Work Completed

This week’s work saw further improvement to the friendly character. I once again spent most of my time this week programming Flash. The character that I had previously designed is still in use, however I had to basically recreate the same character with a front, left, right and rear view. The reason the character had to be programmed from all sides is that as he is scanning around a room he will not always be walking forward. When the character is moving from the left side of the screen to the right side of the screen you will see the right side of the character. When the character is moving from the right side of the screen to the left side you will see the left side of the character. When the character is moving from the front of the room to the rear of the room you are going to see the back of the character. Finally when the character is moving from the rear of the screen to the front of the screen you will see the front of the character and it will appear as if he’s walking towards you.

In order to maintain the perspective look of the environment I implemented another feature. When the character is near the rear of the room his over all dimensions will be scaled down so that he looks smaller. In real life the farther away something is from you the smaller it appears. When the character is right in the front of the environment he will be back up to his full size. That seemingly simple change required the implementation of a lot more programming seeing as how when your programming animation or movement into Flash it is necessary to change everything you want to change by a very small amount in successive frames to achieve the overall look of motion. Therefore every step that was previously done has to be redone in order to keep all of the dimensions the same.

Another thing I accomplished this week was to help Tristan design the electrical circuit for the input device. The input device consists of four electrical components. The components include the tamiya clip that the smart charger plugs into, the 12-volt Nickel Metal Hydride (NiMH) battery, the wireless video receiver and a Double Pole Double Throw (DPDT) switch he picked up at radioshack. Our objectives for this circuit were for the switch to control when power was received by the wireless receiver from the battery and allow for the charger to charge the battery regardless of whether or not the receiver was drawing power. We accomplished this by tying all of the neutrals together and connecting the hot leg of the battery and the charger be on one pole of the switch and the hot leg for the wireless receiver be on the other.

Another step we had to work through for the designing of the circuit was how the switch worked. This came into play because we had a DPDT switch when all we really
required was a Single Pole Single Throw (SPST) switch. Tristan accidentally bought the more complicated switch, which will work just as well, but it has more leads to make connections. We traced out the lines of the switch by using the Digital Multi-Meter (DMM) in conjunction with the labs DC power Supply. We were able to determine which of the six leads we had to make the connections to in order to get the switch to work, as we desired.

Future Work

The work I have in store for me this week will mainly focus on the finalized completion of the output device. We finally received the Acrylonitrile-Butadiene-Styrene (ABS) from professional plastics. The output device has been designed and a prototype built for about four weeks now but I have not been able to go forwards with the building due to the lack of material. This fortunately is no longer the issue. The material was received as we ordered it, we got four 24” x 48” x 3/16” sheets.

![ABS material front view showing color and size (24” x 48”, black)](image)

My plan for this week is to begin construction of the enclosure tomorrow, Wednesday October 31, and have the device completed with internal mounting, electrical connections made, and semi-permanently sealed by the following Monday. This will require me to cut all of the sidepieces, and then cut their edges to forty-five degree angles to allow flush mounting. Once the external case pieces are made I will mount the LCD into the front piece, and then mount the bottom and sides to the case to allow it to stand. I will then proceed to create the internal mounting pieces, mount their various hardware to them and mount them into the box, and then finally mount the external components, the switch and tamiya clip, finally putting the rear and top onto the device.
The other work I will achieve this week assuming I finish the output device with time to spare will be to work on the animation of the friendly character. I’ve got the animation down pretty good were I’m relatively fast at it but as of now I have been unable to import an already programmed Flash animation into another Flash project. It is for this reason I may have to program the characters scanning motion individually for every room.

Project Review

At this point in the project everything is coming together and we can see the end in site. At the time of me writing this report we have 18 days left until the due date of the project. The input device is completely designed and we are working on assembling it now, we just verified the electronics today. The output device is in the process of being built, and the Flash environments are all made. The last major task we have is to write the code that allows the user to switch from room to room and select objects in the Flash program. All in all we should be done ahead of schedule.

Projected Timeline

Tues (10-09-07): Team meeting with just team members, weekly reports, update website
Wed: Output Device
Thurs: Output Device
Fri: Output Device

Hours Worked

14 hours