Lately, I have noticed increasing fatigue as I go through my day. It is not that my job is stressful or that I need to perform excessive physical labor. Rather, the problem is that there are too many menial tasks to complete around the house. Some of these tasks include, but are not limited to changing light settings around the house, locking the doors and checking if they are locked on my way out and setting the mood in the house as I get home just before my guests. While hiring a maid is an option, I do not believe this is the best choice of action. Hired hands are unreliable and sometimes untrustworthy. If I leave the house to them, the security of the house is compromised. In addition, I am worried that my neighbors would look poorly upon having a maid. Some may seek to take advantage of the situation and spread rumors about me or they may attempt to deceive or coerce the maid to allow them access to the house.

Instead of hiring human workers, I would like to implement an electronic solution. Machines are always trustworthy and more reliable than humans. Their behavior is predictable. I can give them commands and they will execute these commands without question. As such, I want an automated home system, which I will refer to as autoHome.

In my current vision of autoHome, I see five main classifications of features. These features can be identified as remote control using a mobile application, light control, audible alerts, music control and voice-controlled activation of the system from within the house.

The most important feature of autoHome is remote home control. This will be implemented with a mobile application. The application should have a secure connection to the house and the user should be able to connect to his or her house simply by logging in to a personal account. The account should only allow a predefined maximum number of people to log in at once. This should serve a dual purpose of preventing user conflicts and increasing account security. The application should prevent a user from logging in without further verification of identification if the user fails to login after seven consecutive attempts. In the event that access to an account has been attempted seven times, the application should also send an alert to the user’s mobile device. Once the user has logged in, he or she should be able to monitor and control various connected devices around the house. The device features that the user can control with the application include the status of each door lock around the house, the brightness of lights in each room, the colors of lights in rooms with RGB LED lights, the playing of music in each room, the volume of music in each room and the connection status of the application to devices in the house via Bluetooth.

As mentioned in the description of the mobile application, there should be a method to remotely monitor and control door locks around the house. If a door is unlocked manually, the application should notify all users associated with an account. Users should also be alerted if any locks are broken, malfunction or become disconnected. These alerts should help maintain the security of the household.

As an extra measure of security, buzzers should be installed next to each door. These buzzers will sound whenever a door is opened. The purpose of these buzzers is to alert any residents inside the house when another person enters or exits the house. Buzzers are installed next to each door so that residents can also have a sense of which door was opened. Additionally, this audible security measure is user-friendly to the visually impaired.

Another feature that would be appealing is light control. First and foremost, users should be able to control the activation and deactivation of lights in each room of the house. Control of the lights should be available on the mobile application. This would solve the problem of forgetting to turn off the lights on the way out. Alternatively, being able to turn the lights on from a remote location could also give the impression that someone is in the house and this could be used in various ways. One use of this function could be to ward off potential burglars.

Along with being able to switch lights on and off, the mobile application should feature brightness and color control of lights around the house. While these features are not essential to home security, they are highly versatile. The brightness and color of lighting can be used to influence the mood of a room. These effects can be utilized in a variety of situations, including but not limited to parties, business meetings and studying.

Supplementing brightness and color control of lights, the user should be able to control audio devices in the house using his or her mobile device. These controls should include playing music, pausing music and controlling music volume. The application should be able to sync music between the user’s phone and the audio devices around the home via Bluetooth technology. These features should add to the impressiveness of the application and help the user in social situations.

While users are inside the house, there are situations where it would be more cumbersome to unlock their phones, load the application and control devices in the house from there. Instead of using the mobile application, the users should be able to activate and deactivate voice control of the home automation system. Users should be able to set up a custom key phrase that will unlock or lock voice control. Furthermore, the system should be able to take specific phrases as input and produce the correct output. For example, suppose a user has already set up the key phrase, “monkey one two three” as his or her key phrase. The user should then be able to use the key phrase whenever he or she is in the house to activate the home automation system’s input reception. The user should then be able to give commands, such as “turn off all lights downstairs,” followed by “play next song.” The system should then turn off all lights on the first floor and skip to the next song on the user’s current playlist. Until the user repeats the key phrase, “monkey one two three,” the system should continue to listen for commands. After the user repeats the key phrase, the system should no longer listen for commands and voice control should be deactivated. If any person tries to give the system commands while voice control is deactivated, then the system should ignore those commands.

Finally, user information should be kept in a secure database. The most important information stored in this database must be the user’s username and password. This key-value pair is the primary mechanism by which users validate their identities and gain access to their accounts. From there, a user can establish a secure connection to his or her specific home only. It is of utmost importance that users do not gain unauthorized access to other homes.

It was mentioned in the description of the mobile application and it will be addressed again that users should be asked for additional verification of their identities after a specified number of consecutive, failed login attempts. Much information needs to be stored in a database in order to satisfy this requirement. For additional verification of identification, the system should store a customer’s recovery questions and his or her answers to these questions. The system should also record the time and date during which these failed login attempts were made. Furthermore, basic account information must be stored. This would include the user’s full name, address, contact information and optionally a profile picture. The user should be able to change his or her basic account information after entering his or her password again.

While I greatly value the convenience that an automated home would give me, it is imperative that this system is secure. The only people that should have access to my specific copy of autoHome should be the people I authorize and myself. It is my hope that autoHome will be reliable and convenient, as it will be utilized on a daily basis. Additionally, I expect ownership of the automated home to become a standard of living. The features previously described are applicable in a wide variety of situations, which gives the product a large target audience. I am excited to see the future of autoHome.