Câu 1:
bài 1:
code:

```c
#include <REGX51.H>

char so[]={0x40,0x79,0x24,0x30,0x19,0x12,0x02,0x78,0x00,0x10,
0x89,0x06,0xC7,0x40};

//

#define led1 P2_0

#define led2 P2_1

#define sang 0

#define tat 1


char i;


void delay(int time){

        while(time--);

}


void main(){

        led1 = led2 = tat;

        while(1){

                led1 = sang;

                P0   = so[0];

                delay(300000);

                led1 = tat;


                led2 = tat;
```

P0 = so[0];

delay(300000);

led2 = sang;
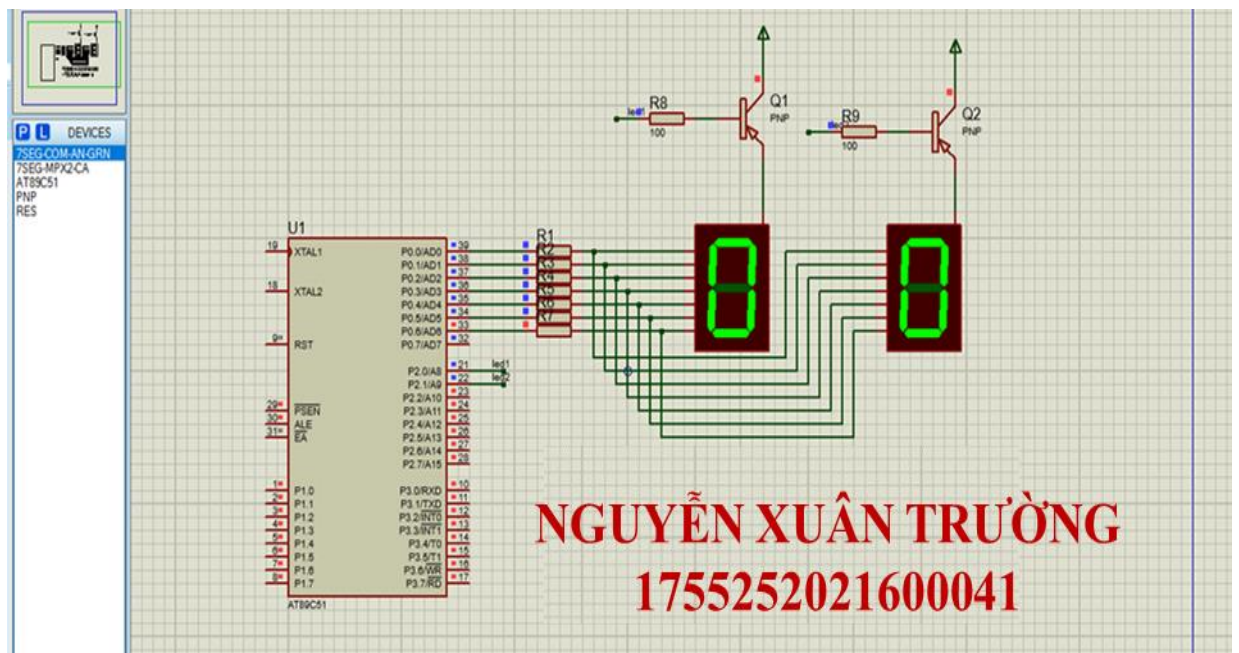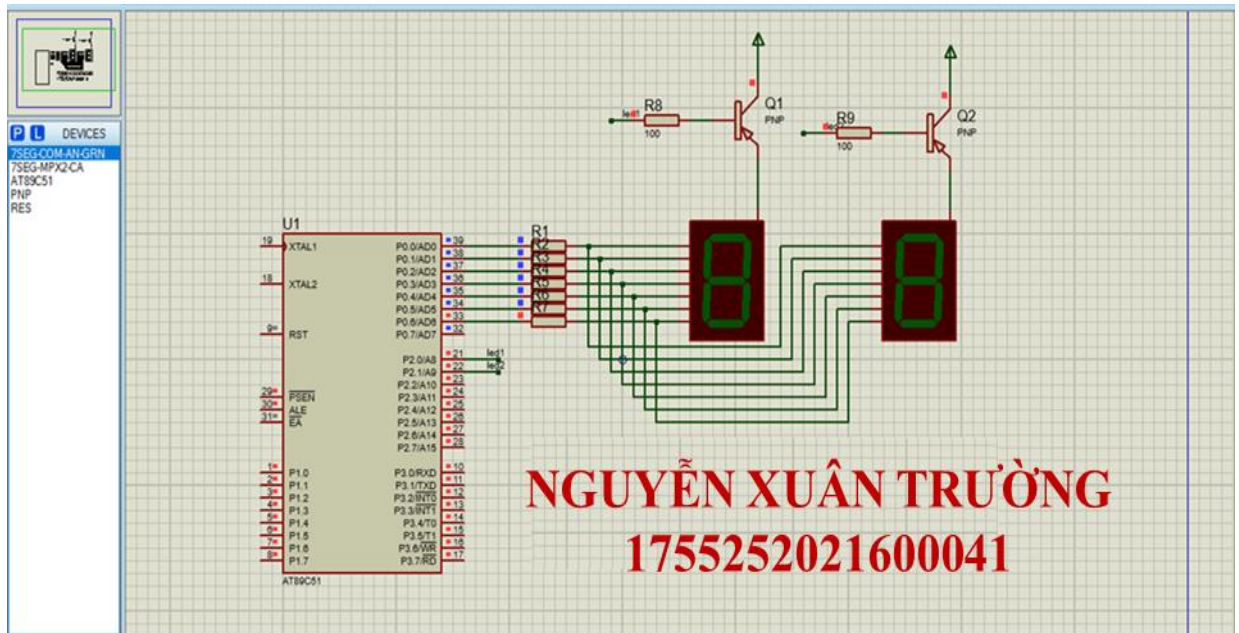
}

}

Mô phỏng proteus:

Bài 2:

code:
xuantruong:

```c
#include <REGX51.H>

char so[]={0x40,0x79,0x24,0x30,0x19,0x12,0x02,0x78,0x00,0x10,
0x89,0x06,0xC7,0x40};

//

char i;

int dem;

unsigned chuc, donVi;

#define led1 P2_0

#define led2 P2_1

#define sang 0

#define tat 1


void delay(int time){
        while(time--);
}


void main(){
        led1 = led2 = tat;
        while(1){

                        for (dem=0;dem<40;dem++){
```

```
//tach chu so

chuc = dem/10;

donVi = dem%10;

for (i = 0 ; i<=10;i++){


        led1 = sang;

        P0   = so[chuc];

        delay(1000);

        led1 = tat;


        led2 = sang;

        P0 = so[donVi];

        delay(1000);

        led2 = tat;



        }
    }
  }
}
```

Mô phỏng proteus:

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CÂU 2:

Bài 1:

Code:

```c
#include <REGX52.H>

void delay_ms(int ms){
    while(ms--){
        TH0 = 0Xfc;
        TL0 = 0x18;
        TR0 = 1;
        while(!TF0);
        TF0 = 0;
        TR0 = 0;
    }
}

void main(){
    EX0 = 1; //cho phep ngat ngoai 0
    IT0 = 1; //chon kieu ngat theo suon
    EA  = 1; //cho phep ngat ngoai cuc
    while(1){
        P2 = 0;
        delay_ms(1000);
        P2 = 0xff;
        delay_ms(1000);
```

```
        }

}


void ngat() interrupt 0{

    long a = 50000;

    P1_3 = 0;

    while(a--){};

    P1_3 = 1;

}
```
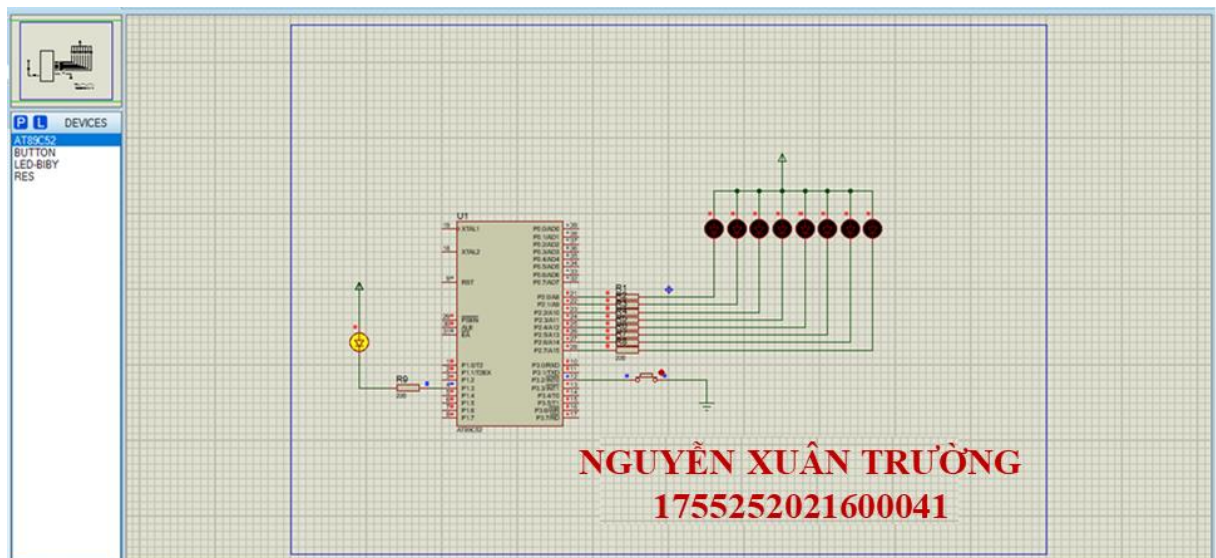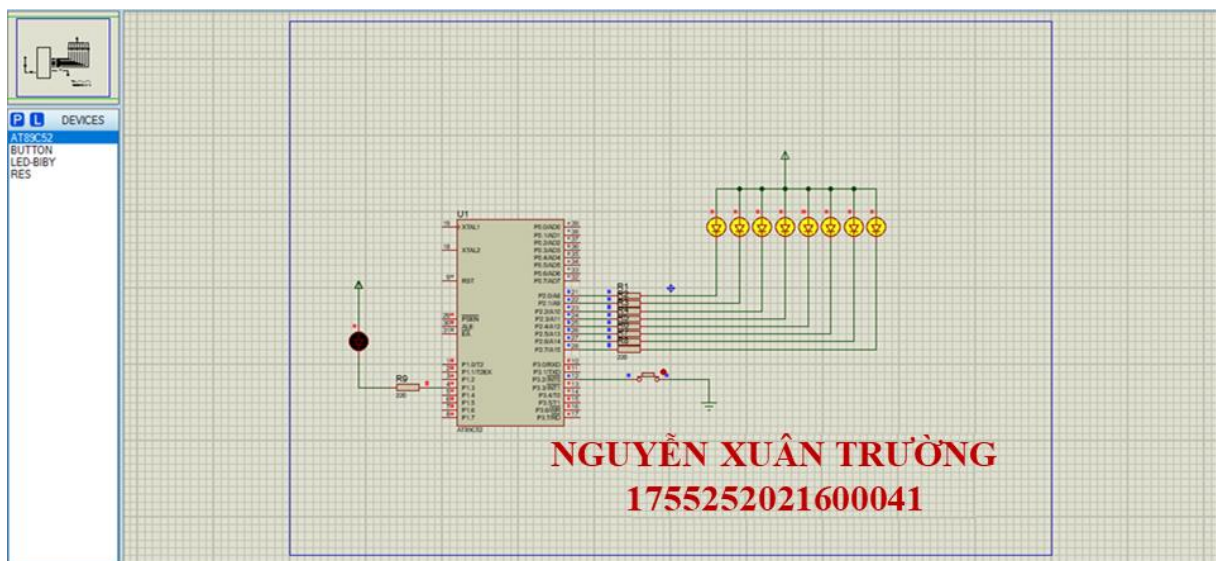
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Bài 2:

Code:

```c
#include <REGX52.H>
#define led1 P3_0
#define led2 P3_1
#define sang 0
#define tat 1
sbit up=P3^2;
char so[ ]={0x40,0x79,0x24,0x30,0x19,0x12,0x02,0x78,0x00,0x10};
char count;
unsigned char chuc,donvi;

void delay_ms(int time){
    while(time--){
        TMOD=0x01;
        TH0=0xfc;
        TL0=0x18;
        TR0=1;
        while(!TF0);
        TF0=0;
        TR0=0;
    }
}

void tang()interrupt 0{
```

```
        count++;

        if(count>30) count=0;

   }


   void main (){

        EA=1;

        EX0=1;

        IT0=1;

        EX1=1;

        IT1=1;

        while(1){

             chuc=count/10;

             donvi=count%10;

             led1 =sang;   P2=so[chuc];   delay_ms(10);   led1 =tat;

             led2 =sang;   P2=so[donvi];  delay_ms(10);   led2 =tat;

        }

   }
```
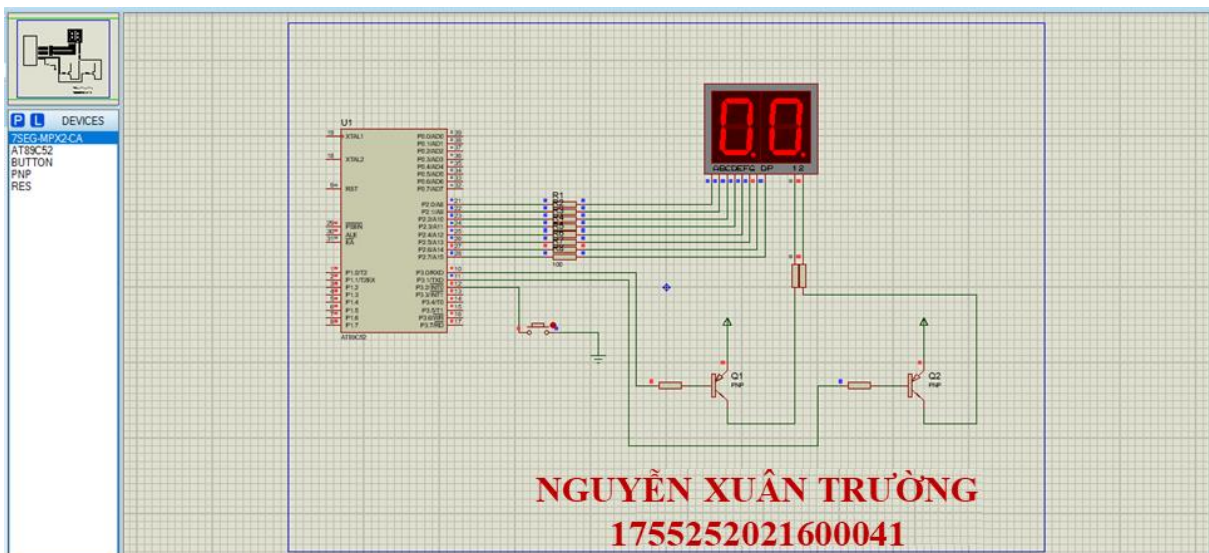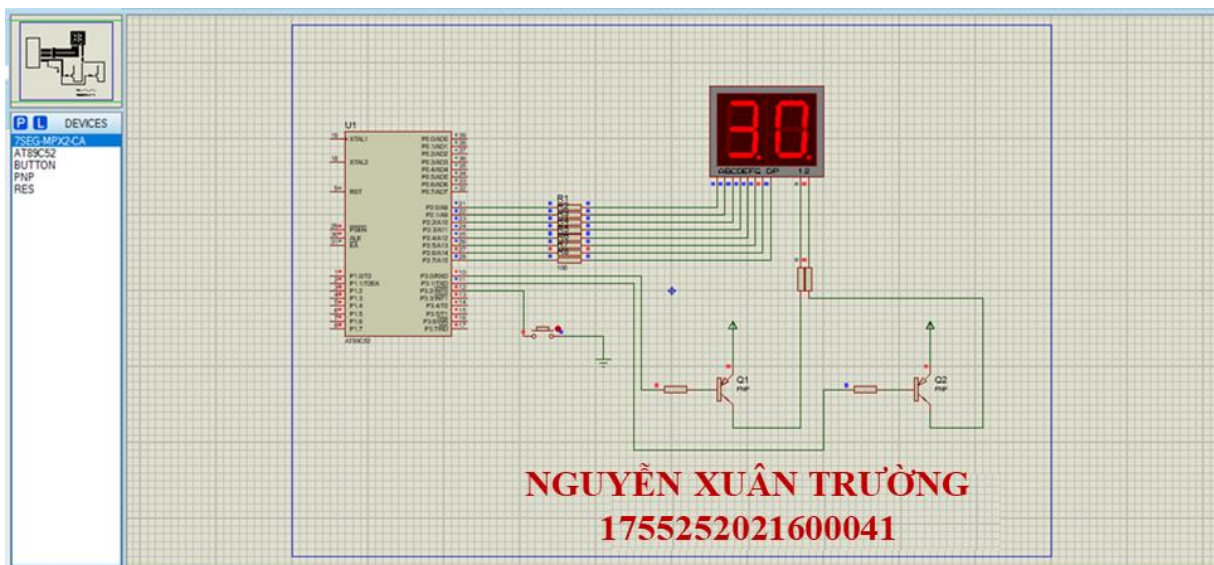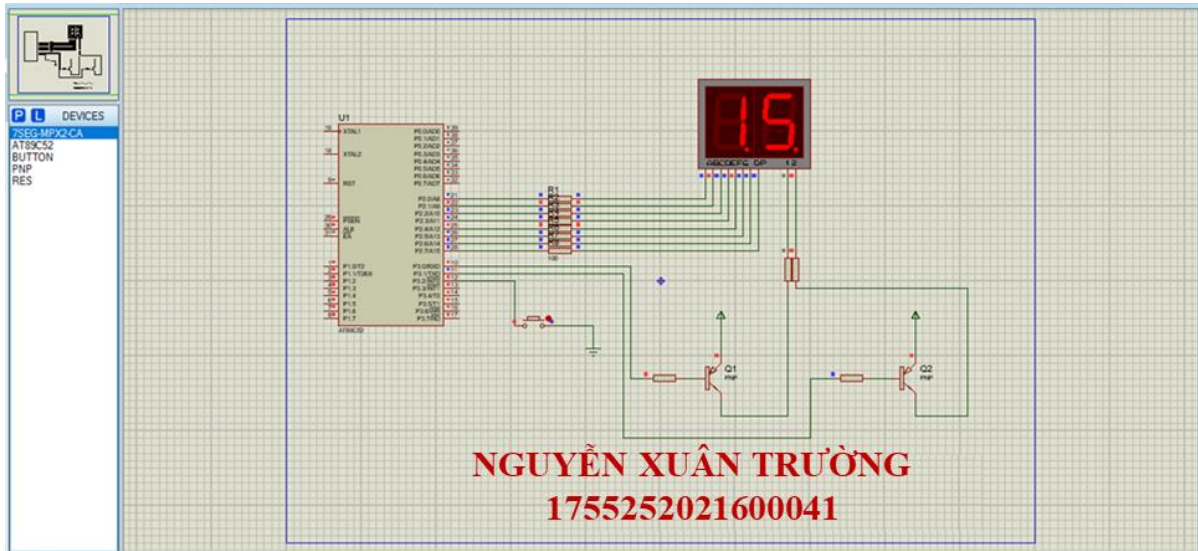
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CÂU 3:

Bài 1: Hiển thị tên LCD:

code:

#include <REGX52.H>

#define LCD_RS P1_0

#define LCD_RW P1_1

```c
#define LCD_EN P1_2
#define LCD_D4 P0_4
#define LCD_D5 P0_5
#define LCD_D6 P0_6
#define LCD_D7 P0_7

void delay_us(unsigned int t){
    unsigned int i;
        for(i=0;i<t;i++);
}

void delay_ms(unsigned int t){
    unsigned int i,j;
        for(i=0;i<t;i++)
        for(j=0;j<125;j++);
}

void delay(long time)
{
   while (time--);
}

void LCD_Enable(void){
    LCD_EN =1;
            delay_us(3);
```

```c
        LCD_EN =0;

        delay_us(50);

}


void LCD_Send4Bit(unsigned char Data){

    LCD_D4=Data & 0x01;

        LCD_D5=(Data>>1)&1;

        LCD_D6=(Data>>2)&1;

        LCD_D7=(Data>>3)&1;

}


void LCD_SendCommand(unsigned char command){

    LCD_Send4Bit(command >>4);

        LCD_Enable();

        LCD_Send4Bit(command);

        LCD_Enable();

}


void LCD_Clear(){

    LCD_SendCommand(0x01);

        delay_us(10);

}


void LCD_Init(){

    LCD_Send4Bit(0x00);
```

```c
        delay_ms(20);

        LCD_RS=0;

        LCD_RW=0;

        LCD_Send4Bit(0x03);

        LCD_Enable();

        delay_ms(5);

        LCD_Enable();

        delay_us(100);

        LCD_Enable();

        LCD_Send4Bit(0x02);

        LCD_Enable();

        LCD_SendCommand(0x28);

        LCD_SendCommand(0x0c);

        LCD_SendCommand(0x06);

        LCD_SendCommand(0x01);
}


void LCD_Gotoxy(unsigned char x, unsigned char y){
    unsigned char address;

        if(!y)address=(0x80+x);

        else address= (0xc0+x);

        delay_us(1000);

        LCD_SendCommand(address);

        delay_us(50);
}
```
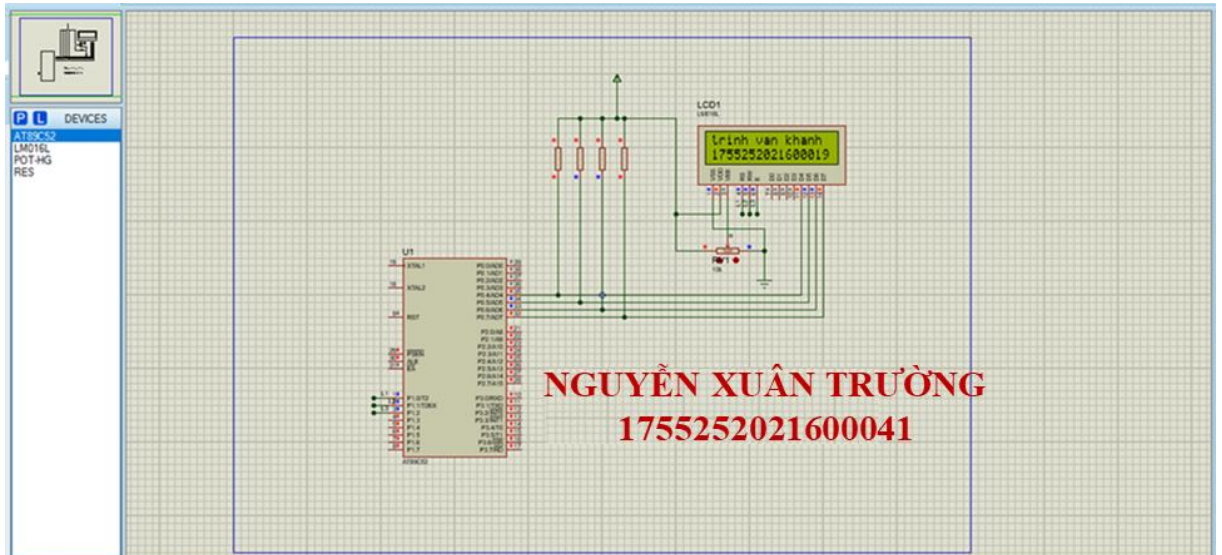
```c
void LCD_PutChar(unsigned char Data){
    LCD_RS=1;
        LCD_SendCommand(Data);
        LCD_RS=0;
}


void LCD_Puts(char*s){
    while (*s){
            LCD_PutChar(*s);
                s++;
        }
}


void main(){
  LCD_Init();
    LCD_Puts(" hello");
    delay_ms(1000);
    LCD_Clear();
    LCD_Gotoxy(0,0);
    LCD_Puts("trinh van khanh");
    delay_ms(1000);
    LCD_Gotoxy(0,1);
    LCD_Puts("1755252021600019");
    while(1);
```

}

Mô phỏng:

CÂU 4:

CODE:

#include <REGX52.H>

#include <RTX51TNY.H> //Su dung thu vien RTX51 Tiny Real-Time

#define INIT 0 //Dinh nghia INIT = 0

#define DO 1 //Dinh nghia DO = 1

#define BUTT 2 //Dinh nghia BUTTTON = 2

sbit LED_DO = P1^2; //Dinh nghia chan LED_DO

sbit BUTTON = P1^3; //Dinh nghia chan BUTTON

void USART(void) interrupt 4 //Ngat nhan USART

{

 if(RI) //Flag nhan duoc ki tu

```
{ //Clear flag
RI=0; //Nhan ki tu
isr_send_signal(DO);       //Gui signal cho task DO
}
}
//========Ham Start up=========
void Startup(void) _task_ INIT
{
SCON=0x52;             //USART che do 1
TMOD=0x21;              //Timer 1 mode 2
TH1=TL1=-3;             //baudrate 9600
TR1=1;
IE=0x90;               //Ngat USART
os_create_task (DO);      //Tao Task_Led_Do
os_create_task (BUTT);     //Tao Task BUTTON
os_delete_task (INIT);     //Xoa Task hien tai (Task 0)
}
void Task_Led_Do(void) _task_ DO
{
while(1)
{
os_wait2(K_SIG ,50);     //Cho signal voi time out 50 ticks
LED_DO ^= 1;           //Dao trang thai Led Do
}
}
```

```
void Task_BUTTON(void) _task_ BUTT

{

while(1)

{

if(BUTTON == 0)          //Nhan nut nhan = 0

{

os_send_signal(DO);       //Gui signal cho task DO

while(BUTTON==0);          //Cho nut nhan = 1(Chong nhieu)

}

os_wait2(K_TMO, 10);      //Cho 10 ticks = 100ms

}

}
```

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