Antarmuka & Peripheral

Tugas Pertemuan 2

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Kelas : SK7B

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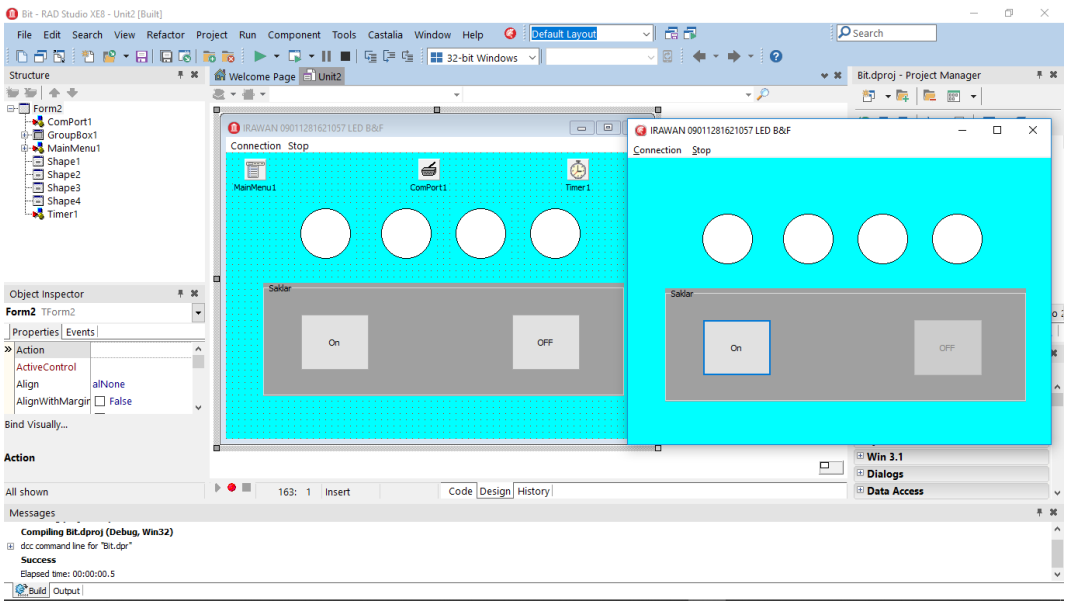
Tugas :

Antarmuka:



Code antarmuka:

unit Unit2;//Irawan 09011281621057 SK7B

interface

uses

Winapi.Windows, Winapi.Messages, System.SysUtils, System.Variants, System.Classes, Vcl.Graphics,

Vcl.Controls, Vcl.Forms, Vcl.Dialogs, Vcl.Menus, Vcl.StdCtrls, Vcl.ExtCtrls,

CPort;

type

led_array = array[0..8]of integer;

TForm2 = class(TForm)

```
MainMenu1: TMainMenu;
Connection1: TMenuItem;
Setting1: TMenuItem;
Connect1: TMenuItem;
Stop1: TMenuItem;
Exit1: TMenuItem;
ComPort1: TComPort;
GroupBox1: TGroupBox;
Button1: TButton;
Button2: TButton;
Timer1: TTimer;
Shape1: TShape;
Shape2: TShape;
Shape3: TShape;
Shape4: TShape;
procedure Exit1Click(Sender: TObject);
procedure Button1Click(Sender: TObject);
procedure Button2Click(Sender: TObject);
procedure Setting1Click(Sender: TObject);
procedure Connect1Click(Sender: TObject);
procedure status_led(led:led_array);
procedure Stop1Click(Sender: TObject);
procedure Timer1Timer(Sender: TObject);
procedure FormCreate(Sender: TObject);
```

```
  private
    { Private declarations }
  public
   { Public declarations }
      left:integer;
   right:integer;
  end;

var
  Form2: TForm2;
  hitung1:integer;

implementation

{$R *.dfm}

procedure TForm2.Button1Click(Sender: TObject);
begin
if button1.Caption='On' then
Begin
left:=1;
right:=0;
Timer1.Enabled:=True;
button1.Enabled:=False;
```

```
button2.Enabled:=True;
end;
end;

procedure TForm2.Button2Click(Sender: TObject);
begin
if button1.Caption='On' then
Begin
Timer1.Enabled:=False;
button1.Enabled:=True;
button2.Enabled:=False;
end;
end;

procedure TForm2.Connect1Click(Sender: TObject);
begin
Comport1.Open();
Comport1.Connected := True
end;

procedure TForm2.Exit1Click(Sender: TObject);
begin
    Application.Terminate
end;
```

```
procedure TForm2.FormCreate(Sender: TObject);
begin
Button2.Enabled:=False;
hitung1:=0;
end;

procedure TForm2.Setting1Click(Sender: TObject);
begin
comport1.ShowSetupDialog()
end;

function pangkat(b:integer):Integer;
var
i,a:Integer;
begin
  a:=1;
  for i := b downto 1 do
  begin
    a:=a*2;
  end;
  pangkat:=a;
end;

procedure TForm2.status_led(led:led_array);
begin
```

```
if led[0]=1 then
begin
  Shape1.Brush.Color:=clRed;
end
else
begin
  Shape1.Brush.Color:=clWhite;
end;

if led[1]=1 then
begin
  Shape2.Brush.Color:=clRed;
end
else
begin
  Shape2.Brush.Color:=clWhite;
end;

if led[2]=1 then
begin
  Shape3.Brush.Color:=clRed;
end
else
begin
  Shape3.Brush.Color:=clWhite;
```

```
  end;

  if led[3]=1 then
  begin
    Shape4.Brush.Color:=clRed;
  end
  else
  begin
    Shape4.Brush.Color:=clWhite;
  end;
end;

procedure TForm2.Stop1Click(Sender: TObject);
begin
Comport1.Close();
Comport1.Connected := False
end;

procedure TForm2.Timer1Timer(Sender: TObject);
var
  led:led_array;
   a,b:integer;
   nbit:integer;

begin
```

```
b:=hitung1;
if  (left=1) and (b<8) then
begin
 b:=b shl 1;
 if b=0 then
 begin
   b:=1;
 end;
 hitung1:=b;
 if b=8 then
 begin
 left:=0
 end
 end
 else if (b=8) or (left=0) then
begin
 b:=b shr 1;
 hitung1:=b;
 if b=1 then
 begin
   b:=1;
   left:=1;
 end;
 end
 else
```

```
  begin
    b:=1;
    hitung1:=b;
  end;

  ComPort1.WriteStr(IntToStr(hitung1)+#13);
  nbit:=7;
  while nbit>=0 do
  begin
    a:=pangkat(nbit);
    if a=b then
    begin
      led[nbit]:=1;
    end
    else
    begin
      led[nbit]:=0;
    end;
    nbit:=nbit-1;
  end;
  status_led(led);
end;

end.
```

Code CVAVR:

```
/*****************************************************
This program was produced by the
CodeWizardAVR V2.05.0 Evaluation
Automatic Program Generator
© Copyright 1998-2010 Pavel Haiduc, HP InfoTech s.r.l.
http://www.hpinfotech.com

Project :
Version :
Date    : 04/09/2019
Author  : Freeware, for evaluation and non-commercial use only
Company :
Comments:


Chip type               : ATmega8535
Program type            : Application
AVR Core Clock frequency: 8,000000 MHz
Memory model            : Small
External RAM size       : 0
Data Stack size         : 128
*****************************************************/

#include <mega8535.h>
```

```
#include <delay.h>

// Standard Input/Output functions

#include <stdio.h>


// Declare your global variables here


void main(void)

{

// Declare your local variables here

int a;

// Input/Output Ports initialization

// Port A initialization

// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In
Func0=In

// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T

PORTA=0x00;

DDRA=0x00;


// Port B initialization

// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In
Func0=In

// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T

PORTB=0x00;

DDRB=0x00;


// Port C initialization
```

```
// Func7=Out Func6=Out Func5=Out Func4=Out Func3=Out Func2=Out
Func1=Out Func0=Out

// State7=0 State6=0 State5=0 State4=0 State3=0 State2=0 State1=0 State0=0

PORTC=0x00;

DDRC=0xFF;


// Port D initialization

// Func7=In Func6=In Func5=In Func4=In Func3=In Func2=In Func1=In
Func0=In

// State7=T State6=T State5=T State4=T State3=T State2=T State1=T State0=T

PORTD=0x00;

DDRD=0x00;


// Timer/Counter 0 initialization

// Clock source: System Clock

// Clock value: Timer 0 Stopped

// Mode: Normal top=0xFF

// OC0 output: Disconnected

TCCR0=0x00;

TCNT0=0x00;

OCR0=0x00;


// Timer/Counter 1 initialization

// Clock source: System Clock

// Clock value: Timer1 Stopped

// Mode: Normal top=0xFFFF
```

```
// OC1A output: Discon.
// OC1B output: Discon.
// Noise Canceler: Off
// Input Capture on Falling Edge
// Timer1 Overflow Interrupt: Off
// Input Capture Interrupt: Off
// Compare A Match Interrupt: Off
// Compare B Match Interrupt: Off
TCCR1A=0x00;
TCCR1B=0x00;
TCNT1H=0x00;
TCNT1L=0x00;
ICR1H=0x00;
ICR1L=0x00;
OCR1AH=0x00;
OCR1AL=0x00;
OCR1BH=0x00;
OCR1BL=0x00;

// Timer/Counter 2 initialization
// Clock source: System Clock
// Clock value: Timer2 Stopped
// Mode: Normal top=0xFF
// OC2 output: Disconnected
ASSR=0x00;
```

```
TCCR2=0x00;
TCNT2=0x00;
OCR2=0x00;

// External Interrupt(s) initialization
// INT0: Off
// INT1: Off
// INT2: Off
MCUCR=0x00;
MCUCSR=0x00;

// Timer(s)/Counter(s) Interrupt(s) initialization
TIMSK=0x00;

// USART initialization
// Communication Parameters: 8 Data, 1 Stop, No Parity
// USART Receiver: On
// USART Transmitter: Off
// USART Mode: Asynchronous
// USART Baud Rate: 9600
UCSRA=0x00;
UCSRB=0x10;
UCSRC=0x86;
UBRRH=0x00;
UBRRL=0x33;
```

```
// Analog Comparator initialization
// Analog Comparator: Off
// Analog Comparator Input Capture by Timer/Counter 1: Off
ACSR=0x80;
SFIOR=0x00;

// ADC initialization
// ADC disabled
ADCSRA=0x00;

// SPI initialization
// SPI disabled
SPCR=0x00;

// TWI initialization
// TWI disabled
TWCR=0x00;

while (1)
      {
      // Place your code here
      scanf("%d",&a);
      PORTC = a;
      delay_ms(100);
```

```
    }
}
```