PRODUCTS DEVELOPED IN THE INSTITUTION

1. AUTOMATIC DIALYZER CLEANSER

Automatic dialyzer cleanser will help the replacement of manual cleaning done in Indian Hospitals. Presently the automatic cleaner comes with the advanced dialysing unit at a very high cost and has to be imported from outside India. Since it is cost effective, easily affordable by Local Clinics and Hospitals

2. WEARABLE PATIENT MONITORING DEVICE

This device is to monitor the patient live data and it is to find a solution to reduce death rate in hospitals due to insufficient health workers and also to take care of patients during global pandemic.


3. FOOT ULCER REMEDY SYSTEM

Foot Ulcer is new generation physical health issue being spread in current time. The foot ulcer is common is urban areas not only in India but in different parts of the world. Foot ulcer is very common among diabetic patients. India is the country with the highest number of diabetics worldwide.
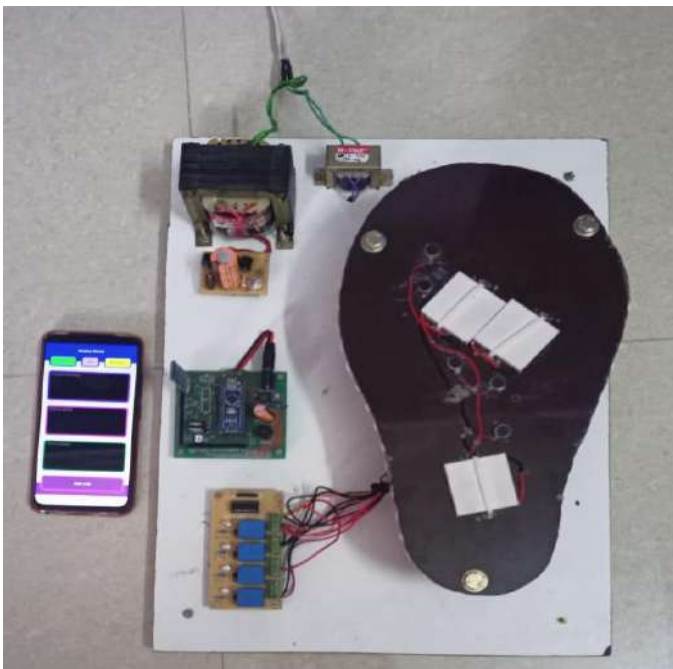
4. AUTOMATIC PLANT GROWTH MONITORING AND IRRIGATION SYSTEM

Food is very important source for the human existence. It is very important to cultivate the plants that give food. But, now days due to global warming and other environmental problems the climate change is produced. So, the rainfall is not able to predict by the peoples, especially farmers. So, farmers uses the water pumps to take a water from the wells or using underground waters, which makes the ground water level to discharges. The ground water level is decreasing frequently we need the efficient usage of the water in agricultural lands as the ground water is the very important source for humans. This work is to irrigate the agricultural land automatically and efficiently by means of infrared (IR) sensor monitoring the plant growth and temperature, soil moisture sensor to monitor the environmental condition and controlling the volume of water that flow to the agricultural land from the above sensor data by means of the ATmega328 microcontroller. GSM module is used to transmit the status of the agricultural land remotely to farmers.
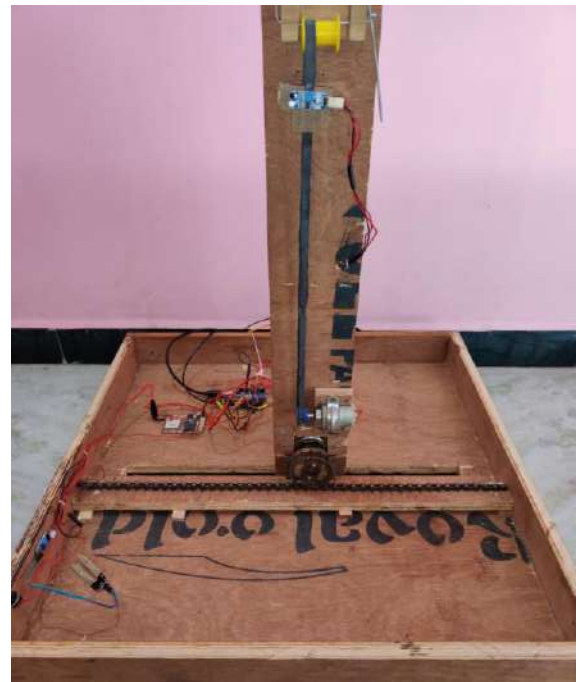
5. VISUALLY IMPAIRED SMART ASSISTANCE

Automated Assistance model for helping the Blind People and make them presence through the Virtual eye in the Real World. To make them confident about the real world through virtual eye also the person feels independent with respect to environment and freely makes a move.

6. SMART GARBAGE BIN

Fully controlled Smart garbage bin which automatically detects the amount of waste and send a notification to the primary garbage collection unit via SMS and E-mail along with the GPS Co-ordinates for smart collection. The operation was fully solar powered, let to perform the bin in an eco-friendly mode.

7. AUTOMATIC WATER DISPENSER

- Automatic Water Dispenser are now some of the most popular options when it comes to water flow, particularly in light of corona virus.

- With the unit never having to be physically touched by the user, they are an important step in limiting touch points within the washroom.

- It also delivers a more intuitive usability to your washroom and can also save water.

- They are controlled using an infra-red beam emitted from a sensor. This beam is broken when hands are placed in front of it, activating water flow. Water then flows for a set period of time before automatically switching off.

- This tap can be fixed with the existing tap. Currently market available products are costly. Our product is cost efficient.

8. AUTOMATED SANITIZER DISPENSER

• Corona Virus (COVID-19) is wreaking havoc in the world. Almost every country is suffering from the Corona Virus. WHO has already announced it a Pandemic disease and many cities are under lockdown situations and changed our lifestyle.

• In this current scenario of the global outbreak, it is advised by WHO (world health organization) to maintain Healthy Hand Wash and Sanitation Habits, but the main problem is the way we do it, that is by physical touch.

• Touching alcohol containers or hand sanitizers with infected hands can spread the virus to the next person.

• We build an automatic hand sanitizer dispenser that uses IR sensors to detect the presence of a hand and activates a pump to pour the liquid on the hand.

9. PORTABLE HUMAN COUNTING KIOSK

- Portable Human Counter is used to control and Monitor the people count in certain area. Each time system needs to display the total count of people entering and exiting the area.

- The total count should not exceed 100 and alarm should be given to notify people entering to wait.

- A camera will be placed at the top of the entry door way facing the floor. Using Image processing the camera draws a virtual line horizontally across the doorway.

- The person who crosses the line and walk in will be counted as increments. The person who crosses from the other side of the line will do decrement to the total count

- If the count reaches 100 then the light and the buzzer will get triggered.

- This to reduce the spread of virus in congested places.

10. AFFORDABLE TOUCH-LESS ATTENDANCE SYSTEM WITH TEMPERATURE MONITORING

- Post COVID-19 pandemic, biometric attendance systems have been prohibited as they are considered as critical transmitter of virus/bacteria.

- Facial Recognition method uses maps facial features & identifies an individual's identity.

- The live captured image is compared with the stored images of that person in the database.

- The camera recognizes the face of the employee by measuring the landmark on the face.

- The contact-less temperature sensor is used for measuring body temperature without any physical contact.

- The attendance taken will get stored inside the database.

- If the temperature range is high for an employee, the attendance will not get registered and the door will remain closed.
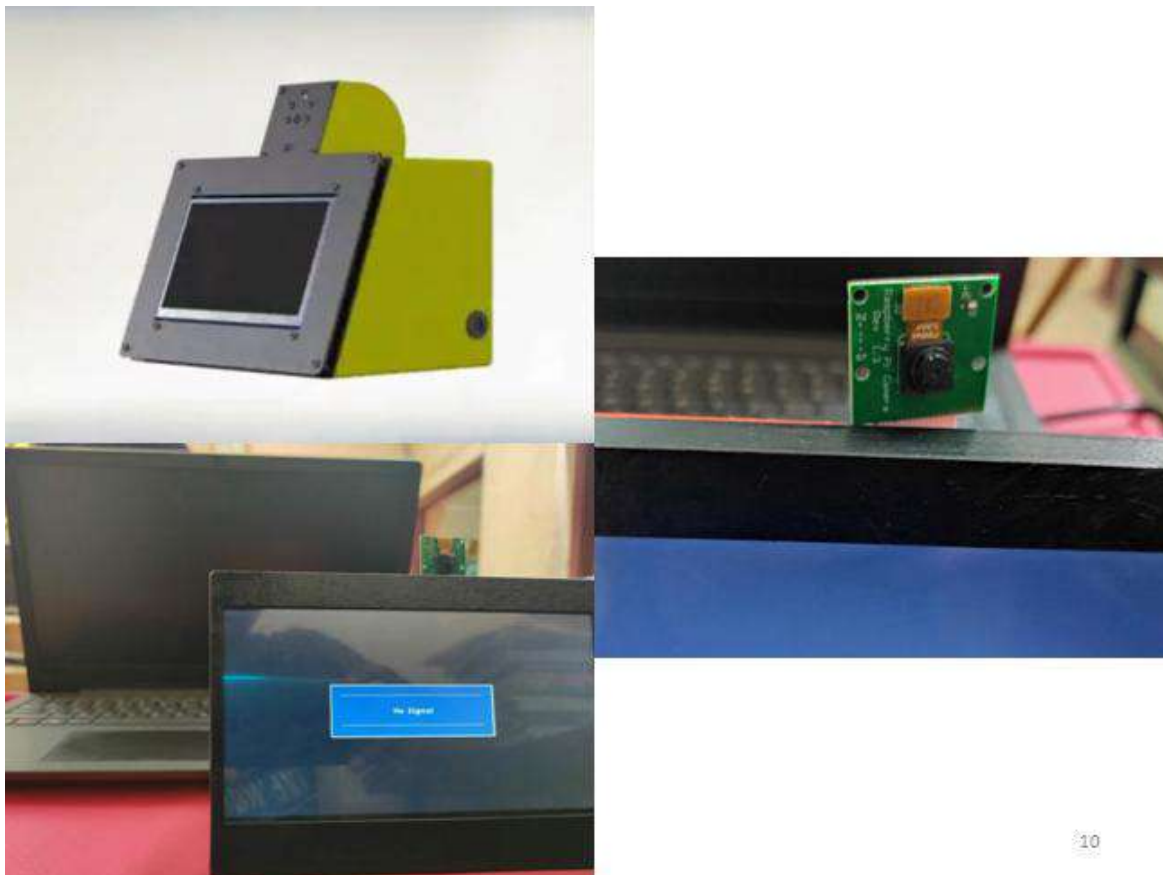
12.INDOOR NAVIGATION USING AUGMENTED REALITY

- We humans always face difficulties when visiting new places. Google maps may help us outdoor but when it comes to indoor there is no efficient and robust solution for navigation.

- This product is about the design and development of an indoor positioning tracking application system with the most optimum characteristics using Augmented Reality.

- GPS is not suitable to be used indoors due to signal loss within the buildings.

- The indoor positioning system is based on the application of Wi-Fi access points found abundantly in smart phones and buildings.

- All these data are sent to the AR mobile app from the cloud with a unique block ID.
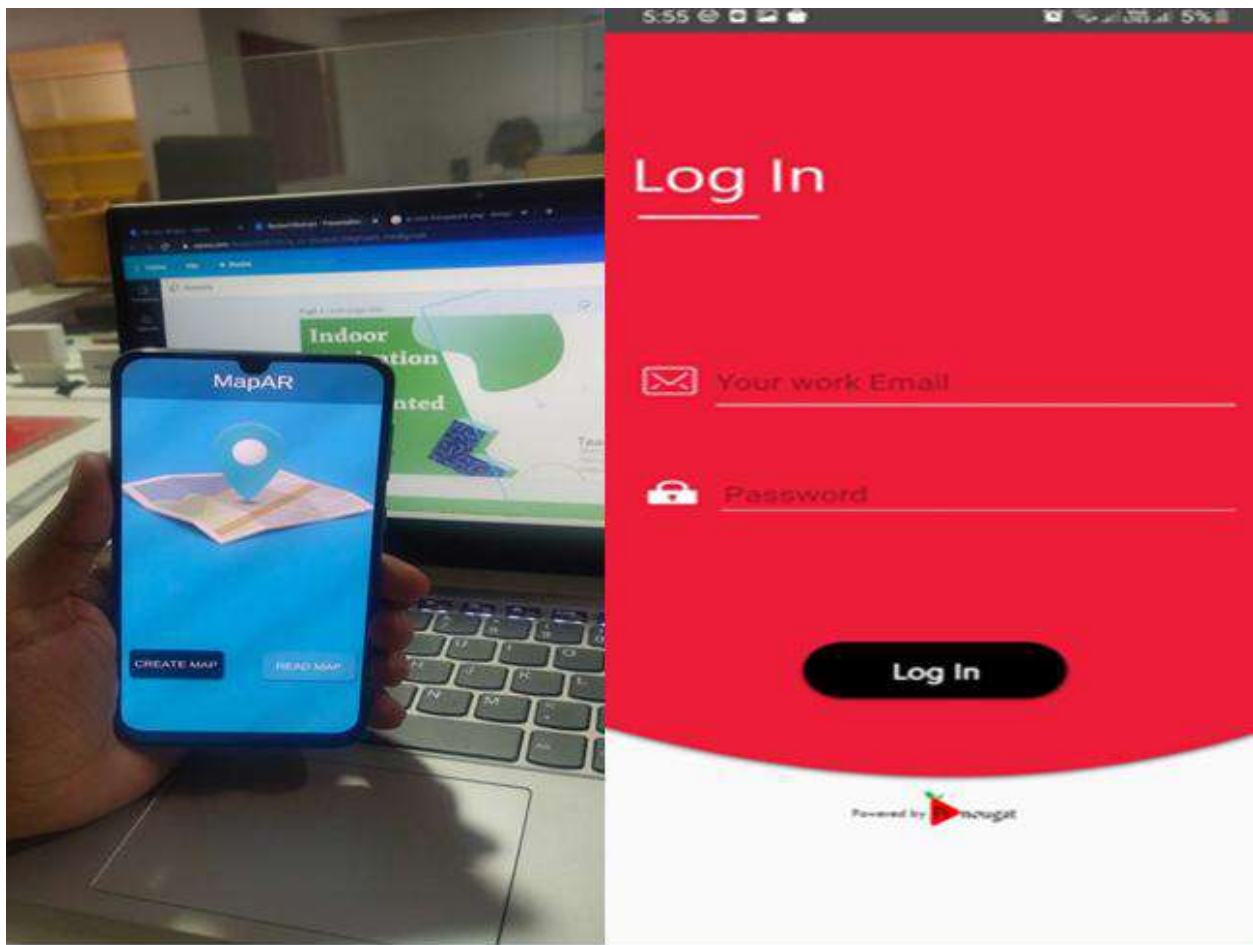
IN-HOUSE DEVELOPMENTS FOR LABORATORIES
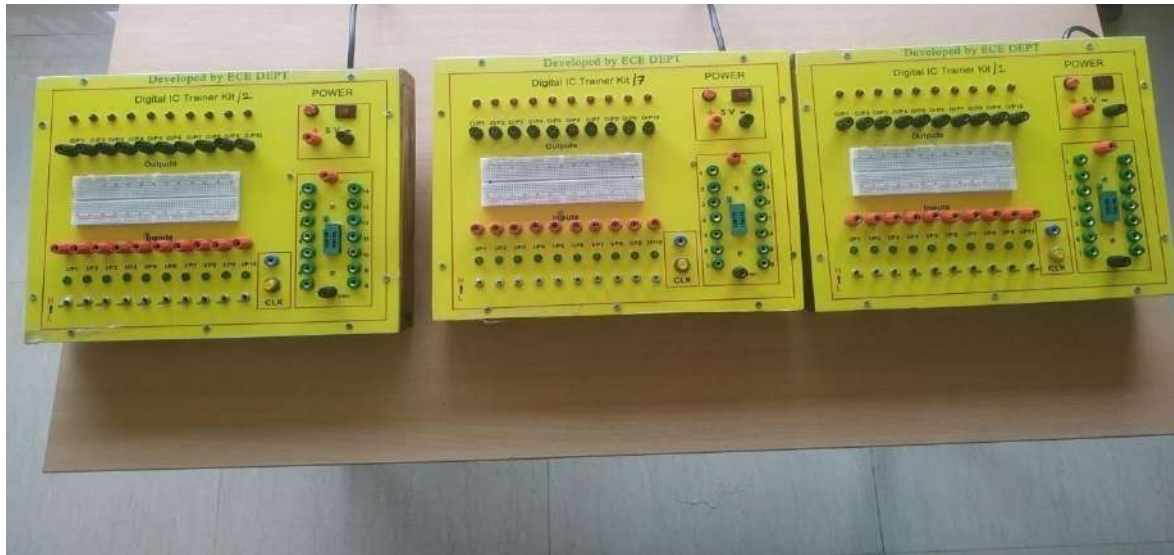
10 Digital trainer kits developed in 2019-20

Digital IC Tester developed in 2020-21

MITSUBISHI PLC PANEL (IN HOUSE DEVELOPMENT)

DELTA PLC PANEL WITH CONTROLS (VFD) (IN HOUSE DEVELOPMENT)

SIEMENS PANEL WITH HMI CONTROL

ELECTRO - PNEUMATIC SYSTEM USING PLC:

The compressor is used to produce the pressurized air to the FRL (Filter Regulator Lubricant) and then the air is passed to the Mechanical switches of the hand leaver switch, limit switch, AND gate switch, OR gate and Electrical switches of Double acting solenoid valve, single acting solenoid valve through tubes, to activate the double actuator with the help of

Bottle Filling Conveyor using Delta PLC
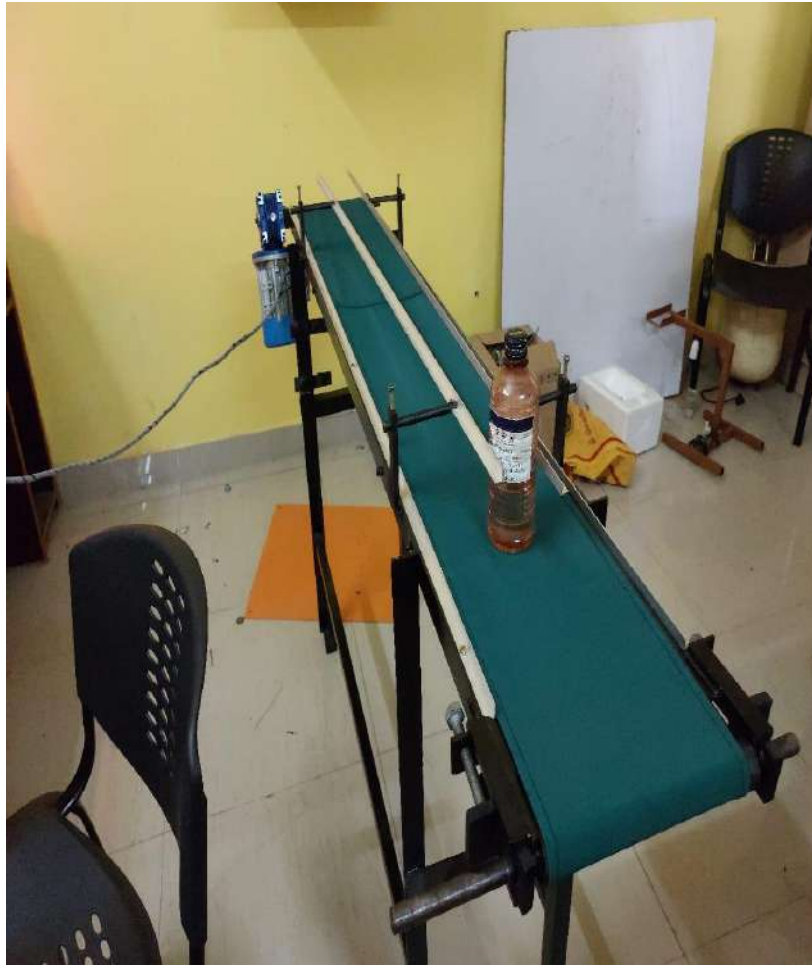
Belt conveyors are durable and reliable components used in the industries for transporting material. Conveyors producing single type of component at a time generally monitor and control a single type of object. However, if there are more objects, then another system needs to be developed. The design, fabrication and validation of a prototype of an automatic monitoring and control system designed for probing various types of objects on a belt conveyor. This system uses Delta PLC for controlling and feedback sensors for monitoring the objects. The production capacity of the system can be set in the program which can be easily altered satisfying the seasonal demand. The system stops automatically after reaching the desired production. In order to validate the designed system, experiments are performed using Taguchi's methodology wherein parameters like position, orientation, filling time, material type and types of objects i.e. trays and bottles are studied elaborately.