Web-based IDE

SmartThings Cloud

Simulator

SmartThings App

Hub Devices

SMARTTHINGS APP DEVELOPMENT
SMART SOLUTIONS

Smart Classroom Application

The Smart Classroom is designed with two purposes in mind. Save money for the school to be put into more valuable things and make the classroom environment more productive. Through my design of the smart classroom, the computer systems, lights and other technologies in the room will be scheduled to work when you need them to.

The system operates on three main pieces of hardware. A contact sensor, multiple smart plugs, smart lighting and a motion sensor. The contact sensor will perform most of the heavy lifting. The contact sensor is attached to the door. Everytime the door is opened, the lights will turn on and so will the computers through the smart plugs. This prevents slow computer boot up times that tend to take away from class. The smart plugs will also be operated on a schedule. If there is a class in that time slot, all the computers will turn on prior to class and if there isn't a class, all computers will be turned off except the front row. This will help students and professors alike to get their work done effectively and quickly. The last piece of tech is the motion sensor. This will detect if there is someone in the room and will keep the lights and computer on for them.

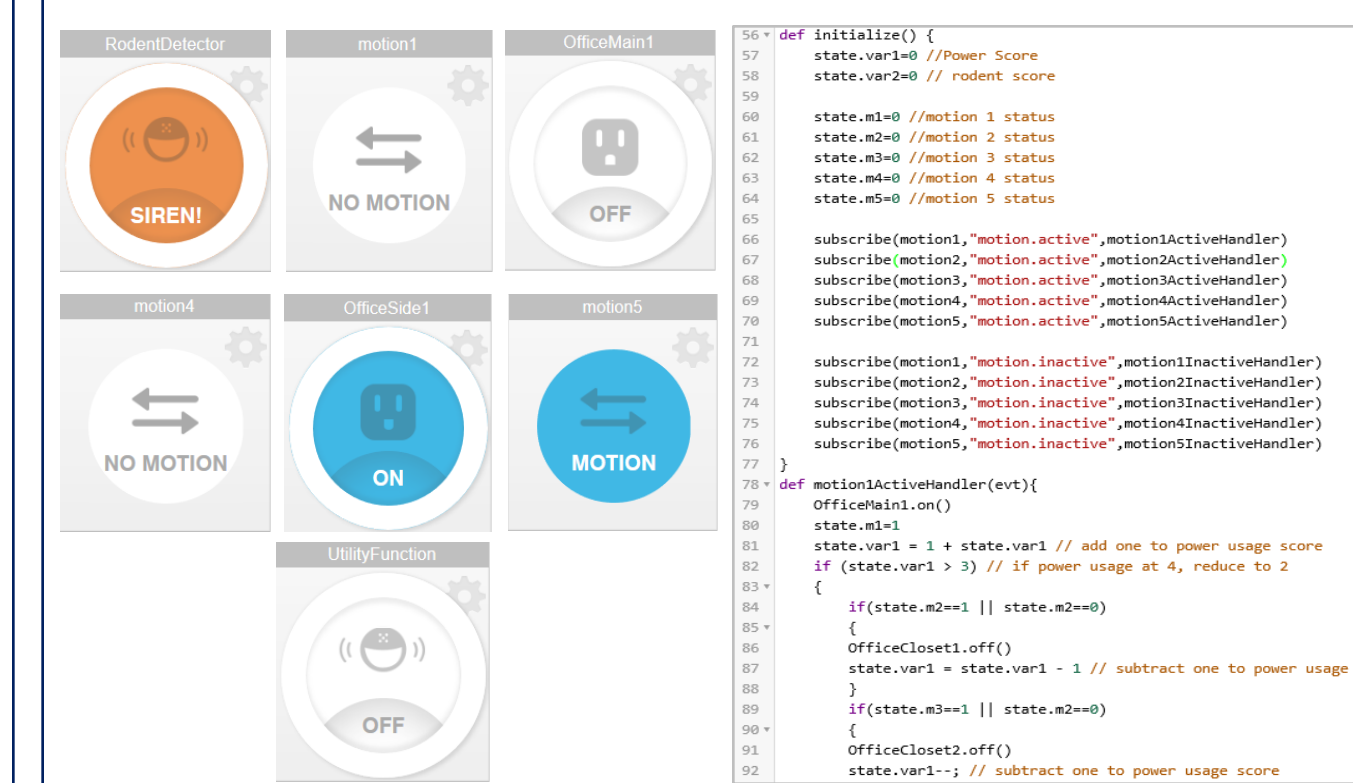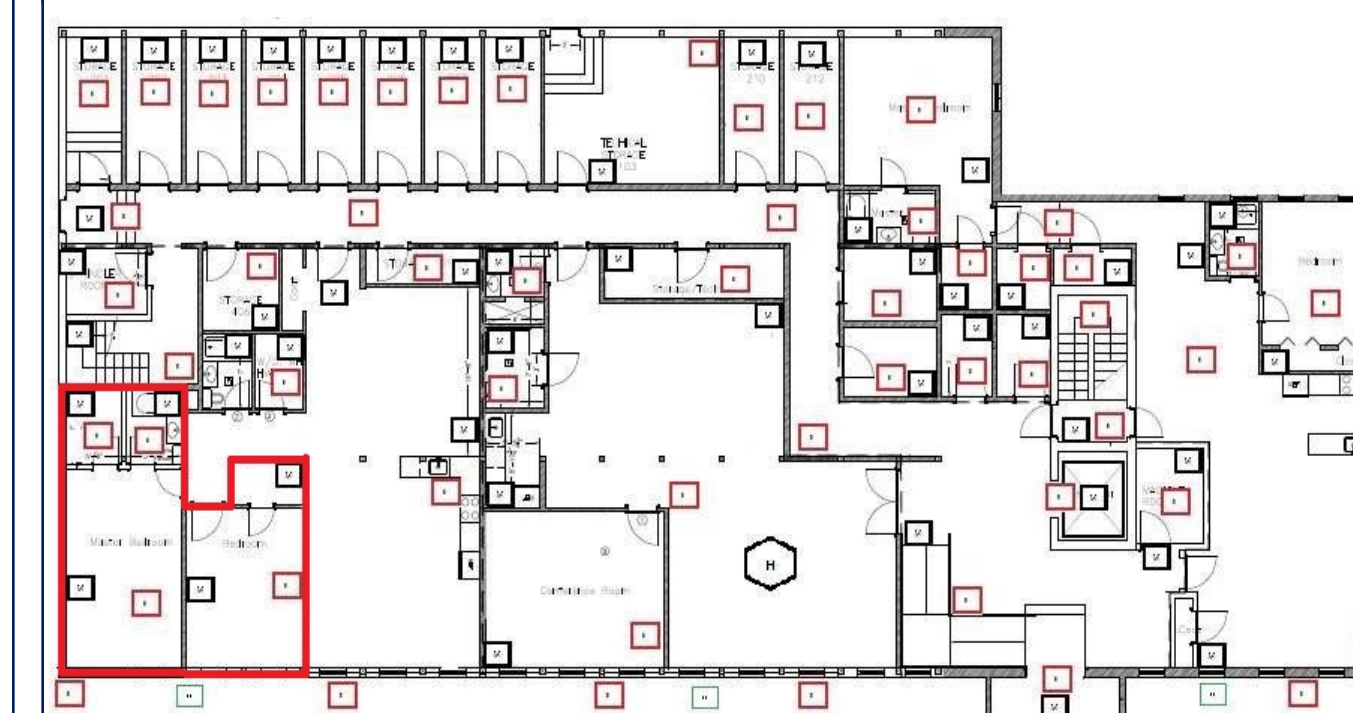| Label	Type of Device	Description
S1-S5	Smart Switches/Smart Plugs	These are the smart plugs. Depending on wattages of computers, a power strip will be plugged into a smart plug or each individual computer will be plugged in a smart plug.
M1	Motion Sensor	Used to see if there is someone in the room. If there is, the computers and lights will stay on. If not, they will turn off.
C1	Contact Sensor	Will be attached to the door and will turn on computers and lights when opened.
Not Pictured: L1	Smart Lights	When the door is open and when the motion detector senses someone in the room the lights will be on

Wesley Smiley
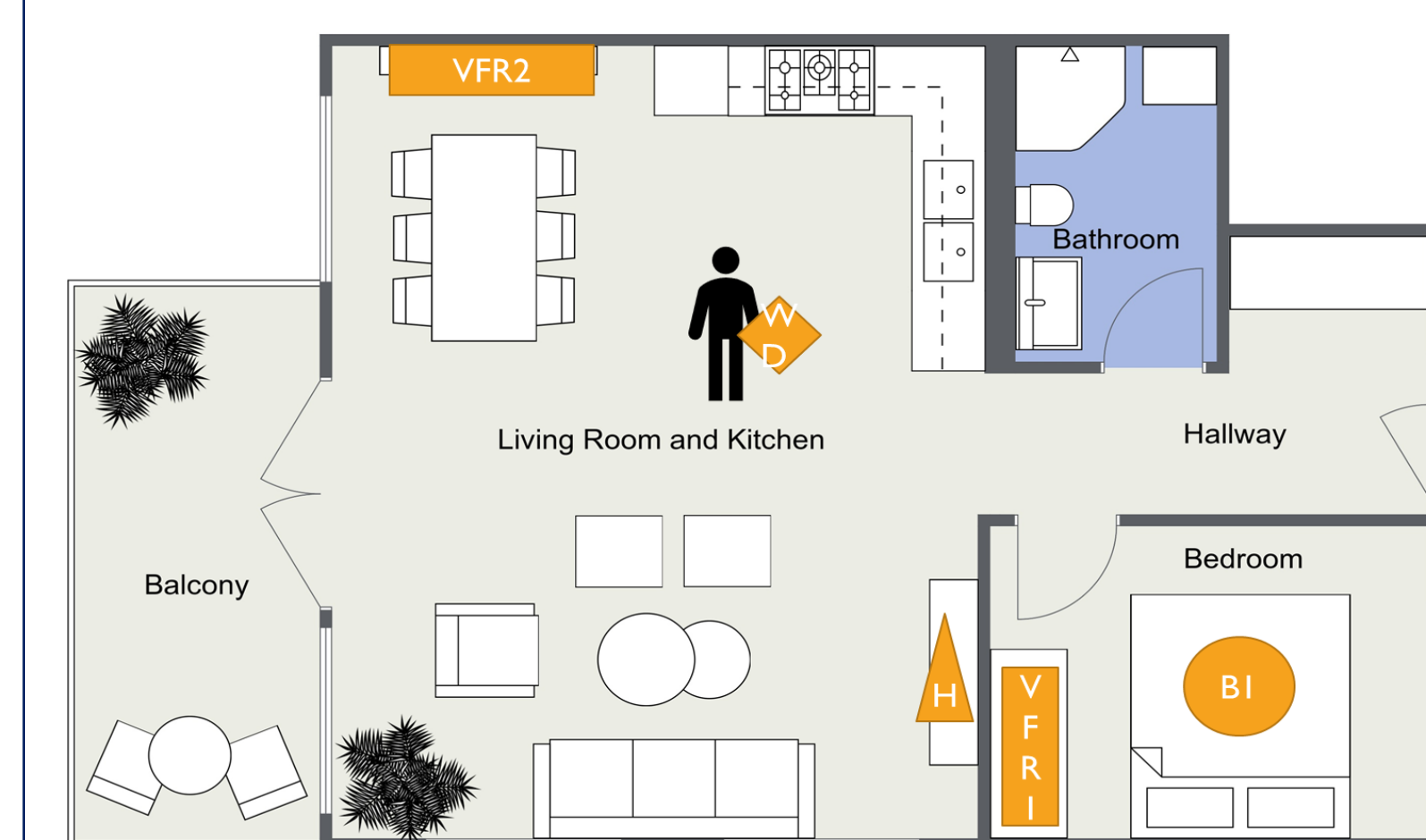
Machine Augmented Environments

The future home is one in which humans will play a very small part. My use case for this future hypothetical environment will rely on modern projections of Machine Learning, along with its seemingly difficult hurdles. This design ought to be important because if we were to have some sort of artificial intelligence that could specialize in the caretaking of your home: it would change the dynamics of IoT (Internet of Things). Machine Intelligence will not only regulate the environment in which it exists, but additionally any environment that it is then placed in.

This proposal will feature a factory floor plan that has been modified with data collecting sensors, commonly seen throughout IoT applications. Then the datasets produced, will influence the use case design and the agent itself will be rated on its actions. As required, this agent will be inexperienced in the task at hand so that in time, it will gradually expand its capability--depending on how long it takes software-engineers to insert protocols and the stability of the environment.

Today we can already see examples of this use case in factory settings, but the goal is to show how the same agent which can benefit this environment, can, under the same principles, impact numerous other environments. The latter portion of this proposal attempts to advocate for projected societal and economic benefits that this type of change could make, in both the community and the nation at large.

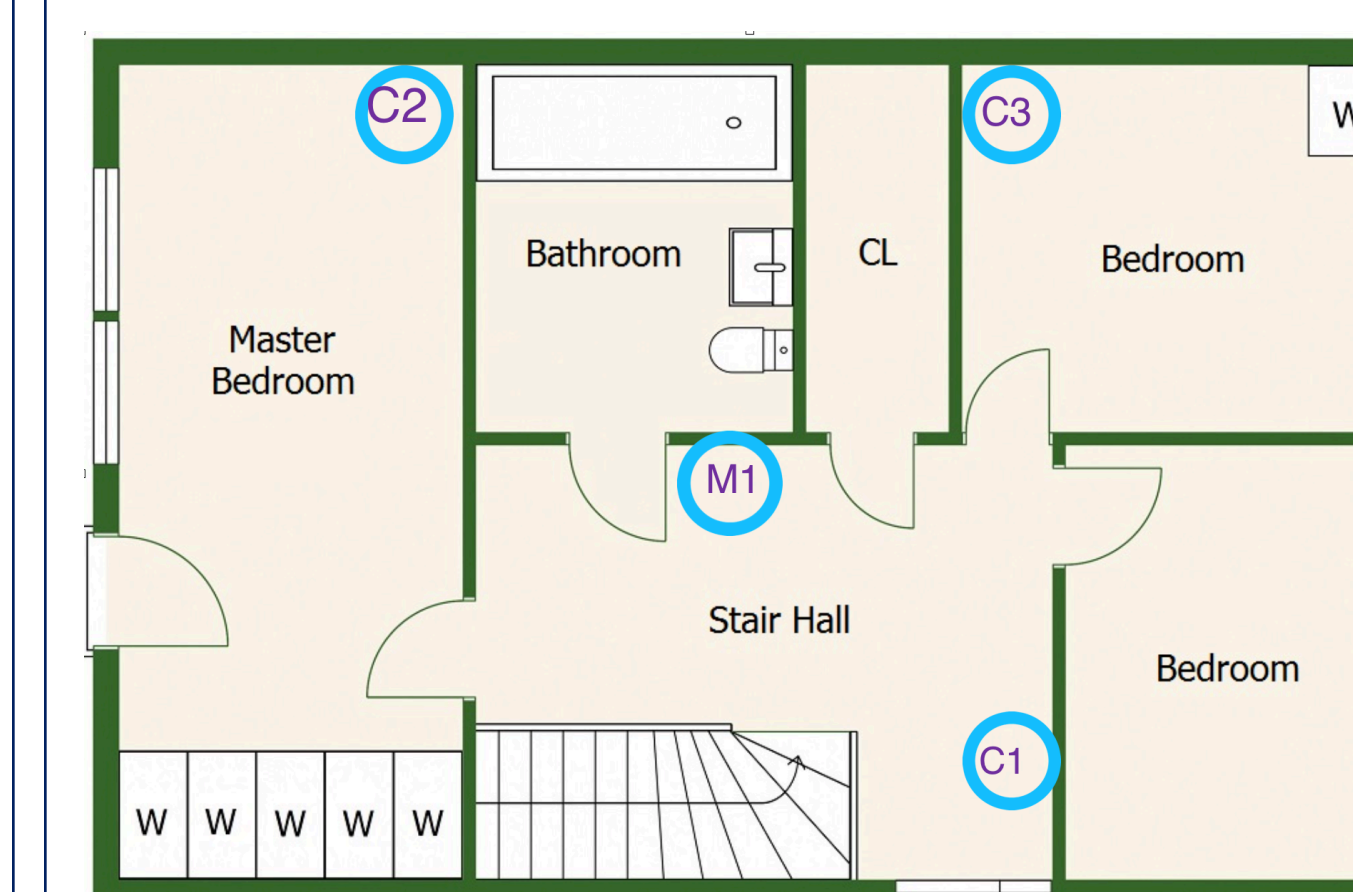| Device Name	What it does	Purpose in use-case
Motion Sensor (Black Square)	Detects movement	Will record when doors are in movement along with any individuals that may enter the shop.
Light Sensor Red Square)	Light(s) On | Off	According to time of day and movement within the factory, certain lights will be on and others will be off.
Sunlight Detector (Green Square)	Detects rays of sunlight	Assists in exterior lighting and aids with potential weather-related activities.
Smart Hub (Black Hexagon)	Connects all Devices	Will relay the information gathered within the factory and pass it along to the agent, which will then act according to its program.
Alarm(s)	When activated, Siren sounds	These will alert the system when conditions are not met, so that other procedures can activate.

Jacobe Wendell

IoT in HealthCare

IoT in healthcare is a growing field and expanding at a rapid rate as we progress with new sensors and technology. In this design, smart technology and devices are included, the main devices in these homes could be smart wearable devices, smart beds, voice and facial recognition. All of these devices and sensors would help ensure the health and safety of those living in senior living homes or in assisted living homes.

- Specific Monitoring – Such as heart rate, Blood Pressure and body temperature, can be taken from a device such as a smart watch.
- IoT can be used to recognize things such as a fall from a wearable device through the tracking of heavy motion or impact to the device itself and then be triggered to ask if help is needed through voice and make an emergency call if needed. Similar devices can monitor heart rate spikes or dramatic changes in body temperature and alert a family member or medical professional.
- Smart beds are used for elderly and patients that may not be able to turn themselves easily into comfortable positions, or those on bed rest that need to be turned to avoid bed sores. Motion detection and voice recognition can be used to sense where the patient is trying to turn and adjust itself around the patient.

Device	Number	Purpose
Smart Bed	B1	Adjust the patient.
Voice and Facial Recognition	VFR1	Voice recognition for bed adjustment and for emergency contact purposes, face recognition if person is having a stroke and can not use facial recognition.
Voice and Facial Recognition	VFR2	For emergency contact purposes, face recognition if person is having a stroke and can not use facial recognition.
Smart Hub	H	Connect all the devices together, with the internet and phone provider.
Wearable Device	WD	Provide Patient Monitoring, Blood Pressure, Heart Rate, Temperature, Fall awareness, Emergency information. This Information can then be stored into a cloud, and sent to a health care provider, making it easier to monitor patients from home, while also make it easier to access during visits.

Christopher Miles

SmartHome Security

This is a smart home project made specifically for users who have a smart motion detector and smart camera. This will hopefully decrease the amount of homes that are being broken into in neighborhoods.

My idea for a smart home project is that a home owner can keep up with the security of a house while it is empty. By the use of smart motion sensors, contact sensors, and smart cameras. The concept is that the user can tell the hub that no one is home. Then the motion sensors will turn on, when motion is detected the hub will send a notification to the owner of the houses phone saying that motion has been detected in your house. It will also send a link to a livestream of the smart cameras in the house. This will not only keep our homes safe, but also the people living inside of them.

The importance of using smart technology in the future will enhance the users capability to do more things with ease around the home and different communities. The smartphones we carry on our person on a daily basis make our lives so much easier. With every update and new model of these devices it makes our lives a bit easier. With "Smart" technology in the common home, the control over every aspect of your home will be improved

Smart Devices	Amount	Description
Smart Motion Detector	As many that are needed in the house	Will turn on the cameras once motion is detected in the home.
Smart Camera	As many that are needed in the house	Will record everything going on in the home.
Smart Contact Sensor	As many that are needed in the house	These will be on all of the windows in the house, these will also turn on all of the cameras in the house once contact has been broken.

Joseph Martin

Creative Thinking 💡 Creative Learning