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Final Writeup

Going into this learning module I worked with Alex Stanneck to create a smart doorbell. The goal for the project was to create a doorbell that would allow the user to press the bell, a buzzer would go off, a camera would then take a video of the person and send it to you. We also had the idea towards the end of the project to use a human sensor to detect if someone was at the door even if they didn't press the button. We also wanted to create a 3D box that will hold all of the components of the doorbell.

We started off with getting a rough "prototype" if you want to call it that which would allow us to test each individual component and then one by one tie them all together. We first started off by getting the buzzer to work. We did all of the coding in python which I have had past experience with. Once we got the buzzer to work we moved onto the camera. At first we were having issues taking pictures with it. The raspberry pi was detecting that there was a camera connected but no matter what we did, it wouldn't take pictures or even show a preview. We eventually solved this problem by picking up a new camera from Mr. Detrick's room. Next we moved onto learning how to send a video through the raspberry pi. Our first idea was to just change a few words in the initial program that would send a picture but we found that there's a few more steps needed to accomplish that. We then had the idea of just creating a live stream of the camera whenever the button was pressed but again we had issues with that. After some time we found an article that went into how to send a video through email but we were still having issues with that.

Once we basically had most of the project done we moved onto creating a 3D model that would house all of the components. Alex was working to find software which would allow us to create the box and put everything in it. We originally went to use fusion 360 but it was giving us problems so we went to look for another program to model in. We eventually used tinkercad to do the work. After watching a few youtube videos on how to use it we started to get a rough

design done. Then we found that there is a model raspberry pi so we didn’t have to do an absurd amount of measuring, we just had to base it off of the model in the program. While that was going on I was figuring out how to have the doorbell run so it could be pressed several times even after someone pressed it once.

In the end we got just about everything working other than some of the video that was sent through email and as of the time that i'm writing this, the 3D box failed on the printer (It was accidentally turned off from the circuit breaker). In all we got a good amount of what we wanted to accomplish done and once we get the box completely printed it will be much better. I think that using the raspberry pi is a great tool to use for future projects and a great tool to learn python on especially with physical components. I would have liked to have a bit more time or in the future get it to where I could get a live stream video feed and then be able to talk to the person at the door through a microphone but that could be done at a later date.