1. ARDUINO NANO BASED BMS WITH BALANCE CHARGING TECHNIQUE

Abstract:-

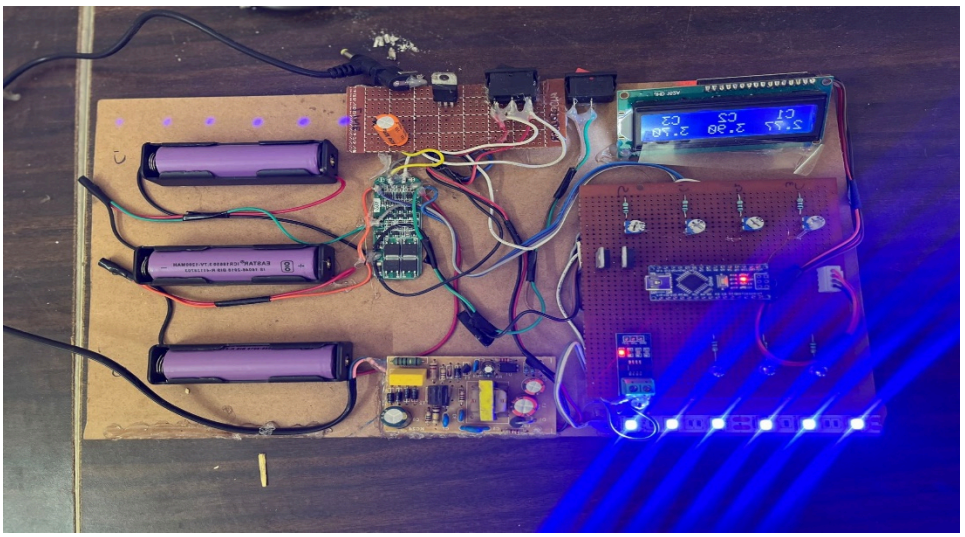
In This Projects We Are Using Balance Charging Technique with Full Protection for EV Li-Ion Cells with Over Voltage Indication and Temp Monitoring Using Arduino Nano with Current Monitor

- **COMPONENT LIST:-**
- LCD 16X2 I2C
- ARDUINO NANO
- LI-ION BATTERY PACK X3
- VOLTAGE DIVIDER CIRCUIT
- POWER SUPPLY
- LI-ION 3S/20A BMS MODULE
- CURRENT SENSOR

- **Advantages:-**
- Useful For EV Based Battery Management System

- **Disadvantages:-**
- Initial cost high as per battery pack

- **Application:-**
- EV based vehicle



2. ARDUINO NANO AND IOT BASED ADVANCE, BMS SYSTEM

Abstract

In this project we are using IOT based technology to remotely monitor EV battery's pack health like voltage, temp, over voltage, charger and balancing charging using BMS module with sending data to cloud on thing speak.

 Components

- LCD
- ARDUINO NANO
- BMS KIT
- BATTERY PACK X3
- VOLTAGE MEASURMENT
- POWER SUPPLY
- LED X3
- ESP32

 Advantages: -

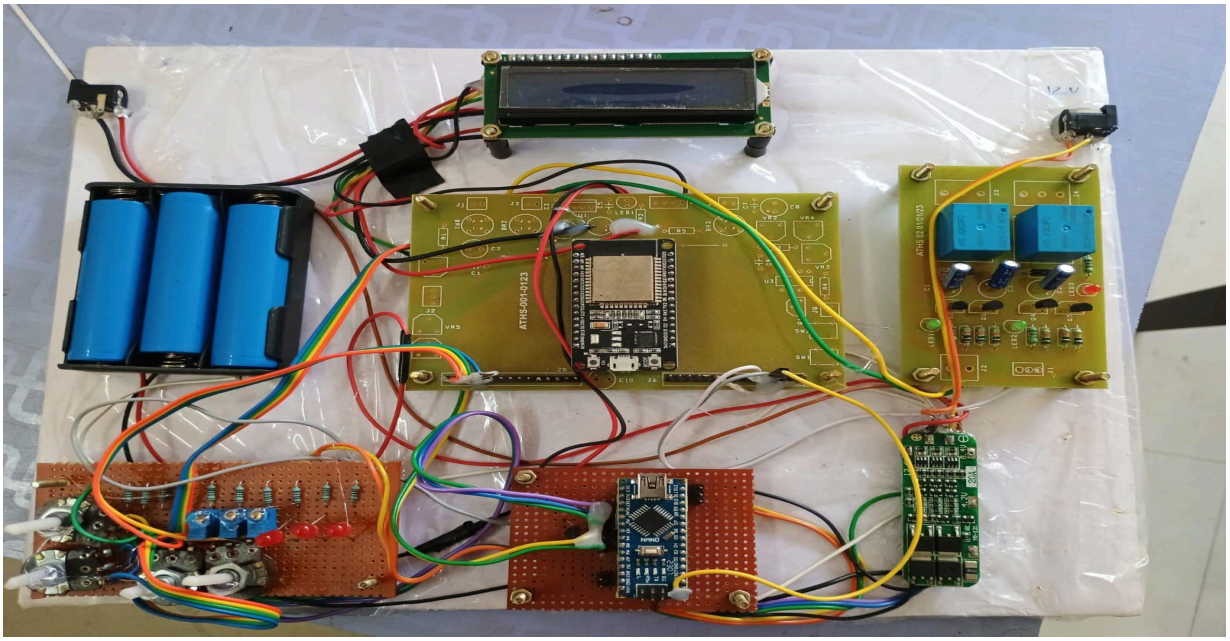
- Useful for remote or android

 Disadvantages: -

- Depend signal on internet

 Application: -

- EV battery pack



3. MULTI INDUSTRIAL FAULT SYSTEM USING IOT

Abstract

In this Project we are using multilingual display industry which is going to monitor different sensor parameter which are having highest priority for a set point the display gives the readings of each sensor when cross the level hence we get the real time clock reference which indicates the number of birthday.

 COMPONENTS

- LCD
- ESP32
- FUSE
- TEMPERATURE
- AUTO TRIP RALAY
- RELAY
- UNDER VOLT
- VARIABLE TRANS

 Advantages: -

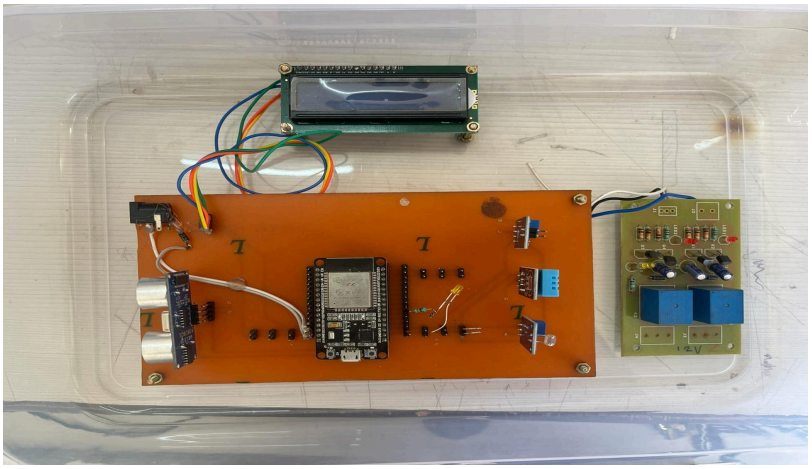
- Useful for industrial machine fault using IOT technology

 Disadvantages: -

- Additional circuit required for interface

 Application: -

- Useful for all control panels



4. HOME AUTOMATION USING BLUETOOTH

Abstract

This project is very simple but effective for home appliances control we can on/off device remotely using Bluetooth control

❖ **COMPONENTS:-**

- ESP32
- LCD I2C
- RELAY X2
- BLUTOOTH MODULE HC05
- DHT11 TEMP
- POWER SUPPLY 5V
- ARDUINO NANO

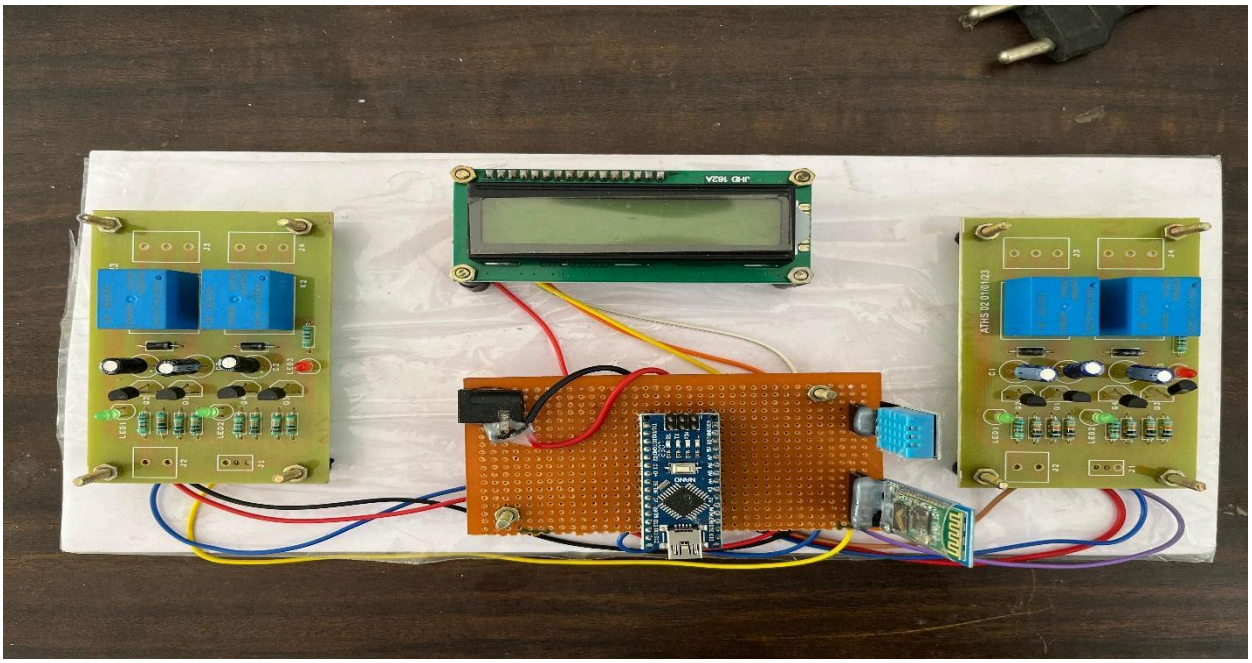
 ADVENTAGES:-

- EASY TO OPERATE FAN, LIGHT, MOTOR, REMOTELY

 DISADVENTAGES:-

- INITIAL COST HIGH
- RANGE LIMITATION

 Application: - All residence / apartment



5. IOT BASED CAR PARKING SYSTEM (3 SLOTS)

Abstract

This project is very useful to park car. Having info on android app using IOT technology so that user can get info that car parking space available

or not the project has auto gate door control with IR sensors for can sensing using esp32 advance controller

 COMPONENTS:-

- LCD
- ESP32
- RELAY
- SERVO MOTOR
- IR SENSOR MODULE X4
- POWER SUPPLY 5V

 Advantages: -

- Pre detection of car space

 Disadvantages: -

- Number of sensors and wiring limits the movement in car parking space

 Application: -

- In apartment/ malls / theatres etc.

6. MAXIMUM DEMAND ALGO FOR POWER, REDUCTION USING IOT ADVANCE TECHNIQUES

Abstract: - this is one of the best project which can reduce band gap between power generation and consumption in order we are using MDT algo with using ESP32 controller which controls power management with power failure

 COMPONENTS

- LCD

- ESP32
- RELAY
- DS 1307
- CT
- 3008 ADC
- TOUCH KEYPAD
- LOAD PANNEL
- CT INTERFACE CIRCUIT
- POWER SUPPLY 5V

 Advantages: -

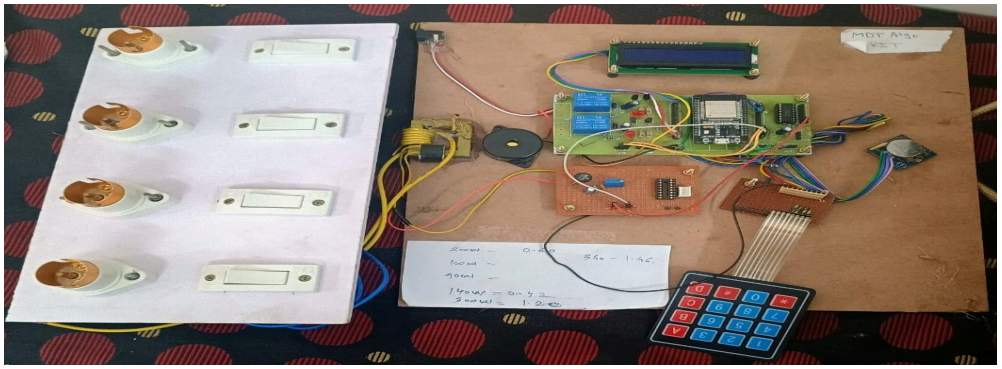
- Useful to all residence/ banglow/ office to reduce electricity bills

 Disadvantages: -

- Considers the most complicated hardware software so initial cost high

 Application: -

- MSCB board/ power distribution lines



7. IOT based 3 phase fault in LL & LG with voltage protections

Abstract:- is this project we are finding three phase faults in transmission lines in order to find on IOT device the line to line and line to ground faults with line voltage says with protection this project is based on ESP32 controller using internet of things

 COMPONENTS

- ESP32

- TRANSFORMER X3
- RELAY X3
- LCD
- BUZZER
- POWER SUPPLY 5V

 Advantages: -

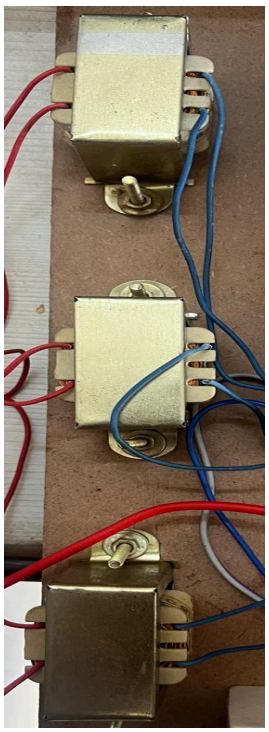
- Useful to local's type of faults

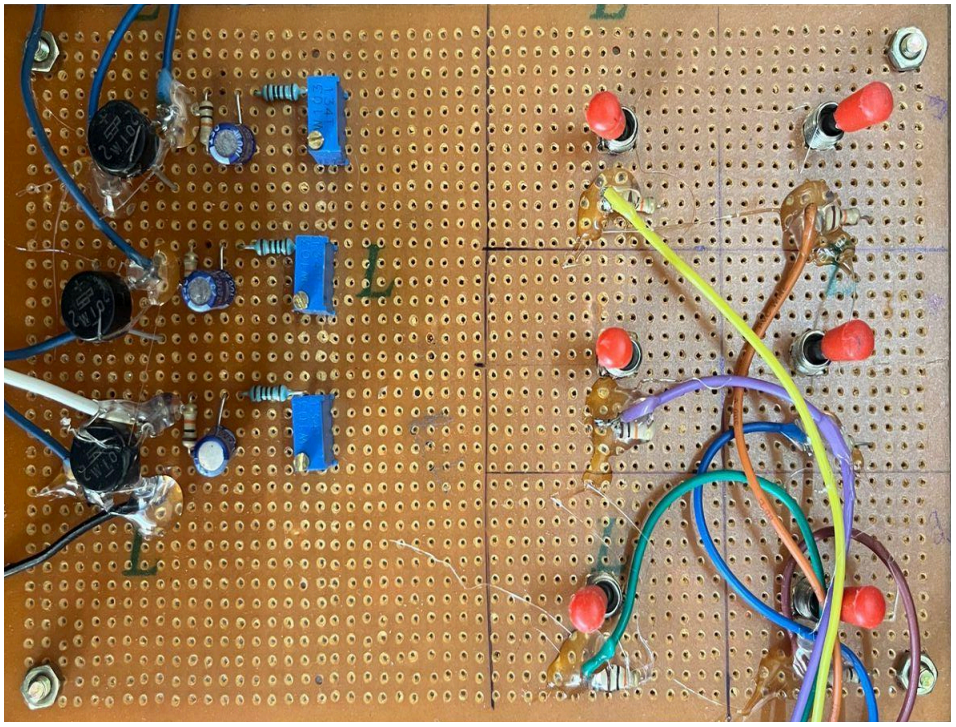
 Disadvantages: -

- Need to find different parameters

 Application: -

- 3 phase transmission line





8. IOT based woman SECURITY system

Abstract:- here in this project we are using fully automated protection system especially in regards for woman security in order to protect in danger situations this project gives SMS with map location with alerts and notification, with emergency switch in panic condition along with heart rate, spo2 blood oxygen and the panic skin response sensors

- COMPONENTS:-

- ESP32
- LCD 16X2
- RX TX RF MODULE
- GSR STRESS SENSOR
- HEART RATE/SPO2 SENSOR (MAX30100)
- GSM/GPS MODULE SIM808
- RELAY INTERFACE
- POWER SUPPLY +5V,+12V

- **Advantages: -**

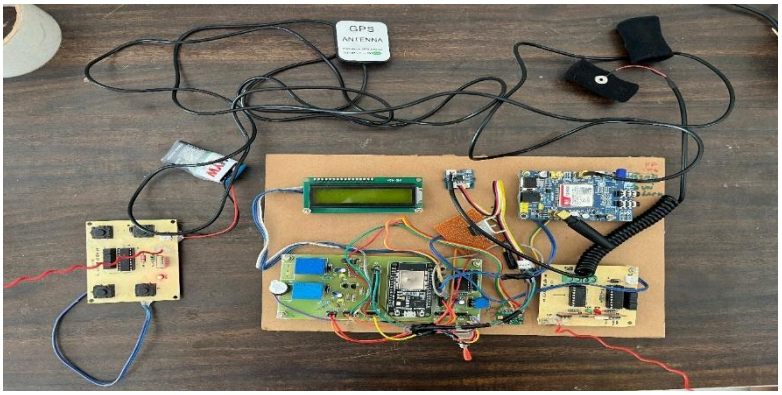
- Very useful for woman's, girls

- **Disadvantages: -**

- Need compact circuit

- **Application: -**

- In panic situation for woman's



9. IOT based smart meter with auto billing and cut-off using android

Abstract: - in this project we are using grid based meter with digital interface which can monitored on ESP32 based IOT system. Here the power, volt, current are monitored and the billing amount number of units by user

- **COMPONENTS:-**

- LCD DISPLAY
- ESP32
- RELAYX2
- LOAD 60W
- DIGITEL METER
- PULSE INTERFACE CIRCUIT
- CT INTERFACE CIRCUIT
- PT INTERFACE CIRCUIT
- MCP 3008

 Advantages: -

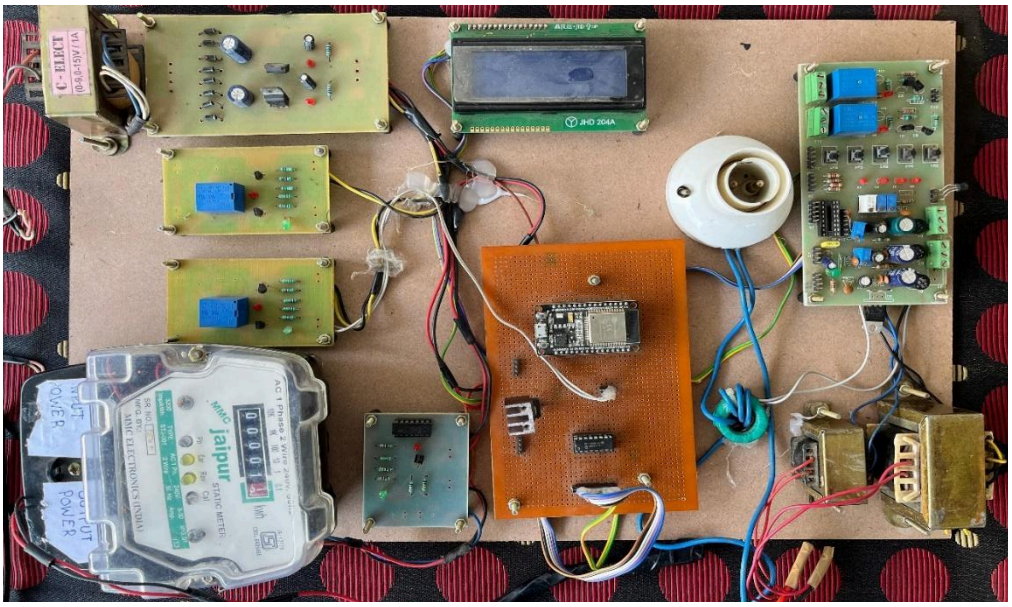
- Useful for billing control

 Disadvantages: -

- Needs to be calculated as per billing sales

 Application: -

- Residence, bazars, apartment, theatre, industry etc.



10. Solar hybrid synchronous BMS charger using thing speak server

Abstract: - in this project the charging with balancing technique using li-ion BMS module and charging from both solar and grid. Both using synchronization to change with balancing technique the loads are connected to battery pack the all data is pushed to cloud server on IOT (ESP32)

 Components

- Arduino nano
- Battery pack 3.7 X 3
- Solar panel
- Relay
- BMS MODULE 3S/20A
- Esp32
- Lm35 temp

 Advantages:

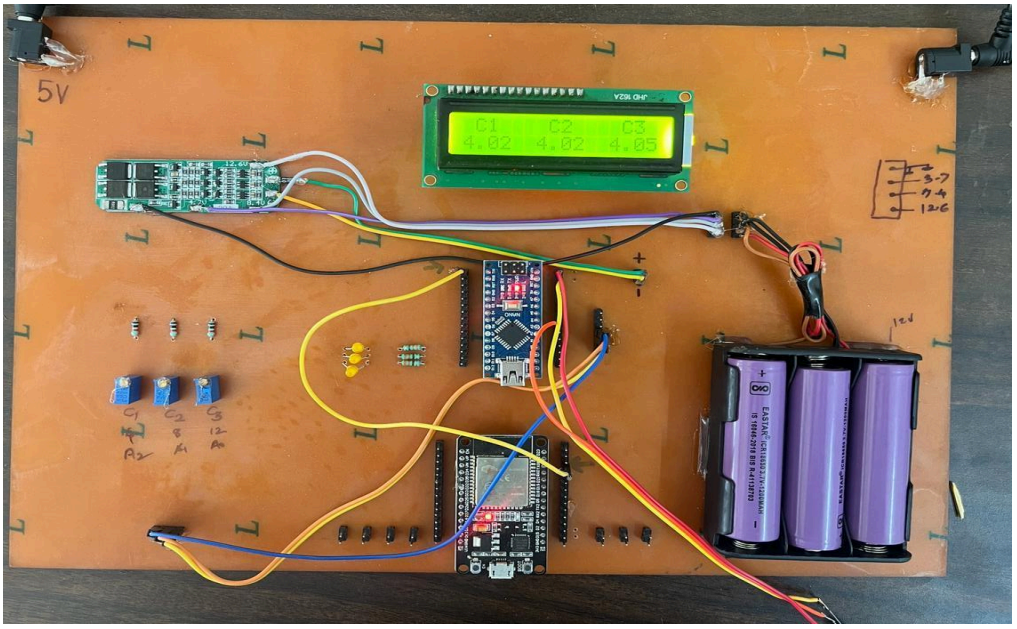
- Useful in power failure

 Disadvantages: -

- Need bigger panel

 Application: -

- EV battery pack



11, IOT BASED INTELLIGENT WATER LEVEL CONTROLLER

Abstract:- in this project we are using flout sensor to monitor upper and underground tank level with using ESP32 controller in IOT mode with help the level set by user motor will automatically on/off without any human interface

 Components:-

- Esp32
- LCD I2c

- Keyboard
- Ds1307
- Relay X2
- Float Sensor X4
- Power supply 12v

Advantages:

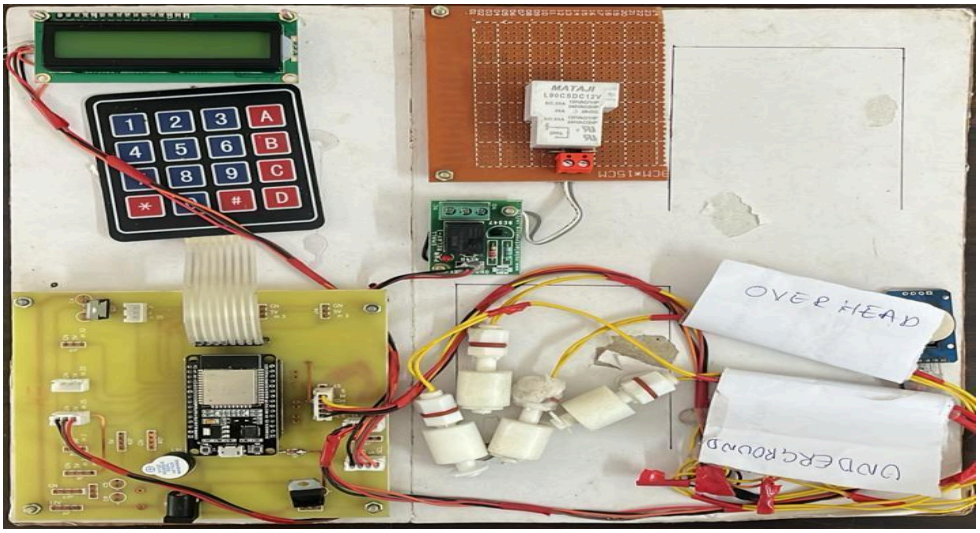
- Automatic

Disadvantages: -

- Need Wiring

Application: -

- Water Level, Apt, Offices All Sector



12. IOT BASED SOILLESS FARMING TECHNIQUE IN HYDROPONICS

Abstract:- in this project we are using advance level farming using soilless plants that are grow in special environment using a advance structure using IOT based hydroponics very useful to grow plants where space is very less have we are using the esp32 with multiple sensor like temp humidity Level and PH of water using pump and mechanical model

Components:-

- Esp32

- LCD I2c
- Relay X2
- Water level sensor
- DHT11
- Water pump
- Hydroponics mechanical structure
- Buzzer
- Power supply 5v

 Advantages:

- Useful in apartment, bungalow

 Disadvantages: -

- Need some chemical to grow plant

 Application: -

- Used in farming



13. EV & PHASE BLDC HUB MOTOR POWER GENERATION TO CHARGE EV BATTERY PACK (60 W)

Abstract:- BLDC hub motor for power generation here we are using EV hub motor which is 3 phase and after doing some modification in the winding we are able to use a generation in the motor to generate ac signal to further change EV battery pack, 60v, useful for nonconventional method

 Components:-

 Advantages:

- Useful for when EV bike are in running mode

 Disadvantages: -

- Need control circuit

 Application: -

- Useful in EV charger

14. IOT BASED VERTICAL CAR PARKING USING RFID

Abstract:- here we are using vertical mechanical structure in order to save space and we can achieve many cars park in minimum space and the mechanical structure is 4 slots with RFID card for security for each owner after validation the gate slot open close automatically using embedded IOT interface circuit

 Components:-

- MECHNICAL STRUCTURE

- ESP32
- LCD I2C
- RFID CARD
- SERVO MOTOR
- IR MODULE X3
- SWITCH
- BUZZER
- MECH MOTOR (CHAIN)

 Advantages:

- In less space

 Disadvantages: -

- Needs separate mechanical structure

 Application: -

- Useful in crowded area



15. IOT BASED HOME AUTOMATION USING REMOTE XY APP

Abstract:- here we are monitoring complete home automation parameter with power saving technique used in residence bungalow here we are using ESP32 with IOT, with multiple sensor with security and auto light on/off, intruder detection, alarm, message on cloud remote android app

 Components:-

- ESP 32

- LCD I2C
- RELAY X2
- PIR SENSOR
- LM35 TEMP
- LDR MODULE
- DOOR SENSOR
- BLDC FAN
- CLOUD REMOTE XY

 Advantages:

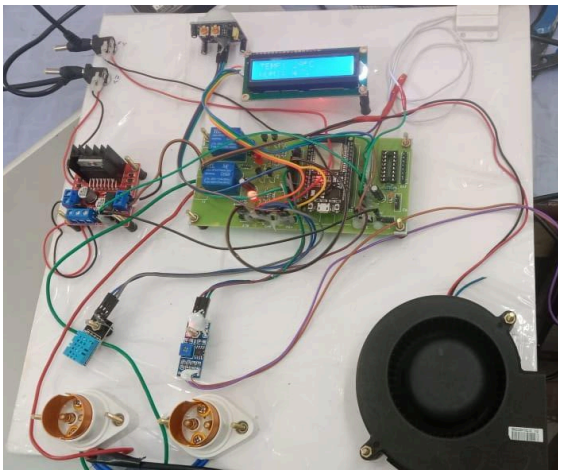
- home/ bungalow power save

 Disadvantages: -

- needs multiple sensor

 Application: -

- used in bungalow with more space



16. ARDUINO NANO BASED EV VEHICLE WITH BMS TROLLEY

Abstract: - here we are using trolley as EV with advance BMS charger with motor control balance charging technique with motor control circuit and key pad used to rotate trolley in proper direction the trolley is full battery operated

 Components:-

- Arduino nano
- LCD I2C

- Motor driver
- Motor 2
- SMPS power supply
- 3.7x3
- BMS module

 Advantages:

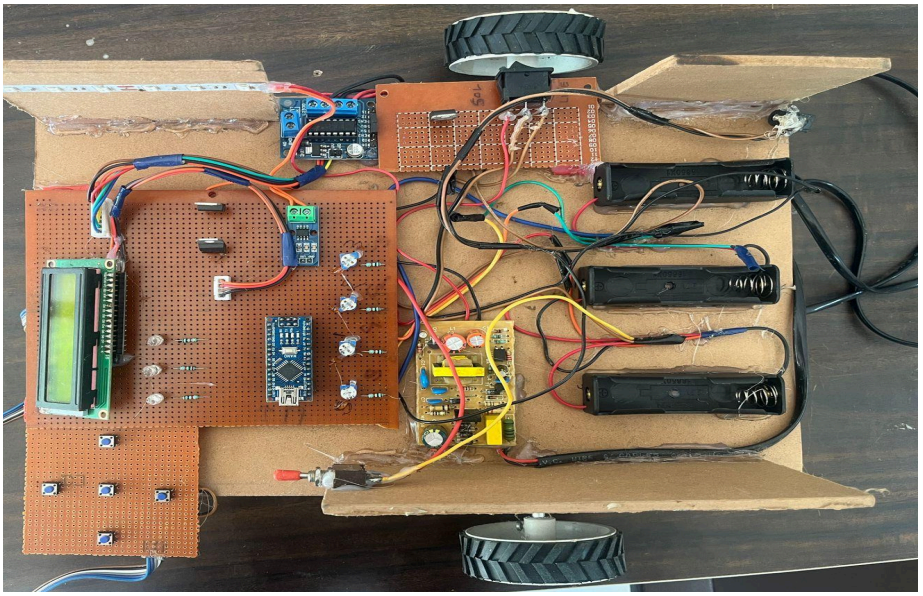
- Useful for EV battery operated

 Disadvantages: -

- Need wireless

 Application: -

- EV vehicles and hybrid cars



17. IOT BASED MEDICAL PARAMETER

Abstract: - we are using IOT based remote medical parameter monitoring system using blynk app and the data is transferred to cloud. Using ESP32

 Components:-

- HEART RATE
- BUCK BOOST
- TRANSFORMER
- POWER SUPPLY

- TEMPERATURE
- POT
- ESP32
- LCD I2C

 Advantages:

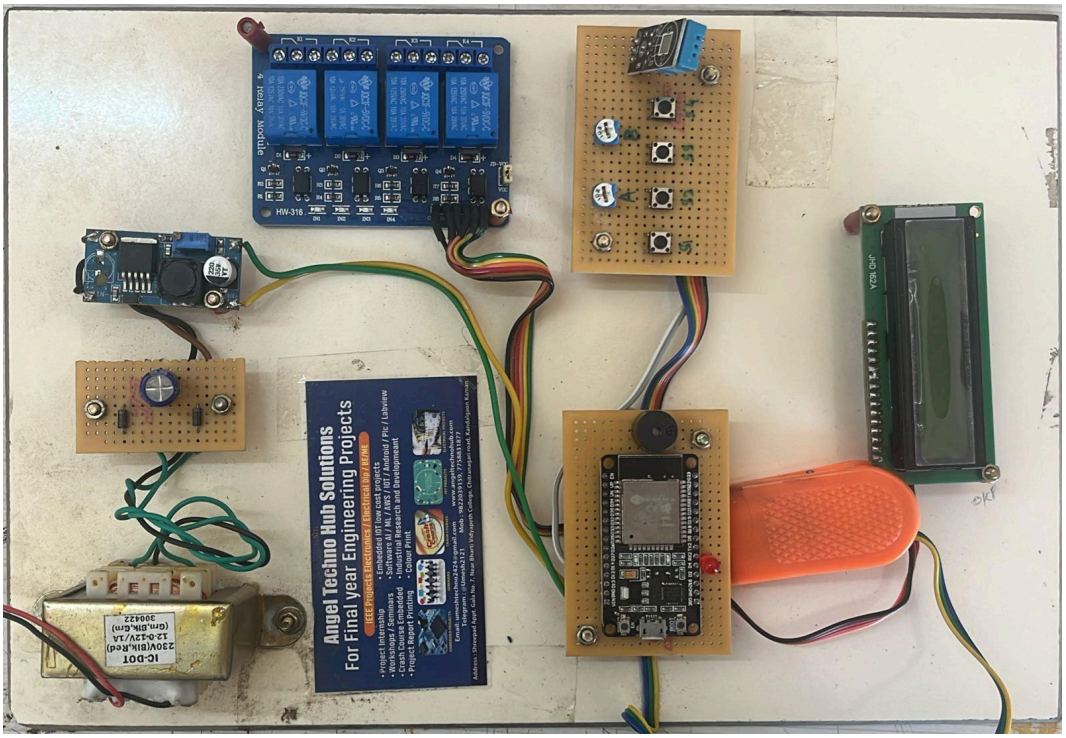
- Useful for old age patient

 Disadvantages: -

- Need sensor more accuracy

 Application: -

- For remote patient monitoring system



18. IOT BASED WIRELESS CAR CHARGING WITH AUTO TIMER AND TWO SLOT PARKING

Abstract:- the project is very high end technology using wireless charger module used for charging cars that to wireless mode. Here we are using can presence detection with slot full or not the car charging timing is also calculated automatically without any human

 Components:-

- ESP 32

- Relayx2
- LCD I2C
- Ultrasonic sensor
- EV wireless charger module x2
- IR sensor
- Car module

 Advantages:

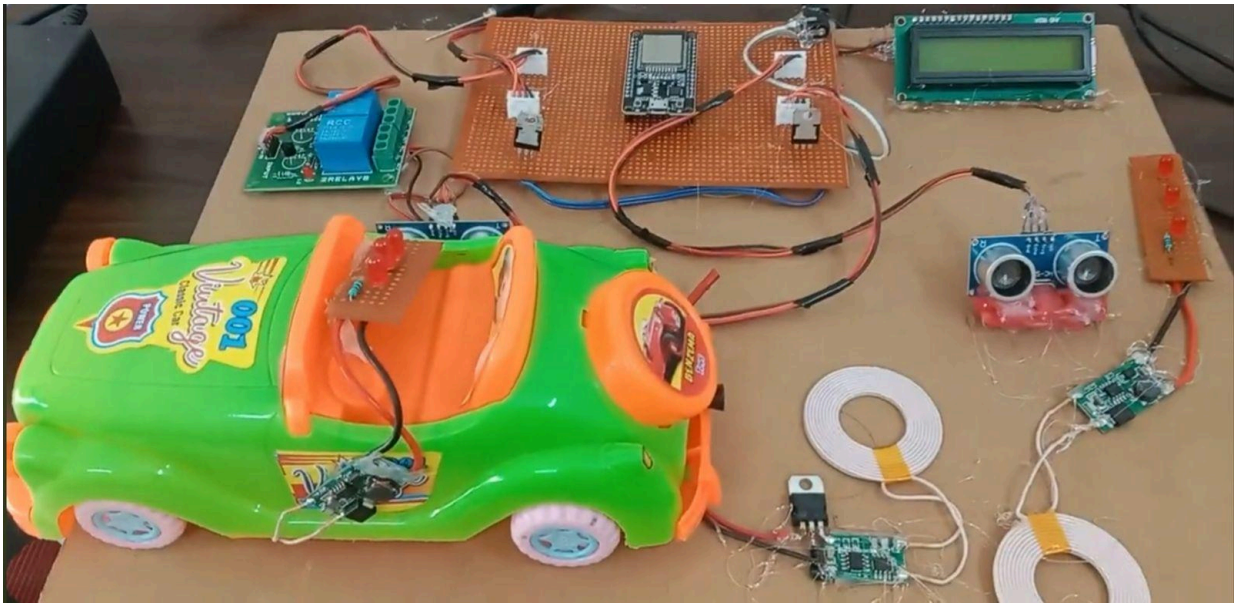
- EV cars

 Disadvantages: -

- Need sensors

 Application: -

- EV charger station



19. IOT BASED COLOUR DETECTION AUTO MECHANISM FOR POWER LOOMS

Abstract:- now a days the power looms for clothes applications, machine available has many limitation here we are using IOT control with small module of loom with colour sensing technique with stop at end of roll and count length of achieved clothes distance on IOT

 Components:-

- LCD I2C
- RELAY X2

- ESP32
- TOUCH KEYPAD
- DS1307
- COLUR SENSOR
- BUZZER
- MECHNICAL SETUP
- POWER SUPPLY 5V

 Advantages:

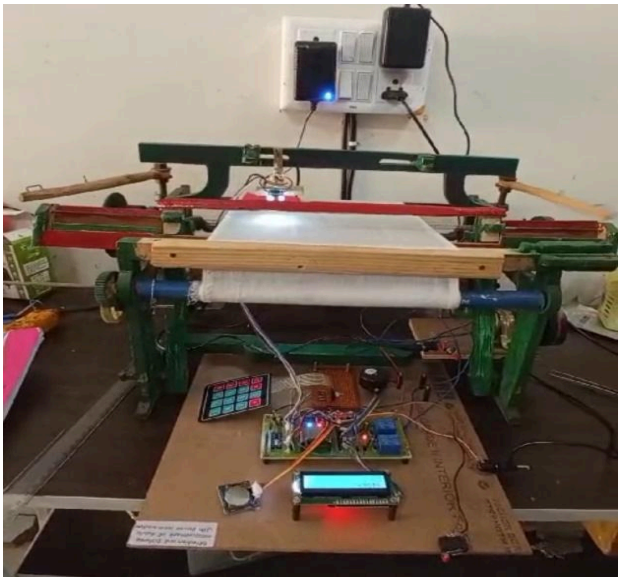
- In power looms

 Disadvantages: -

- Need precise sensor

 Application: -

- In power loom automation



20. VOICE OPERATED BLUETOOTH CONTROL ROBOT

Abstract: - In This Project We Are Using Arduino Uno with Bluetooth Interface and Robot Trolley Using Motor Control with Remote Direction Controls

 Components:-

- Ultrasonic Sensor
- 3.7x2 Batteries

- Servo Motor
- Arduino Uno Shield
- L298 Motor Driver
- 4x Motor
- 4x Wheels
- Bluetooth Control

 Advantages:

- Useful In For Small Task

 Disadvantages: -

- Range Limits

 Application: -

- Use For Obstacle Auto Path Finder Robot

