const int LED=LED\_BUILTIN;

void setup() {

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

pinMode(LED,OUTPUT);

}

void loop() {

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

digitalWrite(LED,HIGH);

delay(1000);

digitalWrite(LED,LOW);

delay(1000);

}

const int LED=LED\_BUILTIN;

void setup() {

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

pinMode(LED,OUTPUT);

}

void loop() {

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

digitalWrite(LED,1);

delay(1000);

digitalWrite(LED,0);

delay(1000);

}

const int LED=LED\_BUILTIN;

void setup() {

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

pinMode(LED,OUTPUT);

}

void loop() {

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

digitalWrite(LED,true);

delay(1000);

digitalWrite(LED,false);

delay(1000);

}

unsigned long t0=0;

unsigned long t1=0;

void setup() {

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

pinMode(LED\_BUILTIN, OUTPUT);

}

void loop() {

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

t0=millis();

digitalWrite(LED\_BUILTIN, HIGH);

while (millis()<(t0+1000)){

}

t1=millis();

digitalWrite(LED\_BUILTIN, LOW);

while (millis()<(t1+1000)){

}

}

const int LED=LED\_BUILTIN;

double t0=0;

double t1=0;

double t2=0;

void setup() {

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

pinMode(LED,OUTPUT);

Serial.begin(9600);

}

void loop() {

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

t0=micros();

digitalWrite(LED,HIGH);

t1=micros();

digitalWrite(LED,LOW);

t2=micros();

Serial.println((String)"digitalWrite(LED,HIGH) requires: "+(t1-t0)+" us.");

Serial.println((String)"digitalWrite(LED,LOW) requires: "+(t2-t1)+" us.");

Serial.println();

delay(1000);

}

int pin = 2;

void setup() {

pinMode(pin, OUTPUT); // sets the digital pin as output

}

void loop() {

digitalWrite(pin, HIGH);

delayMicroseconds(1000);

digitalWrite(pin, LOW);

delayMicroseconds(1000);

}

//obtaining two different delays

//LED1 delay is 400 ms (400 ms on 400 ms off)

//LED2 delay is 500 ms (500 ms on 500 ms off)

//This example uses the array

const int LED1=8;

const int LED2=9;

int LED1State=HIGH;

int LED2State=HIGH;

int k=0;

int LED1Array[]={1,1,1,1,0,0,0,0,1,1,1,1,0,0,0,0,1,1,1,1,0,0,0,0,1,1,1,1,0,0,0,0,1,1,1,1,0,0,0,0};

int LED2Array[]={1,1,1,1,1,0,0,0,0,0,1,1,1,1,1,0,0,0,0,0,1,1,1,1,1,0,0,0,0,0,1,1,1,1,1,0,0,0,0,0};

void setup() {

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

pinMode(LED1,OUTPUT);

pinMode(LED2,OUTPUT);

digitalWrite(LED1,LED1State);

digitalWrite(LED2,LED2State);

}

void loop() {

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

delay(100);

k=k+1;

digitalWrite(LED1,LED1Array[k-1]);

digitalWrite(LED2,LED2Array[k-1]);

if (k==40) k=0;

}

//Common Cathode RGB LED.

//Cathode is connected to GND pin of Arduino.

#define Rpin 8

#define Gpin 9

#define Bpin 10

void setup() {

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

pinMode(Rpin, OUTPUT);

pinMode(Gpin, OUTPUT);

pinMode(Bpin, OUTPUT);

}

void loop() {

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

digitalWrite(Rpin,HIGH);

delay(1000);

digitalWrite(Rpin,LOW);

digitalWrite(Gpin,HIGH);

delay(1000);

digitalWrite(Gpin,LOW);

digitalWrite(Bpin,HIGH);

delay(1000);

digitalWrite(Bpin,LOW);

digitalWrite(Rpin,HIGH);

digitalWrite(Gpin,HIGH);

digitalWrite(Bpin,HIGH);

delay(1000);

digitalWrite(Rpin,LOW);

digitalWrite(Gpin,LOW);

digitalWrite(Bpin,LOW);

}

//Common Anode RGB LED.

//Anode is connected to +5 pin of Arduino.

#define Rpin 8

#define Gpin 9

#define Bpin 10

void setup() {

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

pinMode(Rpin, OUTPUT);

pinMode(Gpin, OUTPUT);

pinMode(Bpin, OUTPUT);

}

void loop() {

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

digitalWrite(Rpin,LOW);

delay(1000);

digitalWrite(Rpin,HIGH);

digitalWrite(Gpin,LOW);

delay(1000);

digitalWrite(Gpin,HIGH);

digitalWrite(Bpin,LOW);

delay(1000);

digitalWrite(Bpin,HIGH);

digitalWrite(Rpin,LOW);

digitalWrite(Gpin,LOW);

digitalWrite(Bpin,LOW);

delay(1000);

digitalWrite(Rpin,HIGH);

digitalWrite(Gpin,HIGH);

digitalWrite(Bpin,HIGH);

}

const int a=2;

const int b=3;

const int c=4;

const int d=5;

const int e=6;

const int f=7;

const int g=8;

int i=0;

void displayNumber(int n);

void clearDisp();

void setup() {

pinMode(a,OUTPUT);

pinMode(b,OUTPUT);

pinMode(c,OUTPUT);

pinMode(d,OUTPUT);

pinMode(e,OUTPUT);

pinMode(f,OUTPUT);

pinMode(g,OUTPUT);

}

void loop() {

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

for (i=0;i<=9;i++){

displayNumber(i);

delay(1000);

}

}

void clearDisp(){

digitalWrite(a,LOW);

digitalWrite(b,LOW);

digitalWrite(c,LOW);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,LOW);

}

void displayNumber(int n)

{

switch (n){

case 0:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,HIGH);

digitalWrite(g,LOW);

break;

case 1:

clearDisp();

digitalWrite(a,LOW);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,LOW);

break;

case 2:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,LOW);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,LOW);

digitalWrite(g,HIGH);

break;

case 3:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,HIGH);

break;

case 4:

clearDisp();

digitalWrite(a,LOW);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 5:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,LOW);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,LOW);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 6:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,LOW);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 7:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,LOW);

break;

case 8:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 9:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,LOW);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

}

}

// PORT

//See: https://create.arduino.cc/projecthub/Hack-star-Arduino/learn-arduino-port-manipulation-2022-10f9af

//See: https://www.instructables.com/Arduino-and-Port-Manipulation/

void setup() {

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

DDRD=0b11111111;

}

void loop() {

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

for (int i=0;i<=255;i++){

PORTD=i;

delay(250);

}

}

//Pin connected to 12 of 74HC595

int latchPin = 8;

//Pin connected to 11 of 74HC595

int clockPin = 12;

//Pin connected to 14 of 74HC595

int dataPin = 11;

void setup() {

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

pinMode(latchPin, OUTPUT);

pinMode(clockPin, OUTPUT);

pinMode(dataPin, OUTPUT);

}

void loop() {

// count from 0 to 255 and display the number

// on the LEDs

// bit: 7 6 5 4 3 2 1 0 (7 shows the MSB, 0 shows the LSB)

// IC pin: 7 6 5 4 3 2 1 15

for (int numberToDisplay = 0; numberToDisplay < 256; numberToDisplay++) {

// take the latchPin low so

// the LEDs don't change while you're sending in bits:

digitalWrite(latchPin, LOW);

// shift out the bits:

shiftOut(dataPin, clockPin, MSBFIRST, numberToDisplay);

//take the latch pin high so the LEDs will light up:

digitalWrite(latchPin, HIGH);

// pause before next value:

delay(500);

}

}

//Pin connected to 12 of 74HC595

int latchPin = 8;

//Pin connected to 11 of 74HC595

int clockPin = 12;

//Pin connected to 14 of 74HC595

int dataPin = 11;

void setup() {

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

pinMode(latchPin, OUTPUT);

pinMode(clockPin, OUTPUT);

pinMode(dataPin, OUTPUT);

}

void loop() {

// count from 0 to 255 and display the number

// on the LEDs

// bit: 7 6 5 4 3 2 1 0 (7 shows the MSB, 0 shows the LSB)

// IC pin: 15 1 2 3 4 5 6 7

for (int numberToDisplay = 0; numberToDisplay < 256; numberToDisplay++) {

// take the latchPin low so

// the LEDs don't change while you're sending in bits:

digitalWrite(latchPin, LOW);

// shift out the bits:

shiftOut(dataPin, clockPin, LSBFIRST, numberToDisplay);

//take the latch pin high so the LEDs will light up:

digitalWrite(latchPin, HIGH);

// pause before next value:

delay(500);

}

}

//This code is written for common Anode display.

#define LATCH\_DIO 4

#define CLK\_DIO 7

#define DATA\_DIO 8

int digit1=0;

int digit2=0;

int digit3=0;

int digit4=0;

const byte SEGMENT\_MAP[] ={0xC0,0xF9,0xA4,0xB0,0x99,0x92,0x82,0xF8,0X80,0X90};

const byte SEGMENT\_SELECT[] = {0xF1,0xF2,0xF4,0xF8};

void setup(){

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

pinMode(LATCH\_DIO,OUTPUT);

pinMode(CLK\_DIO,OUTPUT);

pinMode(DATA\_DIO,OUTPUT);

}

void loop(){

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

displayNumber(7890);

}

void displayNumber(int num){

digit4 = num % 10;

digit3 = (num / 10) % 10;

digit2 = (num / 100) % 10;

digit1 = (num / 1000) % 10;

WriteNumberToSegment(0,digit1);

WriteNumberToSegment(1,digit2);

WriteNumberToSegment(2,digit3);

WriteNumberToSegment(3,digit4);

}

void WriteNumberToSegment(byte Segment, byte Value){

digitalWrite(LATCH\_DIO,LOW);

shiftOut(DATA\_DIO, CLK\_DIO, MSBFIRST, SEGMENT\_MAP[Value]);

shiftOut(DATA\_DIO, CLK\_DIO, MSBFIRST, SEGMENT\_SELECT[Segment] );

digitalWrite(LATCH\_DIO,HIGH);

}

#include <TM1637.h>

int CLK=2;

int DIO=3;

TM1637 tm(CLK,DIO);

void setup() {

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

tm.init();

tm.set(2); //set brightness 0-7

}

void loop() {

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

// this code shows 12:34

tm.display(0,1);

tm.display(1,2);

tm.point(1);

tm.display(2,3);

tm.display(3,4);

}

#include <TM1637.h>

int CLK=2;

int DIO=3;

int number=0;

TM1637 tm(CLK,DIO);

void setup() {

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

tm.init();

tm.set(2); //set brightness 0-7

randomSeed(analogRead(0));

delay(500);

}

void loop() {

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

// this code generates a random number between 1000-9999 and displays it

number=random(1000,9999);

displayNumber(number);

delay(1000);

}

void displayNumber(int num){

tm.display(3, num % 10);

tm.display(2, num / 10 % 10);

tm.display(1, num / 100 % 10);

tm.display(0, num / 1000 % 10);

}

int pushButton=9;

void setup() {

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

pinMode(LED\_BUILTIN,OUTPUT);

pinMode(pushButton,INPUT);

}

void loop() {

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

digitalWrite(LED\_BUILTIN,digitalRead(pushButton));

}

const int LED=LED\_BUILTIN;

const int pushButton=9;

int value=0;

void setup() {

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

pinMode(LED,OUTPUT);

pinMode(pushButton,INPUT\_PULLUP);

}

void loop() {

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

value=digitalRead(pushButton);

digitalWrite(LED\_BUILTIN,!value);

}

void setup() {

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

pinMode(LED\_BUILTIN,OUTPUT);

}

void loop() {

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

digitalWrite(LED\_BUILTIN,!digitalRead(LED\_BUILTIN));

delay(1000);

}

const int a=2;

const int b=3;

const int c=4;

const int d=5;

const int e=6;

const int f=7;

const int g=8;

const int dec=9;

const int inc=10;

int value=0;

void displayNumber(int n);

void clearDisp();

void setup() {

pinMode(a,OUTPUT);

pinMode(b,OUTPUT);

pinMode(c,OUTPUT);

pinMode(d,OUTPUT);

pinMode(e,OUTPUT);

pinMode(f,OUTPUT);

pinMode(g,OUTPUT);

pinMode(dec,INPUT);

pinMode(inc,INPUT);

}

void loop() {

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

if (digitalRead(dec)==LOW){

delay(300);

value=value-1;

if (value<0)

value=0;

}

if (digitalRead(inc)==LOW){

delay(300);

value=value+1;

if (value>9)

value=9;

}

displayNumber(value);

}

void clearDisp(){

digitalWrite(a,LOW);

digitalWrite(b,LOW);

digitalWrite(c,LOW);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,LOW);

}

void displayNumber(int n)

{

switch (n){

case 0:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,HIGH);

digitalWrite(g,LOW);

break;

case 1:

clearDisp();

digitalWrite(a,LOW);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,LOW);

break;

case 2:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,LOW);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,LOW);

digitalWrite(g,HIGH);

break;

case 3:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,HIGH);

break;

case 4:

clearDisp();

digitalWrite(a,LOW);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 5:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,LOW);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,LOW);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 6:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,LOW);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 7:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,LOW);

break;

case 8:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 9:

clearDisp();

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,LOW);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

}

}

const int a=2;

const int b=3;

const int c=4;

const int d=5;

const int e=6;

const int f=7;

const int g=8;

const int pushButton=9;

int value=0;

void displayNumber(int n);

void clearDisp();

void setup() {

pinMode(a,OUTPUT);

pinMode(b,OUTPUT);

pinMode(c,OUTPUT);

pinMode(d,OUTPUT);

pinMode(e,OUTPUT);

pinMode(f,OUTPUT);

pinMode(g,OUTPUT);

pinMode(pushButton,INPUT\_PULLUP);

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,HIGH);

digitalWrite(g,LOW);

randomSeed(analogRead(0));

}

void loop() {

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

value=digitalRead(pushButton);

if (value==LOW){

delay(250);

displayNumber(random(7));

}

}

void clearDisp(){

digitalWrite(a,LOW);

digitalWrite(b,LOW);

digitalWrite(c,LOW);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,LOW);

}

void displayNumber(int n)

{

switch (n){

case 1:

clearDisp();

delay(100);

digitalWrite(a,LOW);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,LOW);

break;

case 2:

clearDisp();

delay(100);

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,LOW);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,LOW);

digitalWrite(g,HIGH);

break;

case 3:

clearDisp();

delay(100);

digitalWrite(a,HIGH);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,LOW);

digitalWrite(f,LOW);

digitalWrite(g,HIGH);

break;

case 4:

clearDisp();

delay(100);

digitalWrite(a,LOW);

digitalWrite(b,HIGH);

digitalWrite(c,HIGH);

digitalWrite(d,LOW);

digitalWrite(e,LOW);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 5:

clearDisp();

delay(100);

digitalWrite(a,HIGH);

digitalWrite(b,LOW);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,LOW);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

case 6:

clearDisp();

delay(100);

digitalWrite(a,HIGH);

digitalWrite(b,LOW);

digitalWrite(c,HIGH);

digitalWrite(d,HIGH);

digitalWrite(e,HIGH);

digitalWrite(f,HIGH);

digitalWrite(g,HIGH);

break;

}

}

#include <Keypad.h>

const byte ROWS = 4; //four rows

const byte COLS = 4; //three columns

char keys[ROWS][COLS] = {

{'1','2','3','A'},

{'4','5','6','B'},

{'7','8','9','C'},

{'\*','0','#','D'}

};

byte rowPins[ROWS] = {5, 4, 3, 2}; //connect to the row pinouts of the keypad

byte colPins[COLS] = {9, 8, 7, 6}; //connect to the column pinouts of the keypad

Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );

void setup(){

Serial.begin(9600);

}

void loop(){

char key = keypad.getKey();

if (key != NO\_KEY){

Serial.println(key);

}

}

#include <Keypad.h>

String num1="",num2="";

String operation="";

float result=0.0;

const byte ROWS = 4; //four rows

const byte COLS = 4; //three columns

char keys[ROWS][COLS] = {

{'1','2','3','\*'},

{'4','5','6','/'},

{'7','8','9','+'},

{'.','0','=','-'}

};

byte rowPins[ROWS] = {5, 4, 3, 2}; //connect to the row pinouts of the keypad

byte colPins[COLS] = {9, 8, 7, 6}; //connect to the column pinouts of the keypad

Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );

void setup(){

Serial.begin(9600);

}

void loop(){

char key = keypad.getKey();

if (key!=NO\_KEY&& key=='C'){

num1="";

num2="";

operation="";

result=0;

}

if (key != NO\_KEY&& operation==""&& (key=='1'||key=='2'||key=='3'||key=='4'||key=='5'||key=='6'||key=='7'||key=='8'||key=='9'||key=='0'||key=='.')){

Serial.print(key);

num1=num1+key;

}

if(key != NO\_KEY&& (key=='+'||key=='-'||key=='\*'||key=='/')){

Serial.print(key);

operation=key;

}

if (key != NO\_KEY&& operation!=""&& (key=='1'||key=='2'||key=='3'||key=='4'||key=='5'||key=='6'||key=='7'||key=='8'||key=='9'||key=='0'||key=='.')){

Serial.print(key);

num2=num2+key;

}

if (key != NO\_KEY&& (key=='=')){

if (operation=="\*"){

result=num1.toFloat()\*num2.toFloat();

Serial.println((String)"="+result);

num1="";

num2="";

operation="";

result=0;

}

if (operation=="/"){

result=num1.toFloat()/num2.toFloat();

Serial.println((String)"="+result);

num1="";

num2="";

operation="";

result=0;

}

if (operation=="+"){

result=num1.toFloat()+num2.toFloat();

Serial.println((String)"="+result);

num1="";

num2="";

operation="";

result=0;

}

if (operation=="-"){

result=num1.toFloat()-num2.toFloat();

Serial.println((String)"="+result);

num1="";

num2="";

operation="";

result=0;

}

}

delay(50);

}

#include <Keypad.h>

String code="";

const int password="12A7";

const byte ROWS = 4; //four rows

const byte COLS = 4; //three columns

char keys[ROWS][COLS] = {

{'1','2','3','A'},

{'4','5','6','B'},

{'7','8','9','C'},

{'\*','0','#','D'}

};

byte rowPins[ROWS] = {5, 4, 3, 2}; //connect to the row pinouts of the keypad

byte colPins[COLS] = {9, 8, 7, 6}; //connect to the column pinouts of the keypad

Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );

void setup(){

Serial.begin(9600);

pinMode(LED\_BUILTIN,OUTPUT);

digitalWrite(LED\_BUILTIN,LOW);

Serial.print("Enter your password: ");

}

void loop(){

char key = keypad.getKey();

if (key != NO\_KEY&& (key=='1'||key=='2'||key=='3'||key=='4'

||key=='5'||key=='6'||key=='7'

||key=='8'||key=='9'||key=='0'

||key=='A'||key=='B'||key=='C'

||key=='D'||key=='E')){

code=code+key;

Serial.print(key);

}

if(key != NO\_KEY&& key=='#'){

if (code==password){

digitalWrite(LED\_BUILTIN,HIGH);

Serial.print("\nCorrect Password...");

}else{

Serial.print("\nWrong Password...");

code="";

Serial.print("\nEnter your password: ");

}

}

delay(50);

}

#define Apin 2

#define Bpin 3

#define Cpin 4

#define Fpin 13

int A=0;

int B=0;

int C=0;

int F=0;

void setup() {

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

pinMode(Apin,INPUT);

pinMode(Bpin,INPUT);

pinMode(Cpin,INPUT);

pinMode(Fpin,OUTPUT);

}

void loop() {

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

A=digitalRead(Apin);

B=digitalRead(Bpin);

C=digitalRead(Cpin);

F=A&(!(B|C));

digitalWrite(Fpin,F);

}

int a=0;

void setup() {

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

Serial.begin(9600);

}

void loop() {

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

int n=0b101101;

Serial.println("n is a binary number with value of 101101.");

for (int i=1;i<=6;i++){

a=n>>i;

Serial.print((String)"Result of n>>"+i+" is ");

Serial.println(a,BIN);

}

Serial.println("-------");

Serial.println("n is a binary number with value of 101101.");

for (int i=1;i<=6;i++){

a=n<<i;

Serial.print((String)"Result of n<<"+i+" is ");

Serial.println(a,BIN);

}

Serial.println("-------");

delay(120000);

}

byte a=0b10110010; //in decimal: 178

byte b=0b10010110; //in decimal: 150

byte c=0;

byte d=0;

void setup() {

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

Serial.begin(9600);

}

void loop() {

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

Serial.println((String)"a=10110010="+a+", b=10010110="+b);

Serial.println("");

c=~a;

d=~b;

Serial.print("~a=");

Serial.println(c,BIN);

Serial.print("~b=");

Serial.println(d,BIN);

Serial.println("");

c=a&b;

d=a|b;

Serial.print((String)"a&b=10110010&10010110=");

Serial.print(c,BIN);

Serial.println((String)", in decimal= "+c);

Serial.println("");

Serial.print((String)"a|b=10110010|10010110=");

Serial.print(d,BIN);

Serial.println((String)", in decimal= "+d);

Serial.println("-----------------------------------------------");

delay(60000);

}

byte a=178; // Binary representation of 178 is 10110010.

byte b=0;

byte c=0;

void setup() {

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

Serial.begin(9600);

}

void loop() {

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

Serial.println("a=178=10110010");

Serial.println();

for (int i=sizeof(a)\*8-1;i>=0;i--){

Serial.println((String)"bit "+i+ " of a is: "+bitRead(a,i)) ;

}

Serial.println();

b=bitSet(a,6);

Serial.println((String)"bitSet(a,6)="+b); //11110010=242 is expected.

c=bitClear(b,6);

Serial.println((String)"bitClear(b,6)="+c); //10110010=178 is expected.

delay(60000);

}

After uploading the code, open the Serial Monitor (Tools> Serial Monitor) to see the output of the code.

void setup() {

pinMode(9,OUTPUT);

}

void loop() {

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

tone(9,900); // 900 Hz on pin 9, duty cycle 50%

delay(500);

noTone(9);

delay(3000);

}