

1. Smart Home Automation System

- **Description:** Develop a system to control lights, appliances, and security features remotely using a smartphone or voice commands.
- **Technologies:** IoT, ESP32, MQTT, Alexa/Google Assistant, Relays.

2. Automated Water Level Controller

- **Description:** Design an automatic water level controller for water tanks to prevent overflows and shortages.
- **Technologies:** Ultrasonic Sensors, Arduino, ESP8266, Relays.

3. Automated Plant Watering System

- **Description:** Create a system that waters plants automatically based on soil moisture levels and weather data.
- **Technologies:** Soil Moisture Sensors, Arduino/ESP32, Cloud IoT, Water Pump.

4. Smart Energy Meter with Billing Automation

- **Description:** Design an automated energy meter that calculates and sends electricity bills based on usage in real-time.
- **Technologies:** Energy Meter Module, ESP8266, IoT Cloud, Mobile App.

5. Automated Traffic Light Control System

- **Description:** Develop a traffic light system that adapts based on real-time traffic conditions to reduce congestion.
- **Technologies:** IR Sensors, ESP8266, AI for Traffic Optimization.

6. Industrial Conveyor Automation System

- **Description:** Build an automated conveyor system that detects, sorts, and moves objects based on size, weight, or color.
- **Technologies:** PLC, Arduino, Proximity Sensors, Conveyor Belt, Camera.

7. Automated Attendance System using Face Recognition

- **Description:** Develop a system that automates attendance using facial recognition.
- **Technologies:** AI/ML, OpenCV, Raspberry Pi, Camera Module.

8. Automated Fire Detection and Extinguishing System

- **Description:** Build a fire detection system that automatically identifies fire and triggers extinguishing mechanisms.
- **Technologies:** Flame Sensors, Thermal Cameras, Arduino/ESP32, Relays.

9. Smart Parking Automation

- **Description:** Create a system that detects available parking spaces and automates parking management.
- **Technologies:** Ultrasonic Sensors, ESP8266, IoT Cloud, Web App.

10. Automated Air Quality Monitoring System

- **Description:** Develop a system to monitor air quality and trigger ventilation or alarms if pollutant levels rise.
- **Technologies:** Air Quality Sensors (MQ135), Arduino, IoT Platform.

11. Home Security Automation using IoT

- **Description:** Implement a home security system that detects intrusion and sends alerts via mobile apps.
- **Technologies:** PIR Sensors, ESP32, Cloud IoT, Cameras.

12. Automated Greenhouse Management System

- **Description:** Design an automated system to control temperature, humidity, and lighting inside a greenhouse.
- **Technologies:** Temperature and Humidity Sensors, ESP32, IoT Cloud, Relays.

13. Automated Manufacturing Quality Control System

- **Description:** Build a system that uses cameras and AI to inspect manufactured products for defects in real-time.
- **Technologies:** AI, Machine Vision, Conveyor System, Raspberry Pi.

14. Smart Door Lock Automation

- **Description:** Create a smart lock that allows users to control door access through their smartphone.
- **Technologies:** RFID/Fingerprint Module, Arduino, Bluetooth, Servo Motor.

15. Automatic Lighting Control Based on Occupancy

- **Description:** Design a system that automatically controls lights based on room occupancy.
- **Technologies:** PIR Motion Sensors, ESP32, Relays, IoT.

16. Automated Street Lighting System

- **Description:** Develop a system where streetlights automatically adjust their brightness based on ambient light and traffic.
- **Technologies:** LDR Sensors, IR Sensors, ESP8266, IoT.

17. Automated Supply Chain Tracking System

- **Description:** Create an automated system to track goods across the supply chain, providing real-time updates on location and status.
- **Technologies:** GPS, RFID, IoT Cloud, Web App.

18. Automated Fire Door Control System

- **Description:** Build a system to automatically control fire doors in case of an emergency, ensuring safe evacuation.
- **Technologies:** Fire Sensors, Arduino, Actuators, Wireless Communication.

19. Smart Waste Management System

- **Description:** Create a system where waste bins automatically notify collection services when they are full.
- **Technologies:** Ultrasonic Sensors, ESP32, IoT Cloud, Mobile App.

20. Automated Green Energy Monitoring System

- **Description:** Develop a system to monitor and optimize energy consumption from renewable sources like solar or wind.
- **Technologies:** Solar Panels, Wind Turbines, ESP32, IoT Cloud, Energy Meter.