Project 11:

Dc Pump using WeMos webserver

1. Introduction

I created a WiFi server application so that I may able to control the pump through my smartphone. Basically, the WeMos D1 Mini broadcasts an access point and then I connect to that access point. I then visit an IP address using a web browser and there an interface is shown for controlling the water pump

2. Understanding of Dc Pump

This DC 3-6 V Mini Micro Submersible Water Pump is a low cost, small size Submersible Pump Motor which can be operated from a 2.5 ~ 6V power supply. It can take up to 120 liters per hour with a very low current consumption of 220mA. Just connect tube pipe to the motor outlet, submerge it in water and power it.

Make sure that the water level is always higher than the motor. The dry run may damage the motor due to heating and it will also produce noise.

COMPONENTS: -

1.WEMOS

2.MOSFET

3.PUMP

4.ADEPTOR

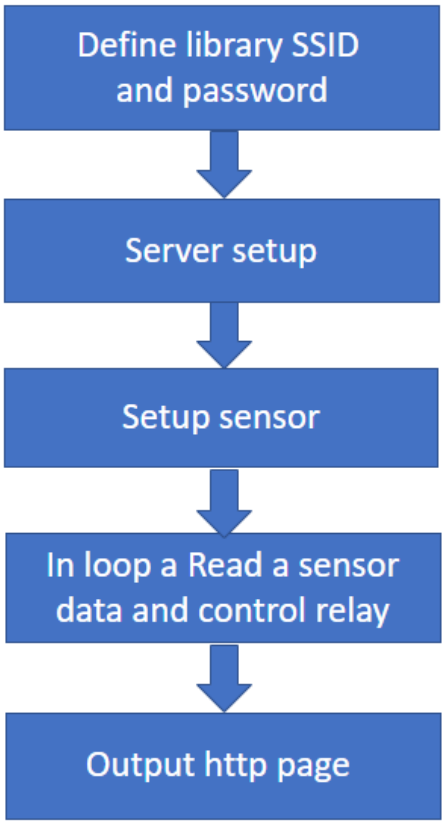
APPLICATION: -

DC motors have been used as pump drive motors due to their variable speed control ability, especially at low speeds, simple control system, high starting torque and good transient response. ... However, since they are load dependent, their output speed varies with the applied load.

OBJECTIVES: -

The Water Pump acts as the heart of the engine, pumping much-needed liquid through to the engine to help it run efficiently and reliably; the flow rate is vitally important so as to maximize this.

FLOW CHART:-



PROGRAMMING: -

```
#include <ESP8266WiFi.h>
#include <WiFiClient.h>
#include <ESP8266WebServer.h>
const char* ssid = "Pump Controller";
const char* password = "12345678";
 ESP8266WebServer server(80);
 const int pump = 8;
```

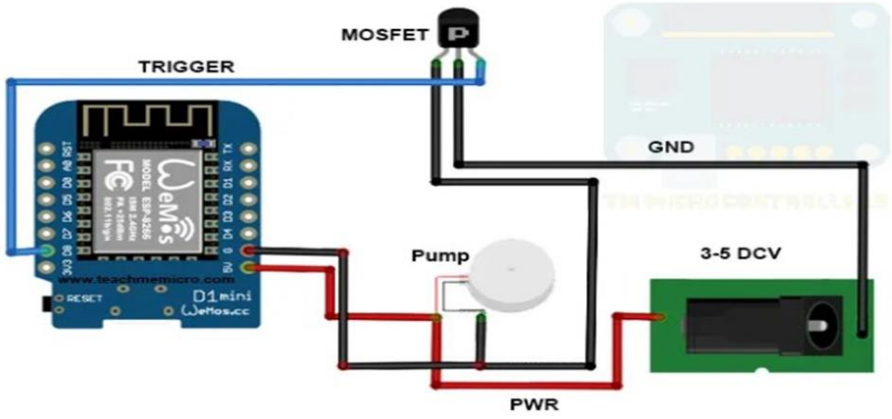
```
static const String page PROGMEM = "<h1>Water Pump
Controller</h1><p><a
href=\"PumpOn\"><button>ON</button></a> <a
href=\"PumpOff\"><button>OFF</button></a></p>";
 void setup(void) {
   pinMode(pump, OUTPUT);
digitalWrite(pump, 0);
  Serial.begin(115200);

  WiFi.softAP(ssid, password);
  Serial.println("");

  Serial.println(ssid);
  Serial.print("WiFi Server started at IP address: ");
  Serial.println(WiFi.softAPIP());



  server.on("/", [](){
    server.send(200, "text/html", page);
  });

  server.on("/PumpOn", [](){
    server.send(200, "text/html", page);
    digitalWrite(pump, HIGH);
    delay(1000);
  });
```

```
  server.on("/PumpOff", [](){
    server.send(200, "text/html", page);
    digitalWrite(pump, LOW);
    delay(1000);
  });

  server.begin();
  Serial.println("HTTP server started");
}

void loop(void) {
  server.handleClient();
}
```

HARDWARE CONNECTION: -

1. Connect Pin DC pump to PNP
2. Connect pin D0 to D2
3. Connect pin GND to GND
4. Connect pin 5v to 5v

CIRCUIT DIAGRAM: -



BASIC PUMP CONTROL CIRCUIT