

# **LAMPIRAN A**

**PROGRAM *CODEVISION AVR***

## LAMPIRAN A

```
#include <mega16.h>
#include <delay.h>

// Alphanumeric LCD Module functions
#asm
    .equ __lcd_port=0x1B ;PORTA
#endasm
#include <lcd.h>

// Standard Input/Output functions
#include <stdio.h>

// Declare your global variables here
unsigned char keypin[9],keypass[10],datapin[9],datapass[10];
unsigned char bacakeypad();
char terima;
int i,j,k;

void main(void)
{
// Declare your local variables here

// 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=In Func3=Out Func2=In Func1=Out
Func0=In
// State7=0 State6=1 State5=1 State4=P State3=1 State2=P State1=1 State0=P
PORTC=0x7F;
DDRC=0xEA;

// 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=FFh
// OC0 output: Disconnected
TCCR0=0x00;
TCNT0=0x00;
OCR0=0x00;

// Timer/Counter 1 initialization
// Clock source: System Clock
// Clock value: Timer 1 Stopped
// Mode: Normal top=FFFFh
// OC1A output: Discon.
// OC1B output: Discon.
// Noise Canceler: Off
// Input Capture on Falling Edge
// Timer 1 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: Timer 2 Stopped
// Mode: Normal top=FFh
// 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: On
// USART Mode: Asynchronous
// USART Baud rate: 9600
UCSRA=0x00;
UCSRB=0x18;
UCSRC=0x86;
UBRRH=0x00;
UBRRL=0x47;

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

// LCD module initialization
// INISIALISASI DAN TAMPILAN AWAL LCD
lcd_init(16);
lcd_gotoxy(0,0);
lcd_putsf("Masukkan pin dan password Anda");

```

```

delay_ms(2000);

while (1)
{
// TAMPILAN AWAL MINTA PIN
lcd_clear();
lcd_gotoxy(0,0);
lcd_putsf("PIN Anda =");
i=0;          // BACA KEYPAD 7 KARAKTER
j=0;
while(i<=6)
{
  datapin[j]='a';
  while(datapin[j]=='a')
  {
    keypin[i]=bacakeypad();
    lcd_gotoxy(i,1);
    switch(keypin[i])
    {
      case '1' : lcd_putsf("1");
                  datapin[j]="";
                  delay_ms(200);
                  break;
      case '2' : lcd_putsf("2");
                  datapin[j]="";
                  delay_ms(200);
                  break;
      case '3' : lcd_putsf("3");
                  datapin[j]="";
                  delay_ms(200);
                  break;

      case '4' : lcd_putsf("4");
                  datapin[j]="";
                  delay_ms(200);
                  break;
      case '5' : lcd_putsf("5");
                  datapin[j]="";
                  delay_ms(200);
                  break;
      case '6' : lcd_putsf("6");
                  datapin[j]="";
                  delay_ms(200);
                  break;
    }
  }
  i++;
  j++;
}
}

```

```

        case '7' : lcd_putsf("7");
                    datapin[j]="";
                    delay_ms(200);
                    break;
        case '8' : lcd_putsf("8");
                    datapin[j]="";
                    delay_ms(200);
                    break;
        case '9' : lcd_putsf("9");
                    datapin[j]="";
                    delay_ms(200);
                    break;
        case '*' : lcd_putsf("*");
                    datapin[j]="";
                    delay_ms(200);
                    break;
        case '0' : lcd_putsf("0");
                    datapin[j]="";
                    delay_ms(200);
                    break;
        case '#' : lcd_putsf("#");
                    datapin[j]="";
                    delay_ms(200);
                    break;
    }
}
i=i+1;
j=j+1;
}
for(k=0;k<=6;k++)    //KIRIM KE KOMPUTER 7 KARAKTER
{
    printf("%c",keypin[k]);
}
terima=";    //TERIMA SINYAL DARI KOMP
terima=getchar();
while(terima=="")
{
    terima=getchar();
}
if (terima=='b')    //B = PIN BENAR, MINTA PASSWORD
{
    lcd_clear();
    lcd_gotoxy(0,0);
    lcd_putsf("Password Anda =");
}

```

```

i=0;
j=0;
while(i<=7)    //BACA PASSWORD
{
  datapass[j]='a';
  while(datapass[j]!='a')
  {
    keypass[i]=baca keypad();
    lcd_gotoxy(i,1);
    switch(keypass[i])
    {
      case '1' : lcd_putsf("1");
                datapass[j]="";
                delay_ms(200);
                break;
      case '2' : lcd_putsf("2");
                datapass[j]="";
                delay_ms(200);
                break;
      case '3' : lcd_putsf("3");
                datapass[j]="";
                delay_ms(200);
                break;

      case '4' : lcd_putsf("4");
                datapass[j]="";
                delay_ms(200);
                break;
      case '5' : lcd_putsf("5");
                datapass[j]="";
                delay_ms(200);
                break;
      case '6' : lcd_putsf("6");
                datapass[j]="";
                delay_ms(200);
                break;
      case '7' : lcd_putsf("7");
                datapass[j]="";
                delay_ms(200);
                break;
      case '8' : lcd_putsf("8");
                datapass[j]="";
                delay_ms(200);
                break;
    }
  }
}

```

```

        case '9' : lcd_putsf("9");
                    datapass[j]="";
                    delay_ms(200);
                    break;
        case '*' : lcd_putsf("*");
                    datapass[j]="";
                    delay_ms(200);
                    break;
        case '0' : lcd_putsf("0");
                    datapass[j]="";
                    delay_ms(200);
                    break;
        case '#' : lcd_putsf("#");
                    datapass[j]="";
                    delay_ms(200);
                    break;
    }
}
i=i+1;
j=j+1;
}
for(k=0;k<=7;k++) //KIRIM KE KOMPUTER
{
    printf("%c",keypass[k]);
}
terima="";
terima=getchar();
while(terima=="") //TERIMA SINYAL
{
    terima=getchar();
}
if(terima=='e') //E = PASS SALAH, KEMBALI KE AWAL
{
    lcd_clear();
    lcd_gotoxy(0,0);
    lcd_putsf("Password salah! Ulangi");
    delay_ms(2000);
}
else if (terima=='d') //D=PASS BENAR, KEMBALI KE AWAL
{
    lcd_clear();
    lcd_gotoxy(0,0);
    lcd_putsf("Anda sudah terabsen..");
    delay_ms(2000);
}

```



```

    }
}
else if (terima=='c') //C=PIN SALAH, KEMBALI KE AWAL
{
    lcd_clear();
    lcd_gotoxy(0,0);
    lcd_putsf("PIN salah! Masukkan lagi");
    delay_ms(2000);
}
else if (terima=='f') //F=PIN SUDAH TERABSEN, KEMBALI KE AWAL
{
    lcd_clear();
    lcd_gotoxy(0,0);
    lcd_putsf("PIN sudah terabsen");
    delay_ms(2000);
}
};
}

```

```

unsigned char bacakeypad() //FUNGSI BACA KEYPAD
{
    PORTC = 0b01111101;
    if (PINC.2==0) return (*);
    if (PINC.0==0) return ('2');
    if (PINC.4==0) return ('3');
    //=====
    PORTC = 0b00111111;
    if (PINC.2==0) return ('1');
    if (PINC.0==0) return ('5');
    if (PINC.4==0) return ('6');
    //=====
    PORTC = 0b01011111;
    if (PINC.2==0) return ('4');
    if (PINC.0==0) return ('8');
    if (PINC.4==0) return ('9');
    //=====
    PORTC = 0b01110111;
    if (PINC.2==0) return ('7');
    if (PINC.0==0) return ('0');
    if (PINC.4==0) return ('#');}

```

# **LAMPIRAN B**

**PROGRAM ABSENSI  
ELEKTRONIK**

## LAMPIRAN B

### Form Menu Utama

```
var
  frmUtama: TfrmUtama;

implementation
uses
  UModule, UDatamahasiswa, UMatakuliah, UBagikelas, UDosen, ULogin, UAbsen;
  {$R *.dfm}

var datapin,datapass,simpanpin,simpanpass,x:string;
var y:integer;

procedure TfrmUtama.ComPort1RxChar(Sender: TObject; Count: Integer);
begin
  if checkbox1.Checked = false then           //BACA PIN
  begin
    comport1.ReadStr(datapin,count);
    edpin.Text :=datapin;
  end
  else if checkbox1.Enabled = true then       //BACA PASSWORD
  begin
    comport1.ReadStr(datapass,count);
    edpass.Text :=datapass;
  end
end;

procedure TfrmUtama.FormActivate(Sender: TObject);
begin
  comport1.Open;
  checkbox1.Checked := false;
end;

procedure TfrmUtama.edPINChange(Sender: TObject);
begin
  if edPIN.Text <> " then
  begin
    y:=cbKuliah.ItemIndex+1;
    With dm.qData Do                          //CEK DENGAN DATABASE
    Begin
      Close;
```

```

Sql.Clear;
Sql.Add('Select PIN,Kuliah1,Kuliah2,Kuliah3,Kuliah4,Kuliah5,'+
'Kuliah6,Kuliah7,Kuliah8,Kuliah9,Kuliah10,Kuliah11,Kuliah12,'+
'Kuliah13,Kuliah14,Kuliah15 From Bagikelas');
Sql.Add('Where KodeMK =:km and PIN =:p and Ket=:kt and Kls=:kl');
Prepare;
parambyname('km').AsString := edKodeMK.Text+' ';
ParamByName('p').AsString := edpin.Text+' ';
parambyname('kl').AsString:=cbKelas.Text;
parambyname('kt').AsString:=cbKet.Text;
Open;
if fields[0].IsNull then
begin
    comport1.WriteStr('c');           //C BERARTI SALAH
end
else
begin
    if fields[y].IsNull then         //PERIKSA STATUS ABSEN
    begin
        simpanpin := Trim(Fields[0].AsString);
        if simpanpin = edpin.Text then
            comport1.WriteStr('b');           //B BERARTI BENAR
            checkbox1.Checked:=true;
        end
        else
        begin
            comport1.WriteStr('f');           //F BERARTI SUDAH ADA
        end
    end;
end;
End;
end;
end;

procedure TfrmUtama.edPassChange(Sender: TObject);
begin
    if edpass.Text <> " then

        begin
            With dm.qData Do           //CEK PASSWORD
            Begin
                Close;
                Sql.Clear;
                Sql.Add('Select Kode,Kuliah1,Kuliah2,Kuliah3,Kuliah4,Kuliah5,'+
                'Kuliah6,Kuliah7,Kuliah8,Kuliah9,Kuliah10,Kuliah11,Kuliah12,'+

```

```

'Kuliah13,Kuliah14,Kuliah15 From Bagikelas');
Sql.Add('Where KodeMK =:km and PIN =:p and Ket=:kt and Kls=:kl');
Prepare;
Parambyname('km').AsString := edKodeMK.Text;
ParamByName('p').AsString := edpin.Text;
parambyname('kl').AsString:=cbKelas.Text;
parambyname('kt').AsString:=cbKet.Text;
Open;
simpanpass := Trim(Fields[0].AsString);
if simpanpass = edpass.Text then
begin
    x:=cbKuliah.Text;
    comport1.WriteStr('d'); //PASSWORD
BENAR
    edPass1.Text:= '*****';
    checkbox1.Checked:=false;
    dm.qData.Close;
    dm.qData.SQL.Clear;
    dm.qData.SQL.Add('Update Bagikelas Set Kuliah'+x+' =:a');
    dm.qData.SQL.Add('Where KodeMK=:km and PIN=:p and Ket=:kt and
Kls=:kl');
    Prepare;
    Parambyname('km').AsString := edKodeMK.Text;
    ParamByName('p').AsString := edpin.Text+' '+' ';
    parambyname('kl').AsString:=cbKelas.Text;
    parambyname('kt').AsString:=cbKet.Text;
    ParamByName('a').AsString := '1';
    ExecSql;
end
else
begin
    comport1.WriteStr('e'); //PASSWORD
SALAH
    checkbox1.Checked:=false;
    edPIN.Clear;
    edPass.Clear;
    edPass1.Clear;
end;
End;
dm.trData.Commit;
end
else
begin
    edPass1.Clear;

```

```

    end;
end;

procedure TfrmUtama.btHadirClick(Sender: TObject);
begin
    x:=cbKuliah.Text;
    with dm.qData do
        //MENAMPILKAN JUMLAH HADIR
    begin
        close;
        sql.Clear;
        sql.Add('Select count(*) from Bagikelas');
        sql.Add('Where Kuliah'+x+'=:a');
        prepare;
        parambyname('a').AsString:='1';
        open;
        edhadir.Text:=trim(fields[0].AsString);
    end
end;

procedure TfrmUtama.FormShow(Sender: TObject);
begin
    edtanggal.Text:=datetostr(date);
    cbMK.Clear;
    //TARIK NAMA KE CBKODEMK
    with dm.qProses do
    begin
        close;
        sql.Clear;
        sql.Add('select distinct NamaMK from Matakuliah');
        sql.Add('Order by NamaMK');
        open;
        while not Eof do
        begin
            cbMK.Items.Add(Trim(Fields[0].AsString));
            Next;
        end;
    end;
end;

procedure TfrmUtama.Timer1Timer(Sender: TObject);
var
    Time1 : TDateTime;
begin
    Time1 := Time;
    edwaktu.Text:=FormatDateTime('hh:nn',time1);
end;

```

```

end;

procedure TfrmUtama.cbMKChange(Sender: TObject);
begin
  with dm.qData do
  begin
    close;
    sql.Clear;
    sql.Add('Select KodeMK from Matakuliah');
    sql.Add('Where NamaMK =:nm');
    prepare;
    parambyname('nm').AsString :=cbMK.Text;
    open;
    edKodeMK.Text := Trim(Fields[0].AsString);
  end;
  cbKet.Clear;
  with dm.qData do
    //TARIK KET KE CBKET
  begin
    close;
    sql.Clear;
    sql.Add('Select Distinct Ket from Bagikelas');
    sql.Add('Where KodeMK=:km');
    sql.Add('Order by Ket');
    prepare;
    parambyname('km').AsString:=edKodeMK.Text;
    open;
    while not Eof do
    begin
      cbKet.Items.Add(Trim(Fields[0].Asstring));
      Next;
    end;
  end;
end;

procedure TfrmUtama.Exit1Click(Sender: TObject);
begin
  application.Terminate;
end;

procedure TfrmUtama.ComPort2Click(Sender: TObject);
begin
  comport1.ShowSetupDialog;
end;

```

```
procedure TfrmUtama.Mahasiswa1Click(Sender: TObject);  
begin  
    frmdata.ShowModal;  
end;
```

```
procedure TfrmUtama.MataKuliah1Click(Sender: TObject);  
begin  
    frmatakuliah.ShowModal;  
end;
```

```
procedure TfrmUtama.PembagianKelas1Click(Sender: TObject);  
begin  
    frmKelas.ShowModal;  
end;
```

```
procedure TfrmUtama.Dosen2Click(Sender: TObject);  
begin  
    frmDosen.ShowModal;  
end;
```

```
procedure TfrmUtama.Dosen1Click(Sender: TObject);  
begin  
    frmLogin.ShowModal;  
end;
```

```
procedure TfrmUtama.LogOut1Click(Sender: TObject);  
begin  
    Label1.Visible:=false;  
    Label2.Visible:=false;  
    Label3.Visible:=false;  
    Label4.Visible:=false;  
    Label5.Visible:=false;  
    Label6.Visible:=false;  
    Label7.Visible:=false;  
    edPIN.Visible:=false;  
    edPass1.Visible:=false;  
    edHadir.Visible:=false;  
    edtanggal.Visible:=false;  
    edWaktu.Visible:=false;  
    btHadir.Visible:=false;  
    CheckBox1.Visible:=false;  
    cbMK.Visible:=false;  
    cbKuliah.Visible:=false;  
    data1.Enabled:=false;
```



```

Label8.Visible:=false;
Label9.Visible:=false;
cbKelas.Visible:=false;
cbKet.Visible:=false;
Label10.Visible:=false;
label11.Visible:=false;
label12.Visible:=false;
edJam.Visible:=false;
edHari.Visible:=false;
edRuang.Visible:=false;
Absensi1.Enabled:=false;
cbKet.Text="";
cbKelas.Text="";
edJam.Clear;
edHari.Clear;
edRuang.Clear;
cbMK.Text="";
cbKuliah.Text="";
end;

procedure TfrmUtama.Admin1Click(Sender: TObject);
var pass:string;
begin
  InputQuery('Log In Admin', 'Password :',pass);
  if pass='admin' then
  begin
    Label1.Visible:=true;
    Label2.Visible:=true;
    Label3.Visible:=true;
    Label4.Visible:=true;
    Label5.Visible:=true;
    Label6.Visible:=true;
    Label7.Visible:=true;
    edPIN.Visible:=true;
    edPass1.Visible:=true;
    edHadir.Visible:=true;
    edtanggal.Visible:=true;
    edWaktu.Visible:=true;
    btHadir.Visible:=true;
    CheckBox1.Visible:=true;
    cbMK.Visible:=true;
    cbKuliah.Visible:=true;
    Data1.Enabled:=true;
    Label8.Visible:=true;
  end;
end;

```

```

Label9.Visible:=true;
cbKelas.Visible:=true;
cbKet.Visible:=true;
Label10.Visible:=true;
label11.Visible:=true;
label12.Visible:=true;
edJam.Visible:=true;
edHari.Visible:=true;
edRuang.Visible:=true;
absensi1.Enabled:=true;
end
else
  showmessage('Password salah !!');
end;

procedure TfrmUtama.cbKetChange(Sender: TObject);
begin
  cbKelas.Clear;           //TARIK KELAS KE CBKELAS
  with dm.qData do
  begin
    close;
    sql.Clear;
    sql.Add('Select Distinct Kls from Bagikelas');
    sql.Add('Where KodeMK=:km and Ket=:kt');
    sql.Add('Order by Kls');
    prepare;
    parambyname('km').AsString:=edKodeMK.Text;
    parambyname('kt').AsString:=cbKet.Text;
    open;
    while not Eof do
    begin
      cbKelas.Items.Add(Trim(Fields[0].AsString));
      Next;
    end;
  end;
end;

procedure TfrmUtama.cbKelasChange(Sender: TObject);
begin
  with dm.qData do
  begin
    close;
    sql.Clear;
    sql.Add('Select JamMK,Hari,Ruang from Jadwal');

```

```

sql.Add('Where KodeMK =:km and Ket=:kt and Kls=:kl');
prepare;
parambyname('km').AsString :=edKodeMK.Text;
parambyname('kt').AsString :=cbKet.Text;
parambyname('kl').AsString :=cbKelas.Text;
open;
edJam.Text := Trim(Fields[0].AsString);
edHari.Text := Trim(Fields[1].AsString);
edRuang.Text := Trim(Fields[2].AsString);
end;
end;

```

### **Form Data Mahasiswa**

```

var
  frmData: TfrmData;

implementation
uses umodule;
{$R *.dfm}

procedure TfrmData.btSimpanClick(Sender: TObject);
begin
  //CEK PIN JIKA SUDAH ADA DATA TIDAK MASUK, JIKA TIDAK ADA DATA
  MASUK
  With dm.qData Do
  Begin
    Close;
    Sql.Clear;
    Sql.Add('Select PIN From Datamahasiswa');
    Sql.Add('Where PIN =:p');
    Prepare;
    ParamByName('p').AsString := edlpin.Text;
    Open;
    if fields[0].Text = edlpin.Text + ' ' + ' ' then
    begin
      MessageDlg('PIN sudah ada', mtInformation,[mbOk], 0);
    end
    else
    if fields[0].IsNull then
    begin
      with dm.qData do
      begin
        close;

```

```

        sql.Clear;
        sql.Add('Insert Into Datamahasiswa(PIN, Kode, Nama)'+
        'values(:p,;k,;n)');
        prepare;
        parambyname('p').AsString := edIpin.Text;
        parambyname('k').AsString := edPass.Text;
        parambyname('n').AsString := edNama.Text;
        execsql;
    end;
    dm.trData.Commit;
    edIpin.Clear;
    edPass.Clear;
    edNama.Clear;
    edIpin.SetFocus;

    with dm.qProses do
    begin
        close;
        sql.Clear;
        sql.Add('Select PIN, Kode, Nama from datamahasiswa');
        open;
    end;
    end;
end;

procedure TfrmData.btExitClick(Sender: TObject);
begin
    close;
end;

procedure TfrmData.FormActivate(Sender: TObject);
begin
    Tampilkan;
    edipin.SetFocus;
end;

procedure TfrmData.edNamaChange(Sender: TObject);
begin
    with dm.qProses do
    begin
        close;
        sql.Clear;
        sql.Add('select PIN, Kode, Nama from datamahasiswa');

```

```

    sql.Add('where PIN like :p');
    prepare;
    parambyname('p').AsString:='%'+edCari.Text+'%';
    open;
end;
end;

```

```

procedure TfrmData.edCariChange(Sender: TObject);
begin
//MENCARI PIN MAHASISWA
    with dm.qProses do
    begin
        close;
        sql.Clear;
        sql.Add('select PIN, Kode, Nama from datamahasiswa');
        sql.Add('where PIN like :p');
        prepare;
        parambyname('p').AsString := '%'+edCari.Text+'%';
        open;
    end;
end;

```

```

procedure TfrmData.dbgMahasiswaDbClick(Sender: TObject);
begin
//HAPUS DATA MAHASISWA
    If MessageDlg('Benar Mau Hapus Data Ini !',mtConfirmation,
    [mbYes,mbNo],0)=mrYes Then
    Begin
        With dm.qData Do
        Begin
            Close;
            Sql.Clear;
            Sql.Add('Delete From DataMahasiswa');
            Sql.Add('Where PIN =:p');
            Prepare;
            ParamByName('p').AsString := dbgMahasiswa.Fields[0].AsString;
            ExecSql;
        End;
        dm.trData.Commit;

        Tampilkan;
    end;
end;

```

```

procedure TfrmData.Tampilkan;
begin
  with dm.qProses do
  begin
    close;
    sql.Clear;
    sql.Add('Select PIN, Kode, Nama from Datamahasiswa');
    open;
  end;
end;

end.

```

### **Form Mata Kuliah**

```

var
  frmMataKuliah: TfrmMataKuliah;

```

```

implementation
uses UModule,UJadwal;
{$R *.dfm}

```

```

procedure TfrmMataKuliah.btSimpanClick(Sender: TObject);
begin
//SIMPAN DATA MATA KULIAH PADA DATABASE
  With dm.qData Do
  Begin
    Close;
    Sql.Clear;
    Sql.Add('Select KodeMK From Matakuliah');
    Sql.Add('Where KodeMK=:km');
    Prepare;
    ParamByName('km').AsString:=cbKodeMK.Text+' - '+edKodeMK.Text;
    Open;
    if Trim(Fields[0].Text) = cbKodeMK.Text+' - '+edKodeMK.Text then
    begin
      MessageDlg('Mata Kuliah sudah ada', mtInformation,[mbOk], 0);
    end
    else
    if fields[0].IsNull then
    begin
      with dm.qData do
      begin

```

```

        close;
        sql.Clear;
        sql.Add('Insert Into
Matakuliah(KodeMK,NamaMK,SKS,Sem)values(:km, '+
        ':nm,:sk,:sm)');
        prepare;
        parambyname('km').AsString := cbKodeMK.Text+' - '+edKodeMK.Text;
        parambyname('nm').AsString := edNamaMK.Text;
        parambyname('sk').AsString := edSKS.Text;
        parambyname('sm').AsString := cbSem.Text;
        execsql;
    end;
    dm.trData.Commit;
    cbKodeMK.Text := "";
    cbSem.Text := "";
    edKodeMK.Clear;
    edNamaMK.Clear;
    edSKS.Clear;
    cbKodeMK.SetFocus;

    tampilkan;
end;
end;
end;

procedure TfrmMataKuliah.FormActivate(Sender: TObject);
begin
    cbKodeMK.SetFocus;
    tampilkan;
end;

procedure TfrmMataKuliah.btKeluarClick(Sender: TObject);
begin
    cbKodeMK.Text := "";
    cbSem.Text := "";
    edKodeMK.Clear;
    edNamaMK.Clear;
    edSKS.Clear;
    close;
end;

procedure TfrmMataKuliah.Tampilkan;
begin
    with dm.qProses do

```

```

begin
  close;
  sql.Clear;
  sql.Add('Select KodeMK,NamaMK,SKS,Sem from Matakuliah');
  open;
end;
end;

procedure TfrmMataKuliah.dbgMatakuliahDbClick(Sender: TObject);
begin
  If MessageDlg('Benar Mau Hapus Data Ini !',mtConfirmation,
  [mbYes,mbNo],0)=mrYes Then
  Begin
    With dm.qData Do
    Begin
      Close;
      Sql.Clear;
      Sql.Add('Delete From Matakuliah');
      Sql.Add('Where KodeMK=:km');
      Prepare;
      ParamByName('km').AsString := dbgMataKuliah.Fields[0].AsString;
      ExecSql;
    End;
    dm.trData.Commit;
  end;

  tampilkan
end;

procedure TfrmMataKuliah.btJadwalClick(Sender: TObject);
begin
  frmJadwal.ShowModal;
end;
end.

Form Dosen
var
  frmDosen: TfrmDosen;

implementation

uses UModule;

{$R *.dfm}

```



```

procedure TfrmDosen.btSimpanClick(Sender: TObject);
begin
//SIMPAN DATA DOSEN PADA DATABASE
  With dm.qData Do
  Begin
    Close;
    Sql.Clear;
    Sql.Add('Select PIND From Dosen');
    Sql.Add('Where PIND =:pd');
    Prepare;
    ParamByName('pd').AsString := edPIN.Text;
    Open;
    if fields[0].Text = edPIN.Text then
    begin
      MessageDlg('PIN sudah ada', mtInformation,[mbOk], 0);
    end
    else
    if fields[0].IsNull then
    begin
      with dm.qData do
      begin
        close;
        sql.Clear;
        sql.Add('Insert Into Dosen(PIND, Nama)'+
        'values(:p,:n)');
        prepare;
        parambyname('p').AsString := edPIN.Text;
        parambyname('n').AsString := edNama.Text;
        execsql;
      end;
      dm.trData.Commit;
      edPIN.Clear;
      edNama.Clear;
      edPIN.SetFocus;

      Tampilkan
    end;
  end;
end;

procedure TfrmDosen.btExitClick(Sender: TObject);
begin
  edPIN.Clear;
  edNama.Clear;

```

```

    close;
end;

procedure TfrmDosen.dbgDosenDbClick(Sender: TObject);
begin
    If MessageDlg('Benar Mau Hapus Data Ini !',mtConfirmation,
    [mbYes,mbNo],0)=mrYes Then
    Begin
        With dm.qData Do
        Begin
            Close;
            Sql.Clear;
            Sql.Add('Delete From Dosen');
            Sql.Add('Where PIND =:pd');
            Prepare;
            ParamByName('pd').AsString := dbgDosen.Fields[0].AsString;
            ExecSql;
        End;
        dm.trData.Commit;
        Tampilkan
    end;
end;

procedure TfrmDosen.Tampilkan;
begin
    with dm.qProses do
    begin
        close;
        sql.Clear;
        sql.Add('Select PIND, Nama from Dosen');
        open;
    end;
end;

procedure TfrmDosen.FormActivate(Sender: TObject);
begin
    Tampilkan;
end;

end.

```

### **Form Jadwal Kuliah**

```
var
```

```

frmJadwal: TfrmJadwal;

implementation
uses UModule;

{$R *.dfm}

procedure TfrmJadwal.FormShow(Sender: TObject);
begin
//TARIK MATA KULIAH KE CBNAMAMK
cbNamaMK.Clear;
with dm.qProses do
begin
close;
sql.Clear;
sql.Add('Select Distinct NamaMK from Matakuliah');
sql.Add('Order by NamaMK');
open;
while not Eof do
begin
cbNamaMK.Items.Add(Trim(Fields[0].Asstring));
Next;
end;
end;

//TARIK PIN DOSEN KE CBPIND
cbNamad.Clear;
with dm.qProses do
begin
close;
sql.Clear;
sql.Add('Select Distinct Nama from Dosen');
sql.Add('Order by Nama');
open;
while not Eof do
begin
cbNamad.Items.Add(Trim(Fields[0].Asstring));
Next;
end;
end;
end;

procedure TfrmJadwal.FormActivate(Sender: TObject);
begin

```

```
    cbNamaMK.SetFocus;  
    tampilkan;  
end;
```

```
procedure TfrmJadwal.btExitClick(Sender: TObject);  
begin  
    edKodeMK.Clear;  
    edPIND.Text:="";  
    cbMulai.Text := " ";  
    cbSelesai.Text := " ";  
    edKelas.Clear;  
    cbKet.Text := " ";  
    cbHari.Text := " ";  
    cbNamad.Text:="";  
    edRuang.Clear;  
    close;  
end;
```

```
procedure TfrmJadwal.btSimpanClick(Sender: TObject);  
begin  
    With dm.qData Do  
        Begin  
            Close;  
            Sql.Clear;  
            Sql.Add('Select KodeMK From Jadwal');  
            Sql.Add('Where KodeMK=:km and Ket=:kt and Kls=:kl');  
            Prepare;  
            ParamByName('km').AsString:=edKodeMK.Text;  
            ParamByName('kt').AsString:=cbKet.Text;  
            ParamByName('kl').AsString:=edKelas.Text;  
            Open;  
            if Trim(Fields[0].Text) = edKodeMK.Text then  
                begin  
                    MessageDlg('Jadwal sudah ada', mtInformation,[mbOk], 0);  
                end  
            else  
                if fields[0].IsNull then  
                    begin  
                        with dm.qData do  
                            begin  
                                close;  
                                sql.Clear;  
                                sql.Add('Insert Into Jadwal(KodeMK,NamaMK,JamMK,Kls,'+  
                                    'Ket,Hari,Dosen,Ruang)values(:km,:nm,:jk,:kl,:kt,:h,:d,:rg)');  
                            end  
                        end  
                    end  
                end  
            end  
        end  
    end;
```

```

prepare;
parambyname('km').AsString := edKodeMK.Text;
parambyname('nm').AsString := cbNamaMK.Text;
ParamByName('jk').AsString := cbMulai.Text+' - '+cbSelesai.Text;
parambyname('kl').AsString := edKelas.Text;
parambyname('kt').AsString := cbKet.Text;
parambyname('h').AsString := cbHari.Text;
parambyname('d').AsString := cbNamad.Text;
parambyname('rg').AsString := edRuang.Text;
execsql;
end;
dm.trData.Commit;
edKodeMK.Clear;
edPIND.Text:="";
cbMulai.Text := "";
cbSelesai.Text := "";
edKelas.Clear;
cbKet.Text := "";
cbHari.Text := "";
cbNamad.Text:="";
edRuang.Clear;
cbNamaMK.Text:="";
cbNamaMK.SetFocus;

tampilkan;
end;
end;
end;

procedure TfrmJadwal.Tampilkan;
begin
with dm.qProses do
begin
close;
sql.Clear;
sql.Add('Select
Jadwal.Hari,Jadwal.JamMK,Matakuliah.Sem,Jadwal.KodeMK, '+
'Jadwal.Ket,Jadwal>NamaMK,Jadwal.KIs,Matakuliah.SKS,Jadwal.Dosen, '+
'Jadwal.Ruang from Jadwal');
sql.Add('inner join Matakuliah on matakuliah.KodeMK = Jadwal.KodeMK');
sql.Add('Order By Jadwal.Hari');
open;
end;
end;
end;

```

```

procedure TfrmJadwal.dbgJadwalDbfClick(Sender: TObject);
begin
  If MessageDlg('Benar Mau Hapus Data Ini !',mtConfirmation,
  [mbYes,mbNo],0)=mrYes Then
  Begin
    With dm.qData Do
      Begin
        Close;
        Sql.Clear;
        Sql.Add('Delete From Jadwal');
        Sql.Add('Where KodeMK=:km and Ket=:kt and Kls=:kl');
        Prepare;
        ParamByName('km').AsString := dbgJadwal.Fields[3].AsString;
        ParamByName('kt').AsString := dbgJadwal.Fields[4].AsString;
        ParamByName('kl').AsString := dbgJadwal.Fields[6].AsString;
        ExecSql;
      End;
      dm.trData.Commit;
    end;
  end;

```

```

  tampilkan
end;

```

```

procedure TfrmJadwal.cbNamaMKChange(Sender: TObject);
begin
  //TAMPILKAN NAMA MATA KULIAH
  with dm.qData do
  begin
    close;
    sql.Clear;
    sql.Add('Select KodeMK from Matakuliah');
    sql.Add('Where NamaMK =:nm');
    prepare;
    parambyname('nm').AsString :=cbNamaMK.Text;
    open;
    edKodeMK.Text := Trim(Fields[0].AsString);
  end;
end;

```

```

procedure TfrmJadwal.cbNamadChange(Sender: TObject);
begin
  //TAMPILKAN NAMA DOSEN
  with dm.qData do
  begin

```

```

        close;
        sql.Clear;
        sql.Add('Select PIND from Dosen');
        sql.Add('Where Nama =:nd');
        prepare;
        parambyname('nd').AsString :=cbNamad.Text;
        open;
        edPIND.Text := Trim(Fields[0].AsString);
    end;
end;

procedure TfrmJadwal.btPrintClick(Sender: TObject);
begin
    rvproject1.Execute;
end;

end.

```

### **Form Jadwal Mahasiswa**

```

var
    frmKelas: TfrmKelas;

implementation
uses umodule, ujadwal;
{$R *.dfm}

procedure TfrmKelas.btKeluarClick(Sender: TObject);
begin
    close;
    cbNamaMK.Text := "";
    cbPIN.Text := "";
    cbKet.Text := "";
    cbKelas.Text := "";
    edKodeMK.Clear;
    edNama.Clear;
    edPass.Clear;
    edJam.Clear;
    edHari.Clear;
    edRuang.Clear;
end;

procedure TfrmKelas.FormShow(Sender: TObject);
begin

```

```

//TARIK NAMA MATA KULIAH KE CBNAMAMK
cbNamaMK.Clear;
with dm.qProses do
begin
  close;
  sql.Clear;
  sql.Add('Select Distinct NamaMK from Matakuliah');
  sql.Add('Order by NamaMK');
  open;
  while not Eof do
  begin
    cbNamaMK.Items.Add(Trim(Fields[0].AsString));
    Next;
  end;
end;
//TARIK PIN MAHASISWA KE CBPIN
cbPIN.Clear;
with dm.qProses do
begin
  close;
  sql.Clear;
  sql.Add('Select Distinct PIN from DataMahasiswa');
  sql.Add('Order by PIN');
  open;
  while not Eof do
  begin
    cbPIN.Items.Add(Trim(Fields[0].AsString));
    Next;
  end;
end;
end;

procedure TfrmKelas.cbNamaMKChange(Sender: TObject);
begin
  //TAMPILKAN KODE MATA KULIAH
  with dm.qData do
  begin
    close;
    sql.Clear;
    sql.Add('Select KodeMK from Matakuliah');
    sql.Add('Where NamaMK =:nm');
    prepare;
    parambyname('nm').AsString :=cbNamaMK.Text;
    open;
  end;
end;

```



```

    edKodeMK.Text := Trim(Fields[0].AsString);
end;

//TARIK KETERANGAN KE CBKET
cbKet.Clear;
with dm.qData do
begin
    close;
    sql.Clear;
    sql.Add('Select Distinct Ket from Jadwal');
    sql.Add('Where KodeMK=:km');
    sql.Add('Order by Ket');
    prepare;
    parambyname('km').AsString:=edKodeMK.Text;
    open;
    while not Eof do
    begin
        cbKet.Items.Add(Trim(Fields[0].AsString));
        Next;
    end;
end;
end;

procedure TfrmKelas.FormActivate(Sender: TObject);
begin
    tampilkan;
end;

procedure TfrmKelas.btSimpanClick(Sender: TObject);
begin
    with dm.qData do
    begin
        close;
        sql.Clear;
        sql.Add('Select PIN from Bagikelas');
        sql.Add('Where KodeMK =:km and Ket =:kt and PIN =:p');
        prepare;
        parambyname('km').AsString := edKodeMK.Text;
        parambyname('p').AsString := cbPIN.Text;
        parambyname('kt').AsString := cbKet.Text;
        open;
        if Trim(fields[0].Text) = cbPIN.Text then
        begin
            MessageDlg('Mahasiswa sudah terdaftar',mtInformation,[mbOk],0);

```

```

end
else
if fields[0].IsNull then
begin
with dm.qData do
begin
close;
sql.Clear;
sql.Add('Insert into Bagikelas(KodeMK,Kls,Ket,PIN,Kode)values(:km, '+
':kl,:kt,:p,:k)');
prepare;
parambyname('km').AsString := edKodeMK.Text;
parambyname('kl').AsString := cbKelas.Text;
parambyname('kt').AsString := cbKet.Text;
parambyname('p').AsString := cbPIN.Text;
parambyname('k').AsString := edPass.Text;
execsql;
end;
dm.trData.Commit;
cbNamaMK.Text := '';
cbPIN.Text := '';
cbKet.Text := '';
cbKelas.Text := '';
edKodeMK.Clear;
edNama.Clear;
edPass.Clear;
edJam.Clear;
edHari.Clear;
edRuang.Clear;
cbNamaMK.SetFocus;

tampilkan
end;
end;
end;

procedure TfrmKelas.btResetClick(Sender: TObject);
begin
with dm.qData do
begin
close;
sql.Clear;
sql.Add('Delete from Bagikelas');
execsql;

```

```

end;
dm.trData.Commit;

tampilkan
end;

procedure TfrmKelas.dbgKuliahDbIClick(Sender: TObject);
begin
  If MessageDlg('Benar Mau Hapus Data Ini !',mtConfirmation,
  [mbYes,mbNo],0)=mrYes Then
  Begin
    With dm.qData Do
    Begin
      Close;
      Sql.Clear;
      Sql.Add('Delete From Bagikelas');
      Sql.Add('Where KodeMK =:km and Ket =:kt and PIN =:p');
      Prepare;
      ParamByName('km').AsString := dbgKuliah.Fields[4].AsString;
      ParamByName('kt').AsString := dbgKuliah.Fields[7].AsString;
      ParamByName('p').AsString := dbgKuliah.Fields[0].AsString;
      ExecSql;
    End;
    dm.trData.Commit;
  end;

 ampilkan
end;

procedure TfrmKelas.Tampilkan;
begin
  with dm.qProses do
  begin
    close;
    sql.Clear;
    sql.Add('Select
Jadwal.Hari,Jadwal.JamMK,Jadwal.Ruang,Bagikelas.KodeMK, '+
  'Jadwal>NamaMK,Bagikelas.Kls,Bagikelas.Ket,Bagikelas.PIN from
Bagikelas');
    sql.Add('inner join jadwal on ((jadwal.kodemk=bagikelas.kodemk) and'+
  ' (jadwal.ket=bagikelas.ket) and (jadwal.kls=bagikelas.kls))');
    sql.Add('Order By Jadwal.Hari');
    open;
  end;
end;

```

```

end;

procedure TfrmKelas.cbPINChange(Sender: TObject);
begin
  //TAMPILKAN NAMA MAHASISWA
  with dm.qData do
  begin
    close;
    sql.Clear;
    sql.Add('Select Nama,Kode from Datamahasiswa');
    sql.Add('Where PIN =:p');
    prepare;
    parambyname('p').AsString :=cbPIN.Text;
    open;
    edNama.Text := Trim(Fields[0].AsString);
    edPass.Text := Trim(Fields[1].AsString);
  end;
end;

procedure TfrmKelas.cbKetChange(Sender: TObject);
begin
  //TARIK KELAS KE CBKELAS
  cbKelas.Clear;
  with dm.qData do
  begin
    close;
    sql.Clear;
    sql.Add('Select Distinct Kls from Jadwal');
    sql.Add('Where KodeMK=:km and Ket=:kt');
    sql.Add('Order by Kls');
    prepare;
    parambyname('km').AsString:=edKodeMK.Text;
    parambyname('kt').AsString:=cbKet.Text;
    open;
    while not Eof do
    begin
      cbKelas.Items.Add(Trim(Fields[0].Asstring));
      Next;
    end;
  end;
end;

procedure TfrmKelas.cbKelasChange(Sender: TObject);
begin

```

```

with dm.qData do
begin
  close;
  sql.Clear;
  sql.Add('Select JamMK,Hari,Ruang from Jadwal');
  sql.Add('Where KodeMK =:km and Ket=:kt and Kls=:kl');
  prepare;
  parambyname('km').AsString :=edKodeMK.Text;
  parambyname('kt').AsString :=cbKet.Text;
  parambyname('kl').AsString :=cbKelas.Text;
  open;
  edJam.Text := Trim(Fields[0].AsString);
  edHari.Text := Trim(Fields[1].AsString);
  edRuang.Text := Trim(Fields[2].AsString);
end;
end;

end.

```

### **Form Log In**

```

var
  frmLogIn: TfrmLogIn;

implementation
uses UModule,UMenuutama;
{$R *.dfm}

procedure TfrmLogIn.btCancelClick(Sender: TObject);
begin
  close;
end;

procedure TfrmLogIn.btLoginClick(Sender: TObject);
begin
  with dm.qData do
  begin
    close;
    sql.Add('Select PIND from Dosen');
    sql.Add('where PIND=:pd');
    prepare;
    parambyname('pd').AsString:=edPIN.Text;
    open;
    if fields[0].IsNull then

```

```

showmessage('PIN salah !!')
else
begin
  showmessage('Log In telah berhasil');
  frmutama.Label1.Visible:=true;
  frmutama.Label2.Visible:=true;
  frmutama.Label3.Visible:=true;
  frmutama.Label4.Visible:=true;
  frmutama.Label5.Visible:=true;
  frmutama.Label6.Visible:=true;
  frmutama.Label7.Visible:=true;
  frmutama.edPIN.Visible:=true;
  frmutama.edPass1.Visible:=true;
  frmutama.edHadir.Visible:=true;
  frmutama.edtanggal.Visible:=true;
  frmutama.edWaktu.Visible:=true;
  frmutama.btHadir.Visible:=true;
  frmutama.CheckBox1.Visible:=true;
  frmutama.cbMK.Visible:=true;
  frmutama.cbKuliah.Visible:=true;
  frmutama.Label8.Visible:=true;
  frmutama.Label9.Visible:=true;
  frmutama.cbKelas.Visible:=true;
  frmutama.cbKet.Visible:=true;
  frmutama.Label10.Visible:=true;
  frmutama.label11.Visible:=true;
  frmutama.label12.Visible:=true;
  frmutama.edJam.Visible:=true;
  frmutama.edHari.Visible:=true;
  frmutama.edRuang.Visible:=true;
  frmutama.Absensi1.Enabled:=true;
  frmlogin.Close;
end
end;
end;

end.

```

## Form Absen

```
var
  frmAbsen: TfrmAbsen;

implementation
uses UModule, UMenuutama, ULogin;
{$R *.dfm}

procedure TfrmAbsen.btExitClick(Sender: TObject);
begin
  close;
end;

procedure TfrmAbsen.FormActivate(Sender: TObject);
begin
  with dm.qProses do
  begin
    close;
    sql.Clear;
    sql.Add('Select KodeMK,Kls,Ket,PIN,Kuliah1,Kuliah2,Kuliah3,Kuliah4, '+
      'Kuliah5,Kuliah6,Kuliah7,Kuliah8,Kuliah9,Kuliah10,Kuliah11,Kuliah12, '+
      'Kuliah13,Kuliah14,Kuliah15 from Bagikelas');
    sql.Add('where KodeMK=:km and Kls=:kl and Ket=:kt');
    prepare;
    parambyname('km').AsString:=frmutama.edKodeMK.Text;
    parambyname('kl').AsString:=frmutama.cbKelas.Text;
    parambyname('kt').AsString:=frmutama.cbKet.Text;
    open;
  end;
end;

end.
```

# **LAMPIRAN C**

**PROGRAM *INTERBASE***



## LAMPIRAN C

### Tabel Bagi Kelas

```
CREATE TABLE BAGIKELAS
(
  KODEMK CHAR(10) NOT NULL,
  KLS CHAR(1),
  KET CHAR(6) NOT NULL,
  PIN CHAR(9) NOT NULL,
  KODE CHAR(8),
  KULIAH1 CHAR(1),
  KULIAH2 CHAR(1),
  KULIAH3 CHAR(1),
  KULIAH4 CHAR(1),
  KULIAH5 CHAR(1),
  KULIAH6 CHAR(1),
  KULIAH7 CHAR(1),
  KULIAH8 CHAR(1),
  KULIAH9 CHAR(1),
  KULIAH10 CHAR(1),
  KULIAH11 CHAR(1),
  KULIAH12 CHAR(1),
  KULIAH13 CHAR(1),
  KULIAH14 CHAR(1),
  KULIAH15 CHAR(1),
  CONSTRAINT PKBGKELAS PRIMARY KEY (KODEMK, PIN, KET)
);
```

### Tabel Data Mahasiswa

```
CREATE TABLE DATAMAHASISWA
(
  PIN CHAR(9) NOT NULL,
  KODE CHAR(8) NOT NULL,
  NAMA CHAR(20),
  CONSTRAINT PKPIN PRIMARY KEY (PIN)
);
```

### Tabel Dosen

```
CREATE TABLE DOSEN
(
  PIND CHAR(6) NOT NULL,
```

```
NAMA      CHAR(40),
CONSTRAINT PKPIND PRIMARY KEY (PIND)
);
```

#### **Tabel Jadwal**

```
CREATE TABLE JADWAL
(
  HARI CHAR(6),
  JAMMK CHAR(13),
  KODEMK CHAR(10) NOT NULL,
  KET CHAR(6) NOT NULL,
  NAMAMK CHAR(25),
  KLS CHAR(1) NOT NULL,
  DOSEN CHAR(40),
  RUANG CHAR(11),
CONSTRAINT PKJADWAL PRIMARY KEY (KODEMK, KET, KLS));
```

#### **Tabel Mata Kuliah**

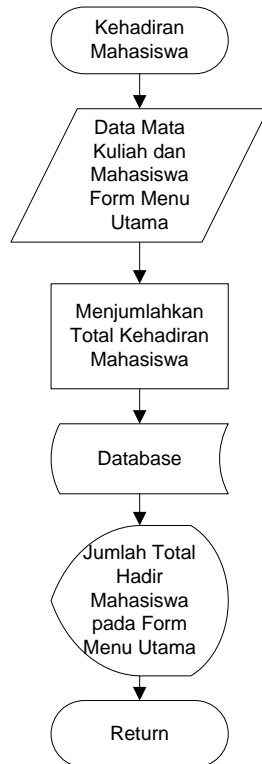
```
CREATE TABLE MATAKULIAH
(
  KODEMK CHAR(10) NOT NULL,
  NAMAMK CHAR(25),
  SKS CHAR(1),
  SEM CHAR(1),
CONSTRAINT PKKODEMK PRIMARY KEY (KODEMK)
);
```

# **LAMPIRAN D**

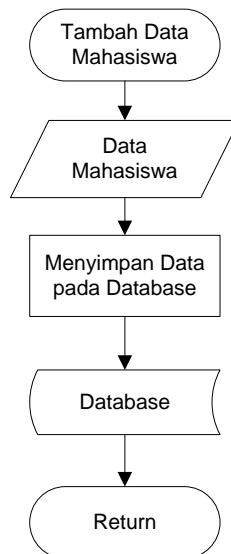
***Flow Chart* Program Absen  
Elektronik**

## Lampiran D

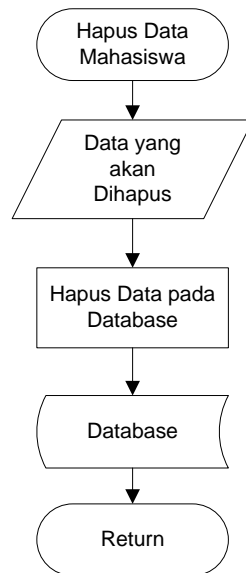
### Flow Chart Kehadiran Mahasiswa



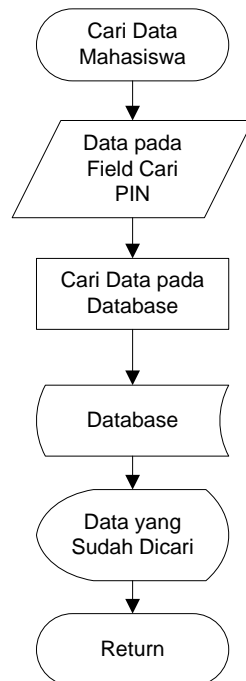
### Flow Chart Tambah Data Mahasiswa



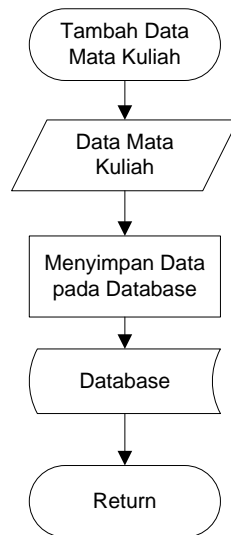
### Flow Chart Hapus Data Mahasiswa



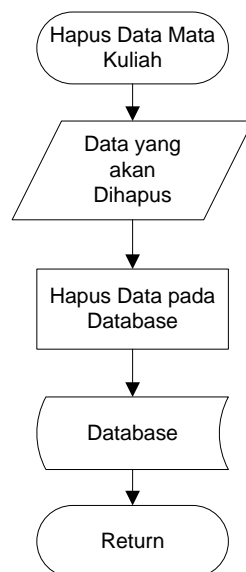
### Flow Chart Cari Data Mahasiswa



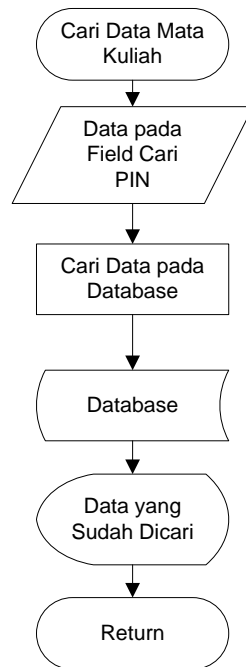
### Flow Chart Tambah Data Mata Kuliah



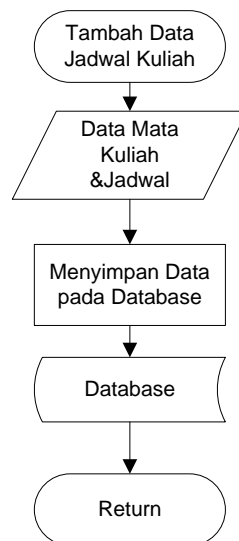
### Flow Chart Hapus Data Mata Kuliah



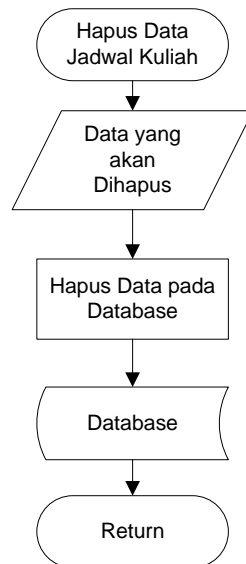
### Flow Chart Cari Data Mahasiswa



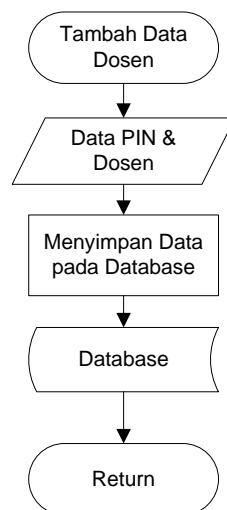
### Flow Chart Tambah Data Jadwal Kuliah



### Flow Chart Hapus Data Mata Kuliah

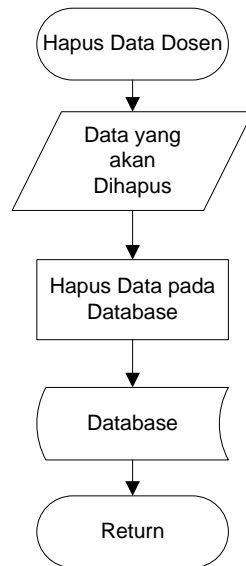


### Flow Chart Tambah Data Dosen

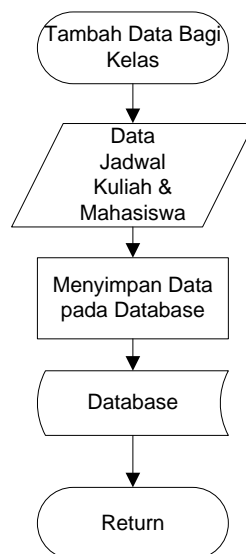




### Flow Chart Hapus Data Dosen



### Flow Chart Tambah Data Bagi Kelas



### Flow Chart Hapus Data Bagi Kelas

