SMART PARKING

Problem Definition:

In urban areas, traditional parking systems often face challenges related to enforcement and misuse of parking spots. Unauthorized vehicles can occupy reserved or disabled spaces, creating inconvenience and frustration. Existing solutions do not offer an effective way to prevent unauthorized parking and ensure compliance with parking regulations.

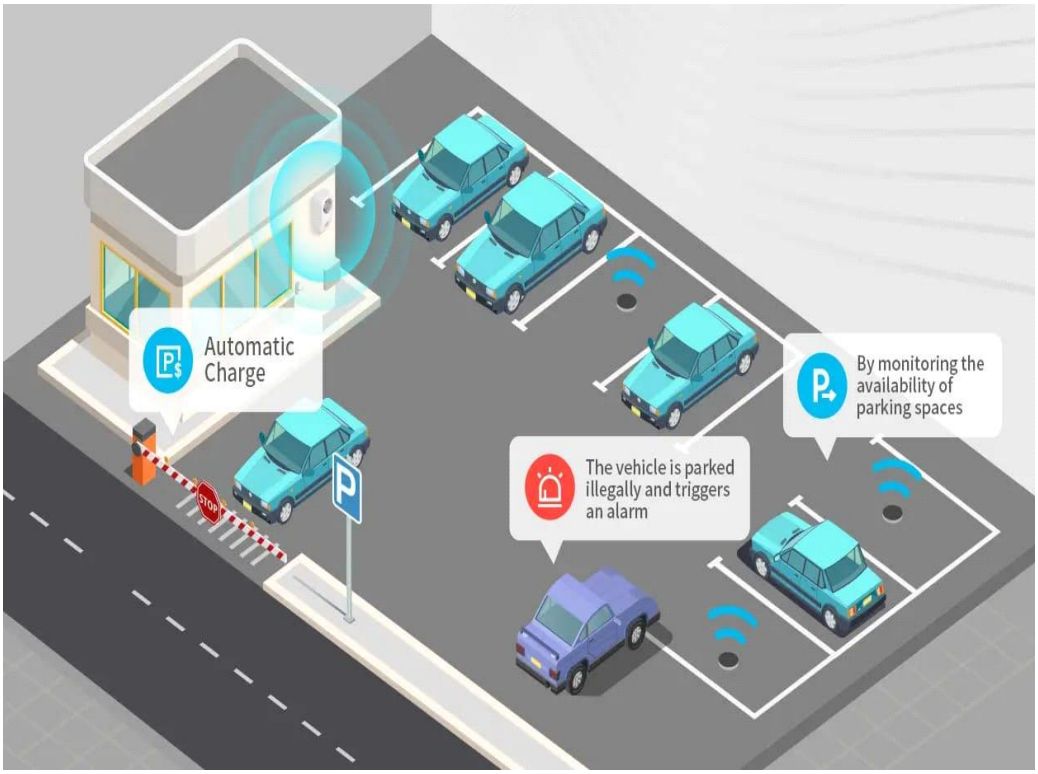
Design Thinking:

Block chain-Powered Access Control:

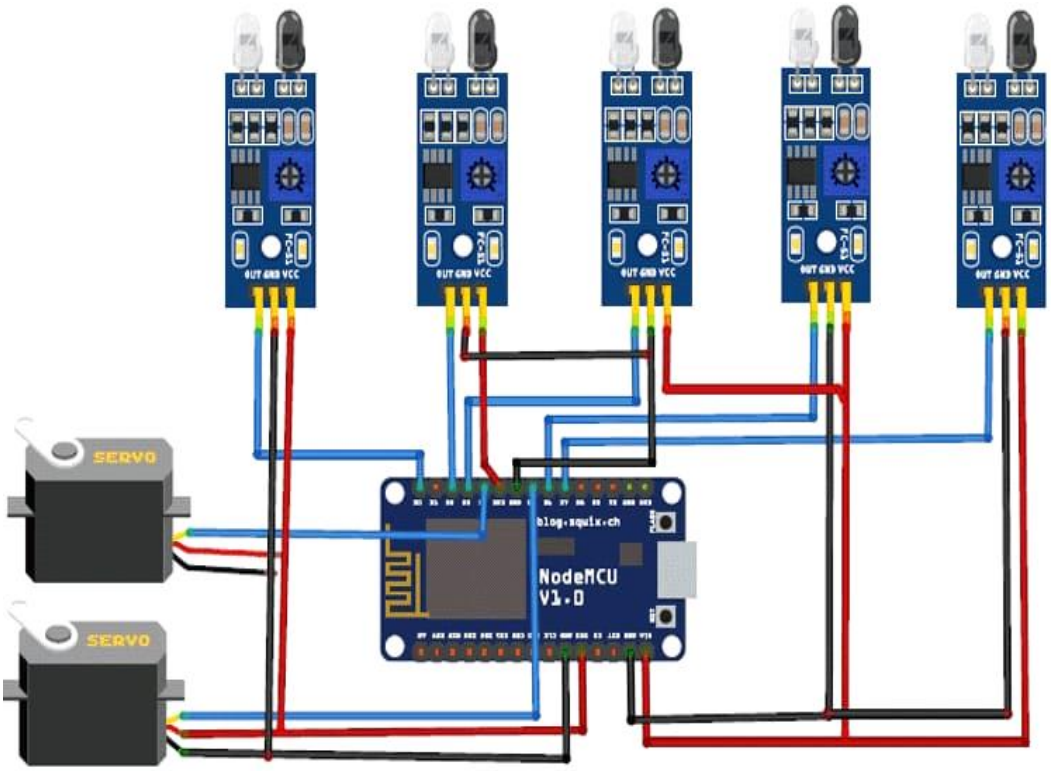
Utilize block chain technology to create a secure and tamper-proof access system for parking spaces. Smart contracts could be employed to define rules and permissions, ensuring only authorized vehicles can access specific spots.

AI-Powered Inference for Spot Misuse:

Implement AI algorithms to analyse parking spot usage and iden tify potential misuse. Integrated cameras and sensors can feed data to the AI system, which can flag instances of unauthorized parking, leading to more efficient enforcement and deterrence against violations

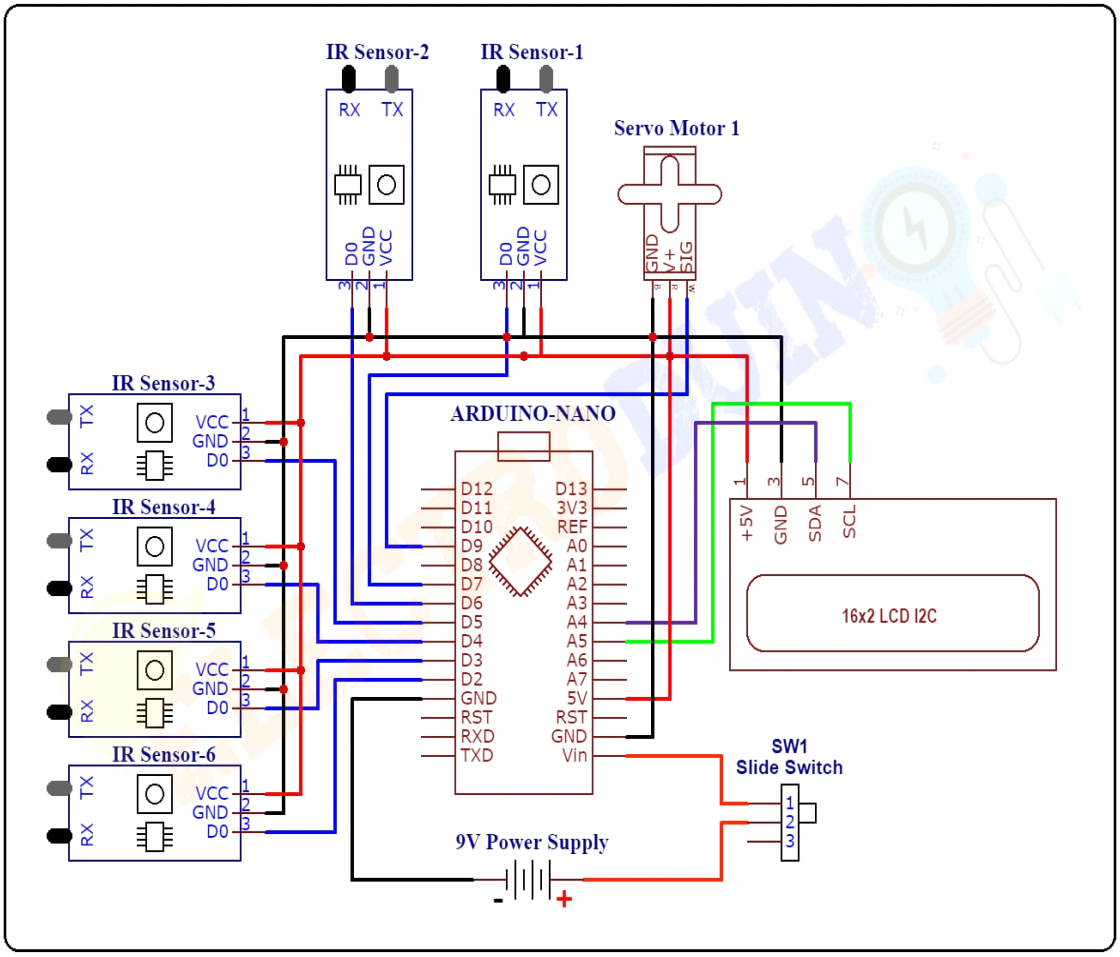


Car parking is a major problem in urban areas in developed and also in developing countries.The growing numberof vehicles creates a problems with parkingspaces mainly in the city center and the surrounding streets.current outdoor car park management is dependent on human personal keeping track of the availability of each car.the proposed solution utilizes a modern IOT approach and technologies such as mini PC platform ,sensors,and IQRF.When compared to a specialized and expansive systems,it is a solution that is cost-effective and has the potential in its expansion and integration with other IOT services



FUNCTIONAL DIAGRAM

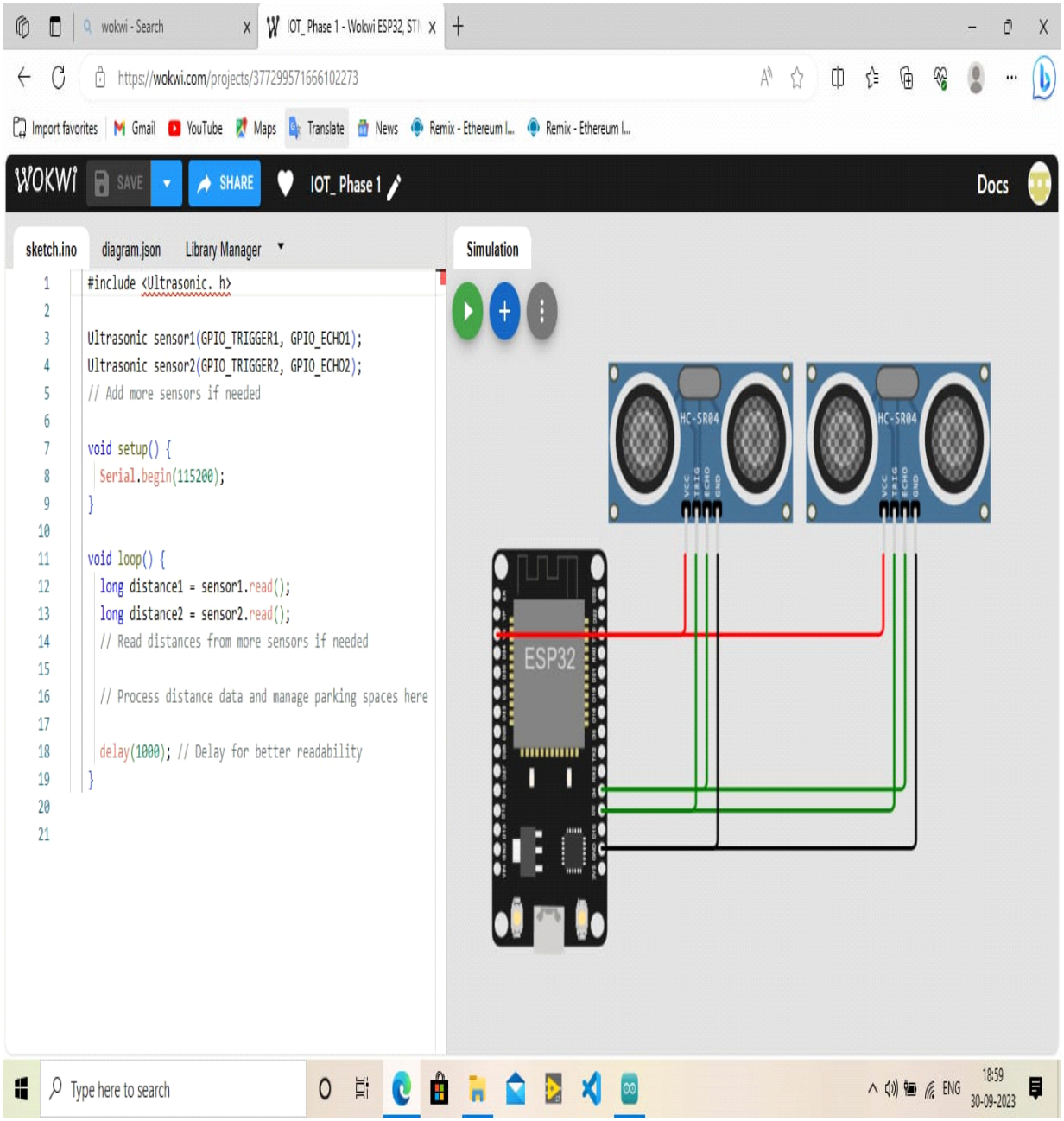
Ultrasonic sensors measure the distance of a target object by eliminating ultrasonic sound waves and convert the reflected sound into an electrial signal. Electromagnetic field detection is helpful to detect metals as they pick up minute changes in the magnetic field. Infrared sensors can detect motion and gauge temperature changes in the immediate surroundings



ENHANCEMENT

IOT enhances security as the sensors detect the vehicle and raise an alarm in case of unauthorized access.security camers and license plate scanners can be integrated into an IOT platform to detect and track susapicious activity automatically.

Solution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IOT_Phase 1 - Wokwi ESP32, STI
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WOKWI
SAVE
SHARE
IOT_Phase 1
Docs
sketch.ino
diagram.json
Library Manager
Simulation
#include <Ultrasonic. h>
Ultrasonic sensor1(GPIO_TRIGGER1, GPIO_ECHO1);
Ultrasonic sensor2(GPIO_TRIGGER2, GPIO_ECHO2);
// Add more sensors if needed
void setup() {
Serial.begin(115200);
}
void loop() {
long distance1 = sensor1.read();
long distance2 = sensor2.read();
// Read distances from more sensors if needed
// Process distance data and manage parking spaces here
delay(1000); // Delay for better readability
}
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