

Dorte Bien-Aime

Culmination Project

September 13, 2023

Project Description

A music box is an automatic musical instrument in a box that plays music by using a set of pins to strike the tuned teeth or lamellae of a steel comb on a rotating cylinder or disc. I want to construct one for my culmination project. Making a wooden music box that plays calming music is the aim. What could be better than it emanating from something aesthetically pleasing to help promote the advantages of listening to music that heals the soul? A slower cadence soothes you and lets you let go of the tension of the day by calming your thoughts and relaxing your muscles. People who listen to music can relax and reduce their tension. I briefly talked with my advisor Adam Wilson, who advised me to add more of the emerging media aspects by blending in Arduino UNO. With Arduino UNO, a sensor would be used to activate the music box and a melody would start to play. With the use of a sensor the goal is to use a magnetic switch door, it would know that it is time for the music box to start and open up and play the melody. I don't have the exact measurements of the box yet because I would have to purchase the mechanism kit first to get measurements correlating to that but it'll be similar to a small jewelry box. But I would want it to look something like the link below. Some of the technical steps that I already know how to do is working in the woodshop, I have the basic skills and safety skills to start my project off in creating the box. Challenging steps that'll need to research and learn, is turning a simple box made out of wood into a music box. Throughout my years here at City Tech, Arduino Uno has made a couple of appearances, I wouldn't call myself an expert. I remember using led lights, sensors, and push buttons, etc. Using it for this project, I may come across a few hurdles.

Like, what are some of the best ways to merge Arduino into a project like this. The percentage of new vs familiar steps, I would honestly split it down the middle 50/50, I know how to do bits and pieces but merging it all together would be a challenge.

Box Measurements

Width: 40.00 cm | 15.74 inch

Depth: 24 cm | 9.44 inch

Height: 14.20 cm | 5.59 inch

What is the “mechanism kit” that is mentioned in the proposal (please provide link)?

The “mechanism kit” produces the melody in a music box.

Link: <https://www.britannica.com/art/music-box>

Link:

https://cdn11.bigcommerce.com/s-ojupdjoifk/images/stencil/1280x1280/products/1895/19366/18-note-mechanical-movement-hundreds-of-songs-to-choose-from__27216.1627419967.jpg?c=1

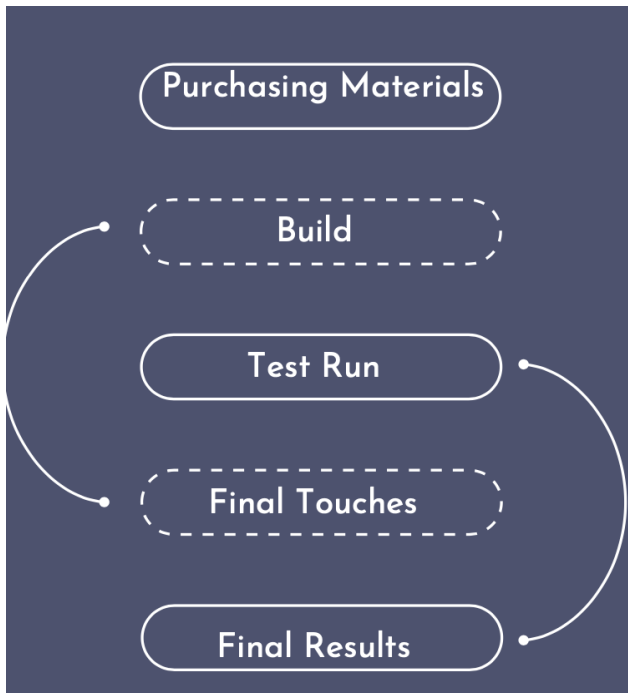
Link: <https://www.wikihow.com/Make-a-Music-Box>

Methods

- For the most part I plan on doing most of it myself.
- Preparing the Box
- Installing the Mechanism
- Adding the Final Touches
- Max
- Arduino UNO
- Blending Arduino & Max with woodwork would be a first for me.

Work Breakdown Structure List

* Includes 3 meetings with my Technical Advisor.



Deliverables List

- Signed Proposal from Technical Advisor
- Calendar/Gantt Chart
- Budget
- Final Product
- Culmination Poster
- Material Breakdown

Resources List & Budget

*May differ depending on what I have access to from the woodshop room.

Task Description	Status	Percent C	Planned \$	End Date	Actual St	Date Vari	Estimated	Estimated
Project Summary		3%	08/27/20	11/15/23		1	\$0	\$270
Meeting with Advisor		28%	08/26/23	08/31/23		0	\$0	\$0
Meet Advisor/Get Proposal Approved	In Progress	10%	08/28/23	08/28/23	08/29/23	-1	\$0	\$0
Sketch	In Progress	10%	08/28/23	08/28/23	08/28/23	0	\$0	\$10
Plan Out Everything	In Progress	10%	08/29/23	08/29/23	08/27/23	2	\$0	\$0
Start	In Progress	10%	08/29/23	08/29/23	09/01/23	-3	\$0	\$0
Gathering Materials		0%	08/27/20	09/30/20		0	\$0	\$270
Purchasing Paint and Wood	Not Started	0%	09/21/20	09/25/20				\$80
Purchasing Paint	Not Started	0%	09/28/20	09/29/20				\$30
Purchase a music box mechanism kit.	Not Started	0%	09/29/20	09/30/20				\$60
Gathering Other Supplies	Not Started	0%	08/27/20	08/27/20				\$100
Assembling		0%	10/02/23	10/20/23		0	\$0	\$0
Preparing the Box	Not Started	0%	10/02/23	10/06/23				
Installing the Mechanism	Not Started	0%	10/14/23	10/20/23				
Adding the Finishing Touches.	Not Started	0%	11/15/23	11/15/23				