Safe Steps

USABILITY EVALUATION

Initial design

During the initial stages of our design process we predicted the possible usability of our design making sure it is meeting with the understanding of the requirements. Based on the predictions and understandings, our team started drawing some initial designs on papers. These designs acted as basic outlines for our paper prototyping. Figure 9 shows one such initial design. For other initial designs you can refer appendix fig:

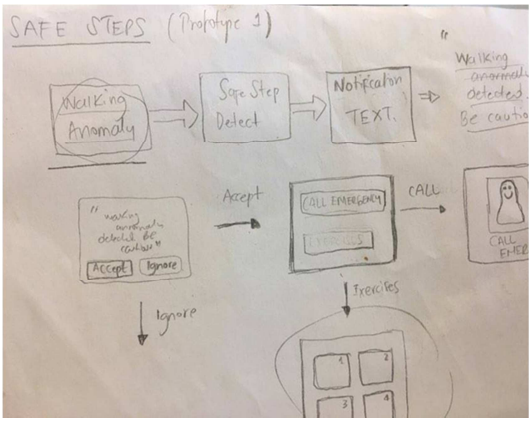

Figure 9. First Sketch Prototype

Paper Prototype

According to the findings obtained from the user research, imagined scenarios and initial design drawings, the idea of the Safe Steps was prototyped using the paper prototyping approach. Based on our idea we made some paper cuttings. Different cuttings were used to show different scenes on the interface. Figures below (see Figure 10-15) shows some of the pictures of our paper prototype of the design:

Figure 10. Prototype Screens

Figure 11. Welcome Screen version I

Figure 12. Welcome Screen version I

Figure 13. Risk surface detection

Figure 14. Clock-mode and welcome screen

Usability Testing

After preparing the initial prototype design and depicted all possible screens of Safe-Steps system which is a fall prevention notification and event record system for elderly people and other users. Apparently, the steps followed to perform testing are as given below:

Step 1: We selected 4 users:

- One from the neighbourhood of one of our group members.
- One whom we interviewed for our first part of our design.
- One from the supermarket.
- One who was referred by the guy whom we interviewed.

Step 2: The testing process was done by all the 5 members of our design team. The roles assigned for each team members from our team (see Table 6).

Team Members Name	Role in Testing Process
Shagun and Kalpan	Interviewers
Aishwarya and Luis	Transcribers
Divas	Recorder

Table 6. Team roles

Step 3: (a) Initially, we selected users to test our prototypes and the interviewers presented the prototype to the user; and the interview was based on the open and closed ended questions (see Appendix A).
(b) Two of our group members interviewed the selected users which was then transcribed by other two members of the group. At last one member recorded the interview. The whole process was iteratively performed with each selected users to get different suggestions.

USER EVALUATION AND FINDINGS

Severity is ranked from low to high depending on the effects it may have on the use of the interaction design. The user findings are explained briefly below:

User 1:

- When user1 was provided with the paper prototype for testing he found it difficult to find the home button as it was in the form of text i.e. home button was not mapped with appropriate icon.
- For pressing the emergency button, he was accidently pressing the side buttons of the watch out of his habit of using hand watches that way.

User 2:

- While waiting for the emergency contacts to be loaded, User 2 felt that the feedback was not good enough to let her know the current status of the process.
- After navigating through different screens user 2 was not able to go back to the previous screen to check other options.

User 3:

- User 3 was finding it difficult to give the necessary inputs because of so many textual information on a small screen.
- User 3 suggested it would be better to include a help and documentation button as he is not that used to technology and will provide him with the better understanding of the system.

User 4:

- When User4 pressed the emergency button it did not give any confirmation message and he had no idea what happened.
- When the user was trying to login after wear the slipper he was not able properly see the login screen and was having difficulty typing because of the small size of the screen.

Issue	Relevant heuristic(s) Issue(s)	Recommendations	Severity
Jonathan	1.Match between real world and system.	1. Home icon button was recommended.	High
	2.User Control and Freedom	2. Placing the emergency contacts button on the top of the screen.	High
Sara	1.Visibility of system status	1. A loading bar icon was recommended for showing system's status.	Medium
	2. User Control and Freedom	2. A back button recommended.	High
Dominique	1. Aesthetic and minimalist design	1.Use of more icons rather than text was recommended	Medium
	2.Help and Documentation	2. Help button recommended	High
Sam	1. Error prevention/User control and freedom	1. Give cancel option on emergency notification screen	High
	2.Visibility of system status	2.Use Voice recognition based login system	High

Table 7. Usability Evaluation