

# TEAM DELIVERABLES

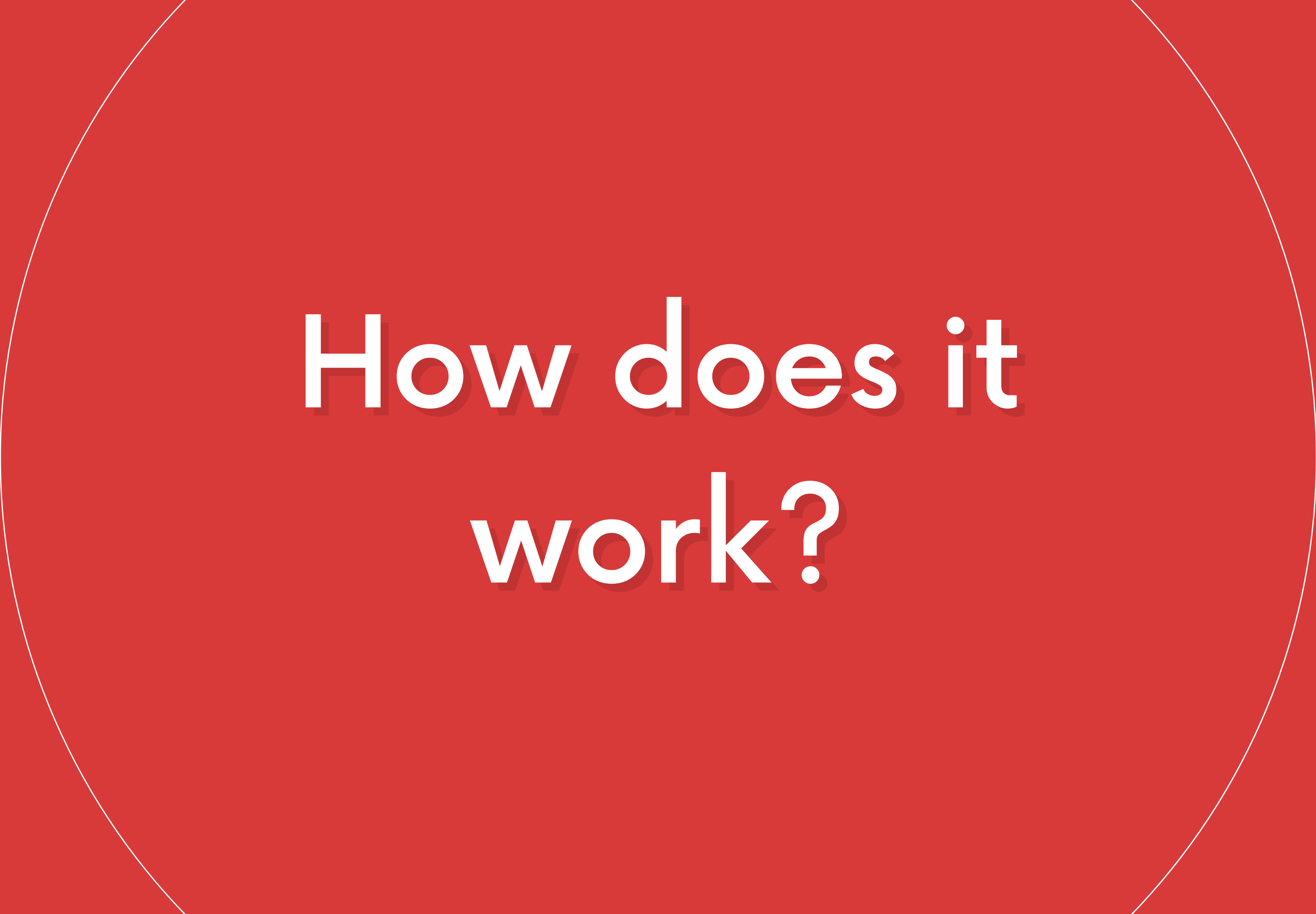
*Medisafe  
Lockbox*

# Project Introduction

We have designed a medical lockbox, to:

- help store and organize medicine
- help users take medication on time
- make the process of taking multiple medicine easier
- make the process of taking medicine safer



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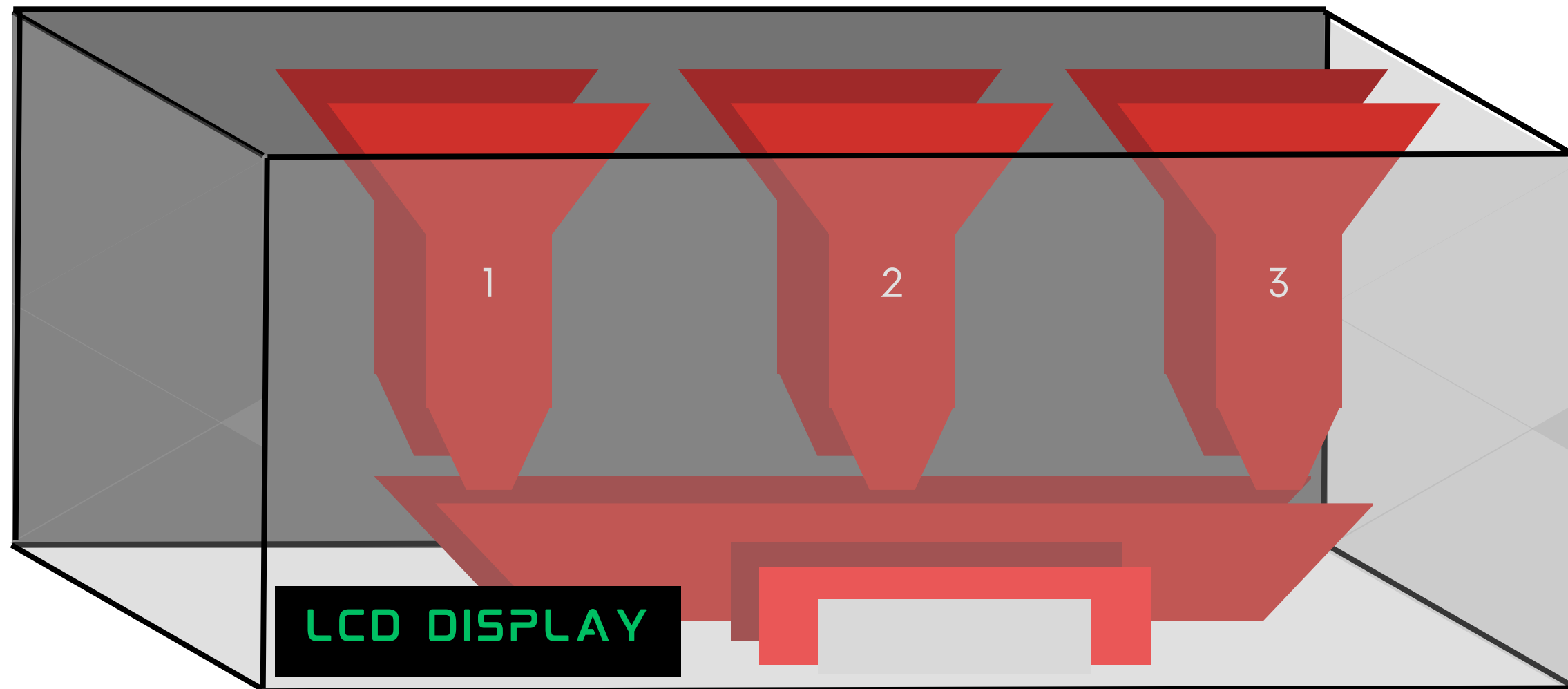
How does it  
work?

# Design

It is a battery powered lockbox, that would dispense medicine at the appropriate time.

LCD display for easier ease of understanding, and app connectivity

It uses a system of servo motors, IR sensors, humidity/temperature sensors to dispense the pills



# Special features



## **FUNNEL DESIGN**

We use a funnel to sort the pills according to 3 different sizes



## **MODULAR DESIGN**

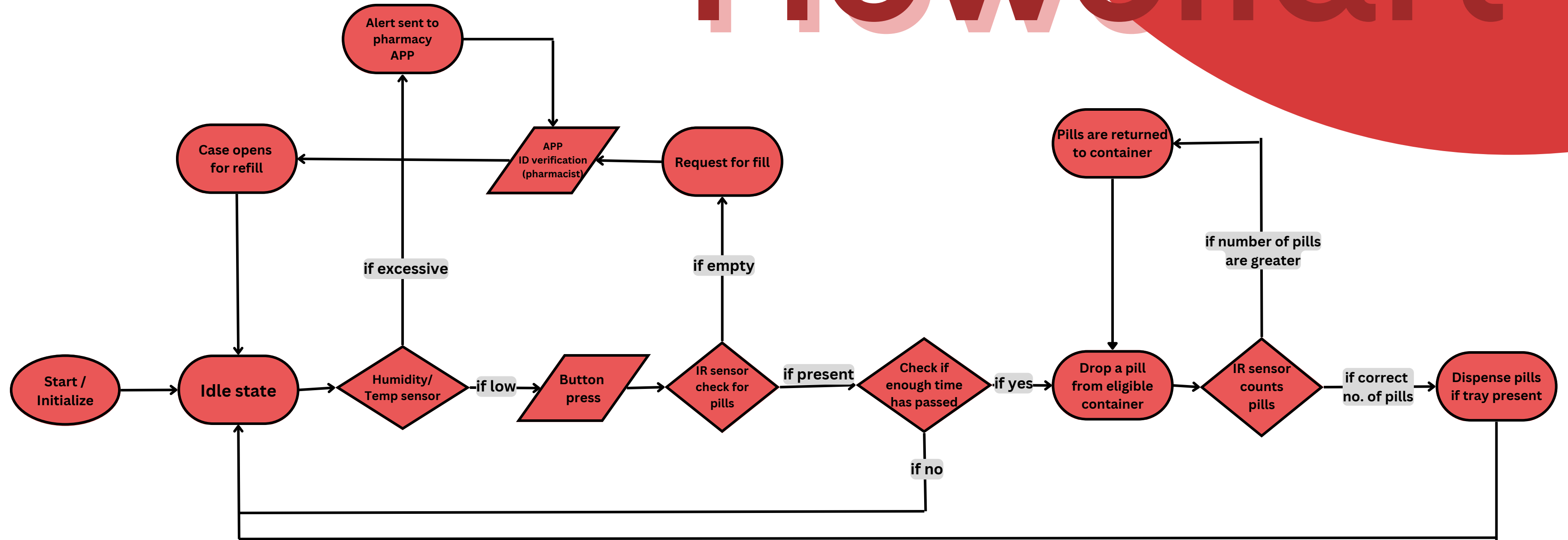
Depending on which pills are to be consumed, the appropriate number of containers can be slotted



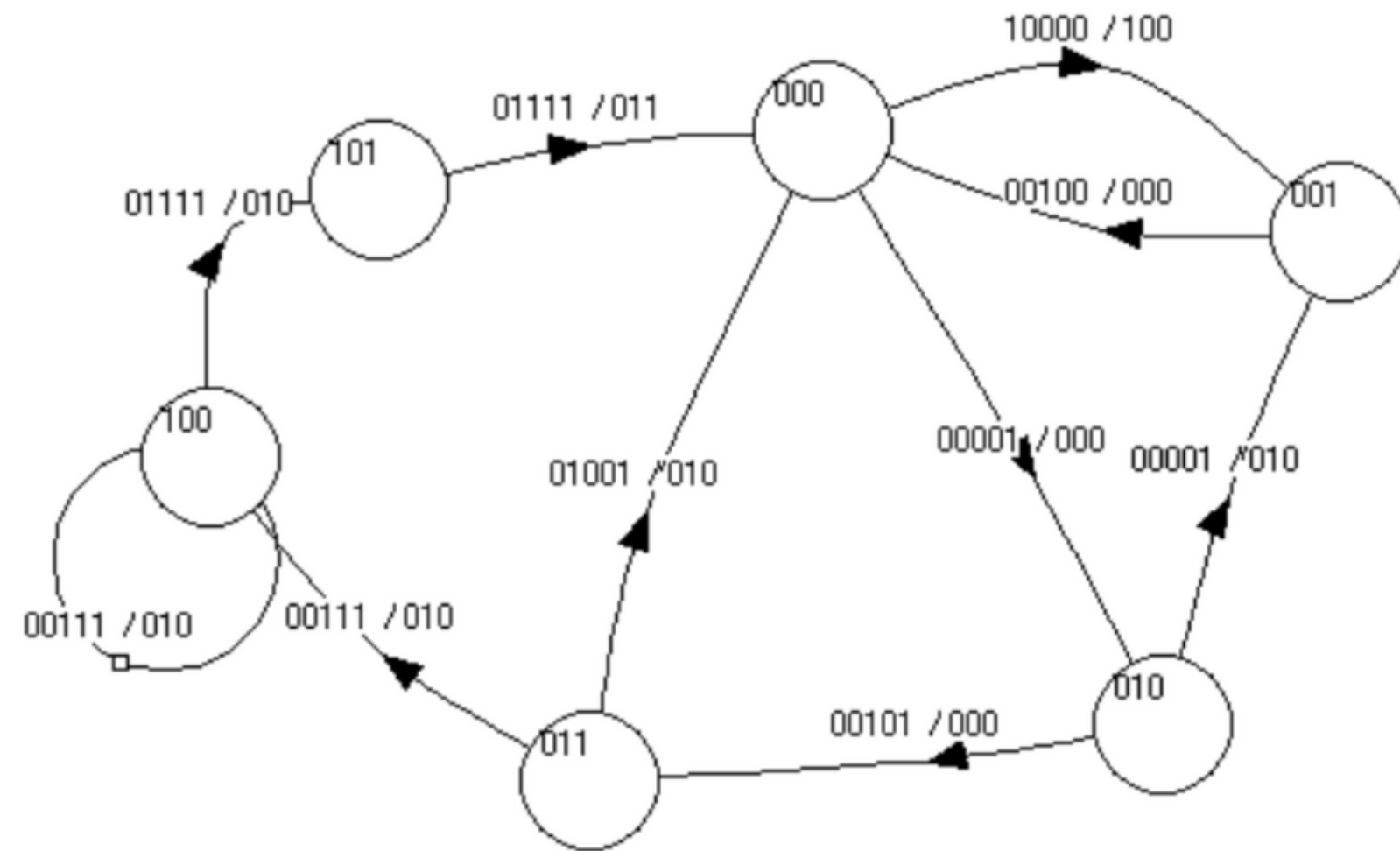
## **APP CONNECTIVITY**

Connection to a web app, allows for easier tracking

# Flowchart



# State Machine



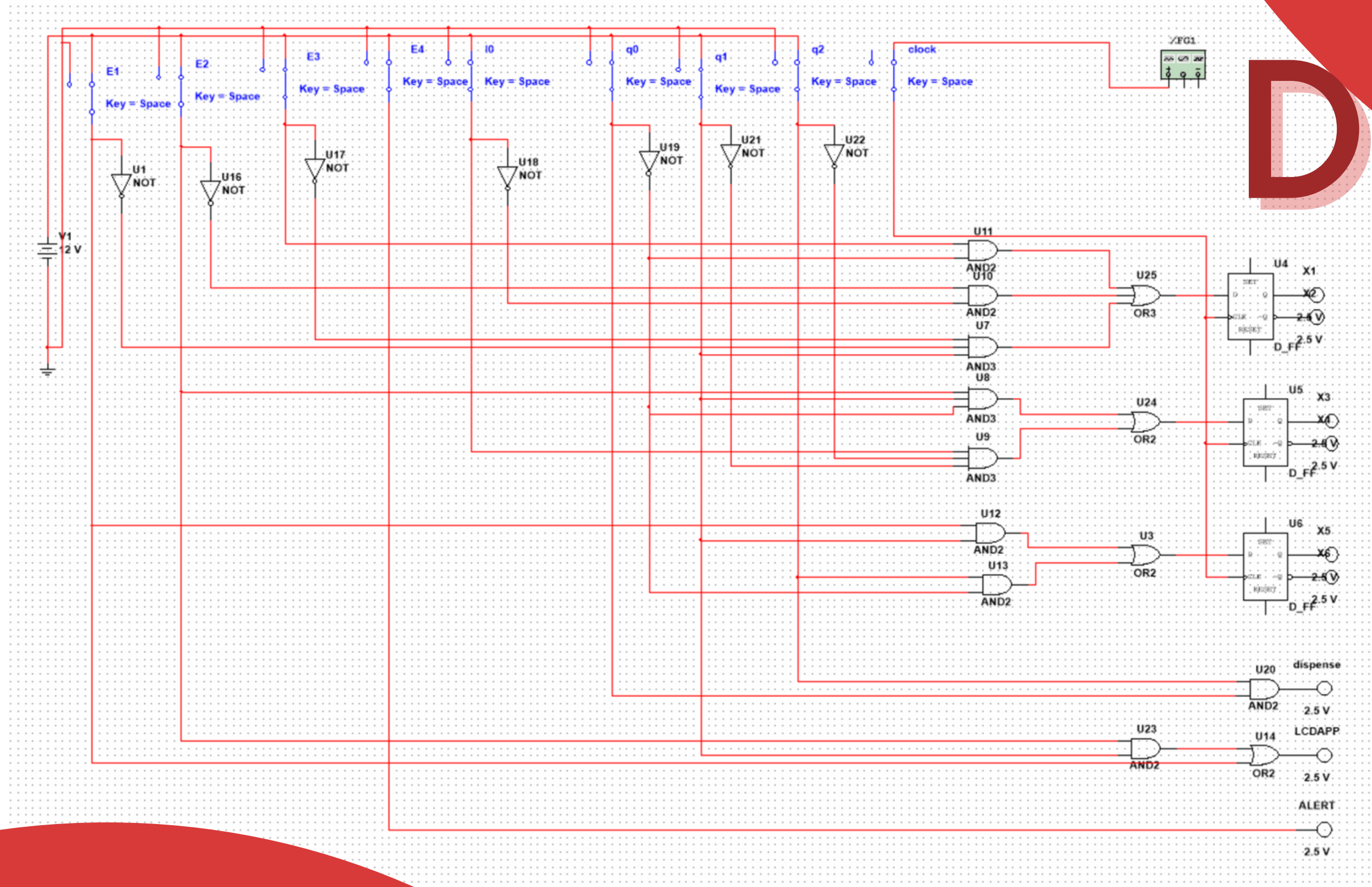
State	Name
000	IDLE
001	APP
010	Check for pills
011	Check for time
100	Dropping pills from container
101	dispensing pills

Input bits (X5,X4,X3,X2,X1)	Role
X5	Temp/Humidity sensor
X4	IR sensor 2 (check for tray)
X3	IR sensor 1 (check for pill)
X2	Time
X1	Button

Output bits (S2,S1,S0)	Role
S2	Alert
S1	LCD/APP
S0	Dispense



# Multisim Design







# Concept App

# Budgeting

# Parts costs

Sno	Part	Cost	Quantity	Total Cost
1	Arduino Mega 2560	69 AED	1	69 AED
2	NE555 timers	10.30 AED	2	20.6 AED
3	Stepper motor	23.80 AED	4	95.2 AED
4	Vibration motor	30 AED	1	30 AED
5	IR Sensor	14.96 AED	4	59.84 AED
6	Temperature and Humidity Sensor	24 AED	3	72 AED
7	Piezo Pressure Sensor	9.25 AED	4	37 AED
8	Web App Development	30000 DHS	N/A	30,000 AED
9	3D INK	90 AED	N/A	90 AED
Total				473.65 AED+30,000 AED

# Labour costs

Deliverables	Expected time (hours)	Wages (per person)	Wages (per team)	Total Cost (Team)
1	5	300 AED	1500	7500 AED
2	5	300AED	1500	7500 AED
3	10	300 AED	1500	15000 AED
4	9	300 AED	1500	13500 AED
5	25	300 AED	1500	37500 AED
6	22	300 AED	1500	33000 AED
7	6	300 AED	1500	9000 AED
8	3	300 DHS	1500	4500 AED
Total				127,500 AED

# Return on Investment



- 3 year sample size
- Taking LIFE Pharmacy on board. 300+ Stores
- COST of parts comes up to AED 500 + AED 130,000 for Labour + AED 30,000 for app development.
- Our total costs comes up to 988,000
- Revenue becomes 1.8 Million if we sell 1800 products.
- that would bring us a gain of 812,000 dhs, an roi of 82.2% and an annualized roi of 22.13%.

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# Marketing

## PRIMARY GOAL

to make sure that there are no medication errors or substance use disorders, since these two issues are becoming more prevalent.

## HEALTHCARE ECOSYSTEM

Healthcare systems are quite concerned about this since it may lessen the effectiveness of the treatment or result in grave outcomes including hospitalisation and death.

## PREVENTION

Our pill dispenser will disperse one pill at the designated time. This will ensure that the patient takes the right dosage of medication at the right time. Also, the pharmacist or doctor who loaded the pills and set the timing will be notified or warned if the patient tries to overdose or attempts to open or break the container.

## EASE OF USE

The patient is reminded to take their prescriptions as directed and the risk of overdosing or underdosing is reduced. Our pill dispenser stands out because it warns customers if an overdose attempt is made in addition to dispensing tablets.



## STATISTICS

Overdosage accounts for 30% of the 500,000 deaths worldwide linked to drug abuse. With the increased number of overdose and underdose instances occurring internationally, we think that this would be a safe and prudent investment for sick people.

## TARGET

The project's target duration has been decided by our team at three years. We intend to work with pharmacies and hospitals to promote our product. We'll give them a 15% cut of our earnings.

## ADDITIONAL MARKETING

Another marketing technique we were exploring, was working with rehab centers, where patients have intentionally overdosed themselves, and nursing homes, where our device will assist elderly residents in taking the proper dosage of meds at the right time. This prevents them from overdosing or underdosing.



**CONCLUSION**

Thank  
you!