Project Deliverable E: Project Plan and Cost Estimate

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Abstract

The main objective for this project deliverable will be to estimate the cost of our final prototype with the chosen subsystems that were decided by our group on our last project deliverable (D). Since now we will have to proceed to start with the prototyping, we must make sure we purchase all materials accordingly and properly, as well as find out whether we have the resources to acquire those arduino components we would need for our prototype. These arduino components are vital for the total functionality of our device therefore we must know early on whether we have to change them depending on availability. Lastly, we came up with a rough sketch of what our device would look like, if assembled all together.

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Introduction

As seen in our lectures, when it comes time to put our ideas into working on the actual prototype and manufacturing of components, the first thing we must think about is the price of the components or raw material we need. We were given a budget of $50 for our design, which we must adhere to, and on our last deliverable (D), when roughly estimating price we came way under, this time we will give a detailed list of the materials and their prices, as well as the arduino components we must use for our device. After considering the components used, we will present a rough sketch that includes all of our components. This sketch was done by hand and as a rough estimate or a draft sketch, therefore the position of the components is not set in stone. For example, the PIR motion sensor will not be sitting inside the box of our device, but instead we must locate it in the ceiling of the vehicle, however, we put it in the assembly drawing just to showcase that we do plan on using it, and the location may change. Other components not shown are the programming components such as the app or messaging application for the alarm system on our device.

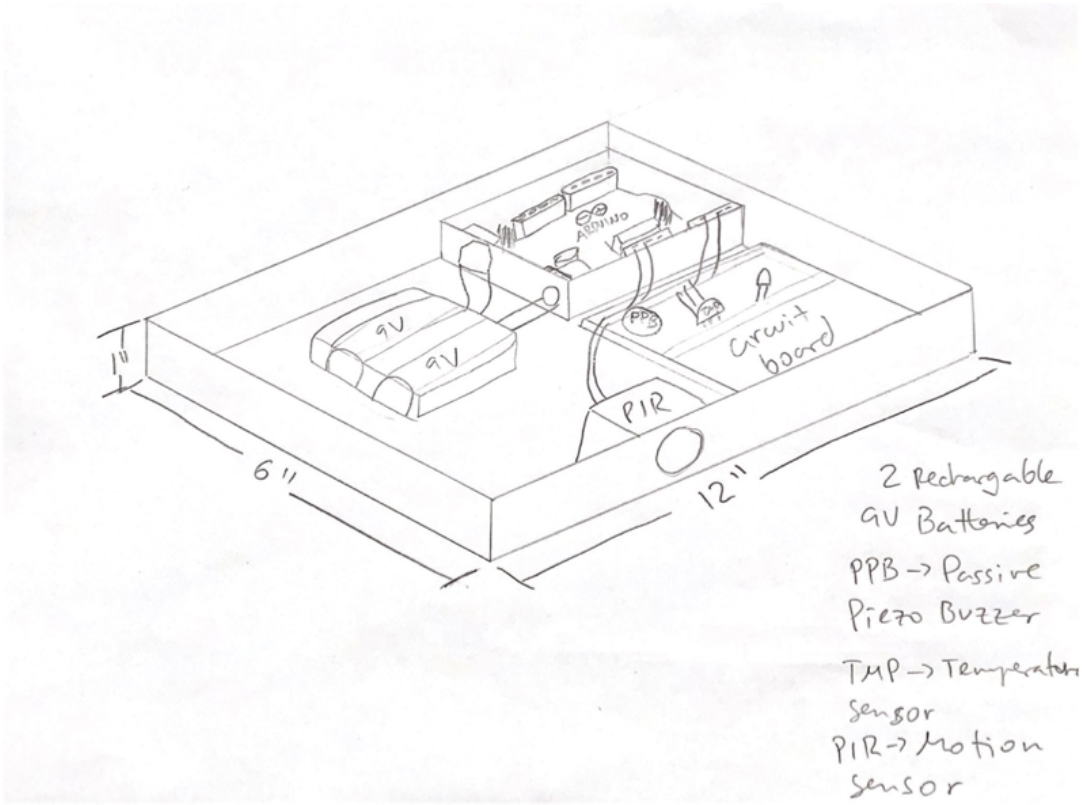
Cost Estimation

BILL OF MATERIALS

BOM Level	*Part Number*	*Part Name*	*Procurement Type*	*Quanity*	*Ind. Cost*	*Tax*	*Shipping*	*Total Cost*
1	NA	Ardunio Uno R3 (clone)	Maker Store	1	17	2.55	0	19.55
2	NA	Passive Piezo Buzzer	NA	2	0	0	0	-
3	TMP36	Tempature Sensor	Canada Robotix	1	2.39	1.56	9.64	13.59
4	HC-SR501	PIR Motion Sensor	Amazon	1	13.98	1.82	0	15.80
5	NA	9v battery	Dollarma	1	4	1.2	0	5.20
6	NA	Solid Core Jumper Wire	NA	15	0	0	0	-
7	NA	18 AWG Wire	NA	1	0	0	0	-
8	NA	BreadBoard	NA	1	0	0	0	-
9	NA	18"x24"x1/8" MDF	Maker Store	1	3	0.45	0	3.45
10	NA	Perf Board	Amazon	1	3.5	0.92	3.5	7.92
			Total Number of Parts	25.00		*Total Cost*		65.51

Things such as soldering iron, glue gun, and tweezers have been left off the BOM but will be used in the production of the prototype. Our first price projection is $15.51 over budget, in order to reduce this price our team will re-evaluate some of our component choices.

Drawing



Conclusion

Throughout this project deliverable we were able to pinpoint the overall cost of our chosen design, as well as locate the rough location of each component that will be used. Also, this deliverable helped us in making a list of every single component we will use for our design, that way we can keep our prototyping and manufacturing process as organized as possible, which will help us in saving time and in finishing the desired tasks within the allocated days. Overall, we did learn in a deeper way about the specific step in the design process (cost estimation), which comes right before starting to manufacture or bringing our device to fruition.

References

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