IoT Project Title

DEPARTMENT OF INFORMATION TECHNOLOGY

22GCL12 – FOUNDATION LAB – Electrical, IoT and Web
**(Internet of Things)**

PRESENTED BY
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OBJECTIVE

- Design and implement a soil moisture monitoring system utilizing an ESP32 microcontroller for measuring and transmitting real-time soil moisture data. The project's objective is to furnish precise and prompt insights into soil moisture levels within a designated area. This facilitates effective control over irrigation, aids in managing plant health, and contributes to water conservation efforts.
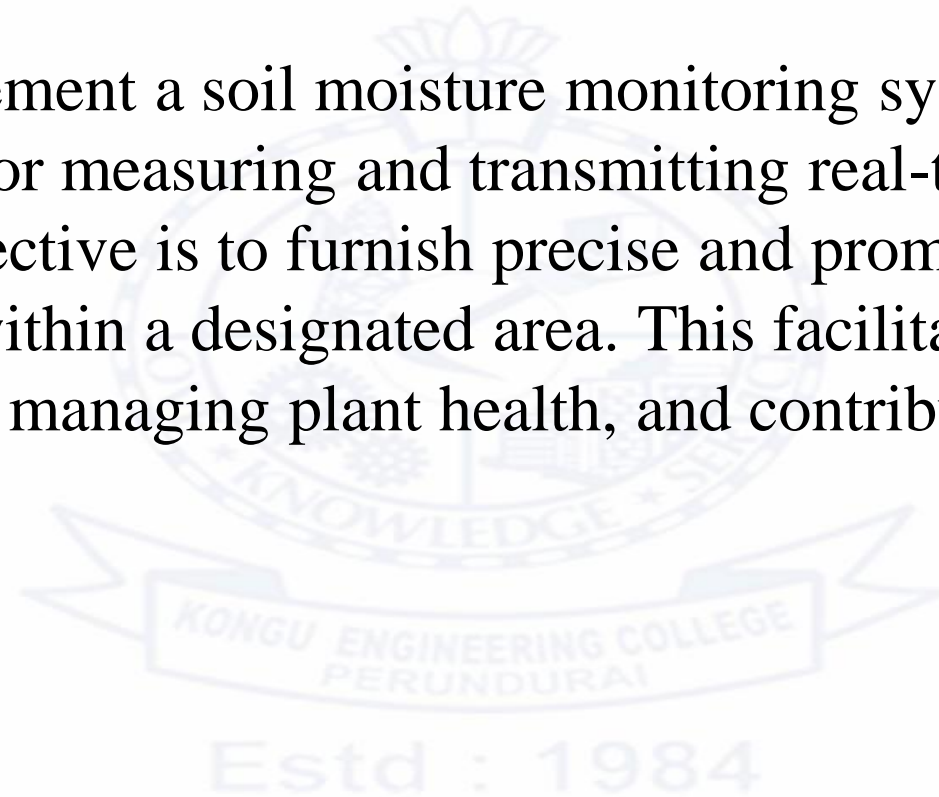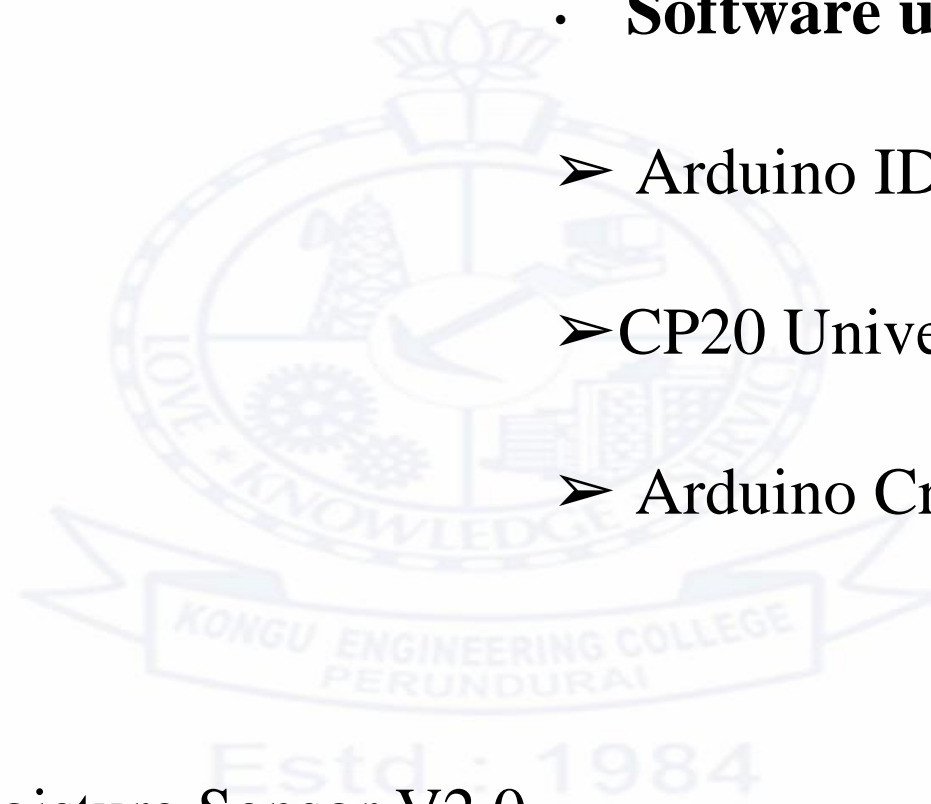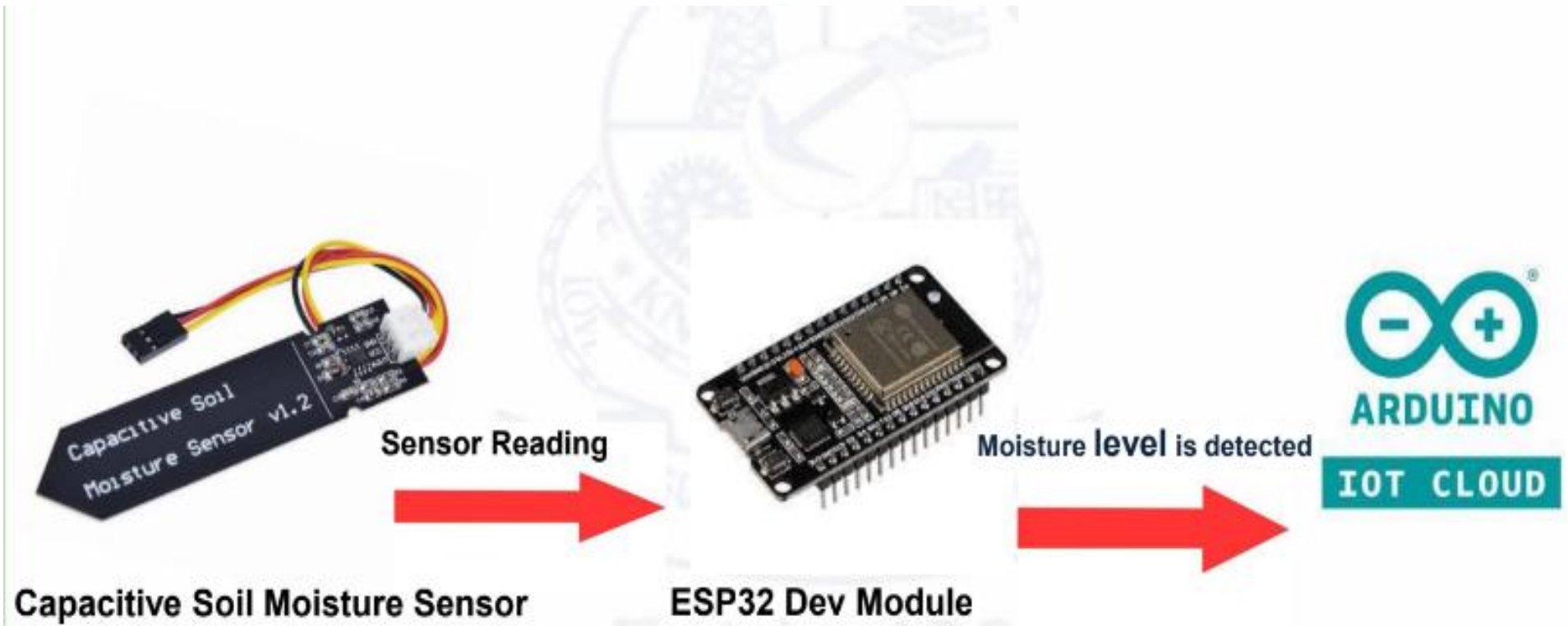
HARDWARE AND SOFTWARE REQUIREMENTS

- **Hardware used**

  ➢ ESP32

  ➢ BreadBoard

  ➢ USB cable

  ➢ Jumper Wire

  ➢ Capacitive Soil Moisture Sensor V2.0
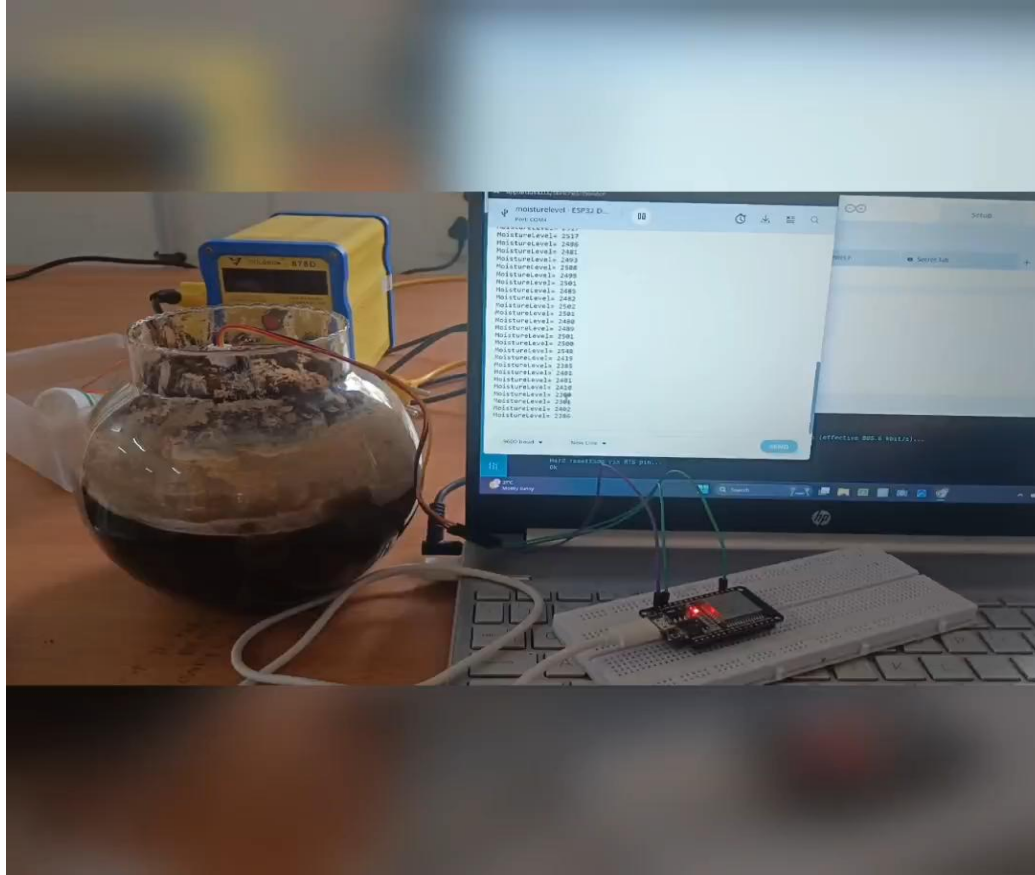
- **Software used**

  ➢ Arduino IDE/Arduino Cloud

  ➢ CP20 Universal Windows Driver
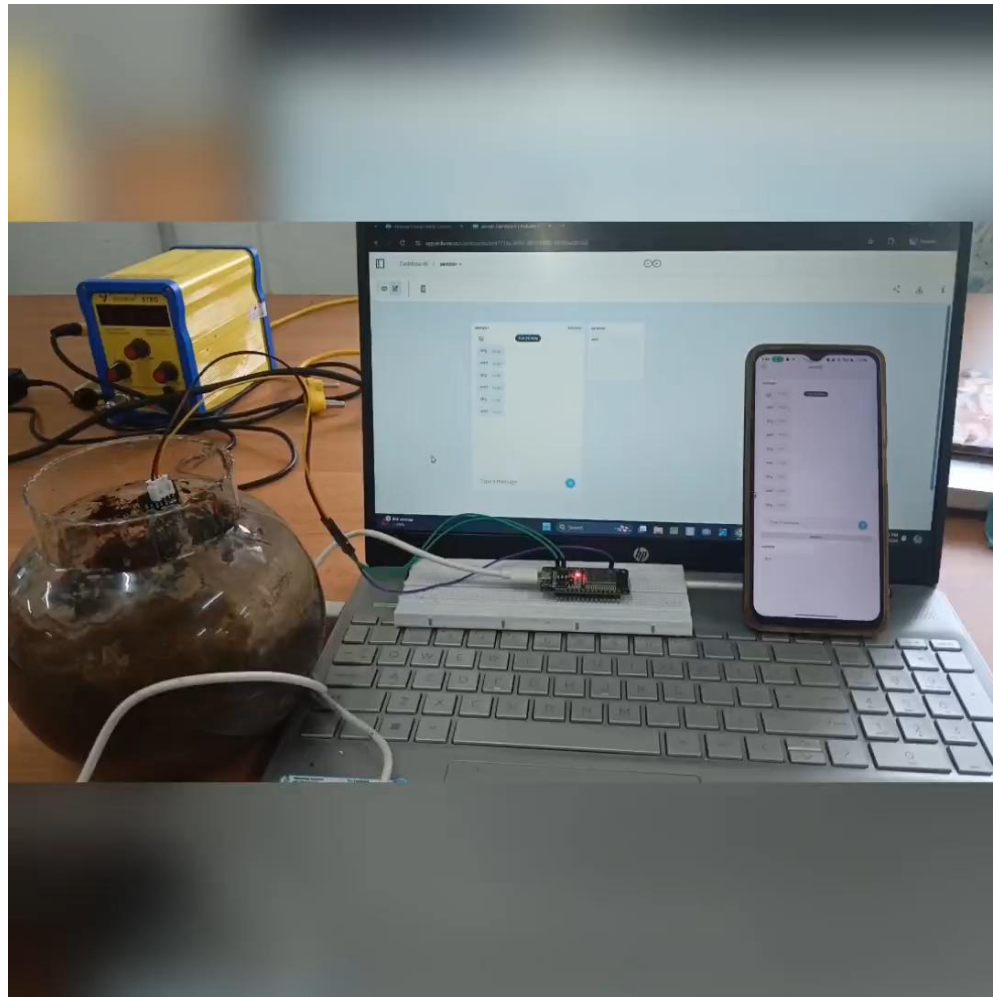
  ➢ Arduino Create Agent

BLOCK DIAGRAM

Capacitive Soil Moisture Sensor → Sensor Reading → ESP32 Dev Module → Moisture level is detected → ARDUINO IOT CLOUD

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SERIAL MONITOR OUTPUT

DASHBOARD

CONCLUSION

The soil moisture monitoring system, powered by ESP32, presents a compelling and budget-friendly solution for tracking soil moisture in real-time. This innovative technology not only contributes to water conservation efforts but also enhances plant health management, thereby establishing itself as an indispensable tool for agricultural and landscaping endeavors.

THANK YOU