FPR

# Alfred

(Wifi-Enabled Automated Mixed Drink Maker)

Team 15:
John Fouad, Ben Ivaldi, Chris Wong, Pat Barron

April 20, 2018

# Team Members

Chris

Advisor:
Professor Moritz

Ben

John

Pat

# Problem Statement

- **Time-Saver:** People wait too long at bars trying to get the bartender's attention to order simple mixed-drinks
- **Eliminates Bartender Pouring Errors:** Bartenders can disproportionately pour drinks or provide the wrong drink
- **Alleviates Congestion:** The amount of people around the bar trying to order a drink is a nightmare

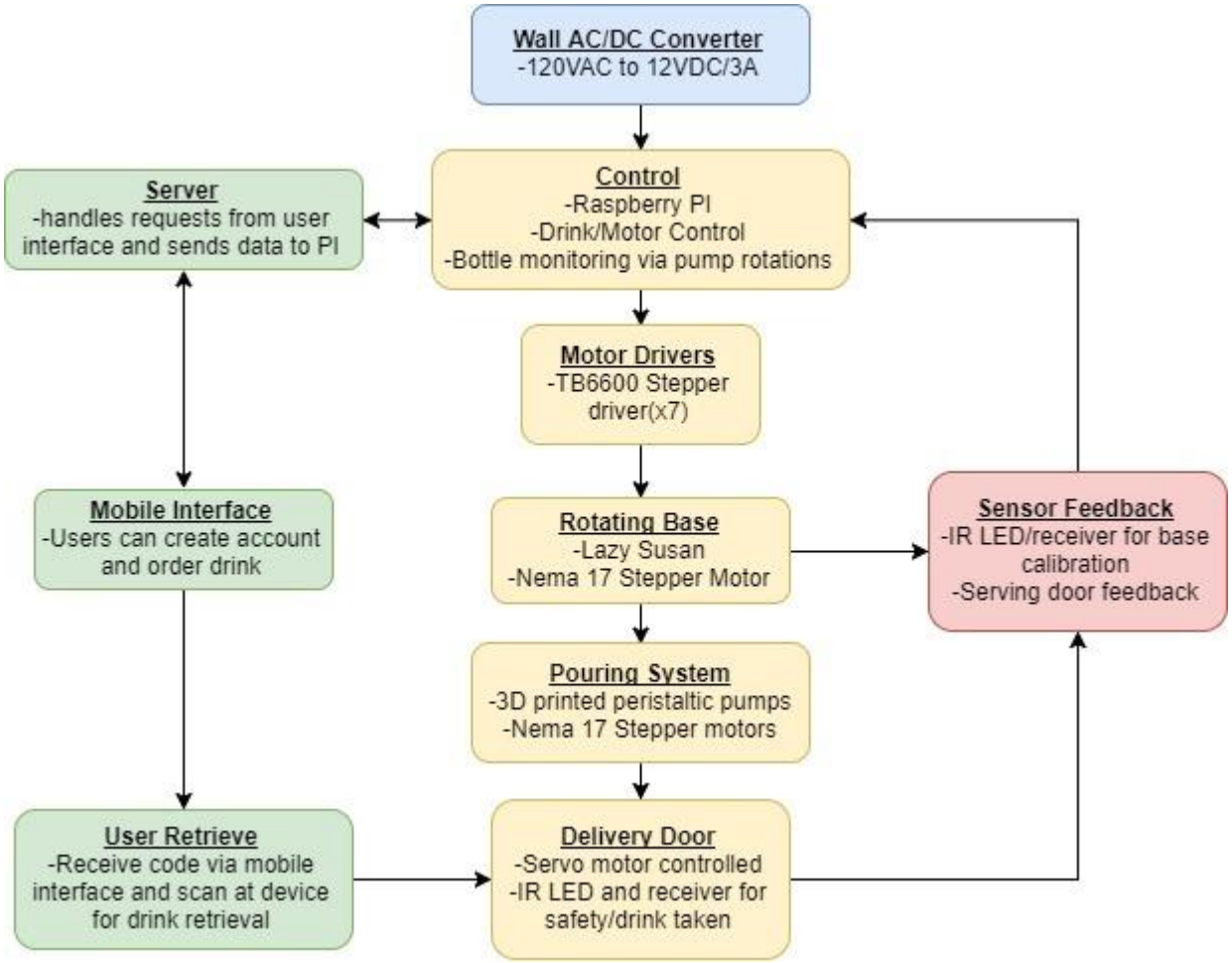
# System Specifications


- Order through mobile device
- Pour a perfect drink in under 2 minutes
- Bartender can insert choice of alcohol (750mL) and mixers into dispensers
- Choice of 4 different drinks
- Does not spill the drinks
- Tab system to order drinks
- Drink served to correct customer using door system
- Rotatable base to access different cups to dispense the liquids

# System Specifications (cont'd)

- 8 cups with ice placed onto base
- 15.9" diameter base
- Dispenses correct proportions of liquids into each specific drink
- Failsafes:
  - Sensor to make sure cup is removed before closing door
  - Sensor to detect correct orientation of base

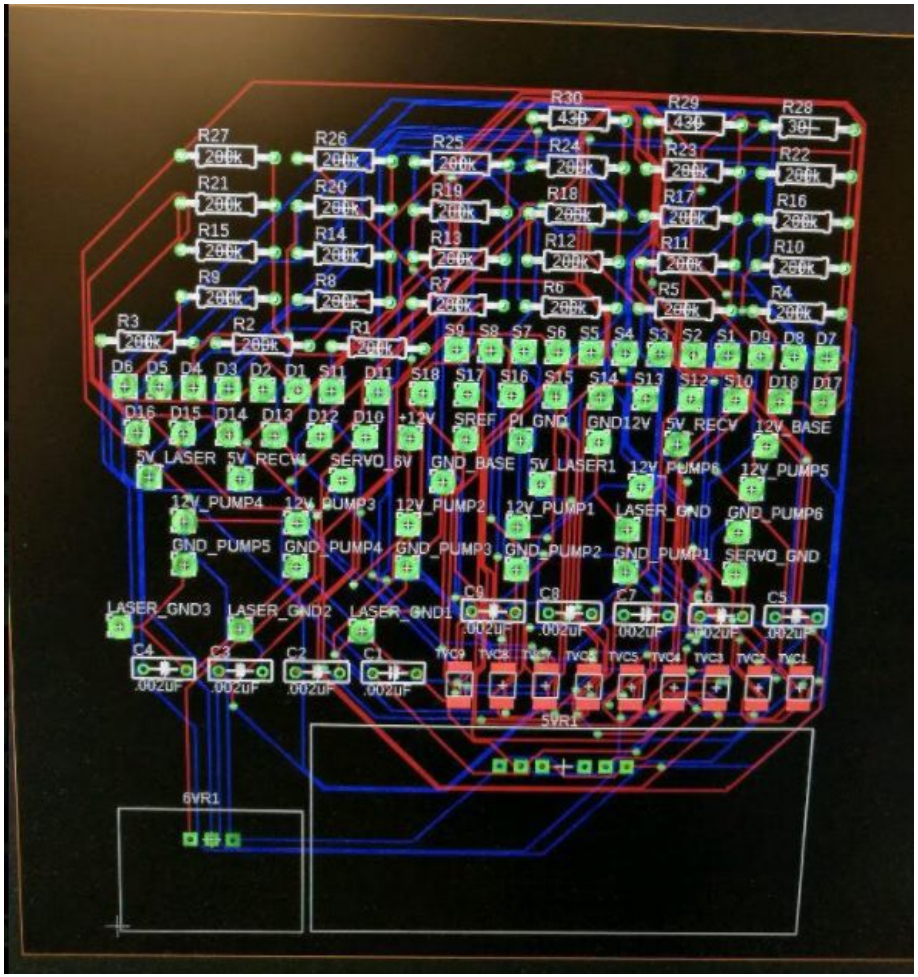
# Block Diagram



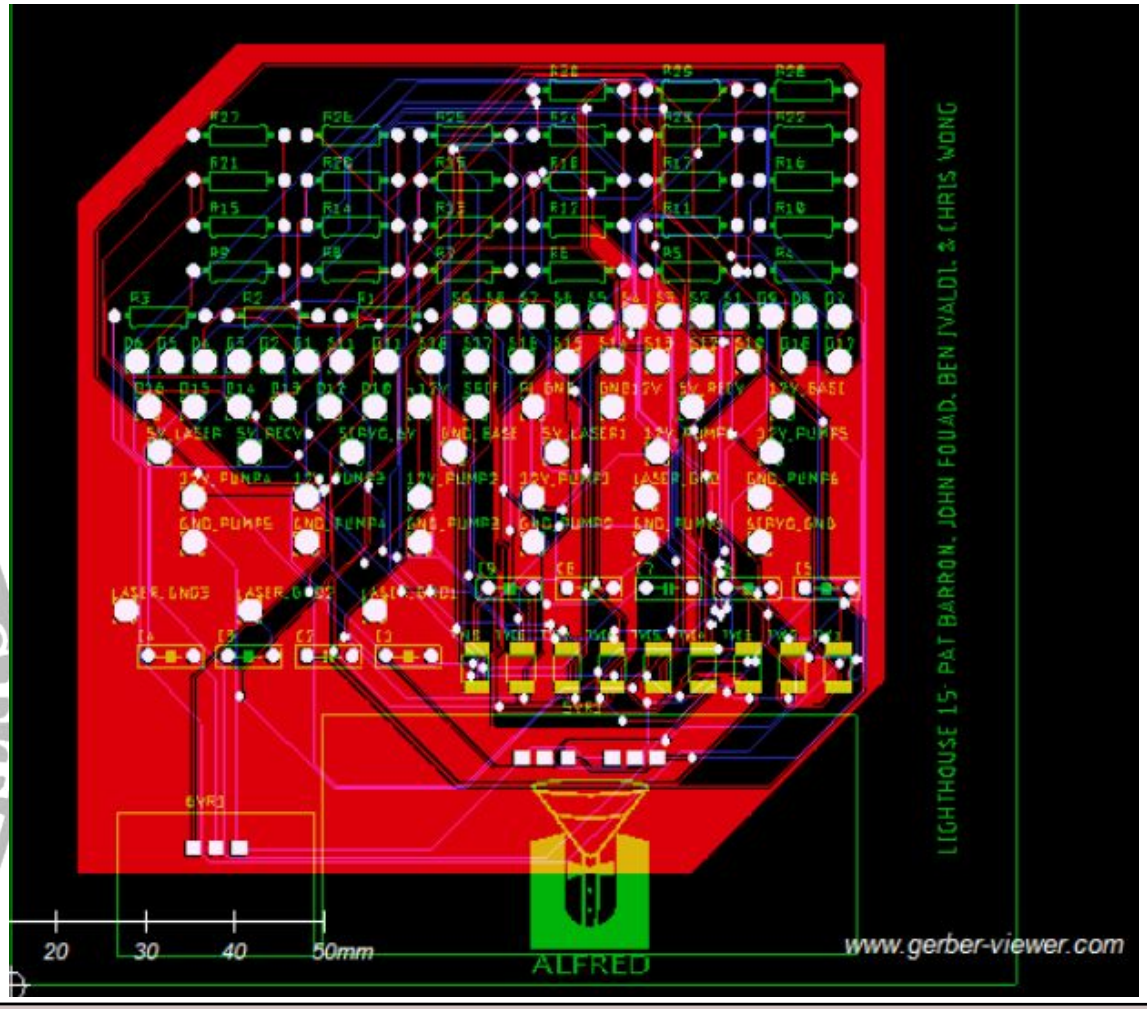
# Proposed FPR Deliverables

- ✓ Splash Guards will be mounted near the tubing - currently liquids splash a little when liquid level increases in cups
- ✓/✗ PCB completed
- ✓ Outer casing for whole project
- ✓ Secure the password reset for accounts
- ✓ Fully automated through Pi
- ✓ Completed algorithm for base rotation
- ✓ Personal identification code for completed drinks (barcode/QR code/keypad)

# PCB


R30
R29
R28
R27
R26
R25
R24
R23
R22
R21
R20
R19
R18
R17
R16
R15
R14
R13
R12
R11
R10
R9
R8
R7
R6
R5
R4
R3
R2
R1
S9 S8 S7 S6 S5 S4 S3 S2 S1 D9 D8 D7
D6 D5 D4 D3 D2 D1 S11 D11 S18 S17 S16 S15 S14 S13 S12 S10 D18 D17
D16 D15 D14 D13 D12 D10 +12V SREF PI_GND GND12V 5V_RECV 12V_BASE
5V_LASER 5V_RECV1 SERVO_6V GND_BASE 5V_LASER1 12V_PUMP6 12V_PUMP5
12V_PUMP4 12V_PUMP3 12V_PUMP2 12V_PUMP1 LASER_GND GND_PUMP6
GND_PUMP5 GND_PUMP4 GND_PUMP3 GND_PUMP2 GND_PUMP1 SERVO_GND
LASER_GND3 LASER_GND2 LASER_GND1
C9 C8 C7 C6 C5
C4 C3 C2 C1
.002UF
5VR1
6VR1

# PCB


LIGHTHOUSE 15- PAT BARRON, JOHN FOUAD, BEN JVALDI, & CHRIS WONG
20
30
40
50mm
ALFRED
www.gerber-viewer.com

# Cost of Materials

| ITEM | QUANTITY | PRICE PER UNIT | TOTAL PRICE |
|---|---|---|---|
| Nema 17 Stepper Motors +Drivers | 6 | $24.99 | $149.94 |
| Silicon tubing | 3 | $9.99 | $29.97 |
| Ball Bearings | 2 | $9.02 | $18.04 |
| Screw Assortment Kits | 2 | $21.99 | $43.98 |
| USB Keypad | 1 | $8.99 | $8.99 |
| Power Supply | 1 | $17.99 | $17.99 |
| PCB | 5 | $2.71 | $13.55 |
| Lazy Susan Base | 1 | $17.95 | $17.95 |
| Raspberry Pi | 1 | $34.93 | $34.93 |

# Cost of Materials (cont'd)

| ITEM | QUANTITY | PRICE PER UNIT | TOTAL PRICE |
|---|---|---|---|
| Raspberry Pi Power Supply | 1 | $9.99 | $9.99 |
| 32GB MicroSD | 1 | $12.99 | $12.99 |
| | | **Total Price:** | $358.32 |


# DEMO


# Questions??