

The user interface showed on mobile phone based on Android system, it is the first component which users can contact with among the whole voice based automation system. We insist on the primary principle that users can make least effort to achieve their goal during the UI design process. In addition, we do effort to make our interface be friendly and clear.

Now, we will give you a detail explanation about our interface design, and show you step by step that how users can “run” their house with minimized approach.

When users enter our system, they are prompt with log in interface which can guarantee their security, authorization and privacy. What the users need to do is inputting their password through the number keyboard showing on the desk. If they key in a wrong number accidentally, instead of canceling the entire password, they can modify it by clicking on the button at bottom-right to delete only the wrong one which can minimize their effort effectively. Then users can tab the blue circle button which with an arrow on it to log in. When they fill in the right password, they will come to the main interface, otherwise, the interface will show users that the password is incorrectly through the word with red color in text box below, thus they can try it again. However, if they input wrong numbers more than 3 times, the system will be locked automatically for about 5 minutes in case of malevolent act of intruding, this design is intend to protect the security of the users.

There is also register button, if user haven't registered before, they should click on the register button to create a new account. When they come to the register button, they would fill in some necessary information like name, email, age and password. If the name they filled in has existed, the registration would fail, and the system would notify that the name has existed, and then users should change other name. when they register successfully, they would come back to the log in system and then continue their operation.

When they are authorized, the user is presented with main interface, it means user can start control their house by voice now. On the top of the screen, he or she can see the detailed status of information of his/her specific devices. In our current project, we can list the status of light and music, whether they are on or off, what is the intensity of the light and what is the volume of the music. Knowing the status of devices, users can make command better and more efficiently. For example, if the status of light is on, they do not need to turn on it again. In other words, users can make better judgment when they know more.

Apart from the list on top, users can see that the main interface includes other 4 parts:1.Microphone: Microphone is the essential and indispensable part to a voice control device, when users want to output command, they just need to click on this button, then the circle background of microphone change its color from red to gray. Meanwhile, the phone will start to record what they say, and then send it to Arduino

over Wifi. Users can be informed that their voice is being received by their phones with that change. When they finish the command, they need to click the Microphones button again, the circle background is back to red. Finally, it will receive the feedback and transfer it to users via voice system.

(The rest three buttons are just needed when users cannot control by voice in some special situation. Otherwise, users can approach to their destination via voice. To sum up, the buttons shown on interface provide users with more options so that they can choose the way they prefer.)

2. Music: One click on this button, they will come into the music interface, and then they can do more detailed things.
3. Light: Through click on this button, the system would redirect users into the light interface.
4. EXIT: This button simply exits from system.

Our target is to make main interface as simple as possible in order to make users would not be bothered with too many useless option and messy buttons. Meanwhile, our interface is designed to satisfy the most principal functions.

When the mobile phone receive the command about the music, it will jumps into music interface. In this interface, users can command the music and check the status of music more clearly and more detailed. Users can see a button line, it includes “play”, “pause”, and “volume” button, the number shown under the button line is the degree of volume. If users want to change the status of music , they can click on the microphone button and speak, and then click the button again after finishing their order. If they want to go back to main interface, they can say “back to main interface” or just click the back button, they can choose what you want.

After getting the signal about light, users are prompted with light interface. The picture of light can basically show whether the light is on or not, users can know the status of their lights simply through the dynamic picture or the button at the bottom of the screen. User can also control the lightness of the light through the button in the middle of screen, the number near the button can show the user the intensity of their light, we consider that the number can offer the user more direct and clear feelings which make them control their light more appropriately. Again, when the user wants to back to main interface, they can click the back button or back via voice.

Finally, as we can see from the whole interfaces which are shown above, what user needs to do is very casual and simple. To log in, user needs type their passport and click one button. To input their command, user needs to click the Microphone button two times. Generally, after these two steps, users can control their devices by voice all the time. As a result, our interface design can basically satisfy our requirement demand.