

NAME	S.NITHIYA
DEPT	ECE –III YEAR
REG NO	420121106027
COLLEGE CODE	4201
GROUP	IBM-GROUP 5

PROJECT: SMART WATER SYSTEM

Project Submission Part 2: Innovation

Water management has never been more important to the world than it is today. 20 years ago, one would have considered it improbable that water management would be vital to accomplishing weighty goals like fighting climate change or achieving political equality.

innovative ideas for water management?



Top 8 Water Management Trends in 2024

- Digital Water Management.
- Wastewater Processing.
- Advanced Filtration.
- Flood Prevention.
- Water-saving Technology.
- Decentralized Infrastructure.
- Innovative Materials.
- Desalination.

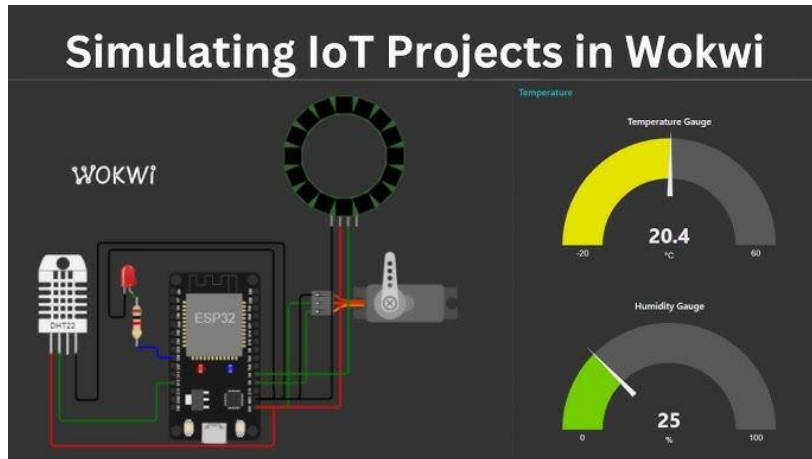
But with the capabilities that are increasingly being made available through smart water management innovations, it's looking more likely that smart water management may help save the world.

Module 3:

Getting started with ESP32 and Wokwi Platform:

The Sonoff devices uses the ESP8266 MC, which is basically the predecessor of the ESP32. But yes, the ESP32 is robust enough to be used in industrial applications

Look for ESP32 Systems. Click entry, and then Install. After restart your and navigate to Board to ensure ESP32 boards



by Espressif on that choose installing, Arduino IDE Tools > you have available.

Now select your board in the Tools > Board menu (in our case, it's the DOIT ESP32 DEVKIT V1).:

ESP32 proves to be a beginner-friendly microcontroller well-projects. It is capable different IoT platforms and works well with platforms we selected experiments

The Arduino for small applications. advanced projects 200 lines of code,

other advanced features like auto completion and error checking, VS Code with the PlatformIO IDE extension is the best alternative.

```
diagram.json  libraries.txt  Library Manager
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 16, 2); // Change the HEX address

#include <Servo.h>
Servo myservo1;

IR1 = 2;
IR2 = 4;
SmokeDetectorPin = 6; // Digital pin for the smoke detector
BuzzerPin = 7;        // Digital pin for the buzzer

Slot = 4; // Enter Total number of parking Slots

bool flag1 = false;
bool flag2 = false;

unsigned long lastLcdUpdate = 0; // Variable to track the time of the last
unsigned long lcdUpdateInterval = 1000; // Update the LCD every 1000 mill.

void setup() {
  lcd.begin(16, 2); // Initialize LCD with 16 columns and 2 rows
  lcd.backlight();
  pinMode(IR1, INPUT);
  pinMode(IR2, INPUT);
  pinMode(SmokeDetectorPin, INPUT);
  pinMode(BuzzerPin, OUTPUT);

  myservo1.attach(3);
  myservo1.write(180);
}
```

versatile and

suited for IoT of working with and standards the two IoT for our

IDE works great However, for with more than multiple files, and

Module 4:

IoT Communication Technologies:

An IoT-based water managementsystem is a centralized management that enables drivers to search for and reserve a water managementspot remotely through their smartphones. It offers a convenient arrangement for drivers to park their cars when they are looking to avoid potential traffic congestion

Technologies such as machine vision, multi-agent systems are suitable for open water managementlots to acquire water managementoccupancy information and GPS can be used to provide navigational directions.

Nwave IoT Based Smart Water managementSystem:

The Nwave water management management software and smart sensors power your wireless car water management monitoring system providing all of the necessary tools to operate with minimal effort and no programming skills required.



However, the most widely adopted types of smart water management IoT systems include:

- *cameras.*
- *overhead radars/lidars.*
- *ground sensors.*

Module 5:

IoT protocols:

A water managementsystem also requires protocols to ensure IoT devices' and sensors' connectivity in the water managementlot. These can be MQTT, LoRaWAN, Zigbee protocol for wireless IoT networks, or else. Such a system also requires video transmission protocols if it uses video surveillance.

IoT is used in smart water management system?



An IoT-based water management system is a centralized management that enables drivers to search for and reserve a water managementspot remotely through their smartphones. It offers a convenient arrangement for drivers to park their cars when they are looking to avoid potential traffic congestion.

An IoT-based smart water managemen tsystem is a decent solution for businesses and consumers, providing real-time data on water managementspace availability, pricing, payments, and more. It can positively impact the environment and traffic. Moreover, IoT solutions ensure efficient water management reservation and management.