

Multimodal Drink Mixer

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Project Motivation

- If you're mixing different drinks together for people, often times mixing tools get dirtied and if you're not careful, this can lead to ruining bar equipment
- If you're mixing together different kinds of drinks, oftentimes you have to clean equipment in between different drinks, especially if people in your party are allergic to some ingredients
- Having people get drinks when they want and not have to be reliant of making it themselves or waiting on another person to make it for them



Introducing: Q.U.E.N.C.H!

- The **Q**uick **U**ser **E**nvironment for **N**etworked **C**ocktail (Mixed Drink) **H**andling
- This machine holds up to 3 different liquids to be accurately measured and poured for users
- Can either input drink order from:
 - Scanning RFID card, translating the UID to a known drink mix
 - Custom Drinks available via Web Server



How does it work?

- Peristaltic Pumps into Rotary Encoder
- Relay Board to control Pumps
- Ultrasonic Sensor to detect cups
- Map UID to drink order, and marks when drink is dispensed
- Arduino R4 Wifi as Brain + Webserver
- Arduino Mega to generate & display QR code

Challenges

1. Properly converting IR sensor into square wave for accurate rotation count

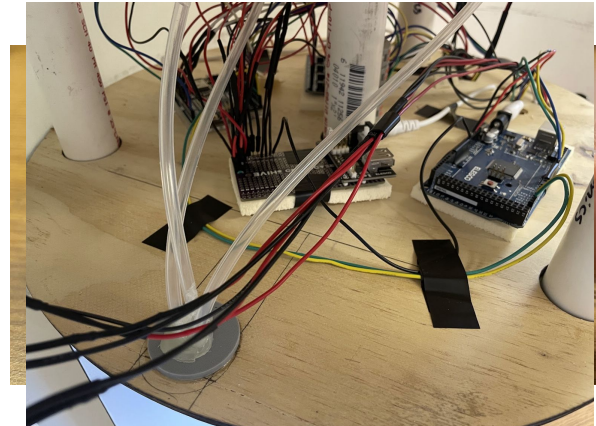
SOLUTION: Electrical Tape!

3. Serial Communication between Arduinos for QR code generation

SOLUTION: Serial Handshake

2. Incorrect kind of RFID Key Cards / Inconsistent 4x4 Membrane keypad

PIVOT: UID over held RFID data



Demo Video

