

UNIVERSITAS BRAWIJAYA

LAMPIRAN



LISTING PROGRAM MCU

```
#include <stdio.h>
#include "sfr_r813.h"
#include "timer.h"
#include "lcdku.h"
#include "serial.h"

#define fbreset "0190000091"
#define fbmasuk "01FF0100FF"
#define fbkeluar "01FF0200FC"

#define dtr p1_6
#define cts p1_7

union byte_def tanda_addr;
#define tanda tanda_addr.byte
#define tt tanda_addr.bit.b0
#define tsb tanda_addr.bit.b1
#define tkm tanda_addr.bit.b2
#define tcom tanda_addr.bit.b3

unsigned char a,tangkap[200],i,i2,d[200],tangkap1[200];

unsigned char kon(unsigned char n)
{
    if (n <10) return(n+0x30);
    else return(n+0x37);
}

unsigned char nok(unsigned char n)
```

```
{  
    if (n < 0x3a) return(n-0x30);  
    else return(n-0x37);  
}
```

=====
Kirim data dan terima data
=====

```
void pindahdata()  
{  
    unsigned char aa;  
    for(i=0;i<120;i++) d[i]=tangkap1[i+1];  
}  
  
void dta(unsigned char aa)  
{  
    unsigned char bb;  
    bb=aa/16+48; kirim0(bb);  
    bb=aa%16+48; kirim0(bb);  
}  
  
unsigned char atd(unsigned char aa, unsigned char bb)  
{  
    unsigned char cc;  
    cc=(aa-48)*16;  
    cc=cc+(aa-48);  
}  
  
void tunggu()  
{  
    while(tt==0);  
    while(tt==1);  
}
```

}

Kartu di masukkan ke Reader

```
void oncard()
```

```
{    kirim0(2);
      kirimt0("01800081");
      kirim0(3);
      tunggu();
      tsb=0;
  for(i=0;i<6;i++)
  {    if(tangkap[i+1]!=fbreset[i]) tsb=1; }
      }
```

Kartu Keluar dari Reader

```
void offcard()
```

```
{    kirim0(2);
      kirimt0("01810080");
      kirim0(3);
      }
```

```
void milihcard()
```

```
{    kirim0(2);
      kirimt0("0102010604");
      kirim0(3);
      }
```

```
void presetcode()
```

```
{    kirim0(2);
```

```
    kirim0("019203FFFFFF6F");
    kirim0(3);}
void awalproses()
{
    dtr=0;delay(100);dtr=1;delay(100);dtr=0;
    delay(1000);
    milihcard();delay(1000);
    oncard();delay(1000);
    presetcode();delay(1000);
}
void tangkapcard()
{
    kirim0(2);
    kirim0("01810080");
    kirim0(3);}
void tuliscard()
{
    unsigned char aa,bb;
    awalproses();
    kirim0(2);
    kirim0("01913E001B");
    aa=0;bb=0xB5;//AB;
    for(i=0;i<120;i++)
    {
        if(i%2==0) aa=nok(d[i])*16;
        else {aa=nok(d[i])+aa;bb=bb^aa;}
    }
    for(i=0;i<120;i++) kirim0(d[i]);
```



```
    kirim0(kon(bb/16));  
    kirim0(kon(bb%16));  
    kirim0(3);  
}
```

Baca Kartu

```
void bacacard()  
{  
    awalproses();  
    kirim0(2);  
    kirim0("01900300000A98");  
    kirim0(3);  
}
```

Hapus Data

```
void cleardata()  
{  
    for(i=0;i<200;i++)  
        d[i]='0';  
}  
#pragma INTERRUPT rx  
void rx(void)  
{  
    while(ri_u1c1 == 0);  
}
```

```

ri_u1c1 =0;
if(u1rb=='a') {tcom=1;i2=0;}
else if(u1rb=='z') {tcom=0;}
if(tcom==1) {tangkap1[i2]=u1rb;i2++;}
u1c1 |= 1;
}

```

```

#pragma INTERRUPT rx0
void rx0(void)
{
while(ri_u0c1 == 0);
ri_u0c1 =0;

if(u0rb==2) {tt=1;i=0;}
else if(u0rb==3) tt=0;
if(tt==1) {tangkap[i]=u0rb;i++;}

u0c1 |= 1;
}

```

Program Utama

```

void main(void)
{
/* Inisialisasi Variable*/

/* Inisialisasi Awal MK */
asm("FCLR I");// Interrupt disable
prcr = 1; // Protect off
cm13 = 1; // X-in X-out = Clock External

```

```
cm15 = 1; // XCIN-XCOUT drivecapacity select bit : HIGH
cm05 = 0; // X-in on
cm16 = 0; // Main clock = No division mode
cm17 = 0;
cm06 = 0; // CM16 and CM17 enable
asm("nop");
asm("nop");
asm("nop");
asm("nop");
ocd2 = 0; // Main clock change (x-tal)
prcr = 0; // Protect on
s1ric=2;
s0ric=1;

/* p1 sebagai keluaran dan p0 sebagai masukan */
pd1=0x80;
pd1_4=1;
pd0=0;
prc2=1;pd0_5=1;
prc2=1;pd0_4=1;
prc2=1;pd0_6=1;
pd3=0xff;
pd3_7=0;
pd1_6=1;pd1_7=0;
asm("FSET I");
initlcd();
//init_timer_X();txs = 1;//mesin=1;
```

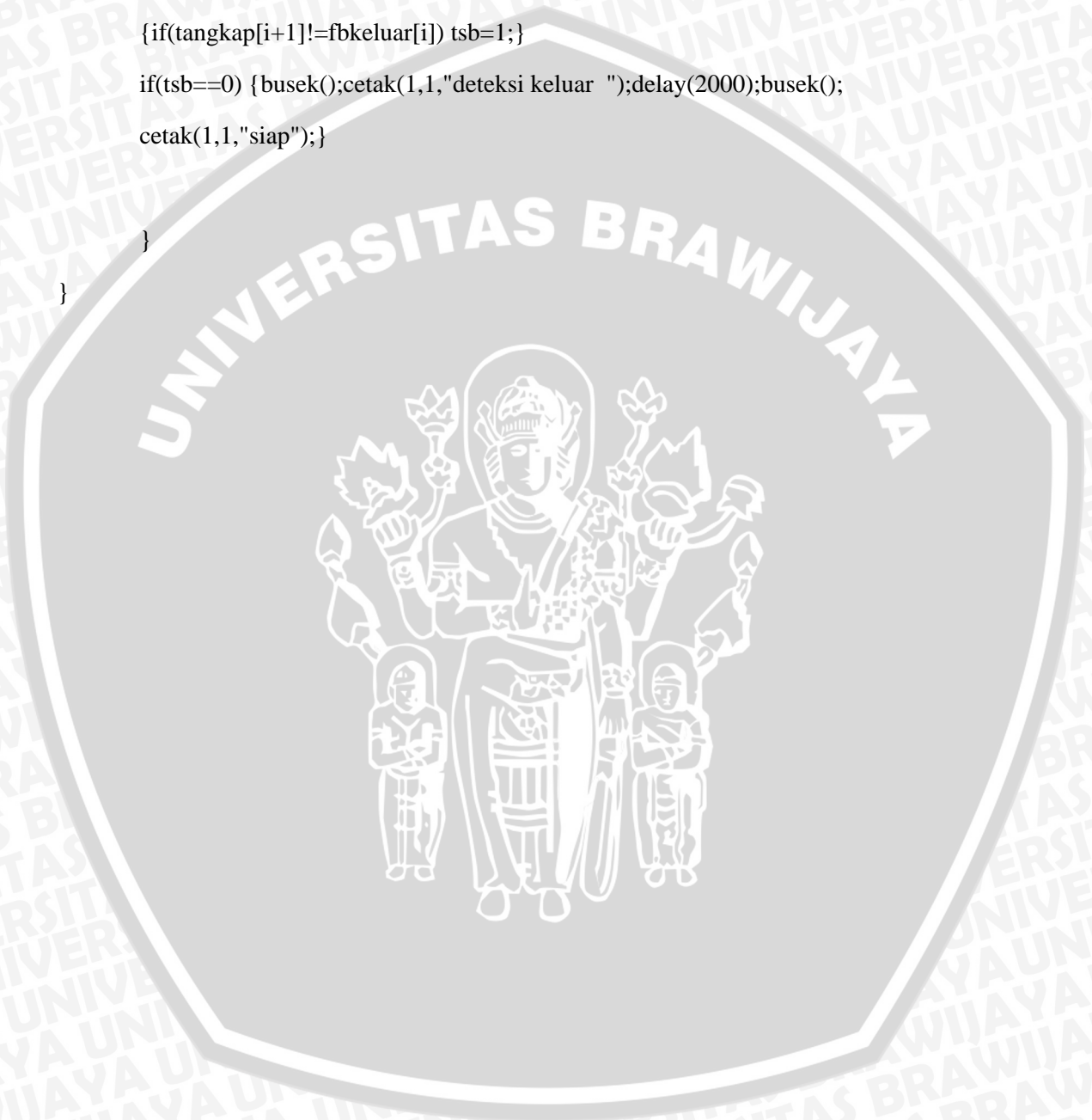


```
initSerial();
//initADC();
tcom=0;
cetak(1,1," Telkom");
cetak(2,1," UB ");
for(i=0;i<200;i++) {d[i]='0';tangkap1[i]='0';}
Send_Text("Telkom");
while (1)
{
tsb=0;
while(tt==0)
{
if(tcom==1);

        pindahdata();
        tuliscard();
        offcard();
        busek();cetak(1,1,"siap");
    }

}
while(tt==1);
tsb=0;
for(i=0;i<10;i++)
{if(tangkap[i+1]!=fbmasuk[i] tsb=1;}
if(tsb==0) {busek();cetak(1,1,"deteksi masuk ");}
bacacard();tunggu();busek();
for(i=47;i<131;i++)kirim_serial(tangkap[i]);
}
```

```
offcard();  
tsb=0;  
for(i=0;i<10;i++)  
{if(tangkap[i+1]!=fbkeluar[i]) tsb=1;}  
if(tsb==0) {busek();cetak(1,1,"deteksi keluar ");delay(2000);busek();  
cetak(1,1,"siap");}  
}  
}
```



Main Program Delphi

unit Unit1;

interface

uses

Windows, Messages, SysUtils, Variants, Classes, Graphics, Controls, Forms,

Dialogs, DB, Grids, DBGrids, DBTables, StdCtrls, Mask, DBCtrls, ExtCtrls,

CPort, ComCtrls, TabNotBk, ExtDlgs, Menus, jpeg, Text2pdu;

type

TForm1 = class(TForm)

Table1: TTable;

DataSource1: TDataSource;

ComPort1: TComPort;

Table2: TTable;

DataSource2: TDataSource;

OpenPictureDialog1: TOpenPictureDialog;

SavePictureDialog1: TSavePictureDialog;

MainMenu1: TMainMenu;

Port1: TMenuItem;

Open1: TMenuItem;

Refresh1: TMenuItem;

File1: TMenuItem;

Keluar1: TMenuItem;

Table3: TTable;

Table4: TTable;

DataSource4: TDataSource;

ComPort2: TComPort;



esKirimSMS1: TMenuItem;
Text2pdu1: TText2pdu;
Notebook1: TNotebook;
TabbedNotebook1: TTabbedNotebook;
DBGrid1: TDBGrid;
DBNavigator1: TDBNavigator;
Label7: TLabel;
Label8: TLabel;
DBGrid2: TDBGrid;
DBLookupComboBox1: TDBLookupComboBox;
DBEdit6: TDBEdit;
DBEdit7: TDBEdit;
Button4: TButton;
GroupBox2: TGroupBox;
Image2: TImage;
Button5: TButton;
Button6: TButton;
Label1: TLabel;
Label2: TLabel;
Label3: TLabel;
Label4: TLabel;
Label6: TLabel;
Label9: TLabel;
Bevel1: TBevel;
DBEdit1: TDBEdit;
DBEdit2: TDBEdit;



```
DBEdit3: TDBEdit;
DBEdit4: TDBEdit;
Button1: TButton;
Button2: TButton;
Button3: TButton;
GroupBox1: TGroupBox;
Image1: TImage;
Button7: TButton;
Memo1: TMemo;
Button8: TButton;
MenuUtama1: TMenuItem;
Timer1: TTimer;
KirimSMSPasien1: TMenuItem;
Timer2: TTimer;
procedure Button1Click(Sender: TObject);
procedure Button2Click(Sender: TObject);
procedure Button3Click(Sender: TObject);
procedure FormCreate(Sender: TObject);
procedure TabbedNotebook1Click(Sender: TObject);
procedure DBGrid2Db1Click(Sender: TObject);
procedure Button4Click(Sender: TObject);
procedure Button5Click(Sender: TObject);
procedure Button6Click(Sender: TObject);
procedure DBLookupComboBox1Click(Sender: TObject);
procedure ComPort1RxChar(Sender: TObject; Count: Integer);
procedure Open1Click(Sender: TObject);
```

```
procedure kirimdata(data:string);
procedure Table1BeforeDelete(DataSet: TDataSet);
procedure Refresh1Click(Sender: TObject);
procedure Button7Click(Sender: TObject);
procedure DBGrid2EditButtonClick(Sender: TObject);
procedure Keluar1Click(Sender: TObject);
procedure FormClose(Sender: TObject; var Action: TCloseAction);
procedure esKirimSMS1Click(Sender: TObject);
procedure KirimSms(No:String ;Isi:String );
procedure ComPort2RxChar(Sender: TObject; Count: Integer);
procedure Button8Click(Sender: TObject);
procedure MenuUtama1Click(Sender: TObject);
procedure Timer1Timer(Sender: TObject);
procedure KirimSMSPasien1Click(Sender: TObject);
procedure Timer2Timer(Sender: TObject);
procedure TabbedNotebook1Change(Sender: TObject; NewTab: Integer;
var AllowChange: Boolean);
private
{ Private declarations }
public
data_sc:string;
{ Public declarations }
end;
Const CRLF = #13+#10;
CTRZ = #26;
SMSCenter = '081100000';
```

```
var  
    Form1: TForm1;  
    Buffer: TBitmap;  
    data_lkp,gambar:string;  
    pdusms: TPDU;  
    sms: tsms;  
    pducmgc: string;
```

```
implementation
```

```
uses Unit2, Unit3, Unit4, Unit5;
```

```
{ $R *.dfm }
```

```
procedure TForm1.KirimSms(No:String ;Isi:String );
```

```
var Nonya, Isinya: string;
```

```
begin
```

```
    Nonya:='0'+Copy(No,3,length(No)-1);
```

```
    Isinya:=Isi;
```

```
    pducms:=Text2pdu1.texttosms(',Nonya,Isinya);
```

```
    ComPort2.WriteStr('AT+CMGC='+IntToStr(pducms.Panjang)+CRLF);
```

```
    Sleep(500);
```

```
    pducmgc:='00'+Copy(pducms.PDU,5,length(pducms.PDU));
```

```
    ComPort2.WriteStr(pducmgc+CTRZ);
```

```
end;
```

```
procedure TForm1.kirimdata(data:string);
var data_kirim:string;
    i:integer;
begin
i:=LENGTH(data);
DEC(I);
ComPort1.WriteStr('a');
ComPort1.WriteStr(data);
repeat
i:=i+1;
    ComPort1.WriteStr('F');
// Sleep(200);
until i>=120;
ComPort1.WriteStr('z');
end;

procedure TForm1.Button1Click(Sender: TObject);
begin
    if OpenPictureDialog1.Execute
    then begin
        Image1.Visible:=true;
        Image1.Picture.LoadFromFile (OpenPictureDialog1.FileName);
        gambar:=OpenPictureDialog1.FileName;
    end;
end;
```




```
procedure TForm1.Button2Click(Sender: TObject);
begin
if Button2.Caption='SIMPAN' then
begin
Image1.Picture.SaveToFile(ExtractFilePath(Application.ExeName)+'\gambar\'+Table1.fi
eldbyname('id').AsString+'.jpg');
if gambar<>" then Table1.FieldByName('foto').AsString:='ada';
Table1.Post;
Button2.Caption:='BARU';
TabbedNotebook1.ActivePage:='Database Pasien';
gambar:=";
end
else begin
Table1.Append;
Button2.Caption:='SIMPAN';
end;
end;

procedure TForm1.Button3Click(Sender: TObject);
begin
Table1.Cancel;
Button2.Caption:='BARU';
TabbedNotebook1.ActivePage:='Database Pasien';
end;

procedure TForm1.FormCreate(Sender: TObject);
```



```
begin
  ShowMessage('Port MK');
  ComPort1.ShowSetupDialog;
  IF ComPort1.Port<>" THEN ComPort1.Open;
  ShowMessage('Port HP');
  ComPort2.ShowSetupDialog;
  IF ComPort2.Port<>" THEN ComPort2.Open;
end;

procedure TForm1.TabbedNotebook1Click(Sender: TObject);
begin
  Image1.Visible:=false;
  Image2.Visible:=false;
  IF TabbedNotebook1.ActivePage='Pengisian Pasien Baru' then
    begin
      Table1.Append;
      Button2.Caption:='SIMPAN';
    end
  else begin
      Table1.Cancel;
      Button2.Caption:='BARU';
    end;
end;

procedure TForm1.DBGrid2DbClick(Sender: TObject);
begin
```

```
IF Table2.FieldName('foto').IsNull then ShowMessage('gak da gambar')
else begin
    ShowMessage(ExtractFilePath(Application.ExeName)+'\gambar\' + Table2.fieldbyname('f
oto').AsString);
    Form2.Show;
end;
end;
```

```
procedure TForm1.Button4Click(Sender: TObject);
```

```
begin
```

```
Table2.Append;
```

```
Form2.Show;
```

```
end;
```

```
procedure TForm1.Button5Click(Sender: TObject);
```

```
begin
```

```
IF Table1.FieldName('foto').IsNull then ShowMessage('gak da gambar')
```

```
else begin
```

```
Image2.Visible:=true;
```

```
Image2.Picture.LoadFromFile(ExtractFilePath(Application.ExeName)+'gambar\' + Table1.
fieldname('id').AsString+'.jpg');
```

```
end;
```

```
end;
```

```
procedure TForm1.Button6Click(Sender: TObject);
```

```
begin
```



```
Table2.Delete;
end;

procedure TForm1.DBLookupComboBox1Click(Sender: TObject);
begin
Table2.Filtered:=false;
Table2.Filter:='ID='+Table1.fieldbyname('id').AsString;
Table2.Filtered:=true;
end;

procedure TForm1.ComPort1RxChar(Sender: TObject; Count: Integer);
var data,data_buf,buf:string;
    i:integer;
begin
ComPort1.ReadStr(data,count);
data_lkp:=data_lkp+data;
Application.ProcessMessages;
ShowMessage('ADA KARTU');
if (copy(data_lkp,1,2)='FF') OR(copy(data_lkp,1,2)='FC')then
begin
data_buf:=data_lkp;
Application.ProcessMessages;
data_sc:=COPY(data_buf,1,2);

if Table1.FindKey([data_sc]) then
begin
```

```
TabbedNotebook1.ActivePage:='Data Pasien';
Button5.Click;
end
else begin
    TabbedNotebook1.ActivePage:='Pengisian Pasien Baru';
    Table1.Append;
    Table1.FieldName('ID').AsString:=data_sc;
    Button2.Caption:='SIMPAN';
    Image1.Visible:=false;
end;

data_lkp:='';
end
else if length(data_lkp)>120 then data_lkp:='';
end;

procedure TForm1.Open1Click(Sender: TObject);
begin
    ComPort1.Close;
    ComPort1.ShowSetupDialog;
    IF ComPort1.Port<>" THEN ComPort1.Open;
end;

procedure TForm1.Table1BeforeDelete(DataSet: TDataSet);
begin
    Table2.Filtered:=false;
```



```
Table2.Filter:='ID='+QuotedStr(Table1.fieldbyname('id').AsString);
Table2.Filtered:=true;
while Table2.RecordCount<>0 do Table2.Delete;
end;

procedure TForm1.Refresh1Click(Sender: TObject);
begin
data_lkp:='';
end;

procedure TForm1.Button7Click(Sender: TObject);
begin
close;
end;

procedure TForm1.DBGrid2EditButtonClick(Sender: TObject);
begin
IF Table2.FieldName('foto').IsNull then ShowMessage('gak da gambar')
else begin

ShowMessage(ExtractFilePath(Application.ExeName)+'\gambar\'+Table2.fieldbyname('f
oto').AsString);

Form2.Show;

end;
end;

procedure TForm1.Keluar1Click(Sender: TObject);
```

```
begin
```

```
Form4.Close;
```

```
end;
```

```
procedure TForm1.FormClose(Sender: TObject; var Action: TCloseAction);
```

```
begin
```

```
Form4.Close;
```

```
end;
```

```
procedure TForm1.esKirimSMS1Click(Sender: TObject);
```

```
begin
```

```
Notebook1.ActivePage:='SMS';
```

```
end;
```

```
procedure TForm1.ComPort2RxChar(Sender: TObject; Count: Integer);
```

```
VAR DATA:STRING;
```

```
begin
```

```
ComPort2.ReadStr(DATA,COUNT);
```

```
Memo1.Text:=Memo1.Text+DATA;
```

```
end;
```

```
procedure TForm1.Button8Click(Sender: TObject);
```

```
begin
```

```
KirimSms('6285234283063','tes');
```

```
end;
```

```
procedure TForm1.MenuUtama1Click(Sender: TObject);
begin
    Notebook1.ActivePage:='utama';
end;

procedure TForm1.Timer1Timer(Sender: TObject);
begin
    IF Table1.FieldName('tgl_pesan').AsString<>" THEN
        if Table1.FieldName('tgl_pesan').AsDateTime=Date+1 then
            KirimSms(Table1.FieldName('hp').AsString,Table1.FieldName('pesan').AsString);
            Table1.Next;
            if Table1.Eof then Timer1.Enabled:=false;
        end;

        procedure TForm1.KirimSMSPasien1Click(Sender: TObject);
        begin
            Table1.First;
            Timer1.Enabled:=true;
        end;

        procedure TForm1.Timer2Timer(Sender: TObject);
        begin
            IF TimeToStr(TIME)='8:00:00' THEN KirimSMSPasien1.Click;
        end;

        procedure TForm1.TabbedNotebook1Change(Sender: TObject; NewTab: Integer;
```


var AllowChange: Boolean);

begin

end;

end.

