**ph SENSOR**

de\_ne SensorPin A0

de\_ne O\_set 0.00

de\_ne LED 13

de\_ne samplingInterval 20

de\_ne printInterval 800

de\_ne ArrayLenth 40

int pHArray[ArrayLenth];

int pHArrayIndex=0;

void setup(void)

pinMode(LED,OUTPUT);

Serial.begin(9600);

Serial.println("pH meter experiment!");

void loop(void)

static unsigned long samplingTime = millis();

static unsigned long printTime = millis();

static oat pHValue,voltage;

if(millis()-samplingTime > samplingInterval)

pHArray[pHArrayIndex++]=analogRead(SensorPin);

if(pHArrayIndex==ArrayLenth)pHArrayIndex=0;

voltage = avergearray(pHArray, ArrayLenth)\*5.0/1024;

pHValue = 3.5\*voltage+O\_set;

samplingTime=millis();

if(millis() - printTime > printInterval)

Serial.print("Voltage:");

Serial.print(voltage,2);

Serial.print(" pH value: ");

Serial.println(pHValue,2);

digitalWrite(LED,digitalRead(LED)1);

printTime = millis();

doubleavergearray(int \_ arr; intnumber)

inti;

intmax; min;

doubleavg;

longamount = 0;

if (number <= 0)

Serial:println("Errornumberforthearraytoavraging!=n");

return0;

if (number < 5)

for(i = 0; i < number; i + +)amount+ = arr[i];

avg = amount/number;

return avg;

else

if(arr[0]<arr[1])

min = arr[0];max=arr[1];

else

min=arr[1];max=arr[0];

for(i=2;i<number;i++)

if(arr[i]<min)

amount+=min; //arr<min

min=arr[i];

else

if(arr[i]>max)

amount+=max; //arr>max

max=arr[i];

else

amount+=arr[i]; //min<=arr<=max

avg = (double)amount/(number-2);

return avg;