**CODE**

#include <SoftwareSerial.h>// import the serial library

#include <LiquidCrystal.h>

LiquidCrystal lcd(13, 12, 11, 10, 9, 8);

SoftwareSerial ESP8266(0, 1); // RX, TX

const int analogInPin = A0; // Analog input pin that the potentiometer is attached to

int sensorValue = 0; // value read from the pot

const int MP3 = 7; // the number of the buzzer pin

const int led = 6; // the number of the buzzer pin

const int motor = 5; // the number of the buzzer pin

void setup() {

// put your setup code here, to run once:

ESP8266.begin(9600);

lcd.begin(16, 2);

pinMode(MP3, OUTPUT);

pinMode(led, OUTPUT);

pinMode(motor, OUTPUT);

lcd.setCursor(0, 0); // Top left

ESP8266.println("SHOWER CONTROL");

lcd.print(" SHOWER CONTROL");

lcd.setCursor(4, 1); // bottom left

lcd.print("PROJECT");

delay(2000);

lcd.clear();

}

void loop() {

if(millis()/1000<=360){

digitalWrite(MP3, HIGH);

digitalWrite(motor, HIGH);

}

lcd.setCursor(0, 0);

// print the number of seconds since reset:

lcd.print("Timer in SEC:");

if(millis()/1000>0&&millis()/1000<360) {lcd.print(millis() / 1000);} //6min timer in sec disply

if(millis()/1000>=240&&millis()/1000<=243){digitalWrite(led, HIGH);delay(500);}//led blinks fOr 3sec On 4th min

else{digitalWrite(led, LOW);}

if(millis()/1000>=300&&millis()/1000<=303){digitalWrite(led, HIGH);delay(500);}//led blinks fOr 3sec On 5th min

else{digitalWrite(led, LOW);}

if(millis()/1000>=360&&millis()){digitalWrite(led, HIGH);delay(500);}//led blinks fOr 3sec On 5th min

if(millis()/1000>=240&&millis()/1000<=243) {digitalWrite(motor, LOW);}//3sec mtr speed cntrl On 4min

else{digitalWrite(motor, HIGH);}

if(millis()/1000>=60&&millis()/1000<=120) {lcd.setCursor(0, 1);lcd.print("1min completed ");}

if(millis()/1000>120&&millis()/1000<=180){lcd.setCursor(0, 1);lcd.print("2min completed ");}

if(millis()/1000>180&&millis()/1000<=240){lcd.setCursor(0, 1);lcd.print("3min completed ");}

if(millis()/1000>240&&millis()/1000<=300){lcd.setCursor(0, 1);lcd.print("4min completed ");} //4rd min led flashes

if(millis()/1000>300&&millis()/1000<=360){lcd.setCursor(0, 1);lcd.print("5min completed ");} //5rd min led flashes

if(millis()/1000>=360){lcd.setCursor(0, 1);lcd.print("6min completed ");digitalWrite(motor, HIGH);digitalWrite(MP3, LOW);digitalWrite(led, LOW);}//after 4 min led,motr,mp3 stop

// put your main code here, to run repeatedly:

sensorValue = analogRead(analogInPin);

ESP8266.println(":Water flow:");

ESP8266.println(sensorValue);

ESP8266.println("ML");

}

**Thinkspeak**

#include <ESP8266WiFi.h>

#include <ESP8266HTTPClient.h>

WiFiClient client;

String thingSpeakAddress= "http://api.thingspeak.com/update?";

String writeAPIKey;

String tsfield1Name;

String request\_string;

HTTPClient http;

void setup()

{

pinMode(16, INPUT);

WiFi.disconnect();

WiFi.begin("HUAWEI","OmaN1234");

while ((!(WiFi.status() == WL\_CONNECTED))){

delay(300);

}

}

void loop()

{

if (client.connect("api.thingspeak.com",80)) {

request\_string = thingSpeakAddress;

request\_string += "key=";

request\_string += "1FKDA12UPR0URXKO";

request\_string += "&";

request\_string += "field1";

request\_string += "=";

request\_string += digitalRead(16);

http.begin(request\_string);

http.GET();

http.end();

delay(3000);

}

}

**SD card**

#include"SD.h"

#define SD\_ChipSelectPin4

#include "TMRpcm.h"

#include "SPI.h"

TMRpcm tmrpcm;

void setup() {

tmrpcm.speakerPin = 9;

Serial.begin(9600);

if(!SD.begin(SD\_ChipSelectPin))

{

Serial.Print("SDfail");

return;

}

tmrpcm.SetVolume(5);

tmrpcm.play("perfect.wav");

}

void loop() {

// put your main code here, to run repeatedly:

}

**Water flow meter**

#include <LiquidCrystal.h>

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

int X;

int Y;

float Time = 0;

float frequency = 0;

float waterFlow = 0;

float total = 0;

float LS = 0;

const int input = A0;

const int test = 9;

void setup()

{

Serial.begin(9600);

lcd.begin(16, 2);

lcd.clear();

lcd.setCursor(0,0);

lcd.print("Water Flow Meter");

lcd.setCursor(0,1);

lcd.print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

delay(2000);

pinMode(input,INPUT);

pinMode(test, OUTPUT);

analogWrite(test,100);

}

void loop()

{

X = pulseIn(input, HIGH);

Y = pulseIn(input, LOW);

Time = X + Y;

frequency = 1000000/Time;

waterFlow = frequency/7.5;

LS = waterFlow/60;

if(frequency >= 0)

{

if(isinf(frequency))

{

lcd.clear();

lcd.setCursor(0,0);

lcd.print("L/Min: 0.00");

lcd.setCursor(0,1);

lcd.print("Total: ");

lcd.print(total);

lcd.print(" L");

}

else

{

total = total + LS;

Serial.println(frequency);

lcd.clear();

lcd.setCursor(0,0);

lcd.print("L/Min: ");

lcd.print(waterFlow);

lcd.setCursor(0,1);

lcd.print("Total: ");

lcd.print(total);

lcd.print(" L");

}

}

delay(1000);

}