GUJARAT TECHNOLOGICAL UNIVERSITY

Chandkheda, Ahmedabad

Affiliated

GOVERNMENT ENGINNERING COLLEGE BHAVNAGAR

, BHAVNAGAR

A PROJECT REPORT

ON

AUTOMATIC DRUG DISPENSER

Under Subject of

DESIGN ENGINEERING –II B

B.E. III, Semester VI

(Electronics & Communication ENGINEERING)

Submitted by:

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ABSTRACT

We live in a world in which technology embraces us, makes our lives easier and more enjoyable. Although we all benefit from this emerging technology, certain groups of people need more help and support then others: Patient and Remote Areas. For them technology means a way of having an almost normal life. So, we focused our attention on an age-old concept: the smart Medication Technology, more precisely Automated Drug Dispenser is a part of the smart paradigm. This Machine is mainly designed for the pharmacy in the hospitals. And ending the queue in the front of pharmacy.

This report discusses ways in which new technology could be harnessedto create an intelligent solution in pharmaceutical with a focus on user- based information. The Automatic Drug Dispenser with prescription QR code integration presents a cutting-edge solution for accurate and precise medication dispensing. This system employs QR code technology linked individual Prescriptions, ensuring the accurate and secure delivery of the prescribed medication in the right dosage. By seamlessly integrating with healthcare databases, the dispenser guarantees real-time verification, reducing the risk of errors and enhancing patient safety. This innovation not only streamlines the medication process but also promotes adherence by providing a full proof method for administering the correct amount of medicine. The Automatic Drug Dispenser reduces the queue in the front of the hospitals pharmacy and Human error prevent patient from mentally and physically from long queue in the pharmacy. The Automatic Drug Dispenser with QRCode functionality represents a significant step towards improving medication management and fostering a safer healthcare environment.

A,E,I,O,U: FRAMEWORK

- A - Activity
- E - Environment
- I - Interactions
- O - Objects
- U - Users

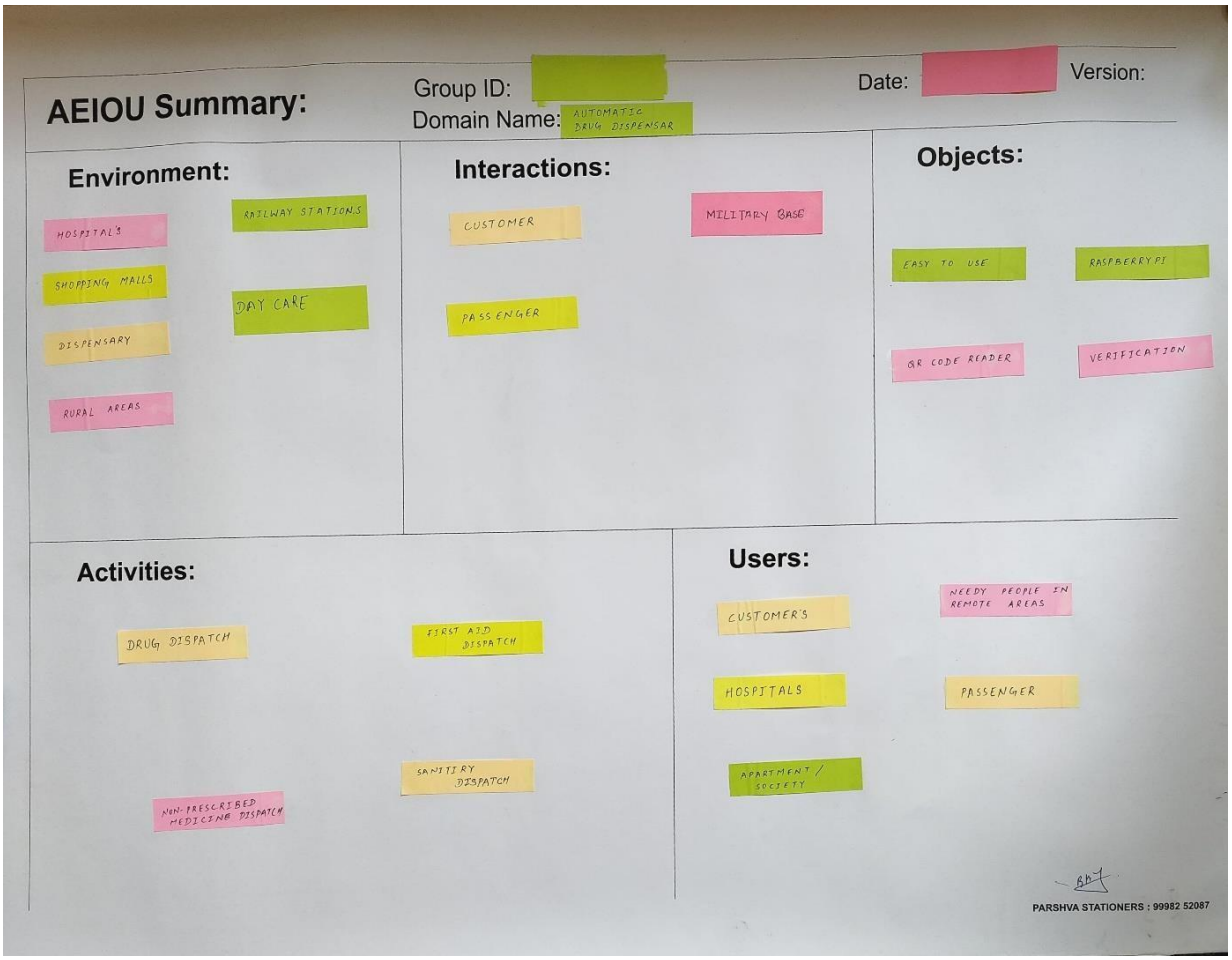


Fig. 1: AEIOU Framework

1.) ACTIVITY: -

- Drug Dispatch
- Sanitary Dispatch
- First Aid Dispatch
- Non-Prescribed medicine

2.) ENVIRONMENT: -

- Apartment/Flats
- Rural Areas
- Dispensary
- Shopping Malls
- Railway / Metro Station
- Hospitals

3.) INTERACTIONS: -

- Hospital Staff
- Customer
- Passengers

4.) OBJECTS: -

- Easy to Use
- Raspberry pi
- QR Code Reader
- Verification

5.) USERS: -

- Customers
- Hospitals
- Apartment/Society
- Customer’s
- Passenger’s
- Needy People In Remote Areas

EMPATHY CANVAS

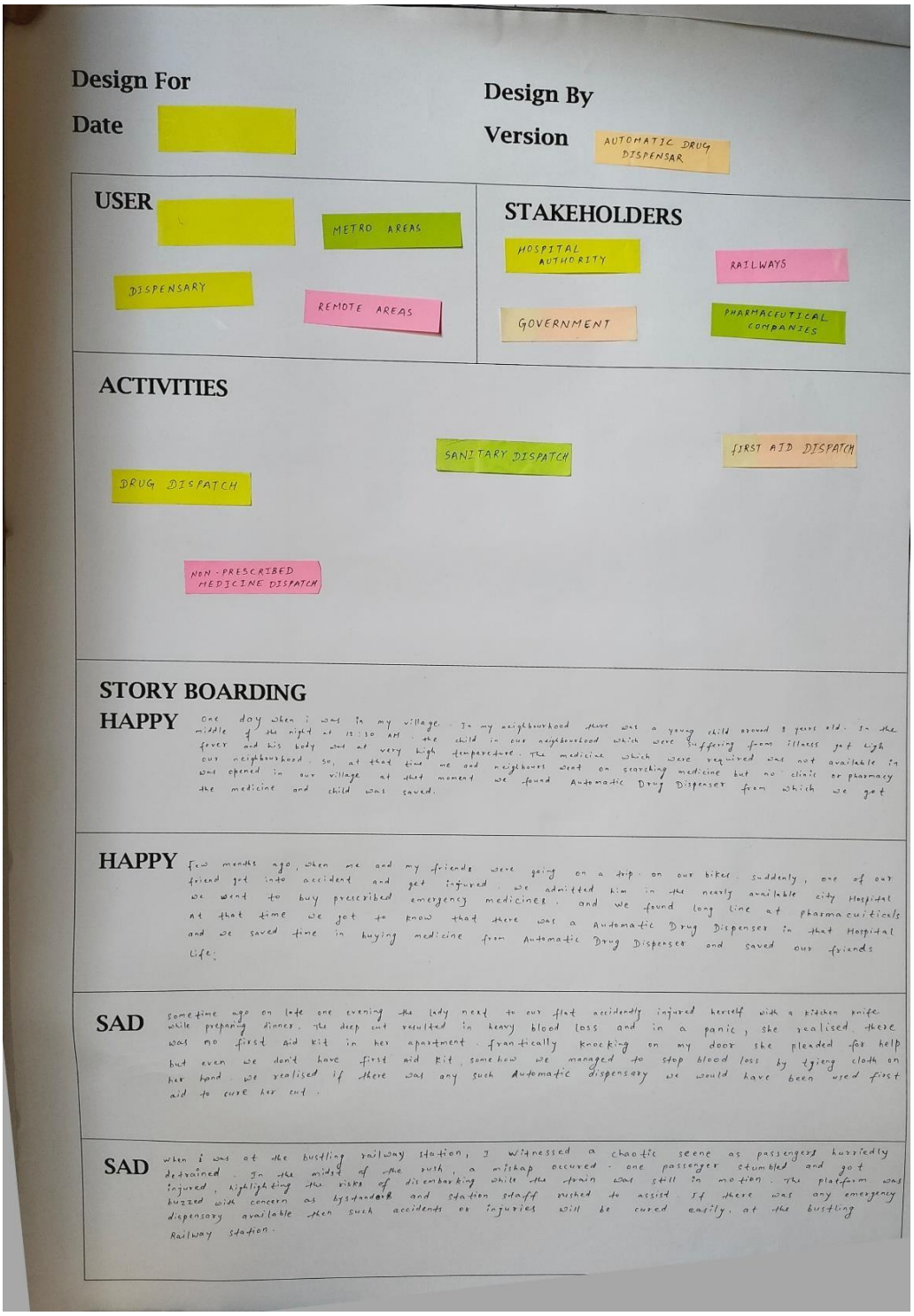


Fig. 2: Empathy Canvas

1.) USERS: -

- Hospitals
- Metro Areas
- Dispensary
- Remote Areas

2.) STAKEHOLDERS: -

- Hospital Authority
- Pharmaceuticals Companies
- Malls and Shop Owner
- Railway and Metro Authority
- Government Authority

3.) ACTIVITY: -

- Drug Dispatch
- Sanitary Dispatch
- First Aid Dispatch
- Non-Prescribed Medicine

IDEATION CANVAS

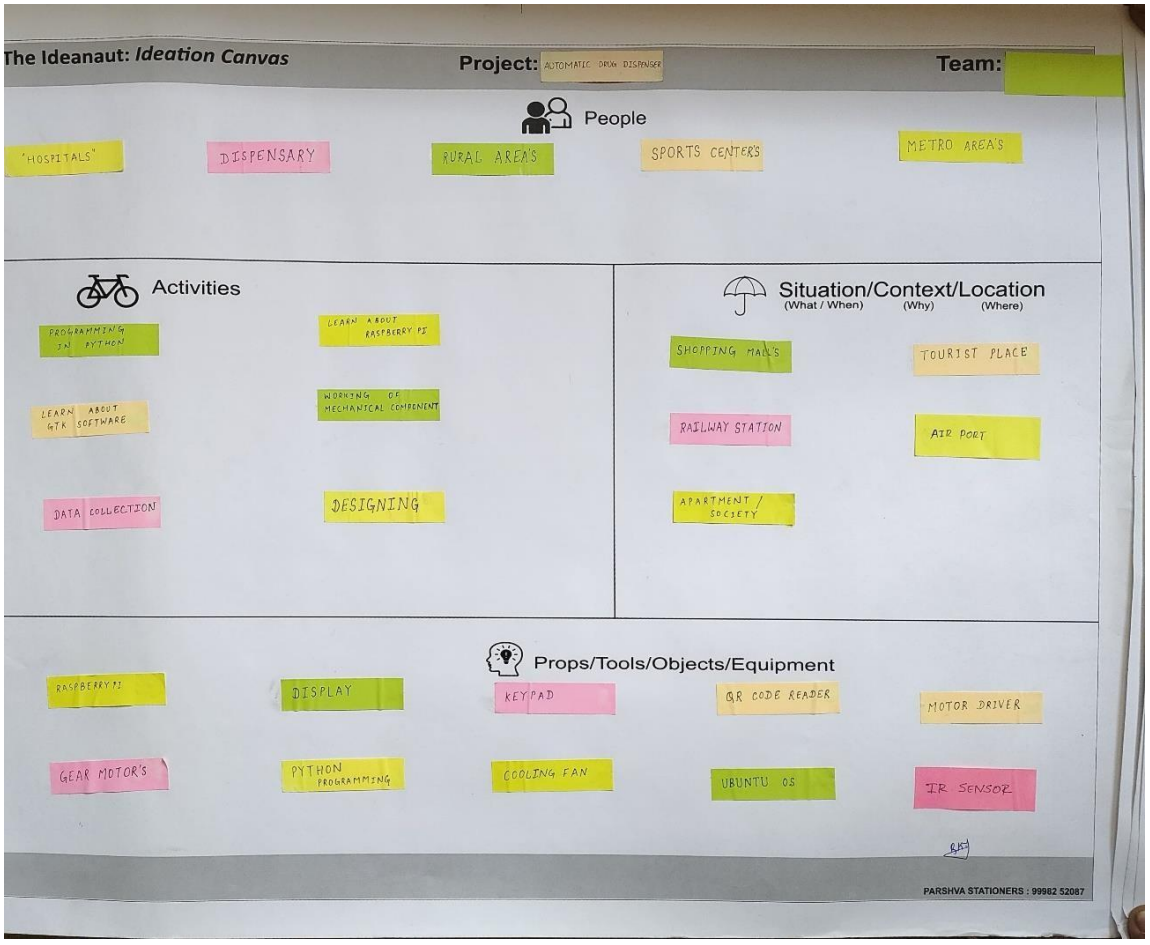


Fig. 3: Ideation Canvas

1.) PEOPLE: -

- Hospitals
- Pharmaceuticals Company
- Rural Areas
- Sports Center
- Metro Areas
- Passenger
- Mall Authority
- Customer's

2.) ACTIVITIES: -

- Programming in Python
- Learn About Raspberry pi
- Learn About GTK Software
- Soldering Component's
- Data collection
- Designing

3.) SITUATION/CONTEXT/LOCATION: -

- Shopping Malls
- Tourist Palace
- Apartment / Society
- Railway / Metro Station

4.) PROPS/TOOLS/OBJECTS/EQUIPMENT: -

- Raspberry pi
- Display
- Keypad
- QR Code Reader
- Motor Driver
- Gear Motors
- Cooling Fan
- Spring Coil

PRODUCT DEVELOPMENT CANVAS

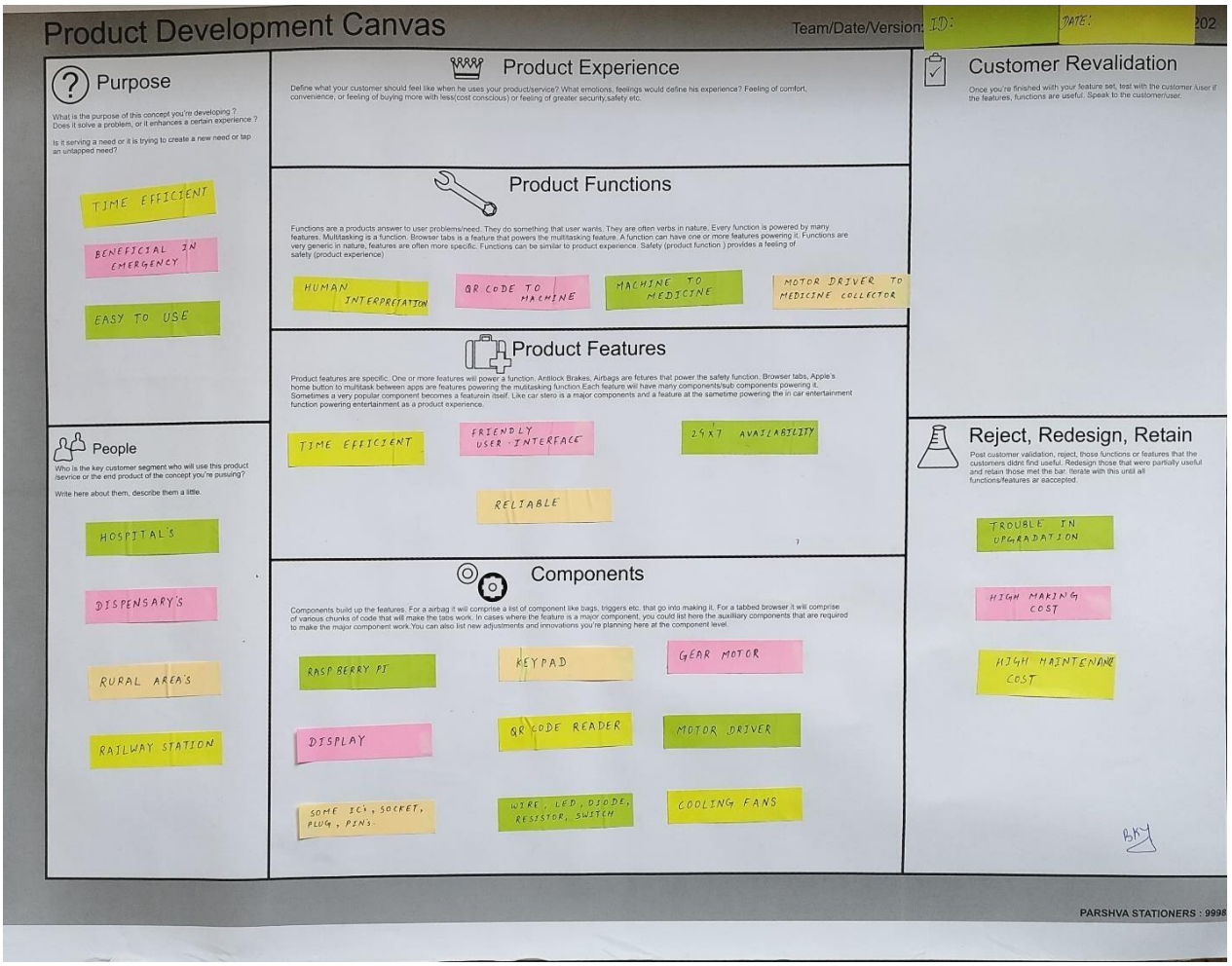


Fig. 4: Product Development Canvas

1.) PURPOSE: -

- Time Efficient
- Easy to Use
- Help to Everyone
- Beneficial in Emergency

2.) PEOPLE: -

- Passengers
- Hospitals
- Dispensary
- Rural Areas
- Railway Station

3.) PRODUCT FUNCTIONS: -

- Human interpretation
- QR Code Reader to Machine
- Machine to Medicine
- Motor Driver to Collector

4.) PRODUCT FEATURES: -

- Improved Customer's Experience
- Time Efficient
- 24 * 7 Availability
- Reliable
- Easy Working
- Friendly User Interface

5.) COMPONENTS: -

- Raspberry pi
- Keypad
- Gear Motor
- Display
- QR Code Reader
- Motor Driver
- LED, Wire,Diode ,Resistor,Switch
- Some IC, Socket, Pins
- Cooling Fans

MIND MAPPING CANVAS

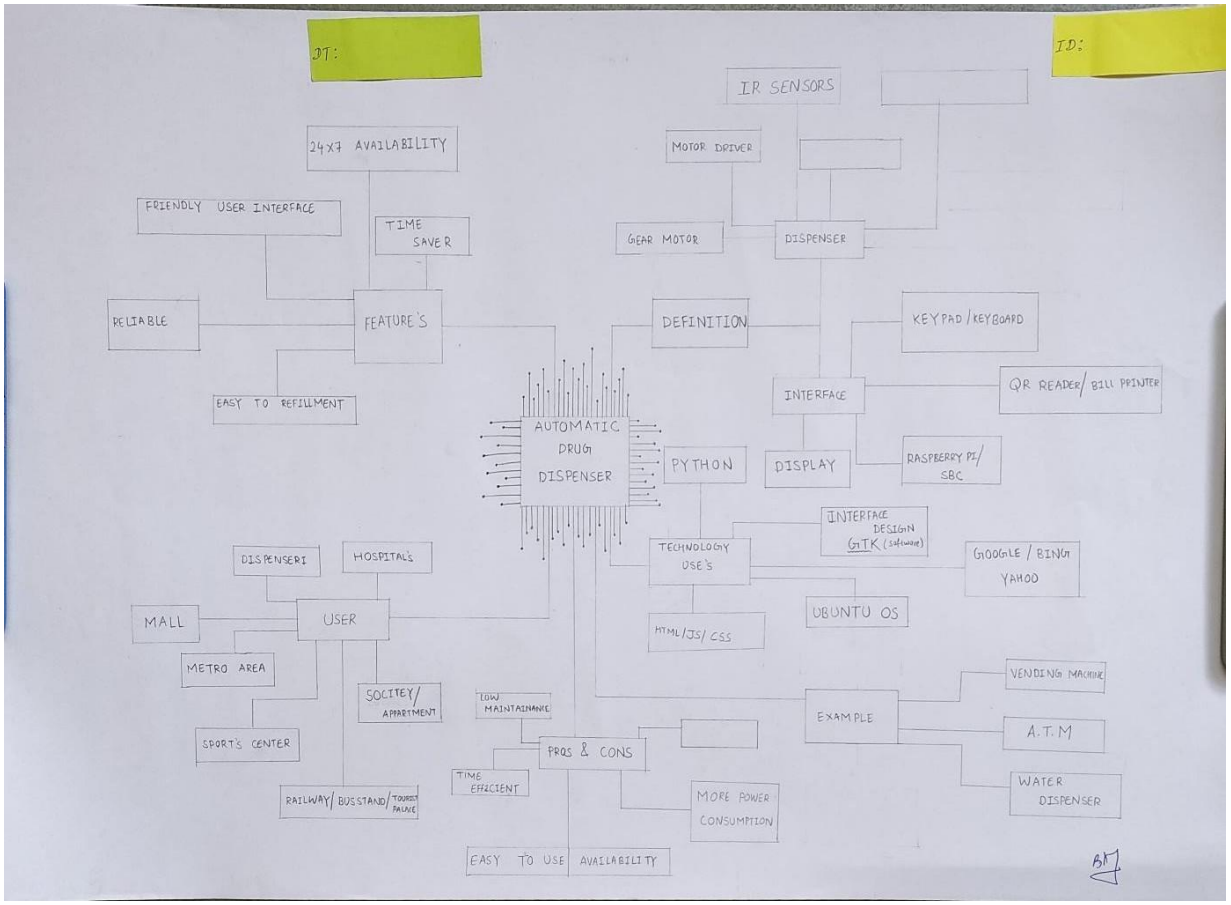


Fig. 5: Mind Mapping Canvas

LEARNINGS NEED MATRIX

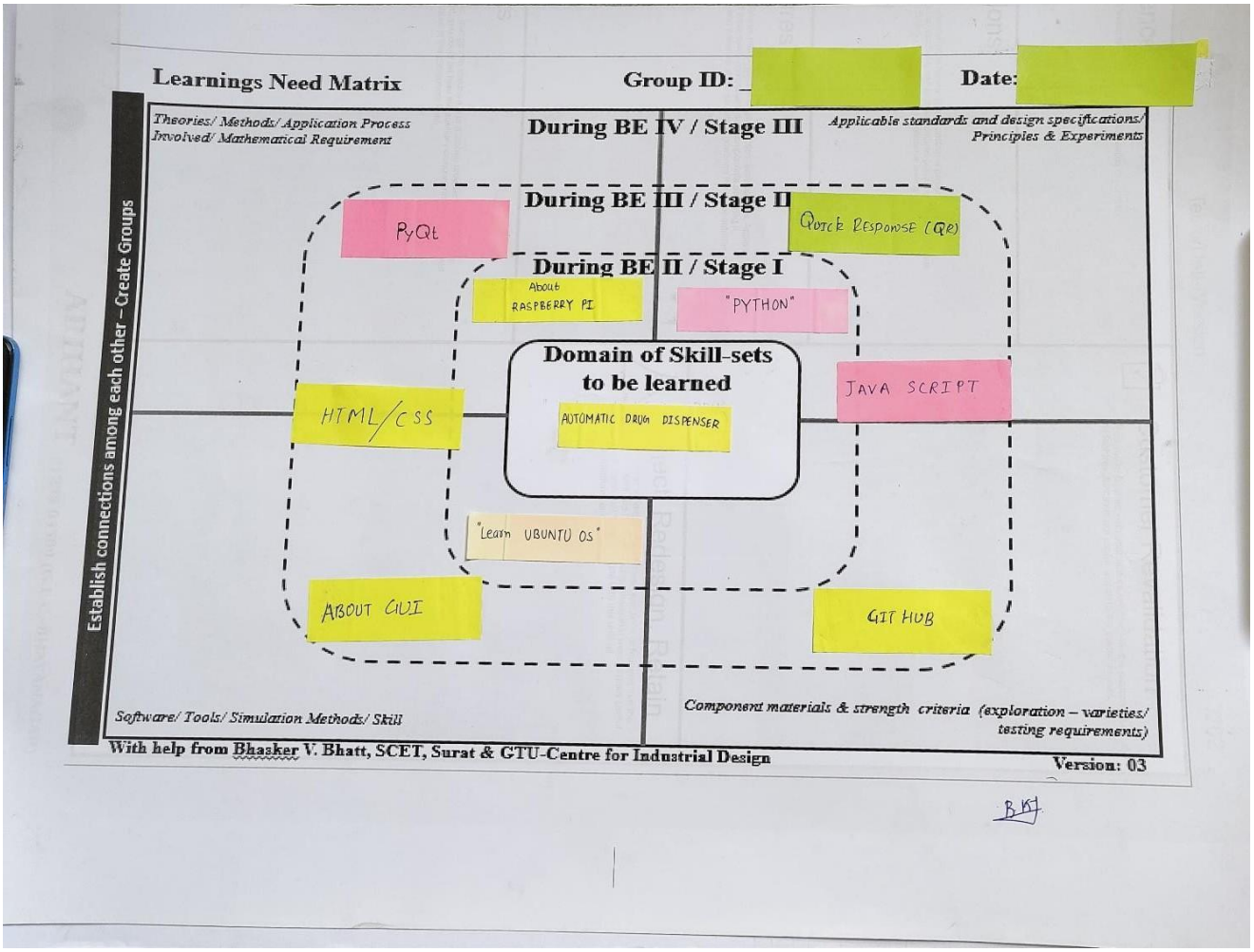
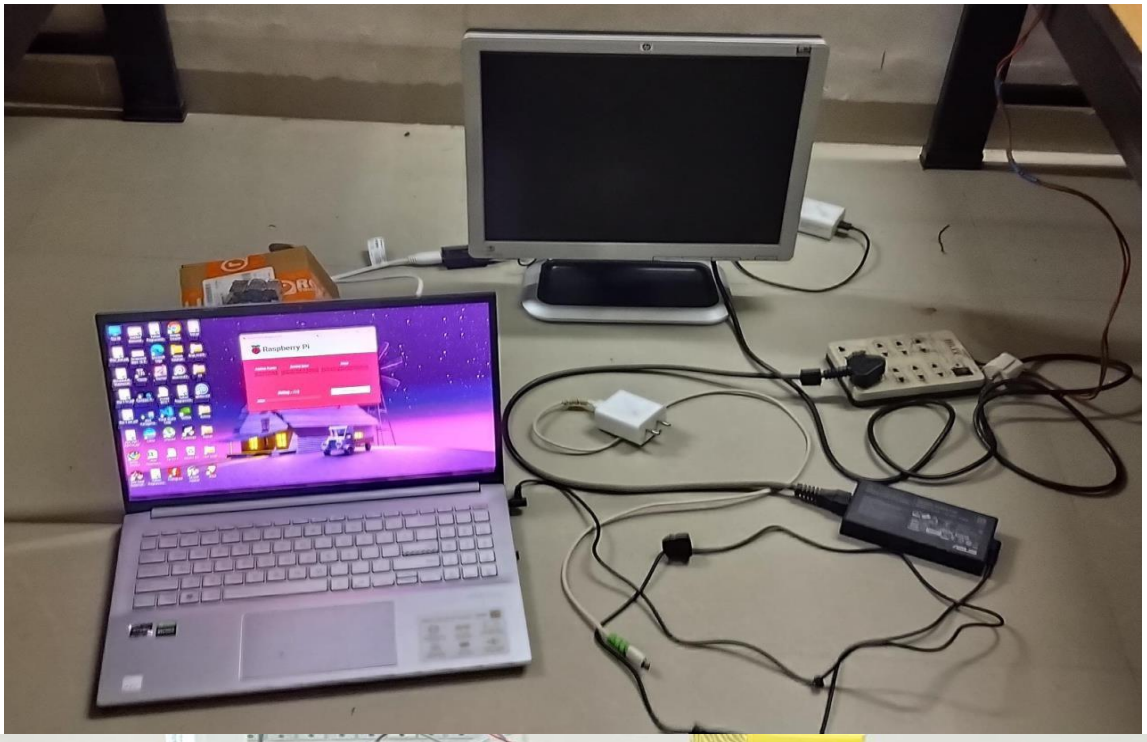
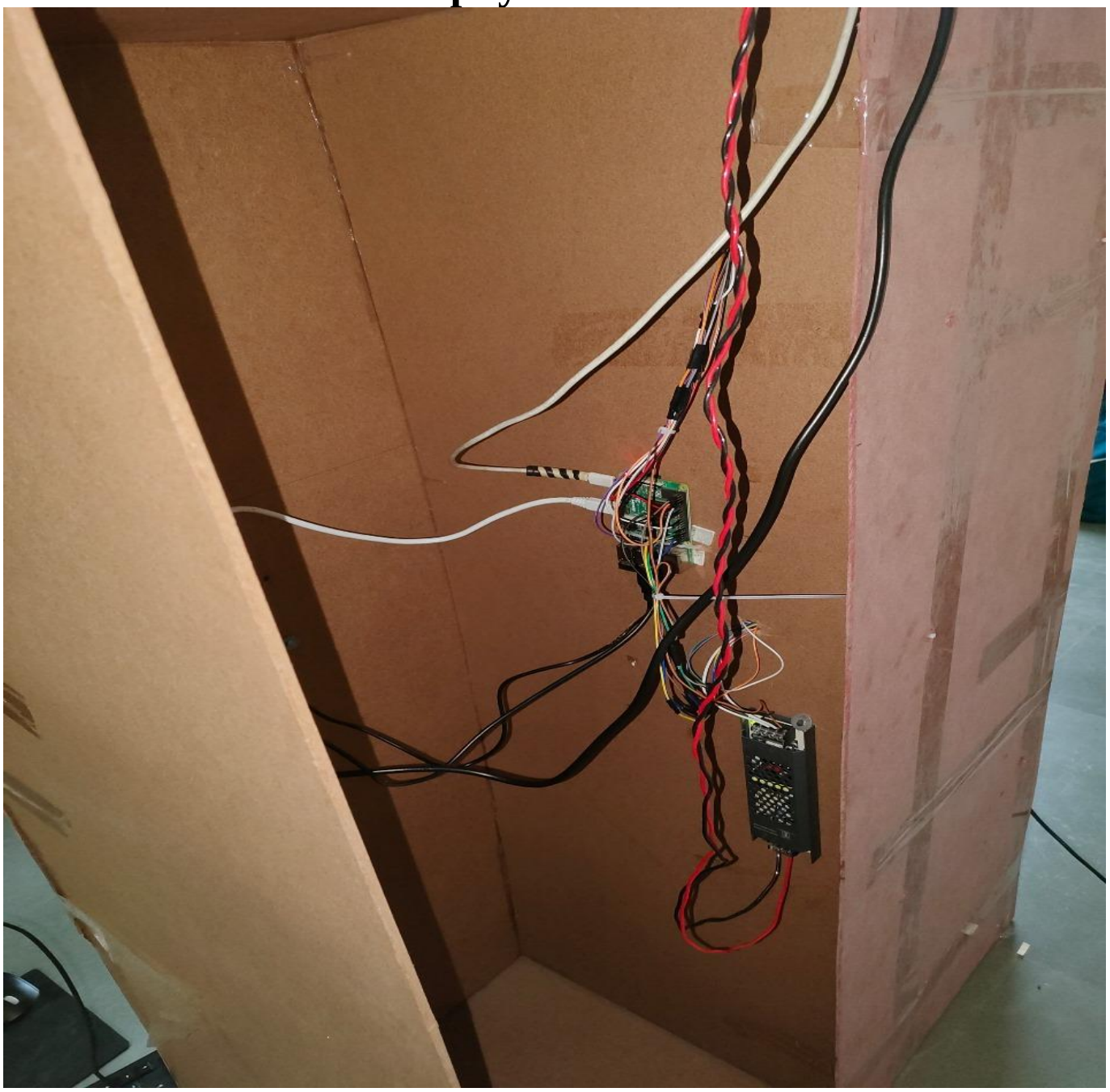


Fig 6: Learnings need matrix

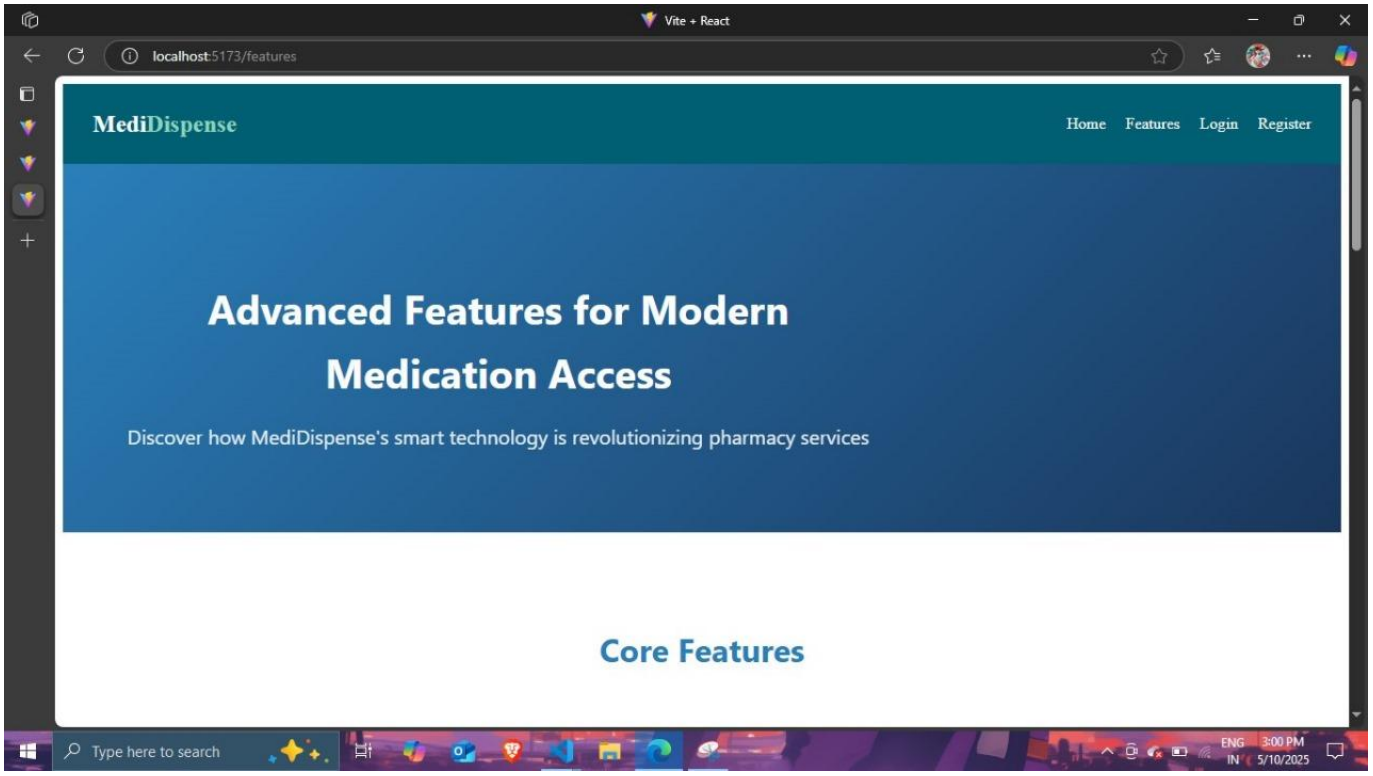
PROTOTYPE

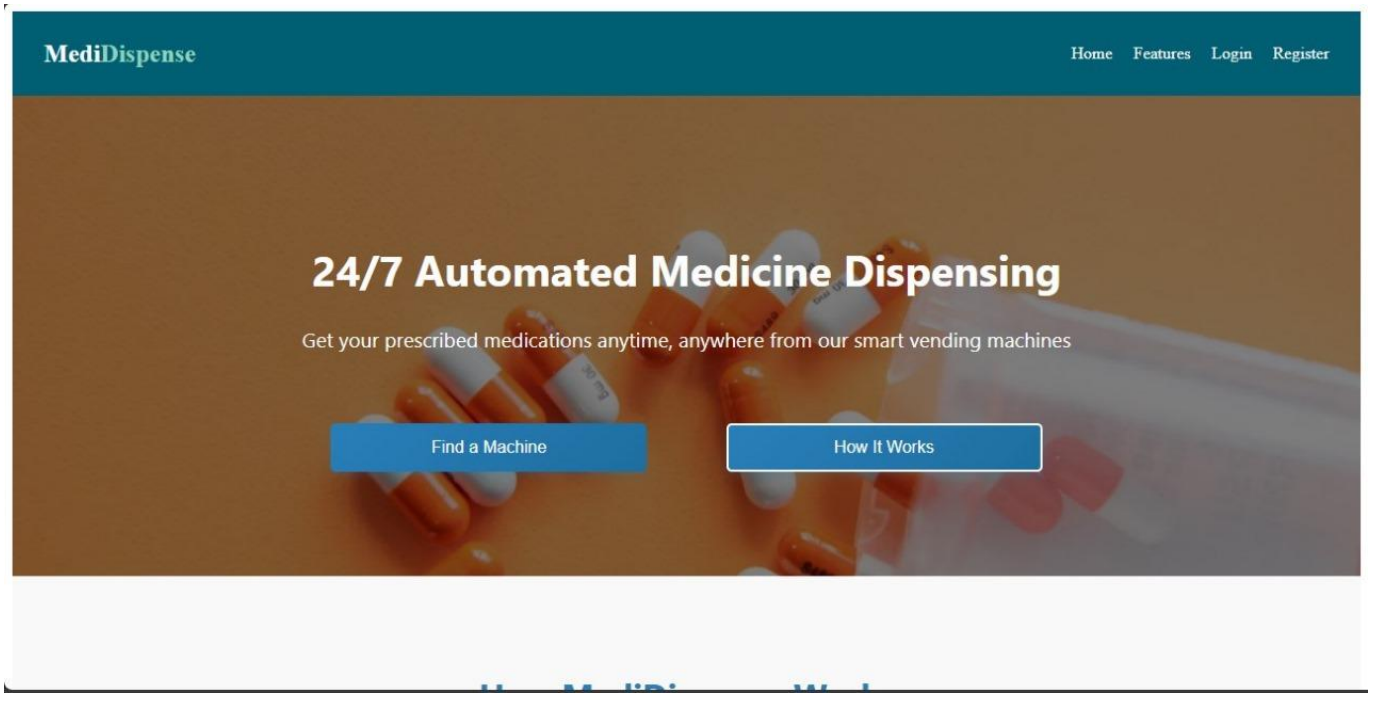


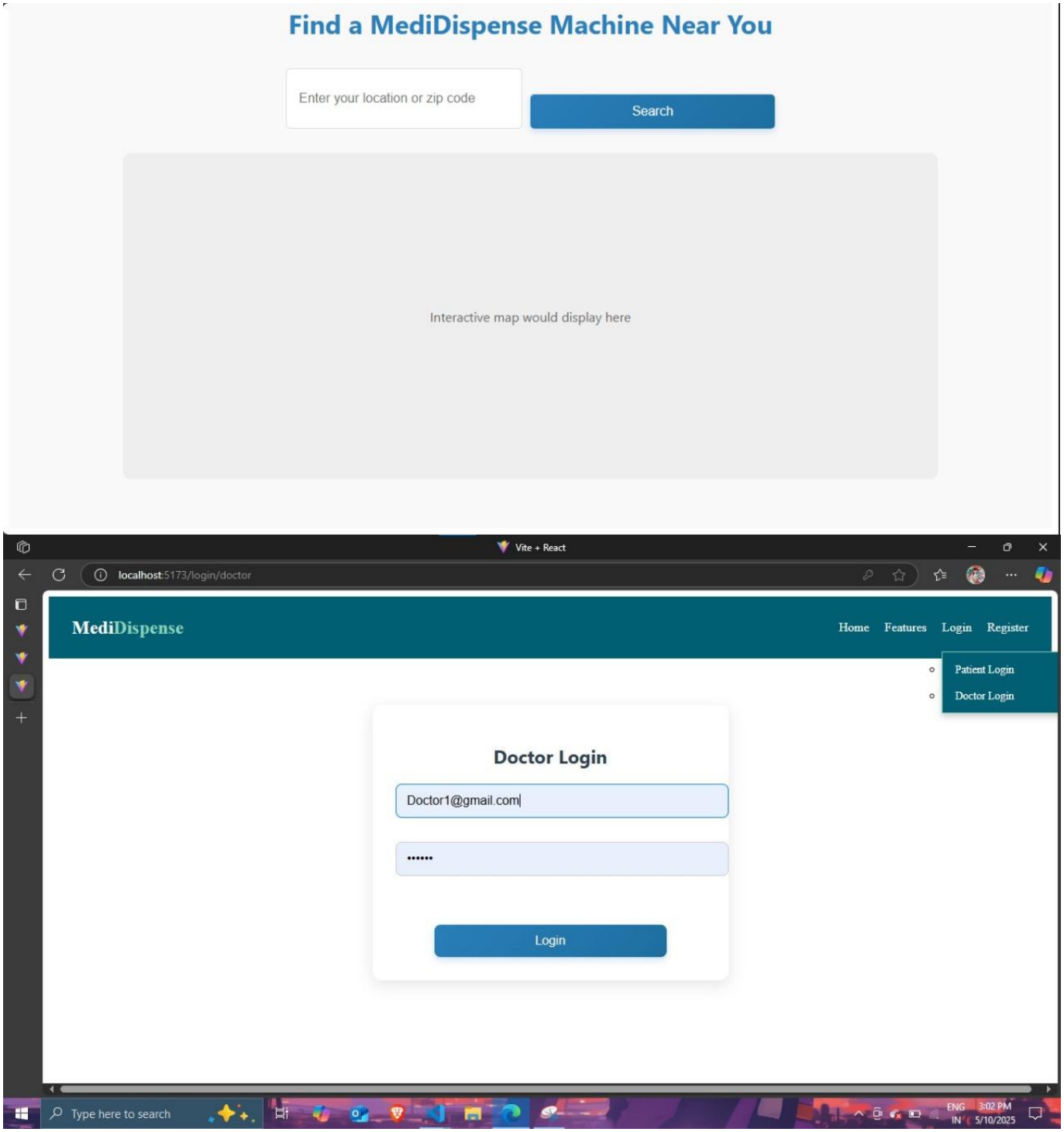
“Circuit physical connection”



“Website for QR based prescription generation”






Find a MediDispense Machine Near You
Enter your location or zip code
Search
Interactive map would display here
Vite + React
localhost:5173/login/doctor
MediDispense
Home
Features
Login
Register
Patient Login
Doctor Login
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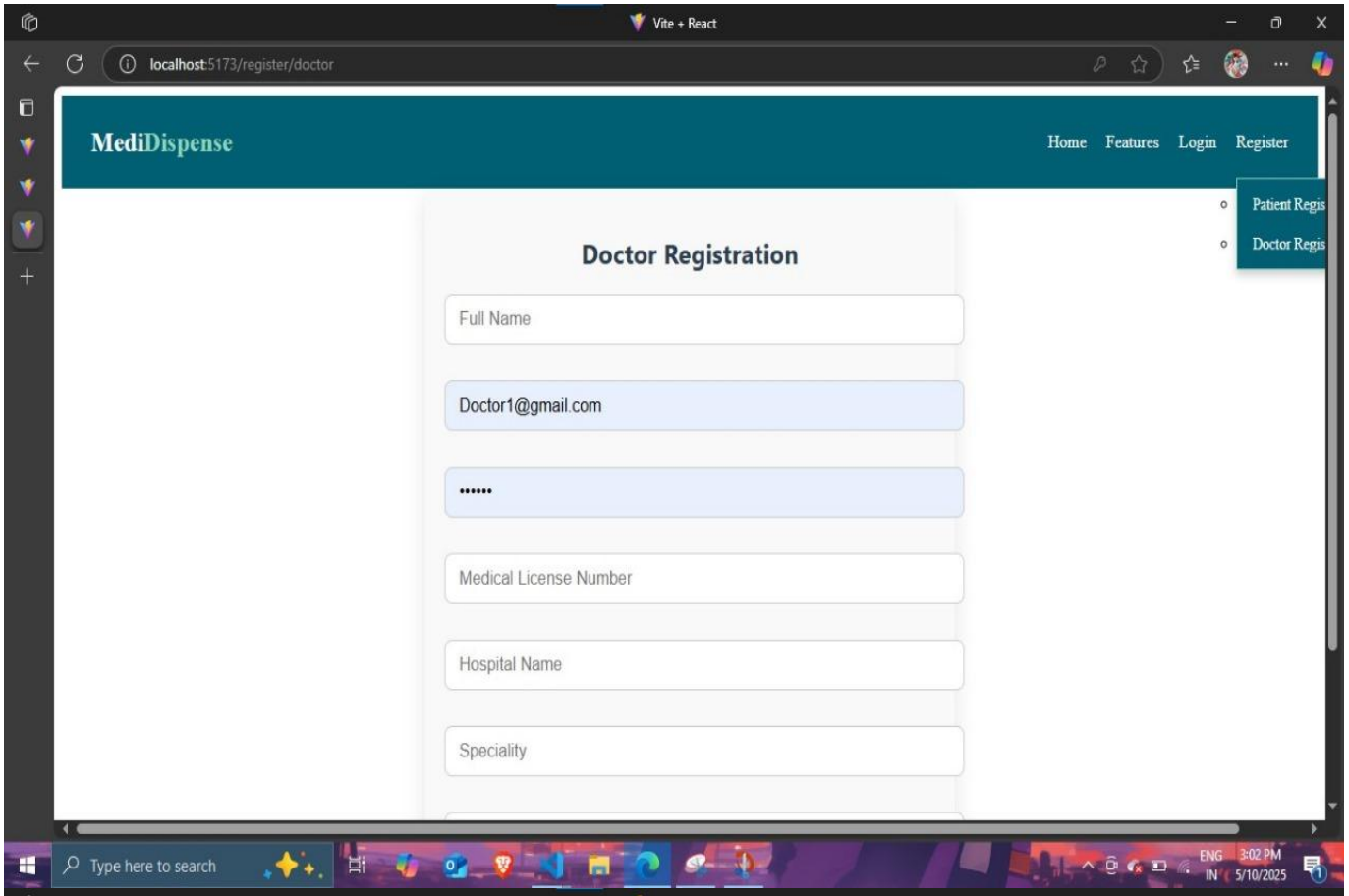
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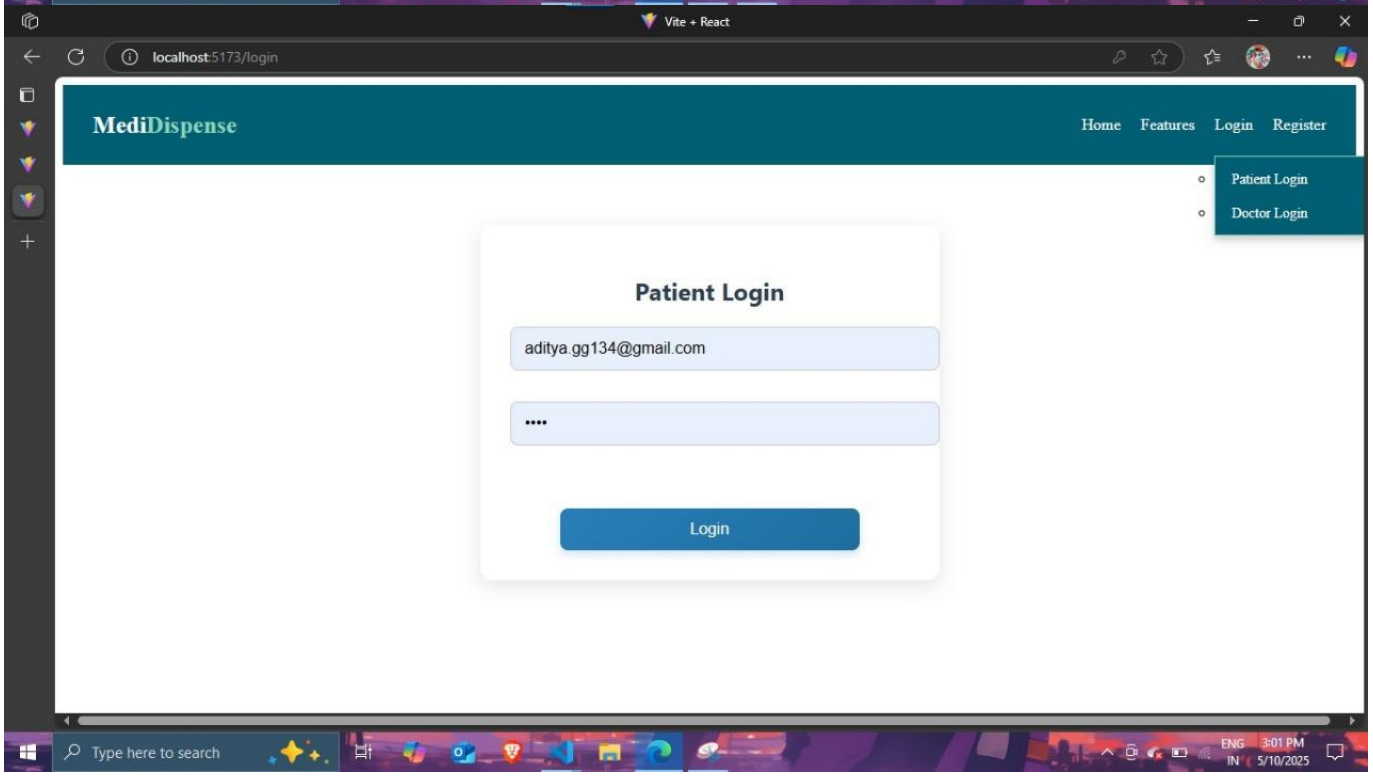
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Login
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Patient Login
Doctor Login
Patient Login
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5/10/2025

How MediDispense Works

1

Find a Machine

Locate the nearest MediDispense vending machine using our map

2

Verify Prescription

Scan your e-prescription or enter your prescription code

3

Receive Medication

Collect your properly packaged medicine in seconds

Why Choose MediDispense?

- ✅ 24/7 access to medications
- ✅ No pharmacy wait times

CONCLUSION

The never-ending queue in hospitals is a nuisance that patients have to go through. Along with the problems being faced by patients due to suffering from diseases, standing and waiting in long queues adds on as a challenge for them to face. This leads to inconvenience to patients at physical as well as mental level. Although in this direction, some steps have been taken by the hospital management system which makes it convenient for patients to consult with doctors by registering and taking an appointment prior to the visit to hospital. But patients still face inconvenience at the mediciner Developing a QR Code drug ATM may resolve the situation at hand, there Patients. A QR code in the prescription will be used to dish out the right drug from the ATM. The drug ATM should be able to dispense wide range of Ayush Medicines available in a hospital/pharmacy.