Work Completed

For the first week, more research on the shelf pins was done. Ideally since we are going to be supporting wood shelves, the metallic models would be more of our ideal choice over plastic. Price ranges are also similar with plastic and metal shelf pins which does not factor into our decision making. Both types are very cheap to buy in bulk. Our design that we have come up with will incorporate 4 adjustable/removable shelves (2 on each side) which will be supported by 4 shelf pins per shelf. This way we will have plenty of support for our shelves since our load may vary depending on the medication Mrs. Smith is taking. This means that we will need at least 16 shelf pins for the medication storage box and most of the bulk packs were sold in 20. By buying the 20 pack shelf pins it will save us money per shelf pin and also provide our client with 4 backup pins in case she loses them over time. The door design of the medication storage box may change if we cannot find a board that will be big enough. If that is the case, we will use 2 smaller boards and have each compartment have a door so that they may be opened separately. This will increase our cost most likely as we will need more hinges and magnets to hold the doors in place when closed.

I also did some research on how expensive this medication storage box is going to be by figuring out a cost if we happened to buy wood from McMaster Carr. McMaster only sold 36”x4”x1/2” so the choices were limited. The thickness in this case may not be enough but assuming that we use this type of wood calculations were made. In order to make the medication storage box to our dimensions planned, it will take about 13 of these boards. Assuming that we do not make any mistakes in assembling this with only 13 boards, the price came out to be about $67.43. We currently have plenty of money left in our budget for both projects so this is not a problem for us. Additional costs will include materials to hold together the wood, treatment of the wood, hinges, shelf pins, and
magnets. With our budget on the medication reminder program barely spent, these materials should not effect too much of our budget. Once we see that this storage box is doable in the amount of time we have, all parts will be researched for prices and ordered immediately so that preparations and work can be started once the parts arrive.

In the second week, I went around to several different hardware stores to see if there were more ideal shelf pins at cheaper prices. Home Depot had just about the same type of selection I saw at Lowes. As I previously observed, both metallic and plastic shelf pins were available in several colors and price ranges were similar also. My local hardware store back in New Jersey carried many different plastic type shelf pins but the designs were not really ideal for the shelves we were planning on making.

I also did some brainstorming and research on the casing for the Shampoo-Conditioner Identification Device. Sheldon had suggested that he would want to carve out the casing from a big piece of plastic. McMaster car does have several thick pieces for sale but the choice in material narrows down. Choices of plastic include Acetal, Nylon, Polyethylene, Polypropylene, and PVC. Prices ranged from around $90-$200. Since we have spent a bit of money buying the electrical parts on the Shampoo-Conditioner Identification Device, we must be careful when looking at the prices for these plastics. Budget planning will be done with my teammates in the near future to see what the best option for us is to balance out cost and efficiency of the device. We will try to follow sheldon's original design for the shape of the casing. The sealing of the plastic is going to be very important for this casing as we will be using this device in a shower environment. The electrical compartments will be sealed tight and the battery compartment will be separated from the main compartment. Wires from the main compartment will pass through tightly sealed holes and lead to the battery compartment. This will have a removable part so that the battery can be replaced over time.

**Future Work**

Future work for both projects for me is to start finalizing the design of the casing and medication storage box. Discussing it with my teammates will be important so that we are all on the same page before we order and start to build the designs. Further research on prices of all the parts we may order must be done to see that everything will
fit in our budget as well as finding the right parts so that we can make this happen. Sheldon and I need to discuss more of the Shampoo-Conditioner Identification Device casing so that we are sure our waterproofing is perfect for the casing. In the upcoming weeks, ideas to test the finished products will be started so that we may ensure what we have promised to build. For example, shower tests at our dorms will most likely be planned to test the waterproofing of our device.

**Project Review**

Plans for both projects are coming along solid. A good amount of time was spent on trying to have the medication storage box be a project we can handle as we want to go above and beyond what we have been told to do. The design for the shelves are pretty much done and shelf pin options have been researched so we may purchase them as soon as we agree on building the box. Once the core work for both projects are finished, most of the plans for casings and accessories are already in place so that we can keep moving according to schedule and deliver an excellent product to our client.

**Hours Worked:** 24