Smart Mirror

Speaker Construct and Installation

by Quang Trung Trinh

1. Introduction

➔ Whole Project Introduction

We trying to make a mirror not only able to reflect physical object but also able to be hooked up with a computer system and display information. Once the mirror is embedded with a computer system, there are a huge horizon of functions and benefits that we are able to implement. In this project, we will only focus on 3 functions for our smartMirror: (1)Display some demanded information on the mirror screen (time, weather, news); (2) Interactability with people through peripherals (microphone, speakers, camera); (3) hackable by Kids. These are the 3 most important requirements from our sponsor (MakerKids) for a project: something looks cool, interactive and hackable by Kids


Tuesday, May 8, 2018
07:52
5:30 Haircut
Emily Comes Home
Mother's Day
Greg's Birthday
Memorial Day
Father's Day
15:18
75.7°
Tue 69.2 52.6
Wed 69.1 47.8
Thu 62.5 54.5
68.4

1. Introduction

➔ **Hardware Project Introduction**

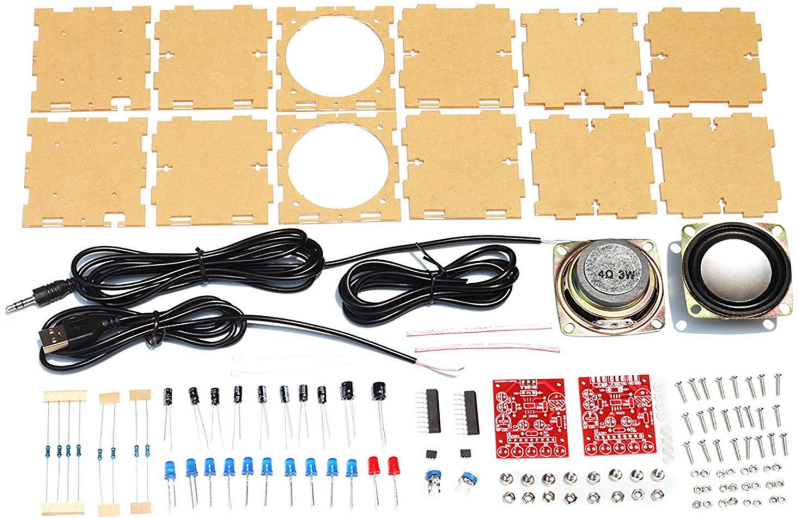
The Speaker that I build in this class will enable our smart mirror to play music, interact with the user by and can also be used as the reminder. The speaker will be builded with the amplifier and be connected to Raspberry Pi 3B+ . The reason we need the amplifier is the speaker alone will have a very limited sound ability

2. Budget for Implementing the Speaker with amplifier

Speaker Package

Included the PCB, necessary components and the speaker.

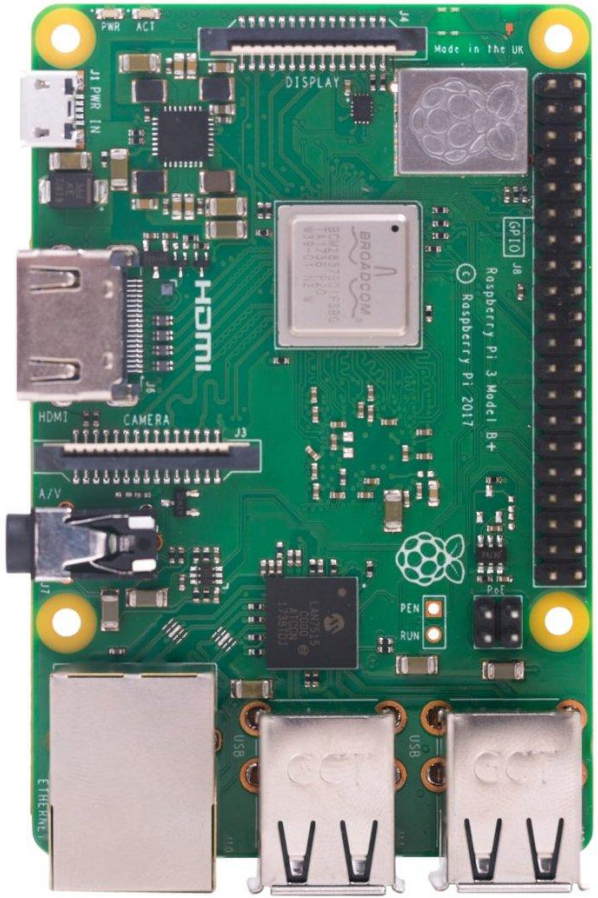
Cost: $21



Raspberry Pi 3B+

Included the
Raspberry Pi 3B+
and 8Gb Sd card

Cost: $75



Connectors

Included Ethernet to Usb adapter, Ethernet cable

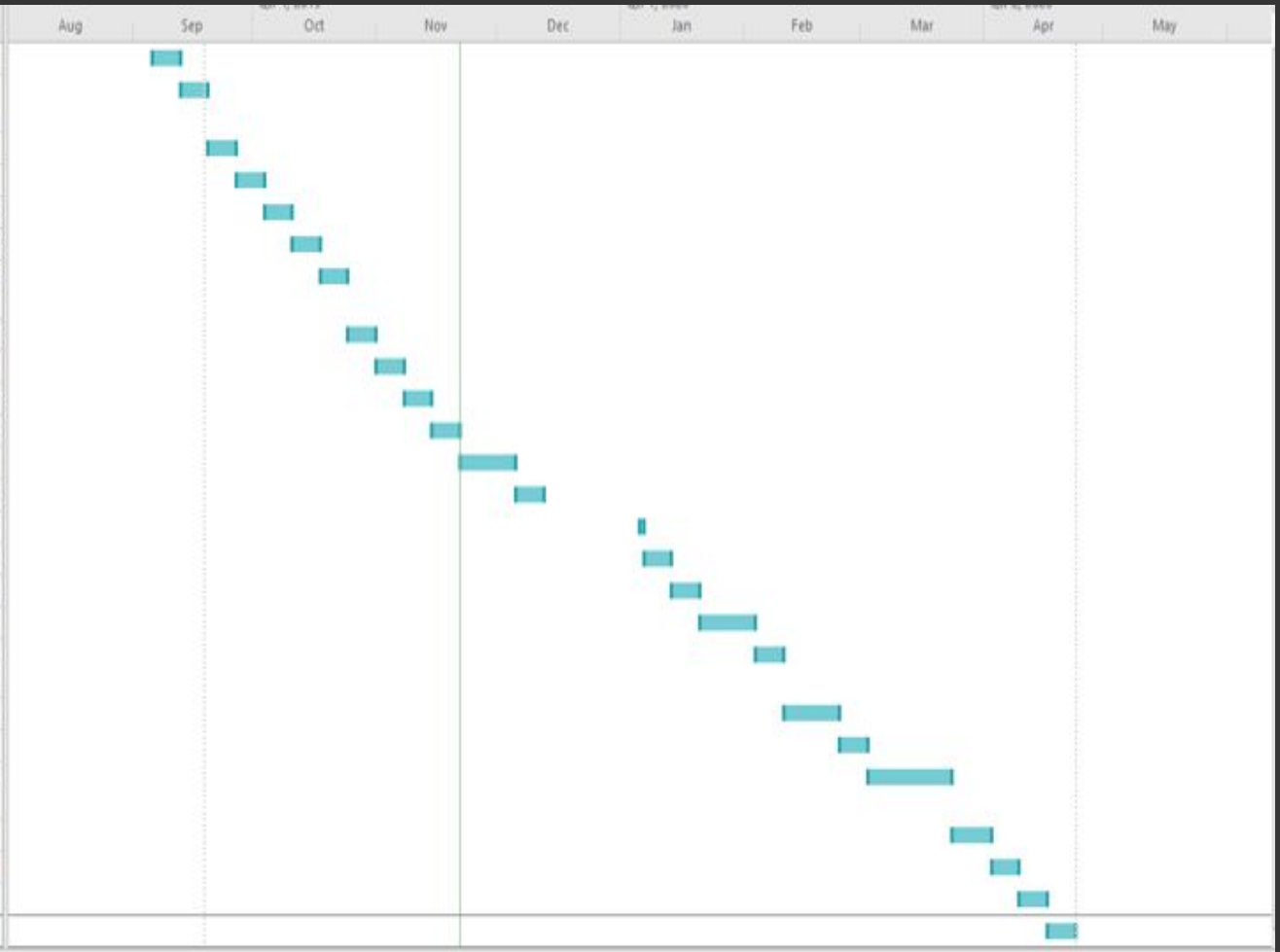
Cost: $29

=> TOTAL COST: 125$

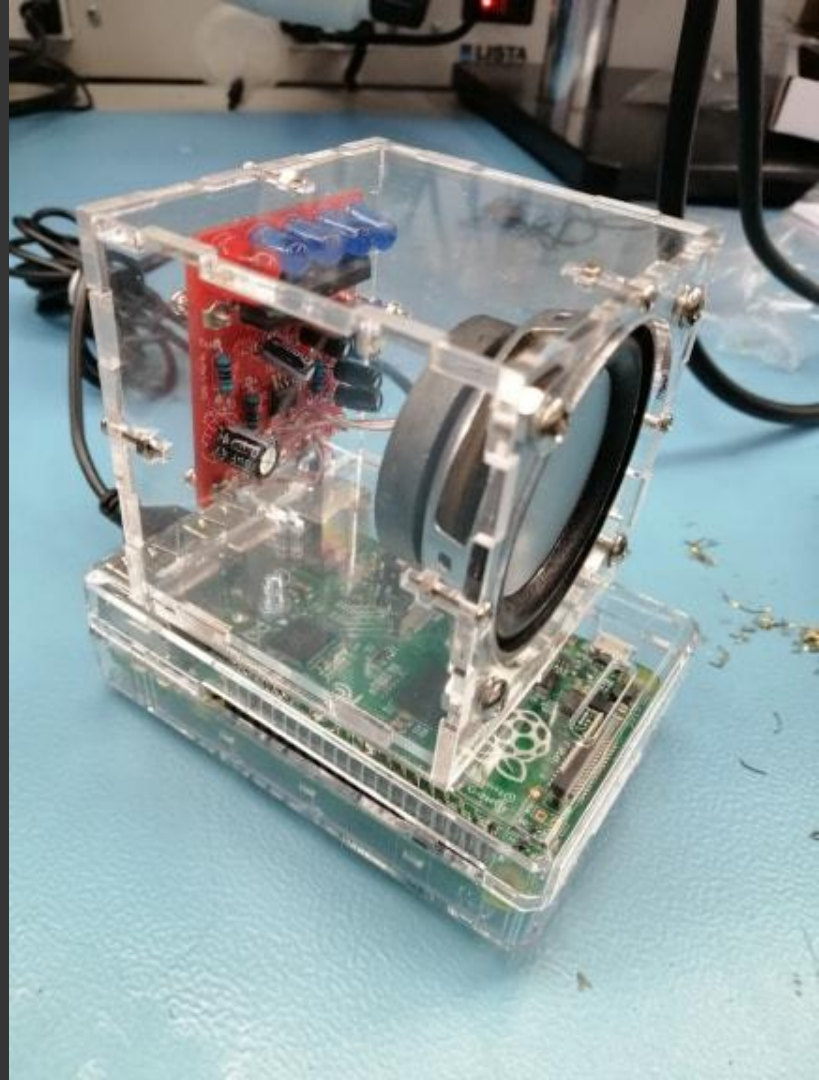
3. Schedule

GANTT CHART

	Task Name	Start	Finish
2	Proposal Due	Fri 9/6/19	Thu 9/12/19
3	Schedule Due/Kick off meeting	Fri 9/13/19	Thu 9/19/19
4	Budget Due	Fri 9/20/19	Thu 9/26/19
5	Parts Ordered	Fri 9/27/19	Thu 10/3/19
6	Acquisitions/Check in meeting	Fri 10/4/19	Thu 10/10/19
7	Breadboard and PCB Designed	Fri 10/11/19	Thu 10/17/19
8	Loading OS/Bootlader on Platform	Fri 10/18/19	Thu 10/24/19
9	Breadboarded Milestone	Fri 10/25/19	Thu 10/31/19
10	PCB Soldered	Fri 11/1/19	Thu 11/7/19
11	PCB Power Up	Fri 11/8/19	Thu 11/14/19
12	Enclosure Due	Fri 11/15/19	Thu 11/21/19
13	Presentations	Fri 11/22/19	Thu 12/5/19
14	Build Instructions Due	Fri 12/6/19	Thu 12/12/19
15	Scheduling and group meetings	Mon 1/6/20	Mon 1/6/20
16	Group project status update	Tue 1/7/20	Mon 1/13/20
17	App, Web and Database S.R.S	Tue 1/14/20	Mon 1/20/20
18	Group project continue	Tue 1/21/20	Mon 2/3/20
19	App, Web and Database Independent Demonstration	Tue 2/4/20	Mon 2/10/20
20	Group project continue	Tue 2/11/20	Mon 2/24/20
21	Group integration	Tue 2/25/20	Mon 3/2/20
22	Group project continue and troubleshoot	Tue 3/3/20	Mon 3/23/20
23	Group physical enclosure complete	Tue 3/24/20	Thu 4/2/20
24	Project Demonstration	Fri 4/3/20	Thu 4/9/20
25	Group Presentations	Fri 4/10/20	Thu 4/16/20
26	Group Final Report	Fri 4/17/20	Thu 4/23/20

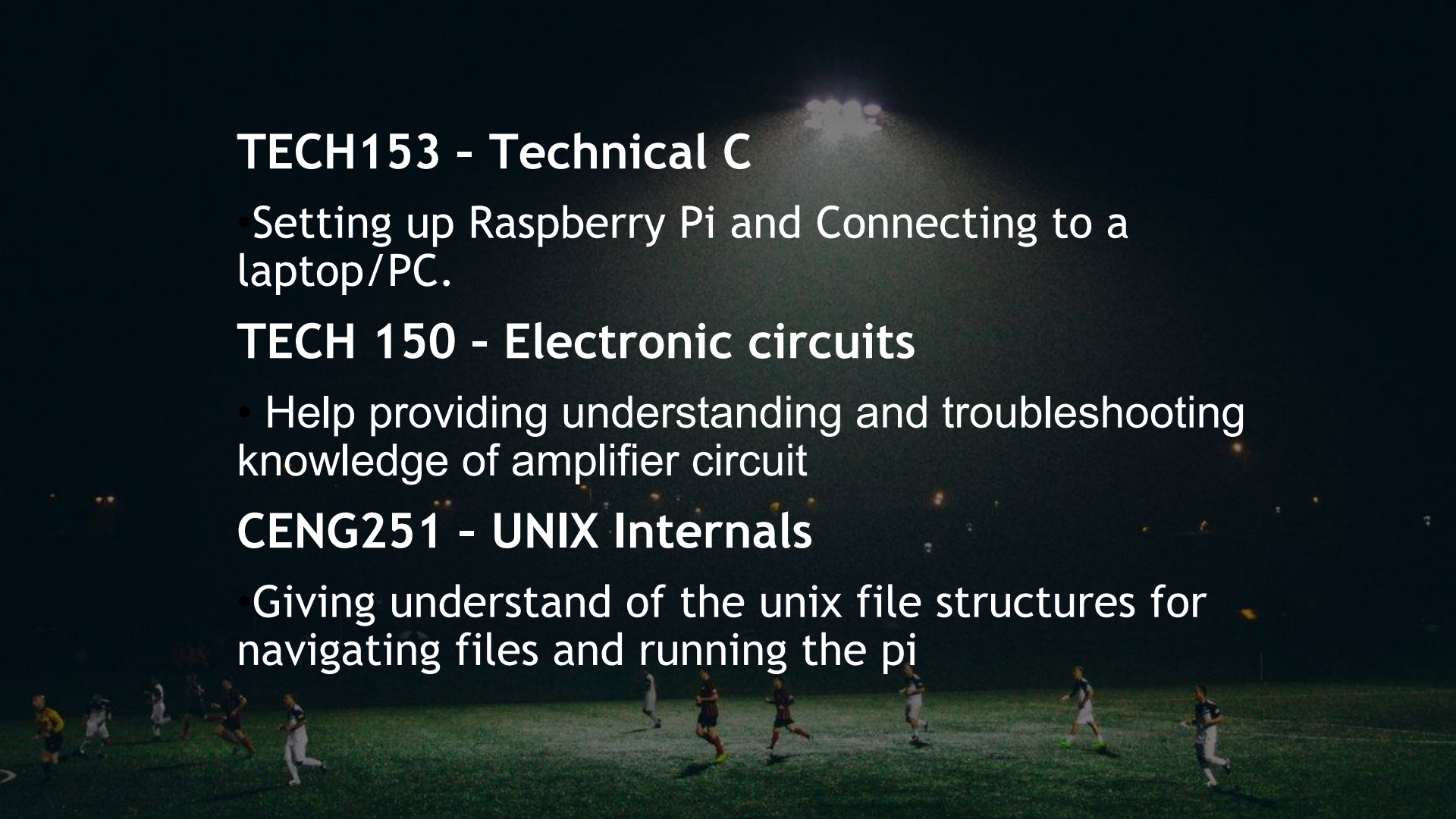


4. Enclosed Hardware



Expected Output

5. Course knowledge used from previous classes



TECH153 - Technical C

- Setting up Raspberry Pi and Connecting to a laptop/PC.

TECH 150 - Electronic circuits

- Help providing understanding and troubleshooting knowledge of amplifier circuit

CENG251 - UNIX Internals

- Giving understand of the unix file structures for navigating files and running the pi


Thank You !