

2023

# PERFUMIX



MACHINE

CRAFTING SCENTS, CAPTURING MOMENTS:  
EXPERIENCE PERFUME BEYOND IMAGINATION.

HARDWARE PROJECT





# AGENDA



01. Main Idea

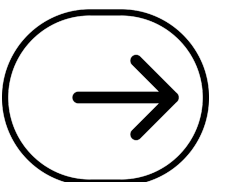
02. Features

03. Motivations

04. Hardware  
Modules

05. Constraints

06. Future Work



# MAIN IDEA

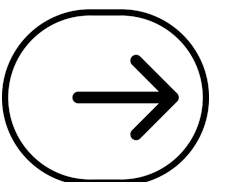
Perfumix is a perfume composition machine from mixing to closing.

## Enhanced User Experience

The machine incorporates a user-friendly LCD display, coupled with a keypad interface and mobile app for the mixing process.

## Automated Bottling & Sealing

Post-selection, the machine fills, mixes, and seals the perfume, ensuring quality and consistency while eliminating manual errors.



# FEATURES

## 2 ways of making perfumes

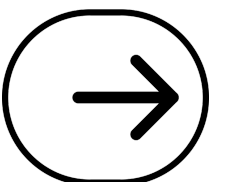
The flexibility of making perfumes effortlessly via our mobile app or directly through the machine's intuitive LCD, keypad.

## Precise Dispensing

Advanced mechanisms ensure the perfect amount of each scent is dispensed, providing consistency in every bottle.

## Limit Switches for Enhanced Precision and Safety

Incorporated at both the beginning and end of the process, these switches ensure accurate positioning and movement within the machine, preventing overruns and enhancing operational safety.



# FEATURES

## Seamless Dispensing

The perfume dispensing mechanism eliminates user intervention through the whole process of perfume preparation.

## Notification

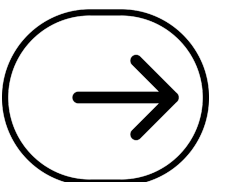
The user can know if any of the ingredients in storage is running low.

## High-Efficiency Pumps

Reliable and durable pumps that accurately handle the transferring and filling processes without any spillage or wastage.

## Seamless Capping

Once filled and mixed, the machine places and secures the bottle cap, guaranteeing a leak-proof experience..



# MOTIVATIONS

## Seamless Dispensing

Creating a unique scent that represents your individuality. And provide users with a convenient and efficient way to prepare and customize their perfumes.

## Modernization

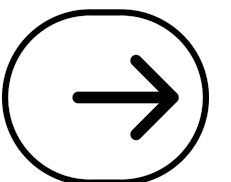
The development of this machine aligns with the trend of incorporating technology and automation into everyday tasks.

## Accessibility

Making the process of crafting personal fragrances easy and accessible to everyone.

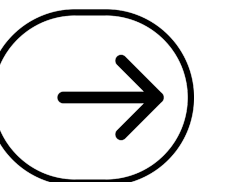
## Creativity

Providing a platform to experiment and discover new, personalized scent combinations.



# HARDWARE MODULES

HARDWARE PROJECT



# AIR UNIT



**VALVE AC 220V**



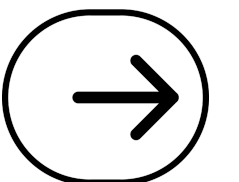
**AIR JACK – MIXING  
STATION**



**AIR JACK – FILLING  
STATION**



**RELAY**



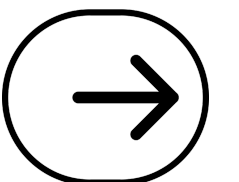
# INPUT / OUTPUT UNIT



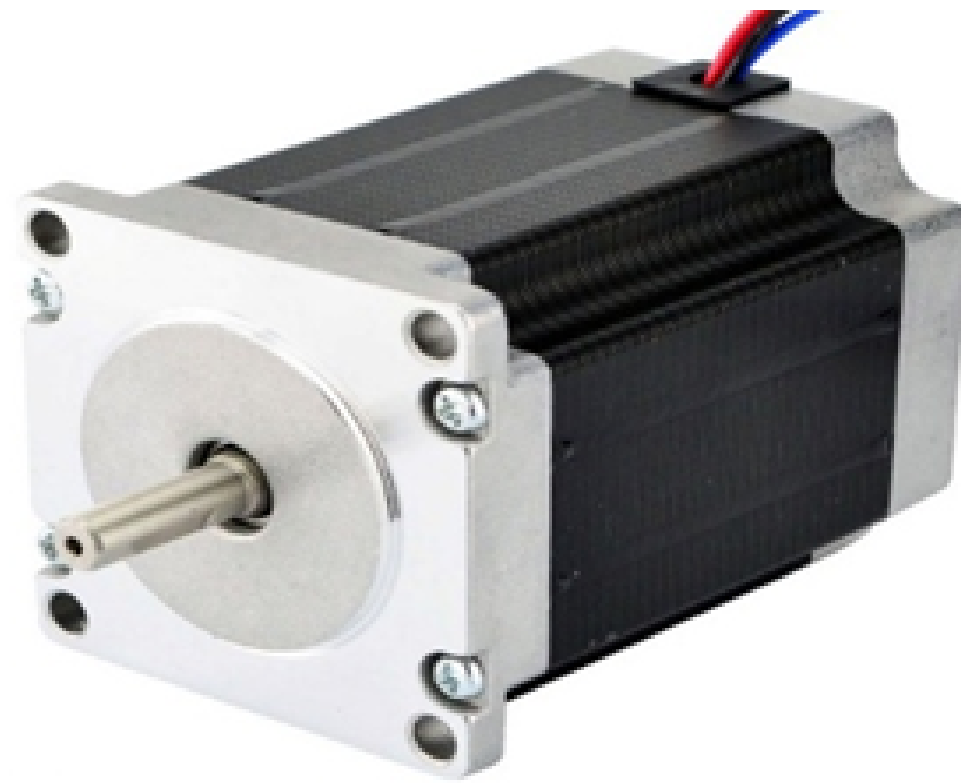
LCD & I2C



KEYPAD



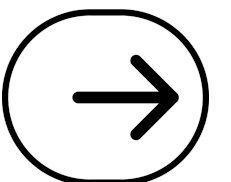
# INPUT / OUTPUT UNIT



**STEPPER MOTOR**



**STEPPER MOTOR  
DRIVER**



# INPUT / OUTPUT UNIT



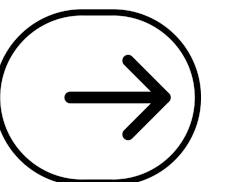
DC MOTOR



DC MOTOR



RELAY



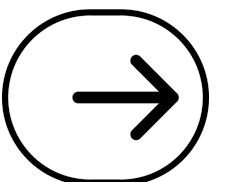
# INPUT / OUTPUT UNIT



**SERVO MOTOR**



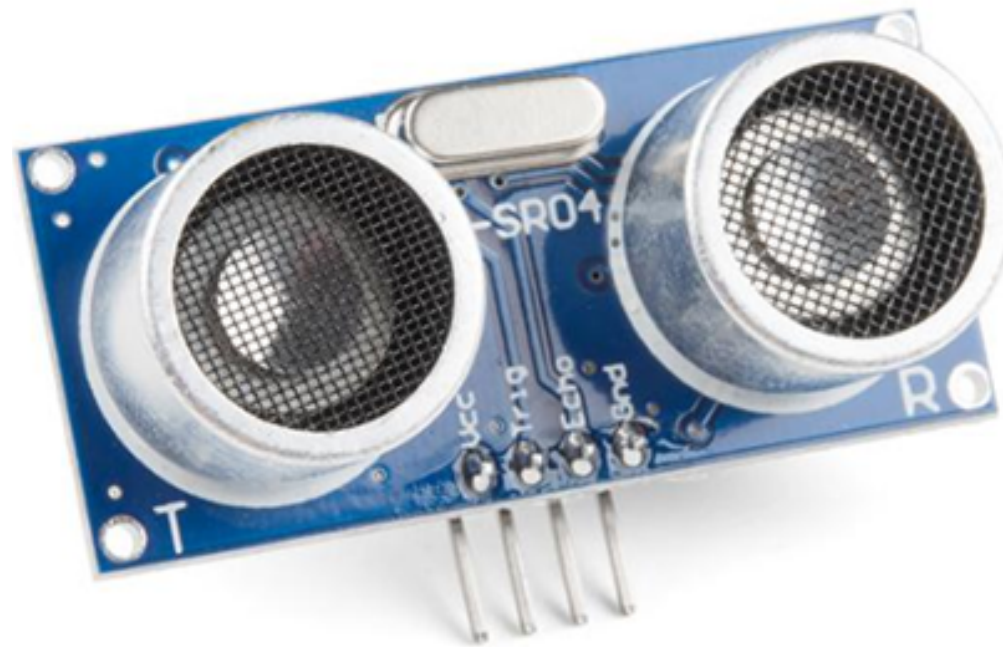
**IR SENSOR**



# STORAGE UNIT



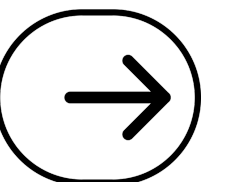
**PUMP**



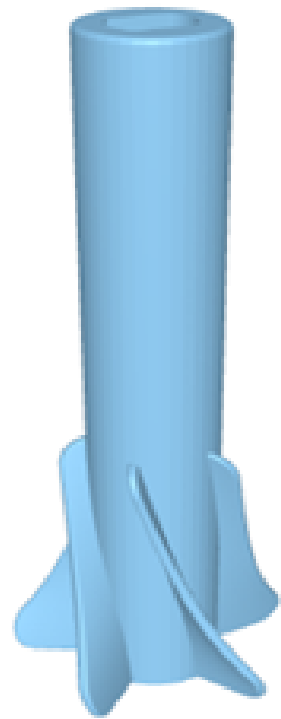
**ULTRASONIC**



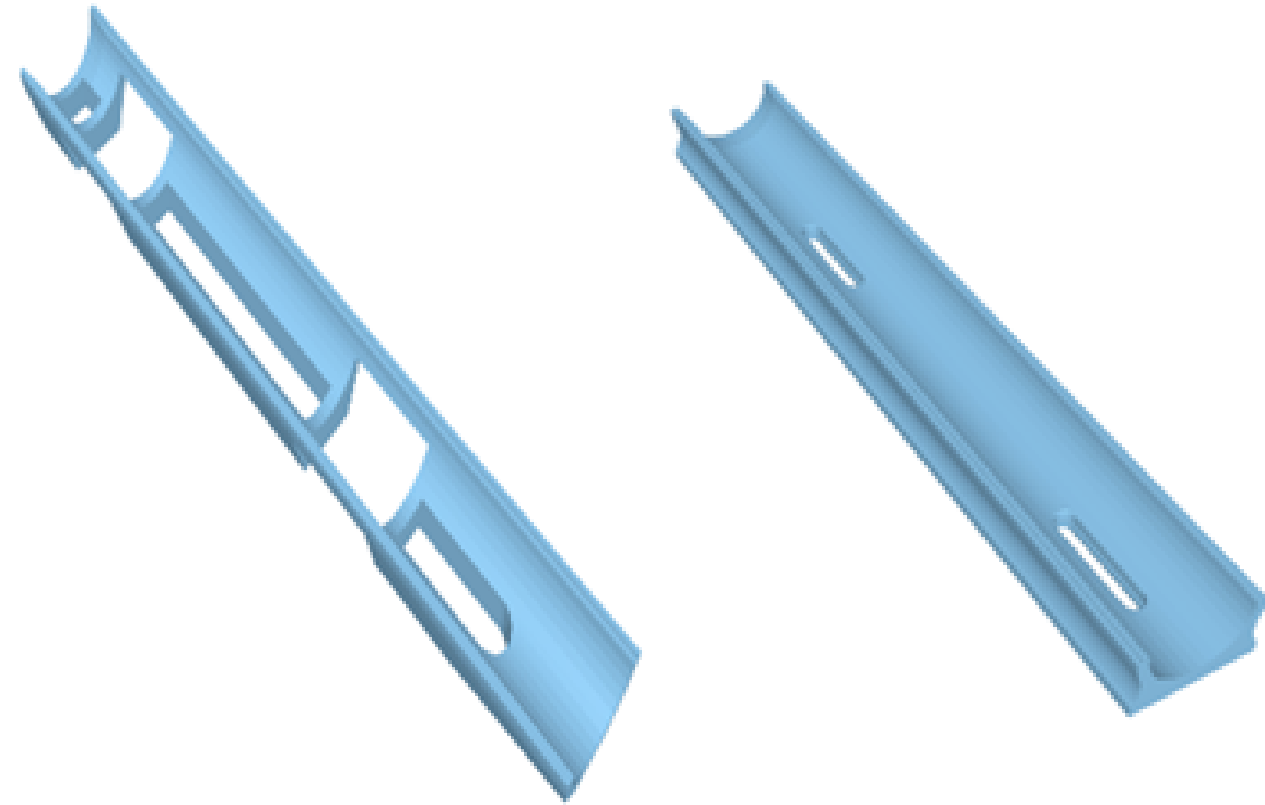
**RELAY MODULE**



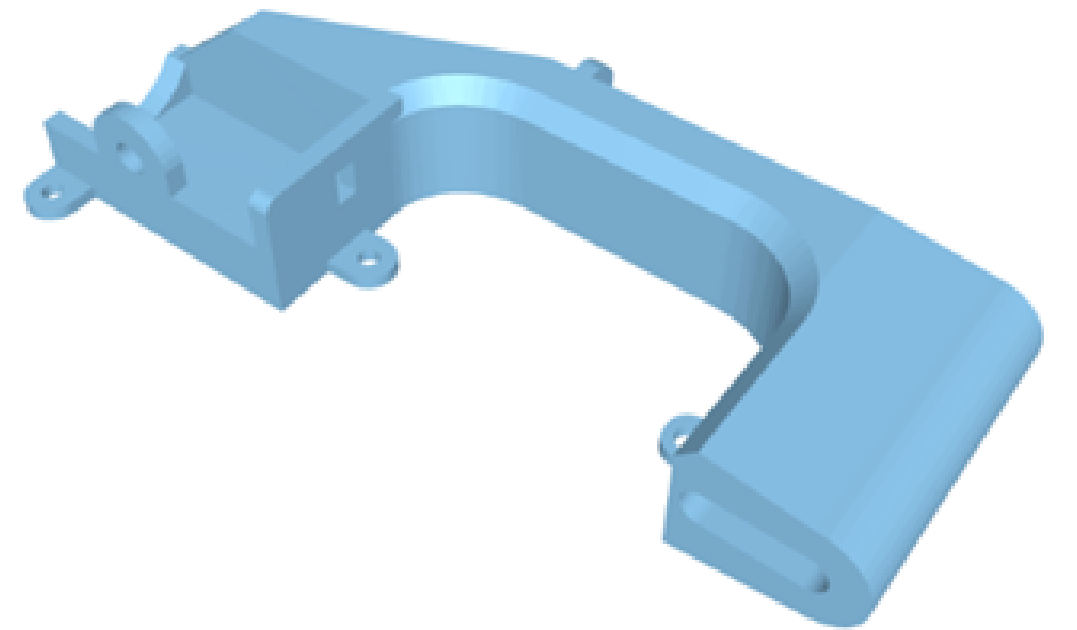
# PERFUME MAKING UNIT



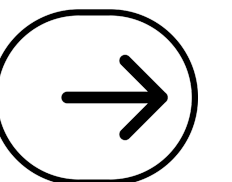
**MIXER**



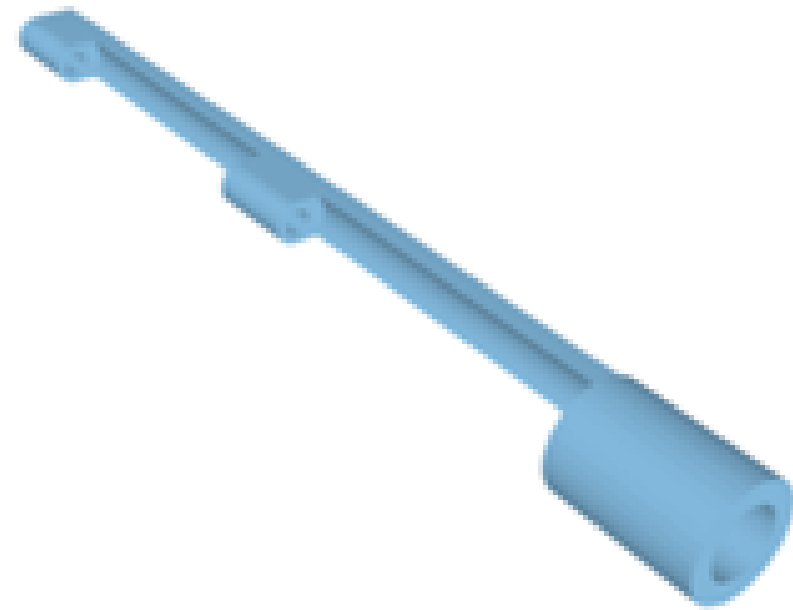
**BOTTLE CAP DROP**



**CAPPER**



# PERFUME MAKING UNIT



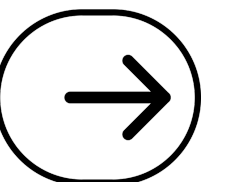
**SUCK STAND**



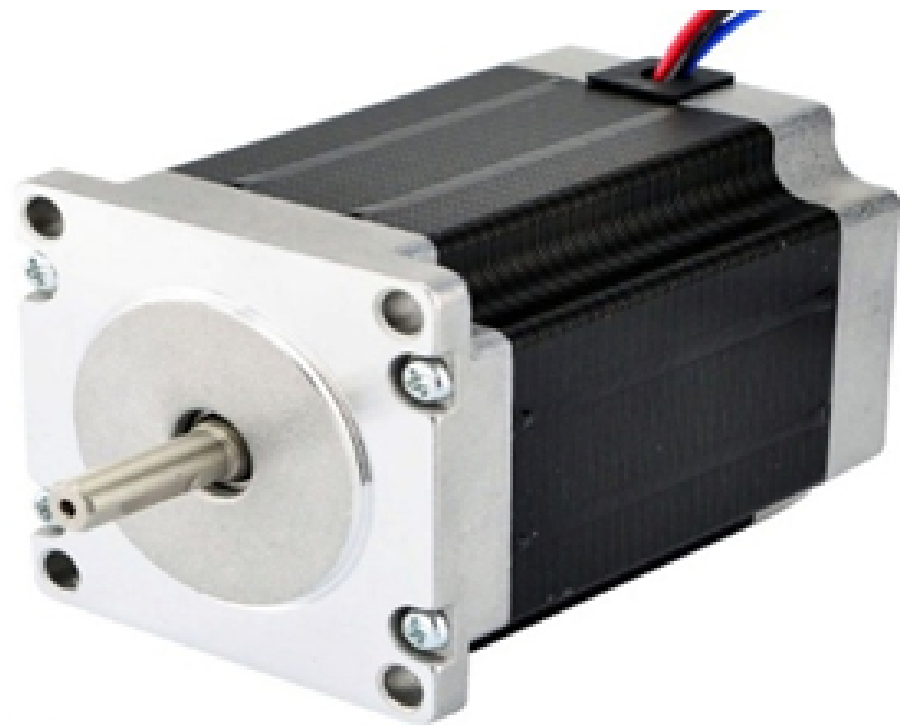
**SERVO GRIPPER**



**REVOLVING NOZZLE**



# PERFUME MAKING UNIT



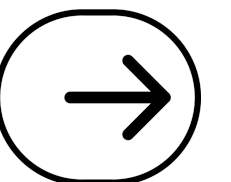
**STEPPER MOTOR**



**DC MOTORS**



**RELAY**



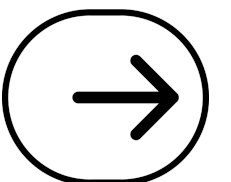
# CONTROL UNIT



**ARDUINO MEGA**



**ESP8266**



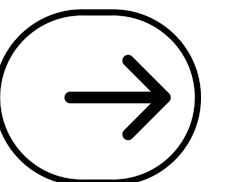
# POWERING DEVICES



**COMPUTER POWER SUPPLY**

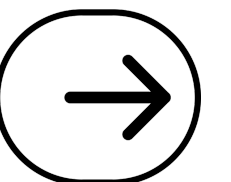


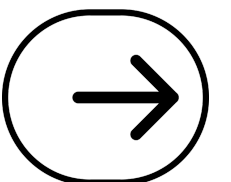
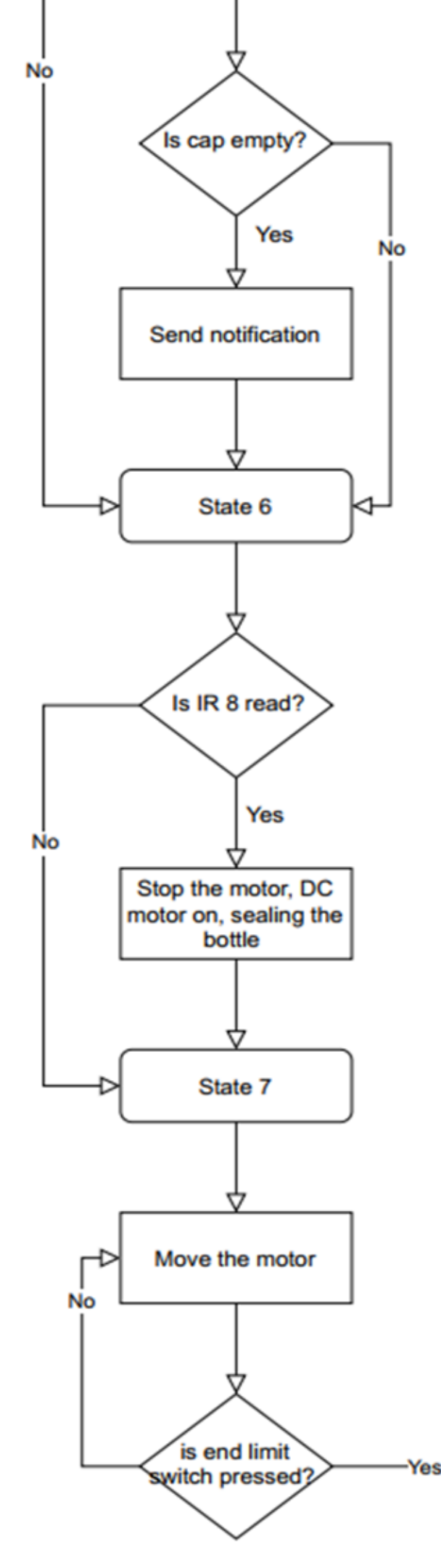
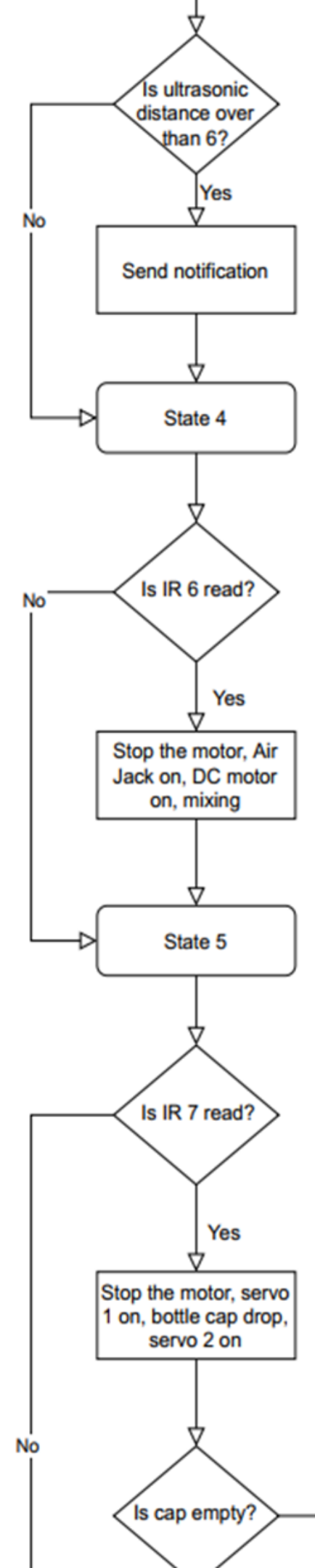
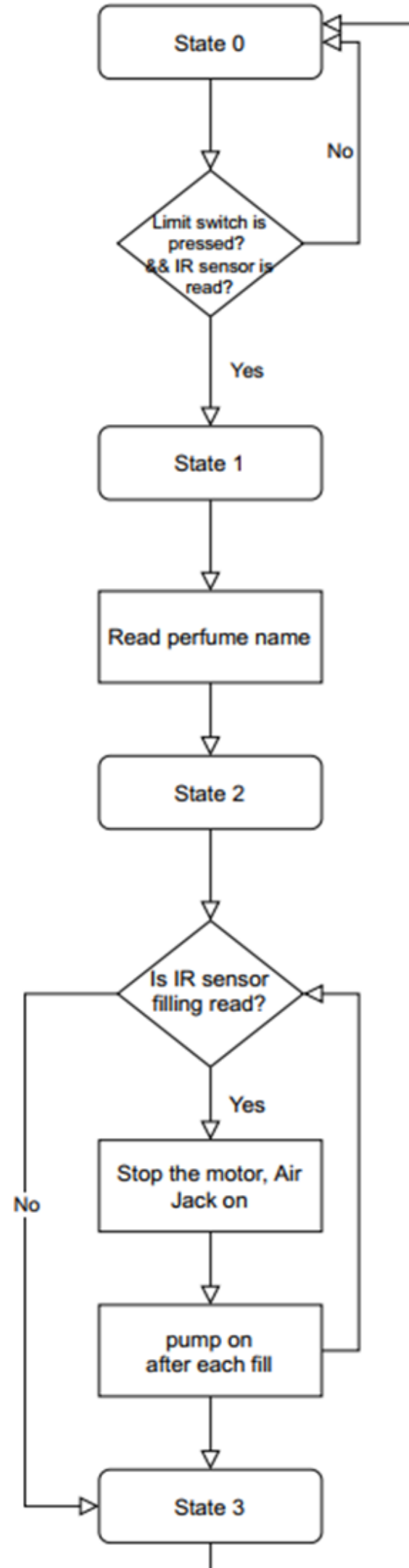
**AC ADAPTER 12V**



# A STEP-BY-STEP OVERVIEW

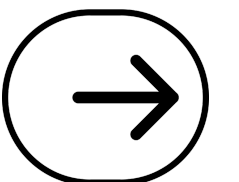
HARDWARE PROJECT



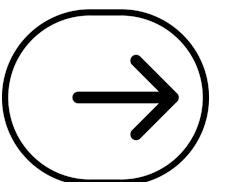


# ESP8266 WEB SERVER

HARDWARE PROJECT



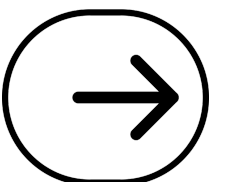
# ESP8266 WEB SERVER



# ESP8266 WEB SERVER

## Sensor Data:

```
SENSOR:0,DISENSOR:0,DISTANCE:6  
SENSOR:1,DISTANCE:6 SENSOR:3,DISTANCE:6
```



# CONSTRAINTS

Complexity and unfamiliarity with components made summer semester timeframe challenging.

Need for precision in handling perfume bottles. Sensor challenges due to lighting; frequent recalibration required.

Difficulty obtaining specific design pieces.  
Assembled the design manually, sourcing pieces from various locations.

Interfacing the Arduino with other components (relays and motors).  
Connecting the Esp8266 to the (internet).



# FUTURE WORK

# 1

## Weighing Mechanism

Introduce a scale for real-time bottle weight monitoring and malfunction detection.

# 2

## Perfume Detection

Use gas sensors to analyze sprayed fragrances and replicate similar aromas.

# 3

## Web

## Customization

Create a dedicated webpage for users to design perfumes by selecting aromatic notes and concentrations.



# THANKS



FOR YOUR ATTENTION

