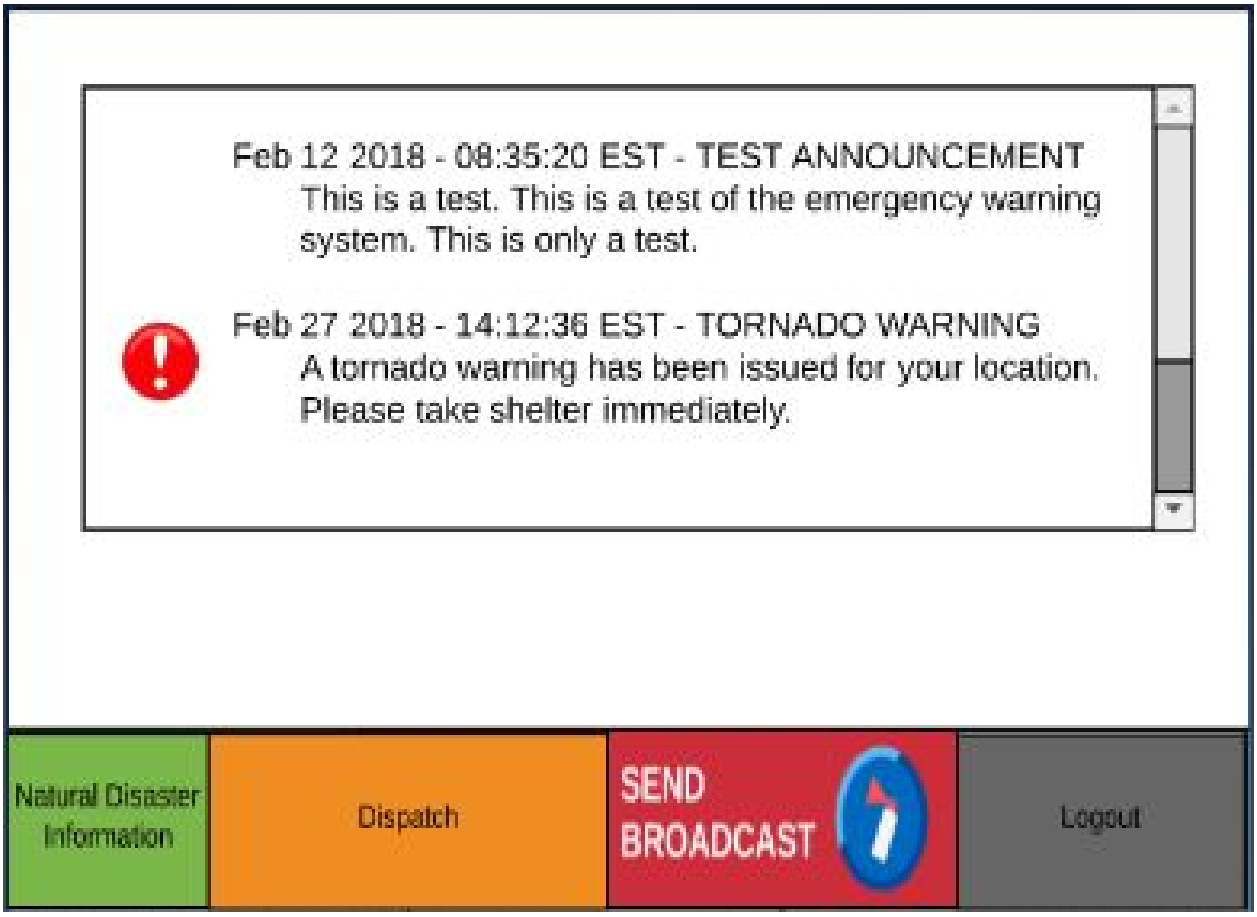
The Natural Disaster Relief Management (NDRM) system is designed to be used to aid the public during or before a natural disaster with information or emergency assistance. The overall design goal for the user experience by this system is to be quick to perform actions, efficient and on demand, and easy to learn. With that in mind, it is necessary to understand the user characteristics of the users/operators of the NDRM system. More specifically, the user characteristics are typical computer users, but those with a more knowledgeable background backed by a college degree or experience with natural disasters and how to handle a realistic situation when a natural disaster occurs. The users vary per operator, but realistically the users would have a neutral or positive attitude for the use of computers since the goal is to provide efficiency through computation. Plus, since people are more connected with computers (smartphones included) the users would have to be competent with computers since this tool needs to reach out to the public by means of the internet. Whether it providing information updates through the website or sending emergency alerts to the many cell phones held by the public. Now that the characteristics of the user are understood it is best to establish many usability goals for the system such as being effective to use, efficient to use, safe for the user to not cause unwanted results, to have a good utility, easy to learn, and easy to recall and remember how to use the system. As shown in the later sketches, the system is effective to use since each and every operation is clear and directing to say, sending an emergency alert, does not require the user to navigate through multiple screens. It requires as little input as possible to perform crucial operations. For example, coordinating a rescue team consists

of choosing the option from the interface, establishing a location, and providing real-time information to the team about the status of the affected area by the disaster. This makes the system incredibly effective for coordination since it does not require the team to meet with the scientists/observers to brief about the situation thus saving crucial rescue time. It is efficient for the user again because the user simply chooses the corresponding option on the interface without having to interact with the system as much. Safety is very crucial to for the user experience so the NDRM provides feedback before the user submits an operation. For example, when the user sends a broadcast emergency evacuation alert to the public the system informs the user with the decision they are about to make. The interface will present an opportunity for the user to review the broadcast message for any spelling errors, false information, and with one final warning before sending out the alert that the public is about to be informed of an emergency. This is absolutely necessary because the system should minimize the possibility of accidentally warning the public of a hurricane when there is none around or sending a rescue team to the wrong place. This same design is kept in mind for the rest of the functions of the system. Furthermore, the system should be easy to learn for the operator. There will be no computer jargon and the verbage used throughout the interface will be tailored to the users general knowledge. Since it was established that the user has a background in natural disasters the system will have vocabulary regarded the type of natural disaster and how serious it is. For instance, if an earthquake is happening the user will issue the type of warning as an earthquake and note that it had a magnitude of 5.2. Again, no computer specific terminology will be used unless an error occurs, but the errors will not present ambiguous error codes, but to be specific with what the problem was in the system and how it could possible be fixed. Furthermore, the interface will have many icons to symbolize many of the functions so the user can recall or recognize what the functions do. An emergency alert with be a typical air horn image blaring to show that it is the emergency alert function. On some screens text will be provided to assist the user on what some functions do. The last goal for usability for the design of this system is to make it easy for the user to remember how to use the system after being away from it for a while. Natural disasters do not occur in some locations all of the time so the operators will not be constantly using the interface allowing them to become less familiar with the system. Again, the image based buttons (icons) will be provided to make it as simple as possible for the user to perform desired operation and remember which is which through recall. This system will follow similar design patterns to other computer systems so there is nothing new for the user to learn. There will be a main panel marked accordingly so the user chooses specifically which category of the action they need to perform. For example, if the user needs to coordinate a response team the user just selects the option from the panel. With all of that being said, the use cases for this system need to be addressed. NDRM is geared to provide general information about the status of the disaster, provide real time updates about the status of the natural disaster, quickly issue and coordinate response teams with appropriate information regarding the current disaster, and to provide emergency alerts to the public about an incoming disaster. Providing general information is different than issuing a warning since a warning is referring to a hazardous situation. General information is in regard to how many people are affected, where the incident took place, and how to seek assistance if needed. Warnings and emergency alerts are more for informing the public of

a potential or current dangerous situation. This system also has the goal in mind for coordinating assistance and rescue teams. Sufficient information is to be provided to the team about where the event took place and what to expect when they arrive at the area where the disaster took place. Real time updates will be updated in the system which will be shown on the website. These updates can be changed by the system when necessary and in relation to the disaster. To recap, the NDRM system will be used to manage situations when a natural disaster occurs and to provide alerts or information to the public.

II. Physical Design: *Show the physical design of each major screen. Each screen should be drawn to scale <u>on a separate page</u> using a computer drawing tool. (Note: this is a paper prototype – <u>do not actually implement</u> the interface for this assignment!) As stated in the Project Overview, the project will be a full-screen application that runs on a desktop PC or laptop (no tablets or mobile devices). Show everything: the layout, color scheme, widgets, icons, images and all text that will appear on the screen. (If the screen has a widget such as a menu in which the choices are hidden, then show the hidden words on the next page using the same ordering and spelling that you plan to use in the implementation of the menu, etc.) At the top of each screen give a short name to be used in the state diagram (part III below).*


Feb 12 2018 - 08:35:20 EST - TEST ANNOUNCEMENT
This is a test. This is a test of the emergency warning system. This is only a test.
Feb 27 2018 - 14:12:36 EST - TORNADO WARNING
A tornado warning has been issued for your location. Please take shelter immediately.
Natural Disaster Information
LOG IN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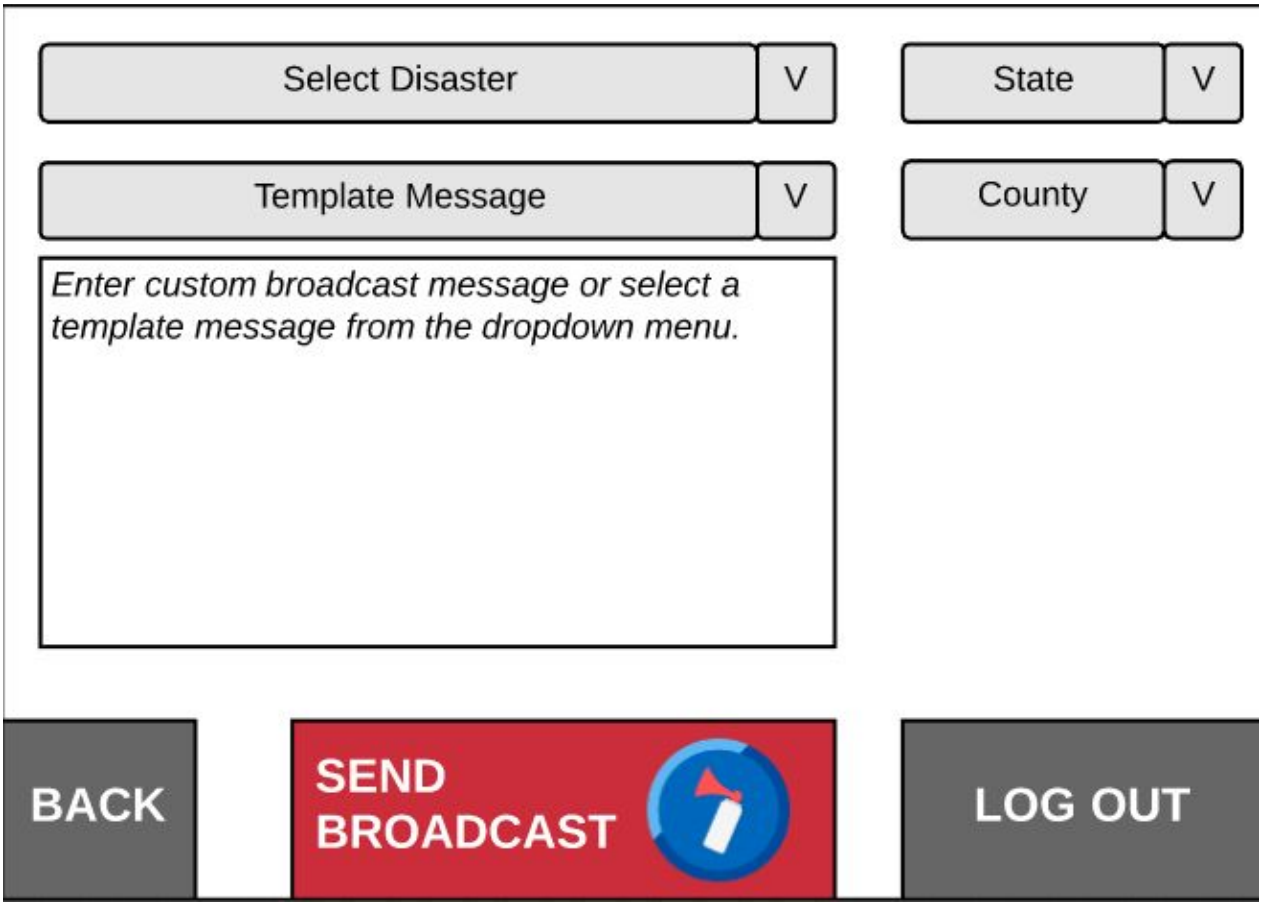
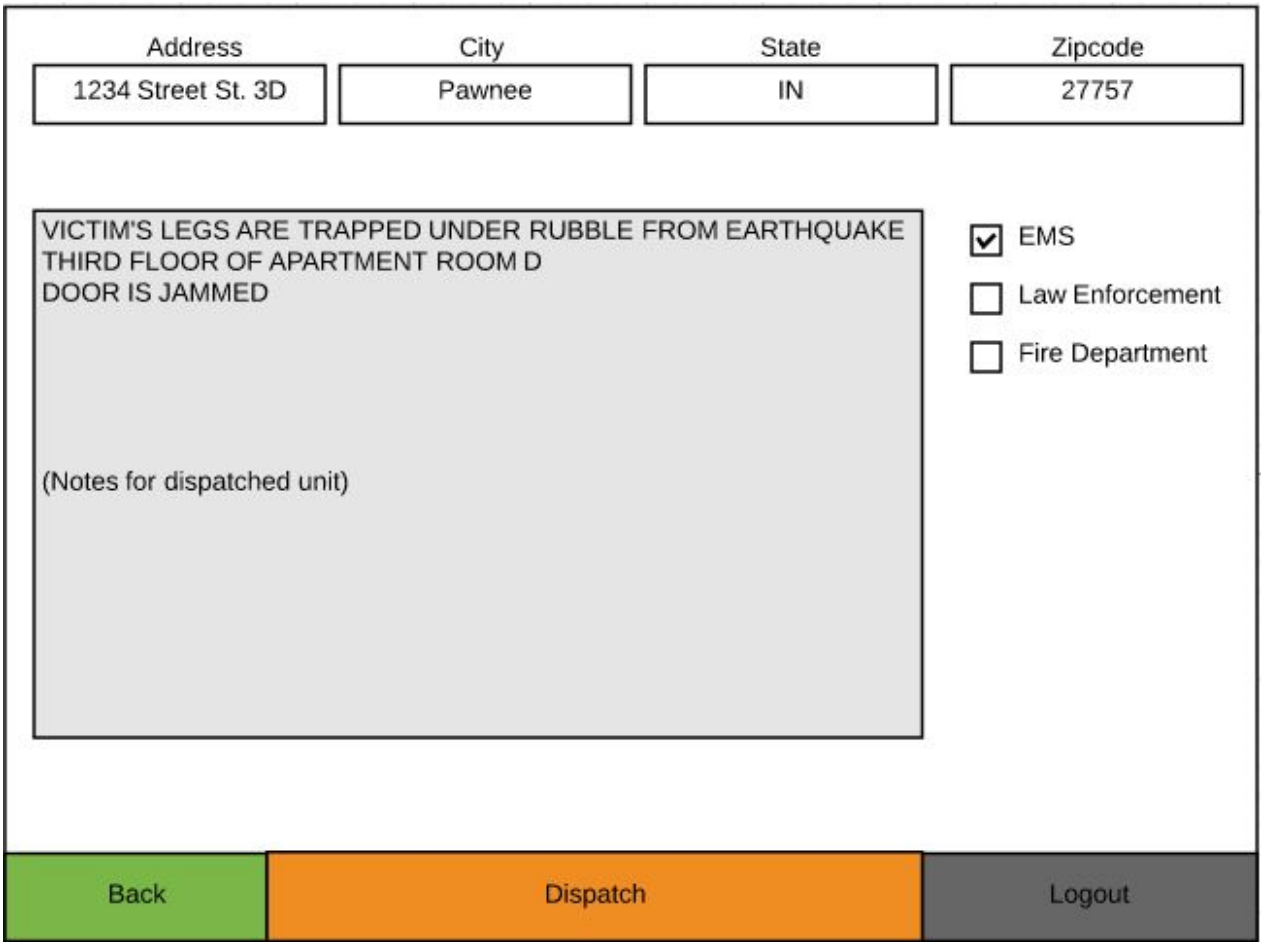
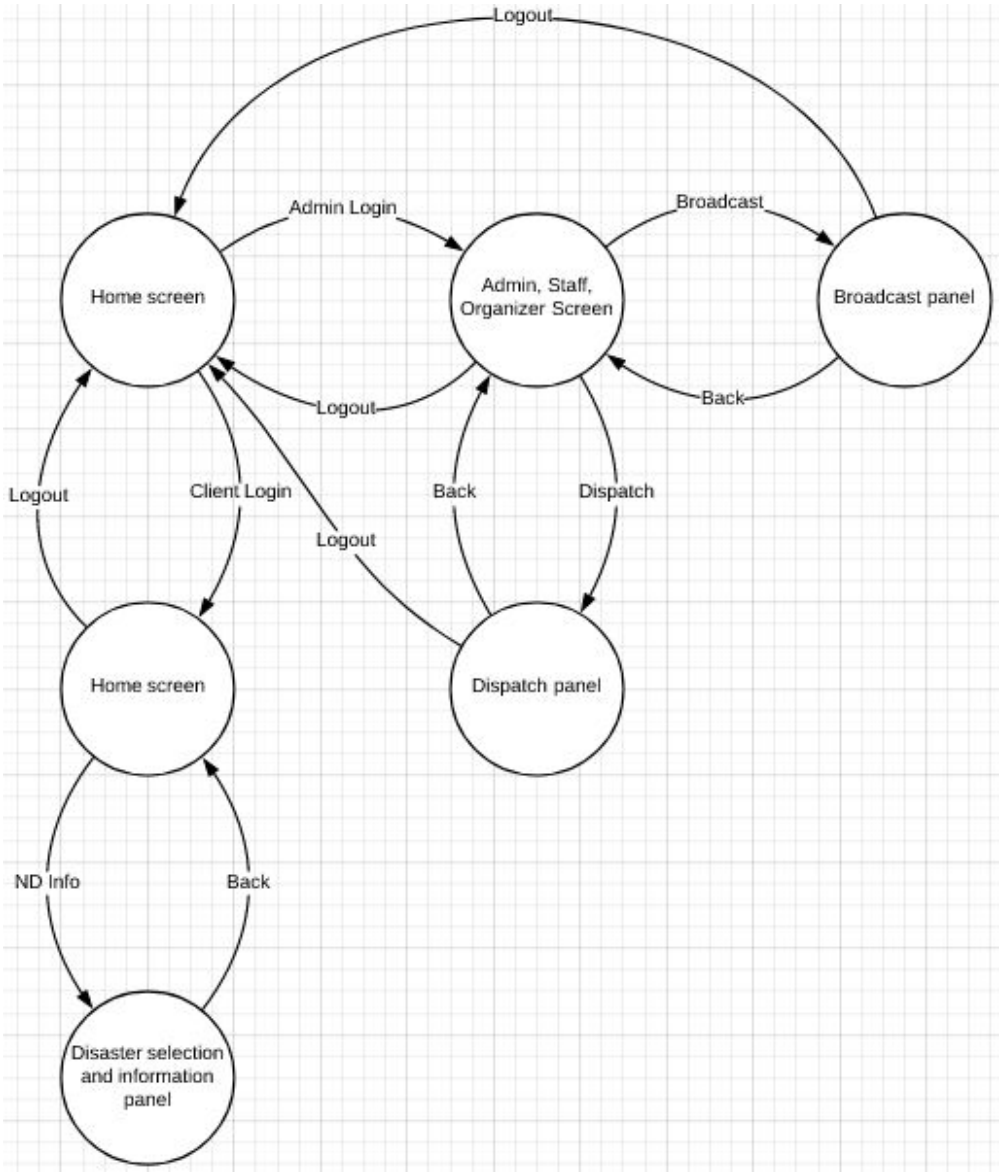
A tornado warning has been issued for your location. Please take shelter immediately.
Natural Disaster Information
Dispatch
SEND BROADCAST
Logout


Select Disaster
V
State
V
Template Message
V
County
V
Enter custom broadcast message or select a template message from the dropdown menu.
BACK
SEND BROADCAST
LOG OUT


Address
1234 Street St. 3D
City
Pawnee
State
IN
Zipcode
27757
VICTIM'S LEGS ARE TRAPPED UNDER RUBBLE FROM EARTHQUAKE
THIRD FLOOR OF APARTMENT ROOM D
DOOR IS JAMMED
(Notes for dispatched unit)
EMS
Law Enforcement
Fire Department
Back
Dispatch
Logout

III. State Diagram: *Show the flow of user control from one screen to another using state diagram notation (covered in Culwin ch.1). Label each state with the name of the screen. Label each transition (arrow) with the user action or other event that causes the interface to change states.*



Grading: The design will be graded on following physical design guidelines and aesthetic principles, completeness/scope of design (i.e., does the design show everything that the project is expected to do), completeness/quality of the design document, and the in-class presentation.

Presentation instructions: A 1-person team will gets 3 minutes, 2-person gets 5 minutes, and 3-person gets 7 minutes. In the allowed time, show each screen in the

design document (using the overhead projector, or if on Powerpoint, you may use the classroom computer). Due to the large size of the class, you may not exceed the allowed time and must be ready to begin at the start of class Feb 27, or the assignment will be considered late.

Late work: -1 point per day the Canvas document or presentation is late (starting 2/27, 12:30 pm).