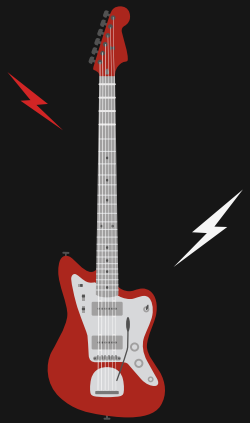
# Legends of Rock

ENGE 1216 3:30pm Team 11



# Overview

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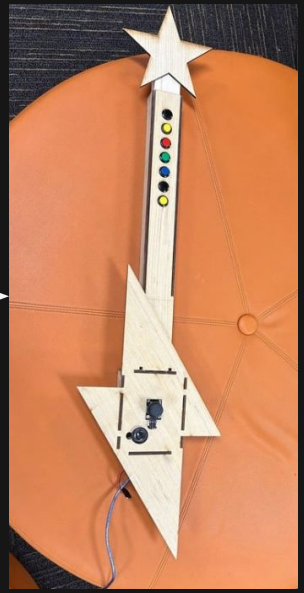
# What is it?

# Prototyping Processes



# Prototyping Processes (Programming Edition)

```
const int buttonC = 2;
const int buttonD = 3;
const int buttonE = 4;
const int buttonF = 5;
const int buttonG = 6;
const int buttonA = 7;
const int buttonB = 8;
const int strumPinX = A0;
const int strumPinY = A1;
const int buzzer = 10;
```

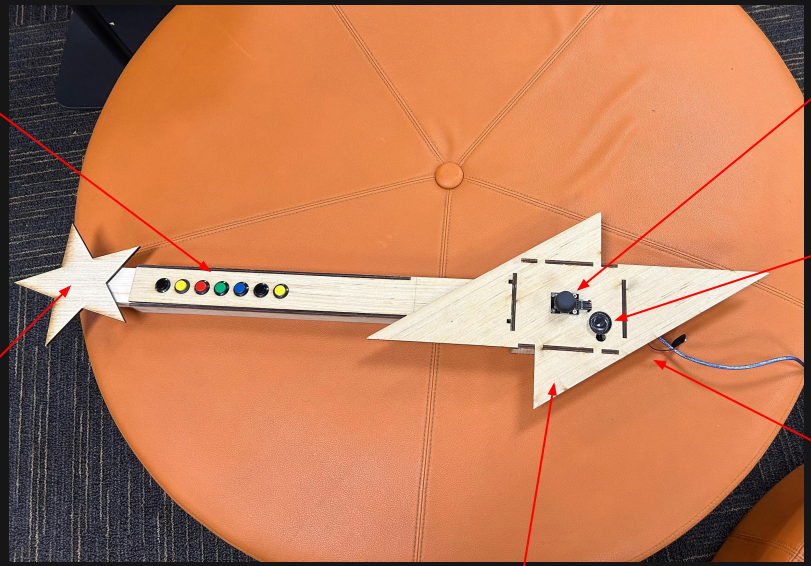
```
int freqC = 132;
int freqD = 148;
int freqE = 166;
int freqF = 176;
int freqG = 196;
int freqA = 220;
int freqB = 248;

int freqCSharp = 140;
int freqDSharp = 156;
int freqFSharp = 186;
int freqGSharp = 208;
int freqASharp = 234;
```

```
bool tuneUp = (!digitalRead(buttonC) && !digitalRead(buttonB));
bool tuneDown = (!digitalRead(buttonC) && !digitalRead(buttonA));
int moveScale = 0;
if (tuneUp) {
  moveScale++;
  delay(500);
}
else if (tuneDown) {
  moveScale--;
  delay(500);
}
if (moveScale > 6 || moveScale < -6) {
moveScale = 0;
}
```

```
int strumPinValueX = analogRead(strumPinX);
int strumPinValueY = analogRead(strumPinY);

bool isStrumDown = (strumPinValueX < 200);
bool isStrumLeft = (strumPinValueY < 200);
bool isStrumRight = (strumPinValueY > 700);
bool isStrumUp = (strumPinValueX > 700);

bool isStrum = (isStrumDown || isStrumUp
        || isStrumRight || isStrumLeft);
```

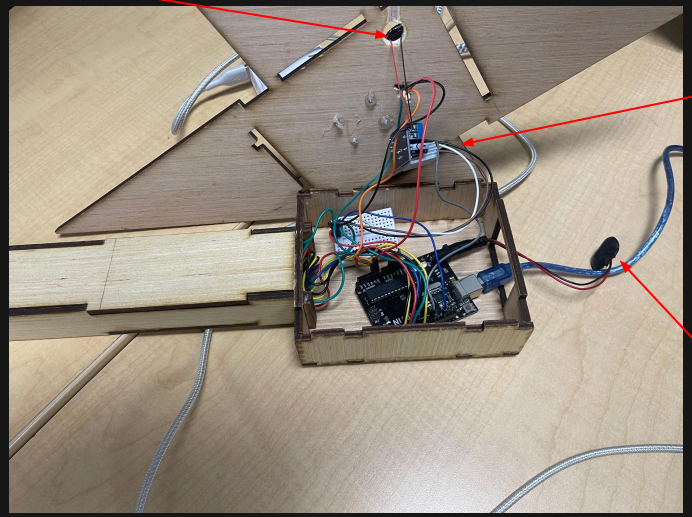
```
if (isStrumDown) {
  mult = 1;
} else if (isStrumRight) {
  mult = 2;
} else if (isStrumLeft) {
  mult = 4;
} else if (isStrumUp) {
  mult = 8;
}

if (isStrum) {
  freqC = freqC * mult;
  freqD = freqD * mult;
  freqE = freqE * mult;
  freqF = freqF * mult;
  freqG = freqG * mult;
  freqA = freqA * mult;
  freqB = freqB * mult;
  freqCSharp = freqCSharp * mult;
  freqDSharp = freqDSharp * mult;
  freqFSharp = freqFSharp * mult;
  freqGSharp = freqGSharp * mult;
  freqASharp = freqASharp * mult;
}
```

# Specifications of Stardvino



# Specifications of Stardvino pt. 2

Speaker



Amplification module

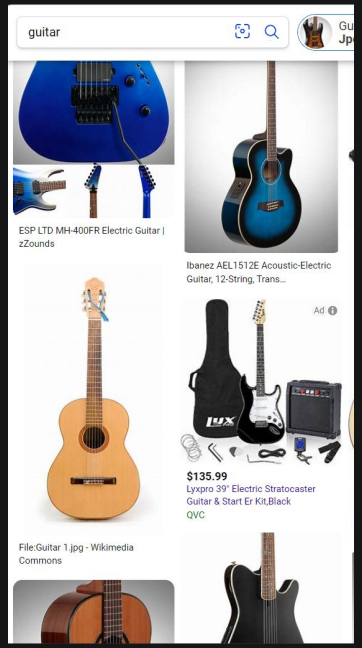
Battery Connector

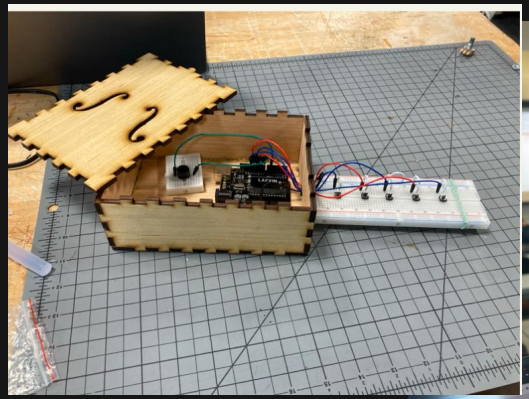
# Price to build

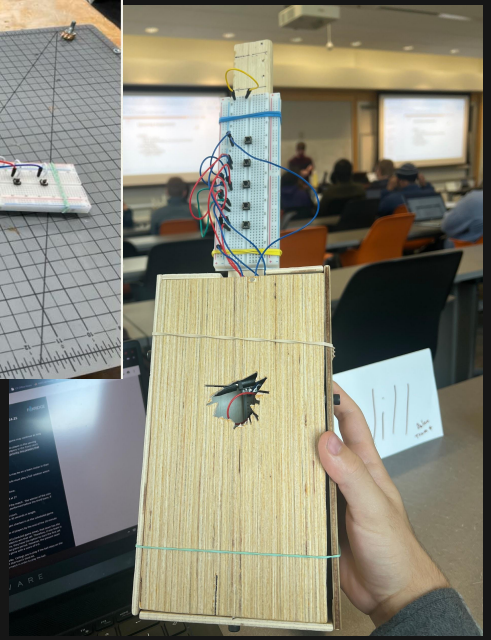
| Item | Unit Price | Amount | Total Price |
|---|---|---|---|
| 12”x24”x3/16” Plywood Sheets | $2.00 | 4 sheets | $8.00 |
| Lafvin Arduino Kit | $31 | 1 kit | $31 |
| Buttons | $1.00 | 7 buttons | $7 |
| Wood Glue | $1.00 | 1 bottle | $1 |
| 9V Battery | $1.10 | 1 battery | $1.10 |
| Miscellaneous minimally used materials (4 dabs of hot glue, 4 small screws) | | | $1.00 |
| Total: | | | $49.10 |

# Comparison With “Team” 4

=





Bland, Unoriginal, Huge body (compensating??), Funhouse mirror, Violin?, Anger issues?

# Why is it Great?

- Plays 68 Notes (48 without any tuning between)
- Very beginner-friendly due to intuitive controls (joystick-based strumming)
- Exploring new sounds is a fun activity
- Rock and roll design

# Real Reviews

| | Testimonies | Instrument testers |
|---|---|---|
| **1** | “This is the best instrument in the entire class, the rest all suck, **especially team 4**, and this one deserves a medal. By the way, Diego’s hair looks amazing.” | Professor Chambers |
| **2** | “This guitar doesn’t just play music - it demands an encore.” | Mick Jagger |
| **3** | “I sleep with this guitar” | Elton John |
| ~~4~~ | “Great!” | Alphonse |

# WHOA!

Listen to how great this marvel of musical technology sounds!

(Much better than team 4's "instrument")

# THANKS!

## Do you have any questions?

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No animals were hurt in the development of this instrument.