Program Statement:
The main objective of **Smart Irrigation** is to automate the process of drip irrigation. Here, a Soil Moisture Sensor is used to read the volumetric moisture content from the soil and display it to the user through an application. The user will also be able to control irrigation by sitting at home and monitoring the farm by switching on or off the motor of the water tank.

CODE:

```
#include <ESP8266WiFi.h>

String apiWritekey = "7ZDPDFQ8EHUK3609"; // replace with your THINGSPEAK WRITEAPI key here
const char* ssid = "pranu"; // your wifi SSID name
const char* password = "pranu1849" ;// wifi pasword

const char* server = "api.thingspeak.com";
//float resolution=3.3/1023;// 3.3 is the supply volt  & 1023 is max analog read value
WiFiClient client;
 const int sensor_pin = A0;
void setup() {
  Serial.begin(115200);
  WiFi.disconnect();
  delay(10);
  WiFi.begin(ssid, password);

  Serial.println();
  Serial.println();
  Serial.print("Connecting to ");
  Serial.println(ssid);

  WiFi.begin(ssid, password);

  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }
  Serial.println("");
  Serial.print("NodeMcu connected to wifi...");
  Serial.println(ssid);
  Serial.println();
}

void loop() {
  int sensorValue=analogRead(A0);

  if (client.connect(server,80))
  {
    String tsData = apiWritekey;
```

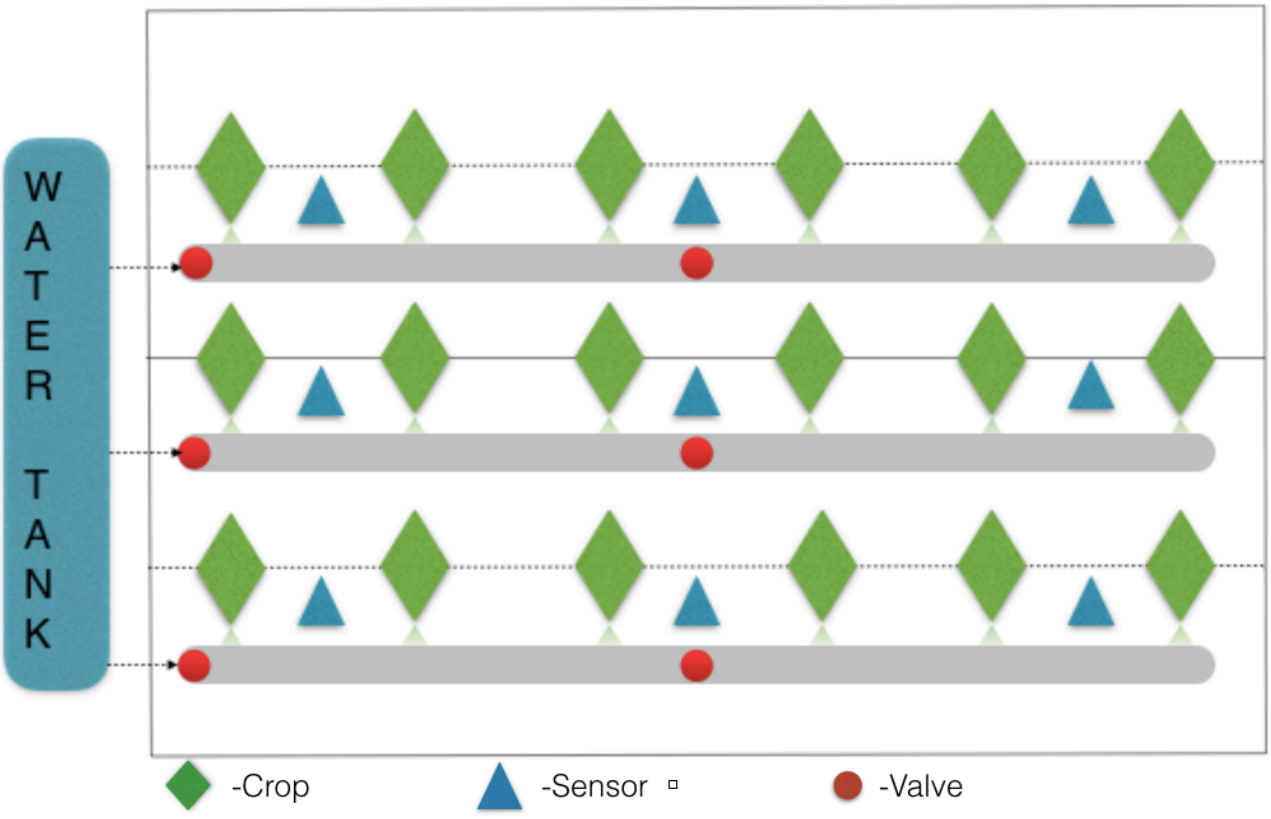
```
            tsData +="&field1=";
            tsData += String(sensorValue);
            tsData += "\r\n\r\n";

      client.print("POST /update HTTP/1.1\n");
      client.print("Host: api.thingspeak.com\n");
      client.print("Connection: close\n");
      client.print("X-THINGSPEAKAPIKEY: "+apiWritekey+"\n");
      client.print("Content-Type: application/x-www-form-urlencoded\n");
      client.print("Content-Length: ");
      client.print(tsData.length());
      client.print("\n\n");  // the 2 carriage returns indicate closing of Header fields &
starting of data
      client.print(tsData);

      Serial.print("Moisture: ");
      Serial.print(sensorValue);
      Serial.println("uploaded to Thingspeak server....");
   }
   client.stop();

   Serial.println("Waiting to upload next reading...");
   Serial.println();
   // thingspeak needs minimum 15 sec delay between updates
   delay(15000);
}
```

ARCHITECTURE



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