VIT-AP UNIVERSITY

AUTOMATED MEDICINE VENDING MACHINE

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GUIDED BY:

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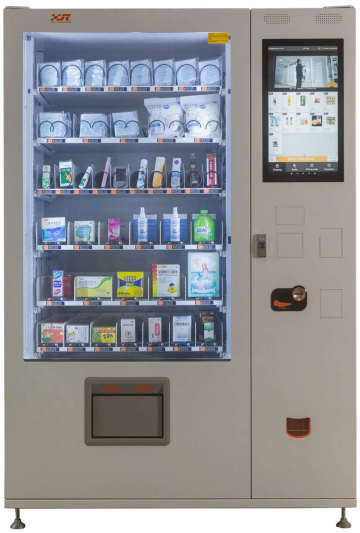


1.Problem statement:

The problem is the lack of 24/7 access to medical stores, which can be critical in emergencies at all places. The proposed solution is a portable vending machine that can be set up anywhere, providing uninterrupted service and eliminating the need for human resources. This machine would ensure easy access to medicines when required and prevent faulty distribution. The challenge lies in implementing this solution effectively to address the identified problem. This concept combines convenience, accessibility, and reliability, aiming to revolutionize the way we access medicines.

2. Identification of problem:

* Lack of space to have pharmacies.

*Unauthorized medicine distribution.(selling of medicine without any prescription)

*Inefficient organization of medicine in the stores causing the increase in purchasing time.

3. Objective of the project:

To design and implement a portable, user-friendly vending machine that provides round-the-clock access to essential medicines. This project aims to eliminate the dependency on human resources, ensure uninterrupted service, and prevent faulty distribution of medicines. It seeks to revolutionize health care accessibility, particularly in emergency situations, by leveraging automation and mobility. The ultimate goal is to enhance public health outcomes through timely and reliable access to medications.

3. Outcomes of the project:

*The project is made with the intention to provide a customer friendly and faster way of dispensing medicine.

* Medicine availability for 24/7 with no human contact.

*The vending machine is useful to conserve space where there is no availability of large area (in the places like railway station , bus stands etc.,)

4. Hardware Components Required:

i. Arduino Mega 2560

ii. DC Gear Motor(12v, 30rpm)

iii. L293D Motor --300-400

iv. IR --200-300

v. Heat --100-250

vi. LM7805 Voltage Regulator

vii. Hc-05 Bluetooth Module

viii. Bread Board+9. Jumper Wires(Male & Female)

ix. Spiral Spring depending upon the size of medicine.

5.Software Components:

i.Aurdino software

ii,Backend software

iii.UI software

iv.Payment processing software

v.Communication protocol

vi.Security software

6.Budget Estimation:

1. Arduino Mega 2560-- 4000(if original) 2-2.5k
2. DC Gear Motor(12v, 30rpm)--500-600
3. L293D Motor Driver--300-400
4. IR Sensor--200-300
5. Heat Sink--100-250
6. LM7805 Voltage Regulator--100
7. Hc-05 Bluetooth Module--350-450
8. Bread Board+9. Jumper Wires(Male & Female)--240
9. Spiral Spring depending upon the size of medicine.

Total estimate:4K -5K(approx)

NOTE:
Actual expenses may vary and additional costs may be incurred during the project development phase

7. Timeline of progress:

1. Components Collection:

- March 5th - March 12th

*Activities involved:
i.ordering of components
ii.Finalizing the design of the vending machine model, including the layout

2.App and Model Design:

-March 6th - March 19
-April 4th-April 25

***Activities involved:**

i.Designing the user interface for the mobile or web app.
ii.Developing the backend software for managing inventory, transactions, and user data.

3.Full Scale Development:

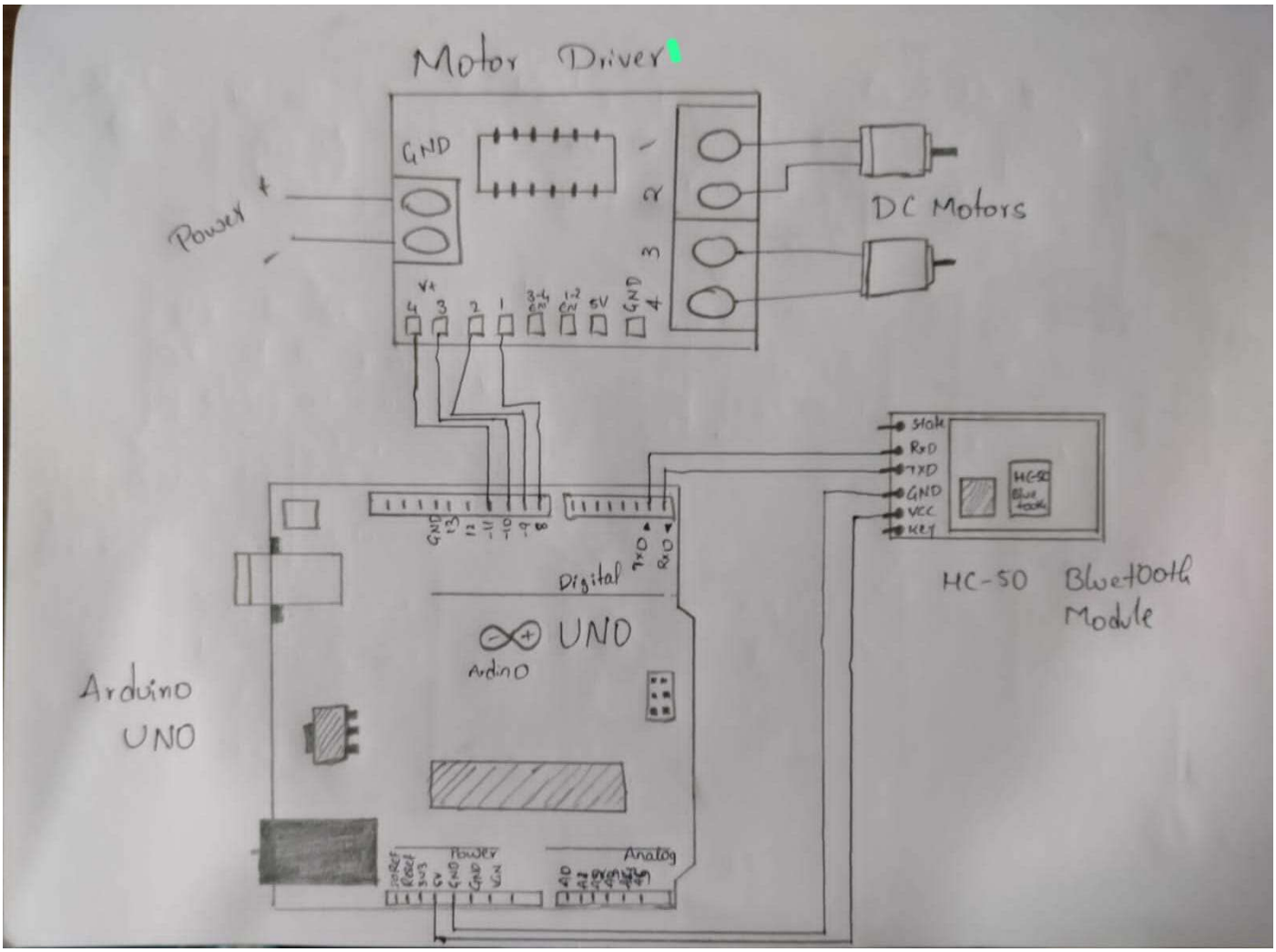
April 4th - April 25

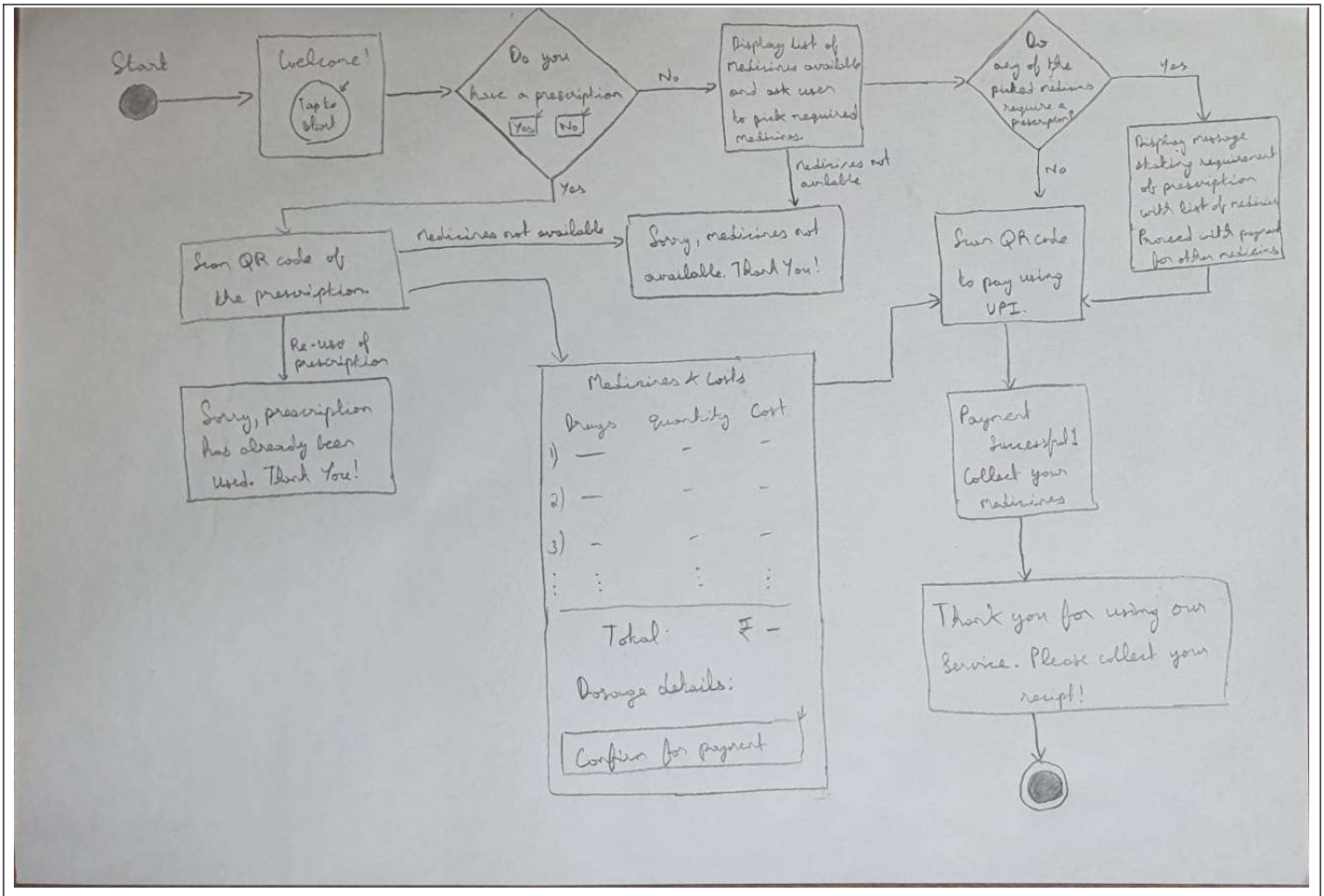
*Activities involved:

i.Assembling of components
ii.Full-scale development of the embedded software for controlling the hardware components.
iii.Integration and testing of the software components.

4. Testing & Final Documentation:

8. Rough Circuit Diagram and Activity Diagram:




Start
Welcome!
Tap to start
Do you have a prescription
Yes
No
No
Display list of medicines available and ask user to pick required medicines.
Do any of the picked medicines require a prescription
Yes
No
Display message stating requirement of prescription with list of medicines. Proceed with payment for other medicines
Scan QR code of the prescription.
Medicines not available
Sorry, medicines not available. Thank You!
Medicines not avilable
Re-use of prescription
Sorry, prescription has already been used. Thank You!
Medicines & Costs
Drugs Quantity Cost
1) — - -
2) — - -
3) - - -
Total: ₹ -
Dosage details:
Confirm for payment
Scan QR code to pay using UPI.
Payment successful! Collect your medicines
Thank you for using our service. Please collect your receipt!