MixBot

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# About our project- The Ultimate Cocktail Mixer!

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We have built a cocktail/drink-mixing station. Our system takes input from the user through an Arduino, which creates an access point by broadcasting its own SSID. The user can choose from pre-made drinks or prepare something for themself. Our system accurately measures and pours the correct amounts of each component, as we desire.

The objectives of this project were:

- Accessible mixing of drinks
- Fixed run-time requirements
- Deterministic behavior
- High performance
- Cost-effective

We successfully managed to hit all of them (as we will showcase in our demo)!

Limitations of Current Practice

Manual Error

Non Inclusive User Experience

Unsanitary

Tedious
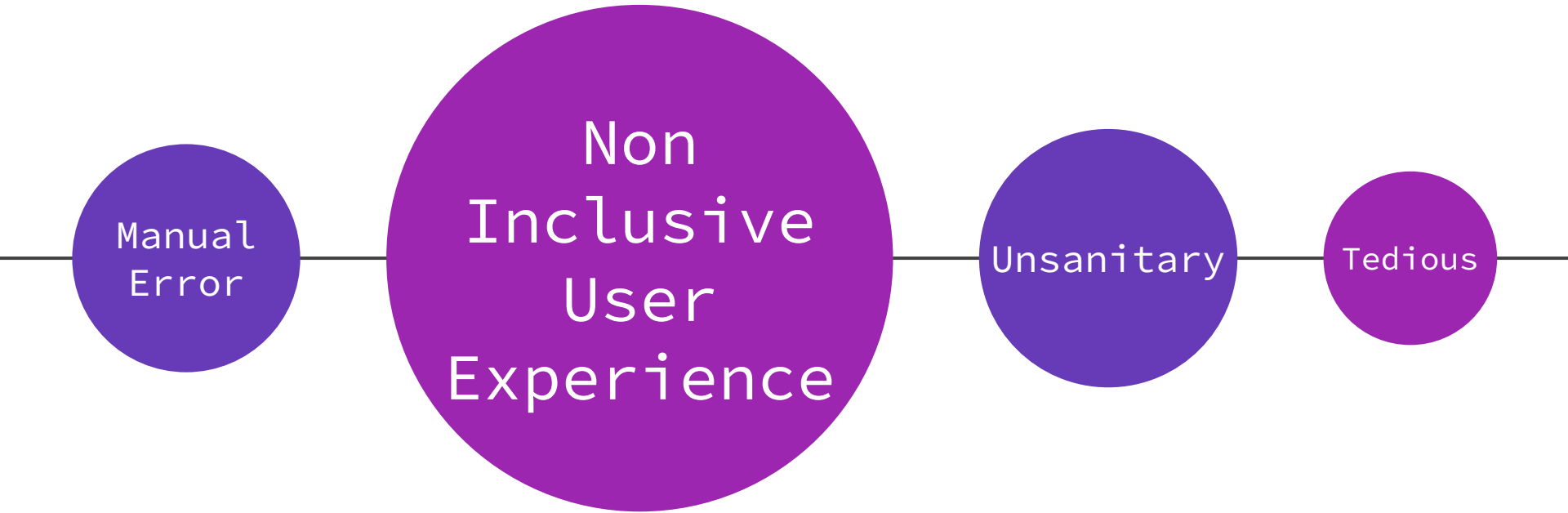
Approach

Input Form

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HTML form that welcomes user to our page, to allow them to choose from premade drinks options or make their own cocktail.

Embedded Mixologist

Welcome! Choose a drink:

Click here to order Special #1

Click here to order Special #2

Or specify your own:

Drink 1:

- ● None
- ○ Less
- ○ Standard
- ○ More

Drink 2

- ● None
- ○ Less
- ○ Standard
- ○ More

Drink 3:

- ● None
- ○ Less
- ○ Standard
- ○ More

Drink 2

- ● None
- ○ Less
- ○ Standard
- ○ More

Drink 3:

- ● None
- ○ Less
- ○ Standard
- ○ More

Drink 4:

- ● None
- ○ Less
- ○ Standard
- ○ More

Submit   Clear Choices

Arduino — Motors

We use analog pins to control motor speeds and digital pins to turn motors off/on. The amount of a drink that is poured into the cup is determined by how long the respective motor is turned on.


Arduino — Webserver

We set up a WiFi access point using the WiFiNINA library. We start a web server, which customers can connect to to access the order page.

Hardware

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We use peristaltic pumps to accurately measure and dispense the correct ingredients. The Arduino controls the pumps through a L298N motor driver circuit. We have 4 pumps, each connected to its own ingredient.
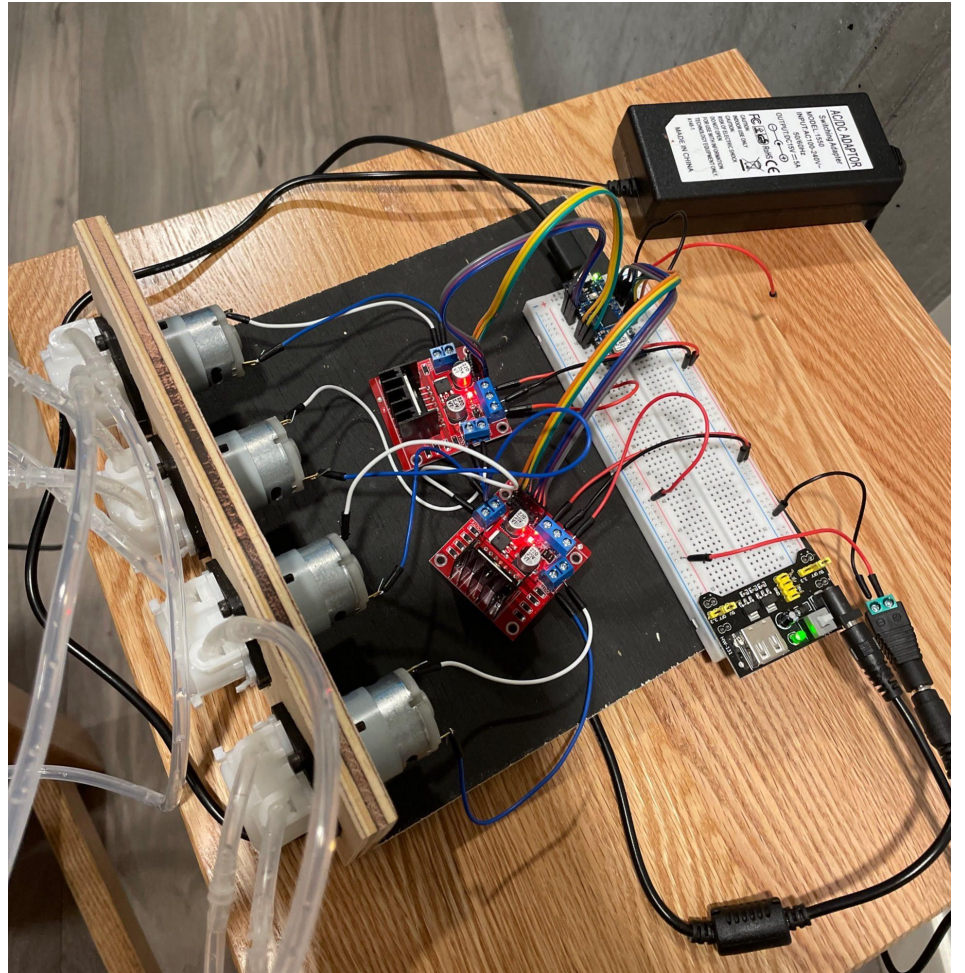
Why our approach is successful

Hands-free
Consistent, sanitary

Inclusive
Can be used if manual mixing not possible, no specialized knowledge required

Technical
No high computing power, fast, no external WiFi/BLE

Metrics of Success

- Accuracy
- Consistency
- Latency
- Cost
- Power Consumption
- Maintainability

Thank you for joining us!
Please let us know if you have any questions (and want samples👀).