

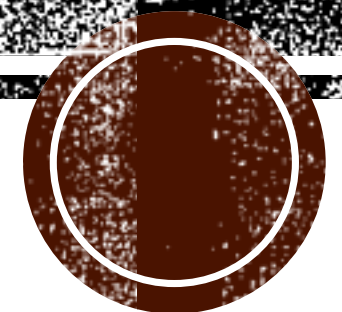
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PROJECT TITLE : DATA STRUCTURE AND ALGORITHMS

TOPIC : DATA STRUCTURE

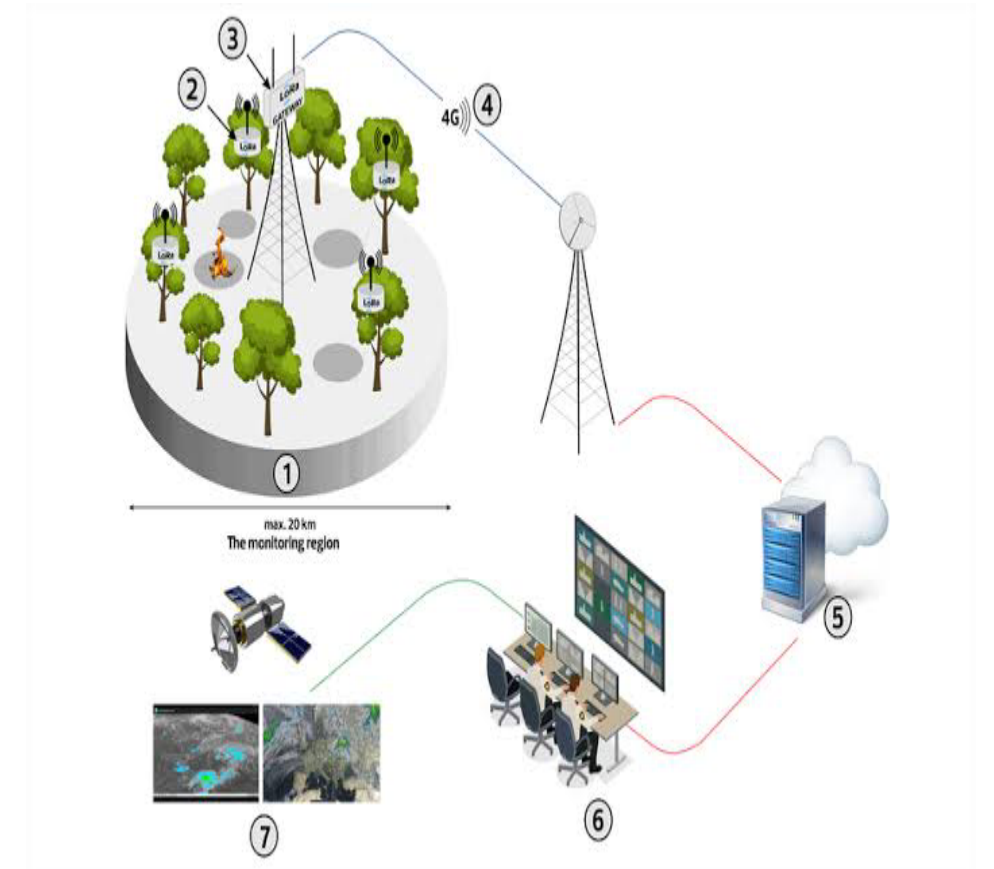


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- PHASE 2 : INNOVATION



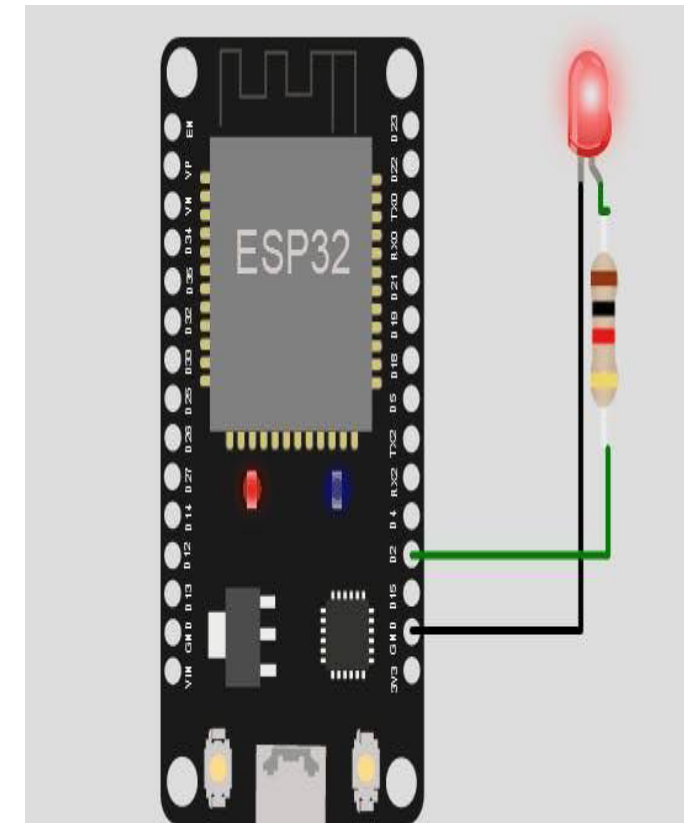
## IOT Based Environmental Monitoring System

*IOT is newly developed technology in which the connectivity between physical objects along with controllers, actuators and sensors synchronized over an Internet. IOT able to provide means to monitor the quality of parameters like Air, Noise, Temperature, Humidity and Light [2]. It helps concern authorities to take action against pollution crossing beyond defined level.*



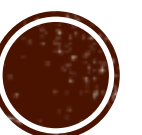
# ESP32 Simulation

- *The ESP32 is a popular WiFi and Bluetooth-enabled microcontroller, widely used for IoT Projects.*
- *Wokwi simulates the ESP32, ESP32-C3, ESP32-S2, ESP32-S3, ESP32-C6 (beta), and ESP32-H2 (alpha).*



# *Iot communication technology*

*system of interconnected physical devices that communicate via network connectivity using various communications protocols*





## *Application layer*

- *The application layer serves as the interface between the user and the device within a given IoT protocol*



# IOT Protocol

- *Advanced Message Queuing Protocol (AMQP)*
- *Constrained Application Protocol (CoAP)*
- *Data Distribution Service (DDS)*
- *Wi-Fi/802.11*
- *Message Queue Telemetry Transport (MQTT)*
- *Transport layer*
- *Transmission Control Protocol (TCP)*



## Conclusion

- The many of the IoT project are used to the ESP32 and Wokwi platforms.
- This is the one of the way to simulate the Arduino Uno and other sensors such as temperature sensor, humidity sensors, etc.,
- IoT communication technology and their protocols are helpful to improve and controls the our projects.

