

学生选课管理系统的设计

一、数据项

1 表 admin (用户表)

Field	Type	Null	Key	Comment
Username	char(10)	——	PRI	用户名
password	char(10)	——	——	密码
Name	Char(10)	——	——	用户昵称

2 表 S (学生信息表)

Field	Type	Null	Key	Comment
Sno	nvarchar(50)	——	PRI	学号
Sname	nvarchar(50)	——	——	姓名
Sx	nvarchar(50)	——	——	系别

3 表 C (课程信息表)

Field	Type	Null	Key	Comment
Cno	nvarchar(50)	——	PRI	课号
Cname	nvarchar(50)	——	——	课名

4 表 SC (学生信息表)

Field	Type	Null	Key	Comment
Cno	nvarchar(50)	——	PRI	课号
Sno	nvarchar(50)	——	PRI	学号
C	nvarchar(50)	——	——	成绩

二、代码分析

连接数据库方法：

java 连接数据库的驱动：

```
public static Connection CONN() {
    String driverName =
        "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载JDBC驱动
    String dbURL = "jdbc:sqlserver://localhost:1433;
        DatabaseName=student"; //连接服务器和数据库test, 此处student是数据库
        名
    String userName = "sa";    //默认用户名
    String userPwd = "mima";    //密码
    Connection dbConn=null;
    try {
        Class.forName(driverName);
        dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
        System.out.println("Connection Successful!");
        //如果连接成功 控制台输出Connection Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
    return dbConn;}

```

用户登录界面 user.java：

登录时，凡是账号密码未填写、输入错误账号密码都会提出错误提示框。在填写好账号密码后，会读取数据库里 admin 表，并查询其输入是否存在，若无误，则登录到用户界面。

```
public class User extends JFrame{
    private JLabel use,password;
    private JTextField k1;//用户名输入框
    private JPasswordField k2;//密码输入框
    private JButton b1,b2;
    //登录窗口
    public User(JFrame f){
        super("系统登录");
        Container c=getContentPane();
    }
}

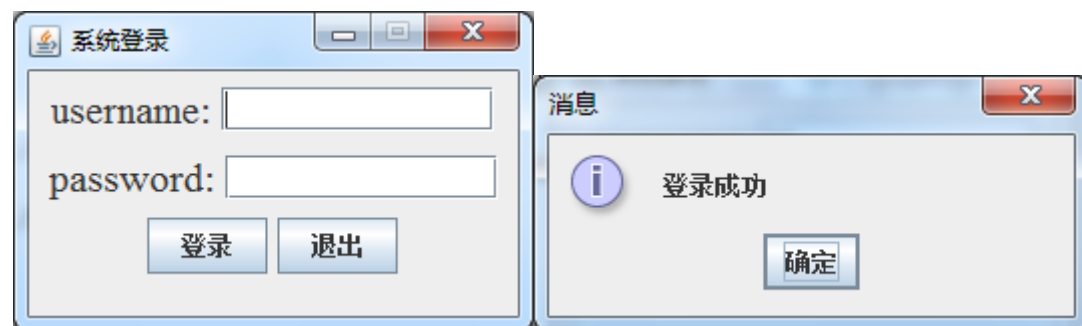
```

```

c.setLayout(new FlowLayout());
use=new JLabel("username:");
use.setFont(new Font("Serif",Font.PLAIN,20));
password=new JLabel("password:");
password.setFont(new Font("Serif",Font.PLAIN,20));
k1=new JTextField(12);
k2=new JPasswordField(12);
b1=new JButton("登录");
b2=new JButton("退出");
// 设置登录方法
BHandler b=new BHandler();
EXIT d=new EXIT();
b1.addActionListener(b);
b2.addActionListener(d);
    //添加控件
c.add(use);
c.add(k1);
c.add(password);
c.add(k2);
c.add(b1);
c.add(b2);
setBounds(600,300,250,150);
setVisible(true);
setResizable(false);
setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);}
//主函数
public static void main(String[] args) {
    User fl=new User(new JFrame());}

```

效果图：



用户界面：Menu.java

用户界面菜单栏有4个一级菜单，学生管理、课程管理、选课管理都能添加、修改、删除数据，分别操作数据库里的S表（学生），C表(课程)，SC表（选课）。查询管理则可进行三个表的查询。

```

import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

```

```

public class Menu extends JFrame implements ActionListener{
    Addstu 增加学生界面;
    Updatastu 修改学生界面;
    Delstu 删除学生界面;
    AddC 增加课程界面;
    DelC 删除课程界面;
    UpdateC 修改课程界面;
    AddSC 增加选课界面;
    DelSC 删除选课界面;
    UpdateSC 修改选课界面;
    Selstu 学生查询界面;
    JPanel pCenter;
    CardLayout card=null;
    JLabel label=null;
    JMenuBar mb=new JMenuBar();//菜单栏
    JMenu m1=new JMenu("学生管理");
    JMenuItem add1=new JMenuItem("add1   ");
    JMenuItem updata1=new JMenuItem("updata1   ");
    JMenuItem delete1=new JMenuItem("delete1   ");
    JMenu m2=new JMenu("课程管理");
    JMenuItem add2=new JMenuItem("add2   ");
    JMenuItem updata2=new JMenuItem("updata2   ");
    JMenuItem delete2=new JMenuItem("delete2   ");
    JMenu m3=new JMenu("选课管理");
    JMenuItem add3=new JMenuItem("add3   ");
    JMenuItem updata3=new JMenuItem("updata3   ");
    JMenuItem delete3=new JMenuItem("delete3   ");
    JMenu m4=new JMenu("查询管理");
    JMenuItem 学生查询=new JMenuItem("查询信息   ");
    JMenuItem m5=new JMenuItem("系统退出");
    Font t=new Font ("sanerif",Font.PLAIN,12);
    public Menu (){
        this.setTitle("学生选课管理系统");
        try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
        catch(Exception e){System.err.println("不能设置外观:   "+e);}
        //组合菜单
        addMenu1();
        addMenu2();
        addMenu3();
        addMenu4();
        addJMenuBar();
        setJMenuBar(mb);
        label=new JLabel("选课管理系统",JLabel.CENTER);
        label.setFont(new Font("宋体",Font.BOLD,36));
    }
}

```

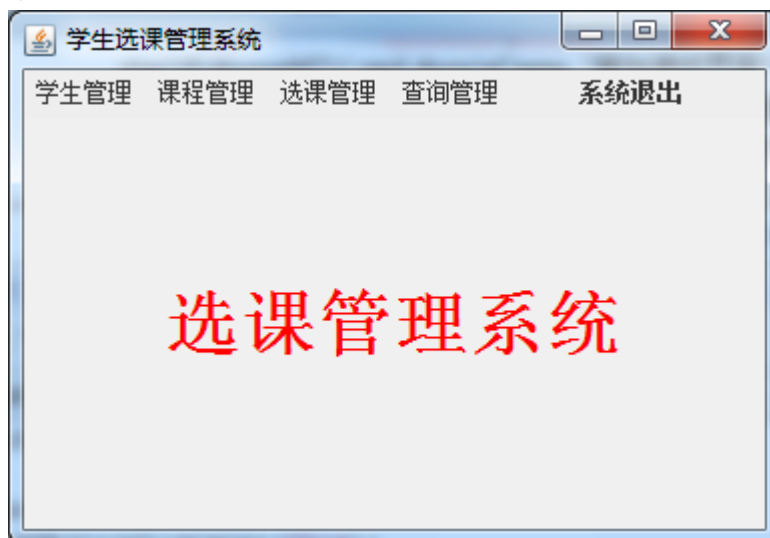
```
label.setHorizontalTextPosition(SwingConstants.CENTER);
label.setForeground(Color.red);
//点击事件
add1.addActionListener(this);
updata1.addActionListener(this);
delete1.addActionListener(this);
m5.addActionListener(this);
add2.addActionListener(this);
delete2.addActionListener(this);
updata2.addActionListener(this);
add3.addActionListener(this);
delete3.addActionListener(this);
updata3.addActionListener(this);
学生查询.addActionListener(this);
card=new CardLayout();
pCenter=new JPanel();
pCenter.setLayout(card);
增加学生界面=new Addstu();
修改学生界面=new Updatastu();
删除学生界面=new Delstu();
增加课程界面=new AddC();
删除课程界面=new DelC();
修改课程界面=new UpdateC();
增加选课界面=new AddSC();
删除选课界面=new DelSC();
修改选课界面=new UpdateSC();
学生查询界面=new Selstu();
pCenter.add("欢迎界面",label);
pCenter.add("增加学生界面",增加学生界面);
pCenter.add("修改学生界面",修改学生界面);
pCenter.add("删除学生界面",删除学生界面);
pCenter.add("增加课程界面",增加课程界面);
pCenter.add("删除课程界面",删除课程界面);
pCenter.add("修改课程界面",修改课程界面);
pCenter.add("增加选课界面",增加选课界面);
pCenter.add("删除选课界面",删除选课界面);
pCenter.add("修改选课界面",修改选课界面);
pCenter.add("学生查询界面", 学生查询界面);
add(pCenter,BorderLayout.CENTER);
validate();
setVisible(true);
setBounds(400,150,400,280);
setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
addWindowListener(new WindowAdapter(){//关闭程序时的操作
```

```

        public void windowClosing(WindowEvent e){System.exit(0);} });
        validate();}
private void addJMenuBar() {
    mb.add(m1);mb.add(m2);mb.add(m3);mb.add(m4);mb.add(m5);}
private void addMenu4() {
    m4.add(学生查询);m4.setFont(t);}
private void addMenu3() {
    m3.add(add3);m3.add(updata3);m3.add(delete3);m3.setFont(t); }
private void addMenu2() { //将菜单加入到菜单栏中
    m2.add(add2);m2.add(updata2);m2.add(delete2);m2.setFont(t); }
private void addMenu1() {
    m1.add(add1);m1.add(updata1);m1.add(delete1);m1.setFont(t); }
public void actionPerformed(ActionEvent e){
    Object obj=e.getSource();
    if(obj==m5){System.exit(0);}
    else{if(obj==add1){card.show(pCenter,"增加学生界面");}
    else{if(obj==updata1){ card.show(pCenter,"修改学生界面");}
    else{if(obj==delete1){ card.show(pCenter, "删除学生界面");}
    else{if(obj==add2){ card.show(pCenter, "增加课程界面");}
    else{if(obj==delete2){ card.show(pCenter, "删除课程界面");}
    else{if(obj==updata2){ card.show(pCenter, "修改课程界面");}
    else{if(obj==add3){ card.show(pCenter, "增加选课界面");}
    else{if(obj==delete3){ card.show(pCenter, "删除选课界面");}
    else{if(obj==updata3){ card.show(pCenter, "修改选课界面");}
    else{if(obj==学生查询){ card.show(pCenter, "学生查询界面");}
    }}}}}}}}}
    public static void main(String[] args) {new Menu();}

```

效果图：



添加界面:AddC.java/AddSC.java/Addstu.java

添加数据时，若遇到必须信息未填写、不能重复的信息在数据库中已存在，都会提示无法添加及其错误原因。

```

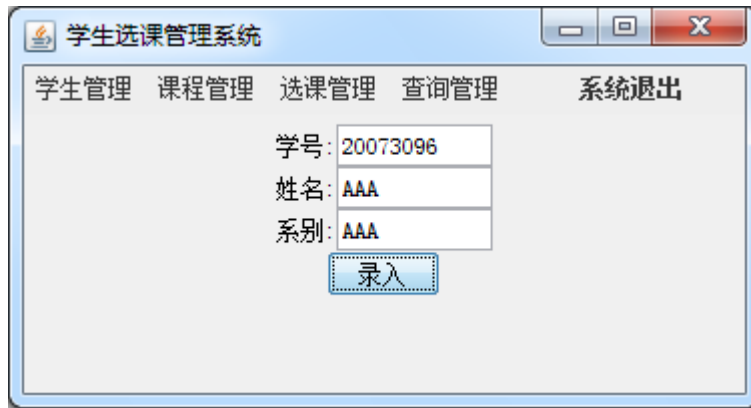
import java.awt.*;
import javax.swing.*;
import java.sql.*;
import java.awt.event.*;

public class AddC extends JPanel implements ActionListener{
    JTextField 课号, 课名;
    JButton 录入;

    public AddC() {
        try
        {
            UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());
        } catch (Exception e) {
            System.err.println("不能设置外观: " + e);
        }
        课号=new JTextField(12);
        课名=new JTextField(12);
        录入=new JButton("录入");
        录入.addActionListener(this);
        Box box1=Box.createHorizontalBox();//横放box
        Box box2=Box.createHorizontalBox();
        Box box3=Box.createHorizontalBox();
        Box box4=Box.createHorizontalBox();
        box1.add(new JLabel("课号:"));
        box1.add(课号);
        box2.add(new JLabel("课名:"));
        box2.add(课名);
        box4.add(录入);
        Box boxH=Box.createVerticalBox();//竖放box
        boxH.add(box1);
        boxH.add(box2);
        boxH.add(box3);
        boxH.add(box4);
        boxH.add(Box.createVerticalGlue());
        JPanel messPanel=new JPanel();
        messPanel.add(boxH);
        setLayout(new BorderLayout());
        add(messPanel, BorderLayout.CENTER);
        validate();
    }
}

```

效果图：



添加界面:UpdateC.java/UpdateSC.java /Updatestu.java

先查找你想要修改的项目，若修改的信息包括号码（学号、课号），则会进行查询，如果修改后的号码已存在，以及修改后必须的信息变成空都会提示无法修改和其错误原因。此外，若修改C表或则S表，会连同SC表中对应的信息一起修改。

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;

public class UpdateC extends JPanel implements ActionListener{
    String save=null;
    JTextField 课号1,课号,课名;
    JButton 修改,查找;

    public UpdateC(){
        try
        {
            UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());
        } catch (Exception e) {System.err.println("不能设置外观： "+e);}

        课号1=new JTextField(12);
        课号=new JTextField(12);
        课名=new JTextField(12);
        修改=new JButton("修改");
        查找=new JButton("查找");

        Box box1=Box.createHorizontalBox();//横放box
        Box box2=Box.createHorizontalBox();
        Box box3=Box.createHorizontalBox();
        Box box4=Box.createHorizontalBox();
        Box box5=Box.createHorizontalBox();
        box1.add(new JLabel("课号:",JLabel.CENTER));
        box1.add(课号);
        box2.add(new JLabel("课名:",JLabel.CENTER));
        box2.add(课名);
        box3.add(修改);
        box5.add(new JLabel("课号:",JLabel.CENTER));
        box5.add(课号1);
        box5.add(查找);
    }
}
```



```

        修改.addActionListener(this);
        查找.addActionListener(this);
        Box boxH=Box.createVerticalBox();//竖放box
        boxH.add(box1);
        boxH.add(box2);
        boxH.add(box3);
        boxH.add(box4);
        boxH.add(Box.createVerticalGlue());
        JPanel picPanel=new JPanel();
        JPanel messPanel=new JPanel();
        messPanel.add(box5);
        picPanel.add(boxH);
        setLayout(new BorderLayout());
        JSplitPane splitV=new
        JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//分割
        add(splitV,BorderLayout.CENTER);
        validate();}

```



删除界面:DelC.java/DelSC.java /Deltu.java

先查找你想要删除的项目，然后删除，此外，若删除C表或则S表的内容，会连同SC表中对应的信息一起修改。

```

import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;

public class DelC extends JPanel implements ActionListener{
    String save=null;
    JTextField 课号1,课号,课名;
    JButton 删除,查找;

    public DelC(){
        try
        {
            UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());
        } catch (Exception e) {System.err.println("不能设置外观： "+e);}

        课号1=new JTextField(12);

```

```

课号=new JTextField(12);
课名=new JTextField(12);
删除=new JButton("删除");
查找=new JButton("查找");
Box box1=Box.createHorizontalBox();//横放box
Box box2=Box.createHorizontalBox();
Box box3=Box.createHorizontalBox();
Box box4=Box.createHorizontalBox();
Box box5=Box.createHorizontalBox();
box1.add(new JLabel("课号:",JLabel.CENTER));
box1.add(课号);
box2.add(new JLabel("课名:",JLabel.CENTER));
box2.add(课名);
box4.add(删除);
box5.add(new JLabel("课号:",JLabel.CENTER));
box5.add(课号1);
box5.add(查找);
Box boxH=Box.createVerticalBox();//竖放box
boxH.add(box1);
boxH.add(box2);
boxH.add(box3);
boxH.add(box4);
boxH.add(Box.createVerticalGlue());
删除.addActionListener(this);
查找.addActionListener(this);
JPanel picPanel=new JPanel();
JPanel messPanel=new JPanel();
messPanel.add(box5);
picPanel.add(boxH);
setLayout(new BorderLayout());
JSplitPane splitV=new
JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//分割
add(splitV,BorderLayout.CENTER);
validate();}

```



查询界面:Selstu.java

可以以任意条件模糊查找相关的表。

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;

public class Selstu extends JPanel implements ActionListener{
    JTextField 学号,姓名,系别;
    JButton 查找;
    JTextField 课号,课名;
    JButton 查找1;
    JTextField 课号1,学号1,成绩;
    JButton 查找2;

    public Selstu () {
        学号=new JTextField(12);
        姓名=new JTextField(12);
        系别=new JTextField(12);
        课号=new JTextField(12);
        课名=new JTextField(12);
        课号1=new JTextField(12);
        学号1=new JTextField(12);
        成绩=new JTextField(12);
        查找=new JButton("查找学生信息");
        查找1=new JButton("查找课程信息");
        查找2=new JButton("查找选课信息");

        Box box1=Box.createHorizontalBox();//横放box
        Box box2=Box.createHorizontalBox();
        Box box4=Box.createHorizontalBox();
        Box box5=Box.createHorizontalBox();
        Box box6=Box.createHorizontalBox();
        Box box7=Box.createHorizontalBox();
        box1.add(new JLabel("学号:",JLabel.CENTER));
        box1.add(学号);
```

```

        box1.add(new JLabel("姓名:",JLabel.CENTER));
        box1.add(姓名);
        box1.add(new JLabel("系别:",JLabel.CENTER));
        box1.add(系别);
        box2.add(查找);
        box4.add(new JLabel("课号:",JLabel.CENTER));
        box4.add(课号);
        box4.add(new JLabel("课名:",JLabel.CENTER));
        box4.add(课名);
        box6.add(查找1);
        box5.add(new JLabel("课号:",JLabel.CENTER));
        box5.add(课号1);
        box5.add(new JLabel("学号:",JLabel.CENTER));
        box5.add(学号1);
        box5.add(new JLabel("成绩:",JLabel.CENTER));
        box5.add(成绩);
        box7.add(查找2);
        Box boxH1=Box.createVerticalBox();//竖放box
        boxH1.add(box1);
        boxH1.add(box2);
        boxH1.add(Box.createVerticalGlue());
        Box boxH2=Box.createVerticalBox();//竖放box
        boxH2.add(box4);
        boxH2.add(box6);
        boxH2.add(Box.createVerticalGlue());
        Box boxH3=Box.createVerticalBox();//竖放box
        boxH3.add(box5);
        boxH3.add(box7);
        boxH3.add(Box.createVerticalGlue());
        查找.addActionListener(this);
        查找1.addActionListener(this);
        查找2.addActionListener(this);
        JPanel messPanel=new JPanel();
        JPanel picPanel=new JPanel();
        JPanel threePanel=new JPanel();
        messPanel.add(boxH1);
        picPanel.add(boxH2);
        threePanel.add(boxH3);
        setLayout(new BorderLayout());
        JSplitPane splitV=new
JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//分割
        add(splitV,BorderLayout.CENTER);
        JSplitPane splitV1=new
JSplitPane(JSplitPane.VERTICAL_SPLIT,splitV,threePanel);//分割

```

```
add(splitV1, BorderLayout.CENTER);  
validate();}
```

效果图：

学生选课管理系统

学生管理 课程管理 选课管理 查询管理 系统退出

学号: 2007 姓名: 系别:

查找学生信息

课号: 课名:

查找课程信息

课号: 学号: 成绩:

查找选课信息

学号	姓名	性别
20073091	小明	A系
20073092	A2	A2系
20073096	学生A	计算机系
20073097	学生B	机电系

下面是java的源代码，总共有15个类。分别是AddC.java, AddSC.java, Addstu.java, Delstu.java, DelC.java, DelSC.java, Menu.java, SelC.java, SelSC.java, Selstu.java, Student.java, Updatastu.java, UpdateC.java, UpdateSC.java, User.java。

AddC.java :

```
import java.awt.*;
import javax.swing.*;
import java.sql.*;
import java.awt.event.*;

public class AddC extends JPanel implements ActionListener{
    JTextField 课号,课名;
    JButton 录入;

    public AddC(){
        try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
        catch(Exception e){System.err.println("不能设置外观: "+e);}

        课号=new JTextField(12);
        课名=new JTextField(12);
        录入=new JButton("录入");
        录入.addActionListener(this);

        Box box1=Box.createHorizontalBox();//横放box
        Box box2=Box.createHorizontalBox();
        Box box3=Box.createHorizontalBox();
        Box box4=Box.createHorizontalBox();
        box1.add(new JLabel("课号:"));
        box1.add(课号);
        box2.add(new JLabel("课名:"));
        box2.add(课名);
        box4.add(录入);
        Box boxH=Box.createVerticalBox();//竖放box
        boxH.add(box1);
        boxH.add(box2);
        boxH.add(box3);
        boxH.add(box4);
        boxH.add(Box.createVerticalGlue());
        JPanel messPanel=new JPanel();
        messPanel.add(boxH);
        setLayout(new BorderLayout());
        add(messPanel,BorderLayout.CENTER);
        validate();
    }
}
```

```

}
public void actionPerformed(ActionEvent c){
    Object obj=c.getSource();
    if(obj==录入){
        if(课号.getText().equals("")||课名.getText().equals("")){
            JOptionPane.showMessageDialog(this,"学生信息请填满再录入！");
        }
        Statement stmt=null;
        ResultSet rs=null,rs1=null;
        String sql,sql1;
        sql1="select * from C where Cno='"+课号.getText()+"'";
        sql="insert into C values('"+课号.getText()+"','"+课名.getText()+"')";
        try{
            Connection dbConn1=CONN();

            stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
            rs1=stmt.executeQuery(sql1);
            if(rs1.next()){JOptionPane.showMessageDialog(this,"该课号以存在，无法添加");}

            else{
                stmt.executeUpdate(sql);
                JOptionPane.showMessageDialog(this,"添加成功");
            }
            rs1.close();

            stmt.close();
        }
        catch(SQLException e){
            System.out.print("SQL Exception occur.Message is:"+e.getMessage());
        }
    }
}
}

```

//连接数据库方法

```

public static Connection CONN(){
    String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载JDBC
    驱动
    String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //连接
    服务器和数据库test
    String userName = "sa";    //默认用户名
    String userPwd = "huangjiwei";    //密码
    Connection dbConn=null;
}

```

```

        try {
            Class.forName(driverName);
            dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
            System.out.println("Connection Successful!");    //如果连接成功 控制台输出
Connection Successful!
        } catch (Exception e) {
            e.printStackTrace();
        }
        return dbConn;
    }
}

```

AddSC.java :

```

import java.awt.*;

import javax.swing.*;

import java.sql.*;
import java.util.*;
import javax.swing.filechooser.*;
import java.io.*;
import java.awt.event.*;

public class AddSC extends JPanel implements ActionListener{
    JTextField 课号,学号,成绩;
    JButton 录入;

    public AddSC(){
        try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
        catch(Exception e){System.err.println("不能设置外观: "+e);}

        课号=new JTextField(12);
        学号=new JTextField(12);
        成绩=new JTextField(12);
        录入=new JButton("录入");
        录入.addActionListener(this);

        Box box1=Box.createHorizontalBox();//横放box
        Box box2=Box.createHorizontalBox();
        Box box3=Box.createHorizontalBox();
    }
}

```



```

Box box4=Box.createHorizontalBox();
box1.add(new JLabel("课号:"));
box1.add(课号);
box2.add(new JLabel("学号:"));
box2.add(学号);
box3.add(new JLabel("成绩:"));
box3.add(成绩);
box4.add(录入);
Box boxH=Box.createVerticalBox();//竖放box
boxH.add(box1);
boxH.add(box2);
boxH.add(box3);
boxH.add(box4);
boxH.add(Box.createVerticalGlue());
JPanel messPanel=new JPanel();
messPanel.add(boxH);
setLayout(new BorderLayout());
add(messPanel,BorderLayout.CENTER);
validate();
}
public void actionPerformed(ActionEvent c){
    Object obj=c.getSource();
    if(obj==录入){
        if(课号.getText().equals("")||学号.getText().equals("")){
            JOptionPane.showMessageDialog(this,"填写课号与学号才能录入！");
        }
        else
        {
            Statement stmt=null;
            ResultSet rs=null,rs1=null,rsC=null,rsS=null;
            String sql,sql1,sqlS,sqlC;
            sqlC="select * from C where Cno='"+课号.getText()+"'";
            sqlS="select * from S where Sno='"+学号.getText()+"'";
            sql1="select * from SC where Cno='"+课号.getText()+"' and Sno='"+学
号.getText()+"'";
            sql="insert into SC values('"+课号.getText()+"','"+学号.getText()+"','"+成
绩.getText()+"')";
            try{
                Connection dbConn1=CONN();

                stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,Resul
tSet.CONCUR_READ_ONLY);
                rsC=stmt.executeQuery(sqlC);
                if(rsC.next()){

```



```
}  
}
```

Addstu.java :

```
import java.awt.*;  
import javax.swing.*;  
import java.sql.*;  
import java.awt.event.*;  
  
public class Addstu extends JPanel implements ActionListener{  
    JTextField 学号,姓名,系别;  
    JButton 录入;  
  
    public Addstu(){  
        try  
{UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}  
        catch(Exception e){System.err.println("不能设置外观: "+e);}  
  
        学号=new JTextField(12);  
        姓名=new JTextField(12);  
        系别=new JTextField(12);  
        录入=new JButton("录入");  
        录入.addActionListener(this);  
  
        Box box1=Box.createHorizontalBox();//横放 box  
        Box box2=Box.createHorizontalBox();  
        Box box3=Box.createHorizontalBox();  
        Box box4=Box.createHorizontalBox();  
        box1.add(new JLabel("学号:"/*,JLabel.CENTER*/));  
        box1.add(学号);  
        box2.add(new JLabel("姓名:"/*,JLabel.CENTER*/));  
        box2.add(姓名);  
        box3.add(new JLabel("系别:"/*,JLabel.CENTER*/));  
        box3.add(系别);  
        box4.add(录入);  
        Box boxH=Box.createVerticalBox();//竖放 box  
        boxH.add(box1);  
        boxH.add(box2);  
        boxH.add(box3);  
        boxH.add(box4);  
        boxH.add(Box.createVerticalGlue());  
        JPanel messPanel=new JPanel();  
        messPanel.add(boxH);
```

```

        setLayout(new BorderLayout());
        add(messPanel, BorderLayout.CENTER);
        validate();
    }

    public void actionPerformed(ActionEvent c){
        Object obj=c.getSource();
        if(obj==录入){
            if(学号.getText().equals("")||姓名.getText().equals("")||系
别.getText().equals("")){
                JOptionPane.showMessageDialog(this,"学生信息请填
                满再录入！");
            }
            Statement stmt=null;
            ResultSet rs1=null;
            String sql,sql1;
            sql1="select * from S where Sno='"+学号.getText()+"'";
            sql="insert into S values('"+学号.getText()+"','"+姓
            名.getText()+"','"+系别.getText()+"')";
            try{
                Connection dbConn1=CONN();

                stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SC
                ROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
                rs1=stmt.executeQuery(sql1);
                if(rs1.next()){JOptionPane.showMessageDialog(this,"该
                学号以存在，无法添加");}

                else{
                    stmt.executeUpdate(sql);
                    JOptionPane.showMessageDialog(this,"添加成功");
                }
                rs1.close();
                stmt.close();
            }
            catch(SQLException e){
                System.out.print("SQL Exception occur.Message
                is:"+e.getMessage());
            }
        }
    }
}

```

//连接数据库方法

```

public static Connection CONN(){
    String driverName =
    "com.microsoft.sqlserver.jdbc.SQLServerDriver"; //加载 JDBC 驱动
}

```

```

        String dbURL = "jdbc:sqlserver://localhost:1433;
DatabaseName=student"; //连接服务器和数据库 test
        String userName = "sa"; //默认用户名
        String userPwd = "huangjiwei"; //密码
        Connection dbConn=null;

        try {
            Class.forName(driverName);
            dbConn = DriverManager.getConnection(dbURL, userName,
userPwd);

            System.out.println("Connection Successful!"); //如果连接
成功 控制台输出 Connection Successful!
        } catch (Exception e) {
            e.printStackTrace();
        }
        return dbConn;
    }
}

```

DelC.java:

```

import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;
public class DelC extends JPanel implements ActionListener{
    String save=null;
    JTextField 课号 1,课号,课名;
    JButton 删除,查找;

    public DelC(){
        try
        {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
        catch(Exception e){System.err.println("不能设置外观: "+e);}

        课号 1=new JTextField(12);
        课号=new JTextField(12);
        课名=new JTextField(12);
        删除=new JButton("删除");
        查找=new JButton("查找");

        Box box1=Box.createHorizontalBox();//横放 box
        Box box2=Box.createHorizontalBox();
    }
}

```

```

Box box3=Box.createHorizontalBox();
Box box4=Box.createHorizontalBox();
Box box5=Box.createHorizontalBox();
box1.add(new JLabel("课号:",JLabel.CENTER));
box1.add(课号);
box2.add(new JLabel("课名:",JLabel.CENTER));
box2.add(课名);
box4.add(删除);
box5.add(new JLabel("课号:",JLabel.CENTER));
box5.add(课号 1);
box5.add(查找);
Box boxH=Box.createVerticalBox();//竖放 box
boxH.add(box1);
boxH.add(box2);
boxH.add(box3);
boxH.add(box4);
boxH.add(Box.createVerticalGlue());

删除.addActionListener(this);
查找.addActionListener(this);

JPanel picPanel=new JPanel();
JPanel messPanel=new JPanel();
messPanel.add(box5);
picPanel.add(boxH);
setLayout(new BorderLayout());
JSplitPane
splitV=new
JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//分割
add(splitV,BorderLayout.CENTER);
validate();

}
public void actionPerformed(ActionEvent e){
Object obj=e.getSource();
Statement stmt=null;
ResultSet rs=null,rs1=null;

String sql=null,sql1=null,sqlSC=null;
if(obj== 查 找 ){if( 课 号
1.getText().equals(""))JOptionPane.showMessageDialog(this,"请填写查询的课号！");
else{
sql1="select * from C where Cno='"+课号 1.getText()+"";
try{
Connection dbConn1=CONN();

```

```

        stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
        rs1=stmt.executeQuery(sql1);
        if(rs1.next()){课号.setText(rs1.getString("Cno").trim());
            课
名.setText(rs1.getString("Cname").trim());
            save=课号 1.getText().trim();

        }
        else{JOptionPane.showMessageDialog(this,"没有这个课号
的课程" );}

        stmt.close();
        rs1.close();
    }catch(SQLException e1){
        System.out.print("SQL Exception occur.Message
is:"+e1.getMessage());
    }
}
else{
    if(obj== 删
除){if(save==null)JOptionPane.showMessageDialog(this,"还没查找需要修改的课程" );
        else{sql="delete from C where Cno='"+save+"'";
            sqlSC="delete from SC where Cno='"+save+"'";
            try{
                Connection dbConn1=CONN();

                stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
                stmt.executeUpdate(sql);
                stmt.executeUpdate(sqlSC);
                save=null;
                JOptionPane.showMessageDialog(this,"删除完成" );
                课号.setText("");
                课名.setText("");

                stmt.close();
            }catch(SQLException e1){
                System.out.print("SQL Exception
occur.Message is:"+e1.getMessage());
            }
        }
    }
}
}

```

```

}

//          连接数据库方法
public static Connection CONN(){
    String          driverName          =
"com.microsoft.sqlserver.jdbc.SQLServerDriver";  //加载 JDBC 驱动
    String  dbURL    =  "jdbc:sqlserver://localhost:1433;
DatabaseName=student";  //连接服务器和数据库 test
    String userName = "sa";  //默认用户名
    String userPwd = "huangjiwei";  //密码
    Connection dbConn=null;

    try {
        Class.forName(driverName);
        dbConn    =    DriverManager.getConnection(dbURL,
userName, userPwd);

        System.out.println("Connection Successful!");  //如果
连接成功 控制台输出 Connection Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
    return dbConn;
}
}

```

DeISC.java:

```

import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;

public class DeISC extends JPanel implements ActionListener{
    String saveC=null;
    String saveS=null;
    JTextField 课号 1,学号 1,学号,课号,成绩;
    JButton 删除,查找;

    public DeISC(){
        try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
        catch(Exception e){System.err.println("不能设置外观:  "+e);}

        学号 1=new JTextField(12);
    }
}

```



```

课号 1=new JTextField(12);
课号=new JTextField(12);
学号=new JTextField(12);
成绩=new JTextField(12);
删除=new JButton("删除");
查找=new JButton("查找");

Box box1=Box.createHorizontalBox();//横放 box
Box box2=Box.createHorizontalBox();
Box box3=Box.createHorizontalBox();
Box box4=Box.createHorizontalBox();
Box box5=Box.createHorizontalBox();
box1.add(new JLabel("课号:",JLabel.CENTER));
box1.add(课号);
box2.add(new JLabel("学号:",JLabel.CENTER));
box2.add(学号);
box3.add(new JLabel("成绩:",JLabel.CENTER));
box3.add(成绩);
box4.add(删除);
box5.add(new JLabel("课号:",JLabel.CENTER));
box5.add(课号 1);
box5.add(new JLabel("学号:",JLabel.CENTER));
box5.add(学号 1);
box5.add(查找);
Box boxH=Box.createVerticalBox();//竖放 box
boxH.add(box1);
boxH.add(box2);
boxH.add(box3);
boxH.add(box4);
boxH.add(Box.createVerticalGlue());

删除.addActionListener(this);
查找.addActionListener(this);

JPanel picPanel=new JPanel();
JPanel messPanel=new JPanel();
messPanel.add(box5);
picPanel.add(boxH);
setLayout(new BorderLayout());
JSplitPane splitV=new JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//分割
add(splitV,BorderLayout.CENTER);
validate();

}

```

```

public void actionPerformed(ActionEvent e){
    Object obj=e.getSource();
    Statement stmt=null;
    ResultSet rs=null,rs1=null;
    String sql=null,sql1=null;

    if(obj== 查 找 ){if( 课 号 1.getText().equals("")|| 学 号
1.getText().equals(""))JOptionPane.showMessageDialog(this,"请填写完成查询的信息！");
    else{

        sql1="select * from SC where Cno='"+ 课 号 1.getText()+"' and Sno='"+ 学 号
1.getText()+"'";
        try{
            Connection dbConn1=CONN();

            stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,Resul
tSet.CONCUR_READ_ONLY);
            rs1=stmt.executeQuery(sql1);
            if(rs1.next()){课号.setText(rs1.getString("Cno").trim());
                学号.setText(rs1.getString("Sno").trim());
                成绩.setText(rs1.getString("C").trim());
                saveC=课号 1.getText().trim();
                saveS=学号 1.getText().trim();
            }
            else{JOptionPane.showMessageDialog(this,"没有这个课号的学生");}
            stmt.close();
            rs1.close();
        }catch(SQLException e1){
            System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
        }
    }
}
else{
    if(obj== 删除 ){if(saveC==null||saveS==null)JOptionPane.showMessageDialog(this,"
还没查找需要修改的学生/课程");
    else{sql="delete from SC where Cno='"+saveC+"' and Sno='"+saveS+"'";
        try{
            Connection dbConn1=CONN();

            stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,Resul
tSet.CONCUR_READ_ONLY);
            stmt.executeUpdate(sql);
            saveC=null;
            saveS=null;
        }
    }
}
}
}

```



```

public class Delstu extends JPanel implements ActionListener{
String save=null;
JTextField 学号 1,学号,姓名,系别;
JButton 删除,查找;

public Delstu(){
try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
catch(Exception e){System.err.println("不能设置外观:  "+e);}

学号 1=new JTextField(12);
学号=new JTextField(12);
姓名=new JTextField(12);
系别=new JTextField(12);
删除=new JButton("删除");
查找=new JButton("查找");

Box box1=Box.createHorizontalBox();//横放 box
Box box2=Box.createHorizontalBox();
Box box3=Box.createHorizontalBox();
Box box4=Box.createHorizontalBox();
Box box5=Box.createHorizontalBox();
box1.add(new JLabel("学号:",JLabel.CENTER));
box1.add(学号);
box2.add(new JLabel("姓名:",JLabel.CENTER));
box2.add(姓名);
box3.add(new JLabel("系别:",JLabel.CENTER));
box3.add(系别);
box4.add(删除);
box5.add(new JLabel("学号:",JLabel.CENTER));
box5.add(学号 1);
box5.add(查找);
Box boxH=Box.createVerticalBox();//竖放 box
boxH.add(box1);
boxH.add(box2);
boxH.add(box3);
boxH.add(box4);
boxH.add(Box.createVerticalGlue());

删除.addActionListener(this);
查找.addActionListener(this);

JPanel picPanel=new JPanel();
JPanel messPanel=new JPanel();
messPanel.add(box5);

```

```

picPanel.add(boxH);
setLayout(new BorderLayout());
JSplitPane splitV=new JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//分割
add(splitV,BorderLayout.CENTER);
validate();
}
public void actionPerformed(ActionEvent e){
Object obj=e.getSource();
Statement stmt=null;
ResultSet rs=null,rs1=null;
String sql=null,sql1=null,sqlSC=null;

if(obj==查找){if(学号 1.getText().equals(""))JOptionPane.showMessageDialog(this,"请填写查
询的学号 ! ");
else{
sql1="select * from S where Sno='"+学号 1.getText()+"'";
try{
Connection dbConn1=CONN();
stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.
CONCUR_READ_ONLY);
rs1=stmt.executeQuery(sql1);
if(rs1.next()){学号.setText(rs1.getString("Sno").trim());
姓名.setText(rs1.getString("Sname").trim());
系别.setText(rs1.getString("Sx").trim());
save=学号 1.getText().trim();
}
else{JOptionPane.showMessageDialog(this,"没有这个学号的学生" );}
stmt.close();
rs1.close();
}catch(SQLException e1){
System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
}
}
}
else{
if(obj==删除){if(save==null)JOptionPane.showMessageDialog(this,"还没查找需要修改的学
生" );
else{sql="delete from S where Sno='"+save+"'";
sqlSC="delete from SC where Sno='"+save+"'";
try{
Connection dbConn1=CONN();
stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.
CONCUR_READ_ONLY);
stmt.executeUpdate(sql);

```

```

stmt.executeUpdate(sqlSC);
save=null;
JOptionPane.showMessageDialog(this,"删除完成" );
学号.setText("");
    姓名.setText("");
    系别.setText("");

stmt.close();
    }catch(SQLException e1){
        System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
    }
}
}
}
}

//连接数据库方法
public static Connection CONN(){
    String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载 JDBC 驱动
    String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //连接服务器和数据库 test
    String userName = "sa";    //默认用户名
    String userPwd = "huangjiwei";    //密码
    Connection dbConn=null;

    try {
        Class.forName(driverName);
        dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
        System.out.println("Connection Successful!");    //如果连接成功 控制台输出 Connection Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
    return dbConn;
}
}
}

```

Menu.java:

```

import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

public class Menu extends JFrame implements ActionListener{

```

```

Addstu 增加学生界面;
Updatastu 修改学生界面;
Delstu 删除学生界面;
AddC 增加课程界面;
DelC 删除课程界面;
UpdateC 修改课程界面;
AddSC 增加选课界面;
DelSC 删除选课界面;
UpdateSC 修改选课界面;
Selstu 学生查询界面;
JPanel pCenter;
CardLayout card=null;
JLabel label=null;
JMenuBar mb=new JMenuBar();//菜单栏
JMenu m1=new JMenu("学生管理");
JMenuItem add1=new JMenuItem("add1");
JMenuItem updata1=new JMenuItem("updata1");
JMenuItem delete1=new JMenuItem("delete1");
JMenu m2=new JMenu("课程管理");
JMenuItem add2=new JMenuItem("add2");
JMenuItem updata2=new JMenuItem("updata2");
JMenuItem delete2=new JMenuItem("delete2");
JMenu m3=new JMenu("选课管理");
JMenuItem add3=new JMenuItem("add3");
JMenuItem updata3=new JMenuItem("updata3");
JMenuItem delete3=new JMenuItem("delete3");
JMenu m4=new JMenu("查询管理");
JMenuItem 学生查询=new JMenuItem("查询信息");
JMenuItem m5=new JMenuItem("系统退出");
Font t=new Font ("sanerif",Font.PLAIN,12);
public Menu (){
this.setTitle("学生选课管理系统");
try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
catch(Exception e){System.err.println("不能设置外观: "+e);}
//组合菜单
addMenu1();
addMenu2();
addMenu3();
addMenu4();
addJMenuBar();
setJMenuBar(mb);

label=new JLabel("选课管理系统",JLabel.CENTER);
label.setFont(new Font("宋体",Font.BOLD,36));

```

```
label.setHorizontalTextPosition(SwingConstants.CENTER);
label.setForeground(Color.red);
//点击事件
add1.addActionListener(this);
updata1.addActionListener(this);
delete1.addActionListener(this);
m5.addActionListener(this);
add2.addActionListener(this);
delete2.addActionListener(this);
updata2.addActionListener(this);
add3.addActionListener(this);
delete3.addActionListener(this);
updata3.addActionListener(this);
学生查询.addActionListener(this);
```

```
card=new CardLayout();
pCenter=new JPanel();
pCenter.setLayout(card);
```

```
增加学生界面=new Addstu();
修改学生界面=new Updatastu();
删除学生界面=new Delstu();
增加课程界面=new AddC();
删除课程界面=new DelC();
修改课程界面=new UpdateC();
增加选课界面=new AddSC();
删除选课界面=new DelSC();
修改选课界面=new UpdateSC();
学生查询界面=new Selstu();
```

```
pCenter.add("欢迎界面",label);
pCenter.add("增加学生界面",增加学生界面);
pCenter.add("修改学生界面",修改学生界面);
pCenter.add("删除学生界面",删除学生界面);
pCenter.add("增加课程界面",增加课程界面);
pCenter.add("删除课程界面",删除课程界面);
pCenter.add("修改课程界面",修改课程界面);
pCenter.add("增加选课界面",增加选课界面);
pCenter.add("删除选课界面",删除选课界面);
pCenter.add("修改选课界面",修改选课界面);
pCenter.add("学生查询界面", 学生查询界面);
```

```
add(pCenter,BorderLayout.CENTER);
validate();
```



```

setVisible(true);
setBounds(400,150,600,380);
setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    addWindowListener(new WindowAdapter(){//关闭程序时的操作
public void windowClosing(WindowEvent e){System.exit(0);}
});
validate();
}

```

```

private void addJMenuBar() {
mb.add(m1);mb.add(m2);mb.add(m3);mb.add(m4);mb.add(m5);
}
private void addMenu4() {
m4.add(学生查询);
    m4.setFont(t);
}
private void addMenu3() {
m3.add(add3);
m3.add(updata3);
m3.add(delete3);
m3.setFont(t);
}
private void addMenu2() {//将菜单加入到菜单栏中
m2.add(add2);
m2.add(updata2);
m2.add(delete2);
m2.setFont(t);
}
private void addMenu1() {
m1.add(add1);
m1.add(updata1);
m1.add(delete1);
m1.setFont(t);//字体
}

```

```

public void actionPerformed(ActionEvent e){
Object obj=e.getSource();
if(obj==m5){System.exit(0);}
else{if(obj==add1){
card.show(pCenter,"增加学生界面");
}
else{if(obj==updata1){
card.show(pCenter,"修改学生界面");
}
}
}

```

```

else{if(obj==delete1){
card.show(pCenter, "删除学生界面");
}
else{if(obj==add2){
card.show(pCenter, "增加课程界面");
}
else{if(obj==delete2){
card.show(pCenter, "删除课程界面");
}
else{if(obj==updata2){
card.show(pCenter, "修改课程界面");
}
else{if(obj==add3){
card.show(pCenter, "增加选课界面");
}
else{if(obj==delete3){
card.show(pCenter, "删除选课界面");
}
else{if(obj==updata3){
card.show(pCenter, "修改选课界面");
}
else{if(obj==学生查询){
card.show(pCenter, "学生查询界面");
}}
}}}}}}}}
public static void main(String[] args) {
new Menu();
}

```

SelC.java:

```

import java.sql.*;
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;

import java.util.*;

public class SelC extends JFrame {
Vector rowData, columnNames;
Statement stmt=null;
String sql=null;

```

```

JTable jt = null;
JScrollPane jsp = null;
PreparedStatement ps=null;
ResultSet rs=null;
public SelC(String sql1){
    columnNames = new Vector();
    // 设置列名
    columnNames.add("课号");
    columnNames.add("课名");

    rowData=new Vector();
    sql=sql1;
    try{
        Connection dbConn1=CONN();
        stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.
        CONCUR_READ_ONLY);
        rs=stmt.executeQuery(sql);

        while(rs.next()){
            Vector hang = new Vector();
            hang.add(rs.getString("Cno"));System.out.print(rs.getString("Cno"));
            hang.add(rs.getString("Cname"));System.out.print(rs.getString("Cname"));
            rowData.add(hang);}
        jt=new JTable(rowData,columnNames);
        jsp=new JScrollPane(jt);
        this.add(jsp);
        this.setSize(400,300);
        this.setVisible(true);
    }catch(SQLException e1){
        System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
    }
}

//连接数据库方法
public static Connection CONN(){
    String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载 JDBC 驱动
    String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //连接服务器和数据库 test
    String userName = "sa";    //默认用户名
    String userPwd = "huangjiwei";    //密码
    Connection dbConn=null;

    try {
        Class.forName(driverName);

```

```

        dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
        System.out.println("Connection Successful!");    //如果连接成功 控制台输出 Connection
Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
    return dbConn;
}
}

```

SelSC.java:

```

import java.sql.*;
import javax.swing.*;

import java.util.*;

public class SelSC extends JFrame {
    Vector rowData, columnNames;
    Statement stmt=null;
    String sql=null;
    JTable jt = null;
    JScrollPane jsp = null;
    PreparedStatement ps=null;
    ResultSet rs=null;
    public SelSC(String sql1){
        columnNames = new Vector();
        // 设置列名
        columnNames.add("课号");
        columnNames.add("课名");
        columnNames.add("学号");
        columnNames.add("姓名");
        columnNames.add("成绩");

        rowData=new Vector();
        sql=sql1;
        try{
            Connection dbConn1=CONN();

            stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
            rs=stmt.executeQuery(sql);

```

```

        while(rs.next()){
            Vector hang = new Vector();
            hang.add(rs.getString("Cno"));System.out.print(rs.getString("Cno"));
            hang.add(rs.getString("Cname"));System.out.print(rs.getString("Cname"));
            hang.add(rs.getString("Sno"));System.out.print(rs.getString("Sno"));
            hang.add(rs.getString("Sname"));System.out.print(rs.getString("Sname"));
            hang.add(rs.getString("C"));System.out.println(rs.getString("C"));
            rowData.add(hang);}
        jt=new JTable(rowData,columnNames);
        jsp=new JScrollPane(jt);
    this.add(jsp);
    this.setSize(400,300);
    this.setVisible(true);
    }catch(SQLException e1){
        System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
    }
}

// 连接数据库方法
public static Connection CONN(){
    String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载
JDBC 驱动
    String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //
连接服务器和数据库 test
    String userName = "sa";    //默认用户名
    String userPwd = "huangjiwei";    //密码
    Connection dbConn=null;

    try {
        Class.forName(driverName);
        dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
        System.out.println("Connection Successful!");    //如果连接成功 控制台输出
Connection Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
    return dbConn;
}
}

```

Selstu.java:

```

import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;

public class Selstu extends JPanel implements ActionListener{
    JTextField 学号,姓名,系别;
    JButton 查找;
    JTextField 课号,课名;
    JButton 查找 1;
    JTextField 课号 1,学号 1,成绩;
    JButton 查找 2;

    public Selstu (){
        学号=new JTextField(12);
        姓名=new JTextField(12);
        系别=new JTextField(12);
        课号=new JTextField(12);
        课名=new JTextField(12);
        课号 1=new JTextField(12);
        学号 1=new JTextField(12);
        成绩=new JTextField(12);
        查找=new JButton("查找学生信息");
        查找 1=new JButton("查找课程信息");
        查找 2=new JButton("查找选课信息");

        Box box1=Box.createHorizontalBox();//横放 box
        Box box2=Box.createHorizontalBox();
        Box box4=Box.createHorizontalBox();
        Box box5=Box.createHorizontalBox();
        Box box6=Box.createHorizontalBox();
        Box box7=Box.createHorizontalBox();
        box1.add(new JLabel("学号:",JLabel.CENTER));
        box1.add(学号);
        box1.add(new JLabel("姓名:",JLabel.CENTER));
        box1.add(姓名);
        box1.add(new JLabel("系别:",JLabel.CENTER));
        box1.add(系别);
        box2.add(查找);

        box4.add(new JLabel("课号:",JLabel.CENTER));
        box4.add(课号);
        box4.add(new JLabel("课名:",JLabel.CENTER));
        box4.add(课名);
    }
}

```

```
box6.add(查找 1);
```

```
box5.add(new JLabel("课号:",JLabel.CENTER));  
box5.add(课号 1);  
box5.add(new JLabel("学号:",JLabel.CENTER));  
box5.add(学号 1);  
box5.add(new JLabel("成绩:",JLabel.CENTER));  
box5.add(成绩);  
box7.add(查找 2);
```

```
Box boxH1=Box.createVerticalBox();//竖放 box  
boxH1.add(box1);  
boxH1.add(box2);  
boxH1.add(Box.createVerticalGlue());  
Box boxH2=Box.createVerticalBox();//竖放 box  
boxH2.add(box4);  
boxH2.add(box6);  
boxH2.add(Box.createVerticalGlue());  
Box boxH3=Box.createVerticalBox();//竖放 box  
boxH3.add(box5);  
boxH3.add(box7);  
boxH3.add(Box.createVerticalGlue());
```

```
查找.addActionListener(this);  
查找 1.addActionListener(this);  
查找 2.addActionListener(this);
```

```
JPanel messPanel=new JPanel();  
JPanel picPanel=new JPanel();  
JPanel threePanel=new JPanel();  
messPanel.add(boxH1);  
picPanel.add(boxH2);  
threePanel.add(boxH3);  
setLayout(new BorderLayout());  
JSplitPane splitV=new JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//
```

分割

```
add(splitV,BorderLayout.CENTER);  
JSplitPane splitV1=new JSplitPane(JSplitPane.VERTICAL_SPLIT,splitV,threePanel);//
```

分割

```
add(splitV1,BorderLayout.CENTER);  
validate();
```

```
}
```

```

public void actionPerformed(ActionEvent c){
    Object obj=c.getSource();
    Statement stmt=null;
    ResultSet rs=null;
    int row=0;
    int i=0;
    String sql=null;
    Students K;
    SelC K1;
    SelSC K2;
    if(obj==查找){
        if(学号.getText().equals("")&&姓名.getText().equals("")&&系
别.getText().equals("")){
            sql="select * from S ";System.out.print("000");//000
        }
        else{
            if(学号.getText().equals("")){
                if(姓名.getText().equals("")){
                    sql="select * from S where Sx like'%" + 系
别.getText()+"%";System.out.print("001");}
                else{if(系别.getText().equals("")){sql="select * from S where Sname
like'%" + 姓名.getText()+"%";System.out.print("010");}
                    else{sql="select * from S where Sname like'%" + 姓
名.getText()+"%' and Sx like'%" + 系别.getText()+"%";System.out.print("011");}}}
                else{if(姓名.getText().equals("")){
                    if(系别.getText().equals("")){sql="select * from S where Sno
like'%" + 学号.getText()+"%";System.out.print("100");}
                    else{sql="select * from S where Sno like'%" + 学号.getText()+"%'
and Sx like'%" + 系别.getText()+"%";System.out.print("101");}}
                    else{if(系别.getText().equals("")){sql="select * from S where Sno
like'%" + 学号.getText()+"%' and Sname like'%" + 姓名.getText()+"%";System.out.print("110");}
                    else{sql="select * from S where Sno like'%" + 学
号.getText()+"%' and Sname like'%" + 姓名.getText()+"%' and Sx like'%" + 系
别.getText()+"%";System.out.print("111");}}}
            }
            K=new Students(sql);
        }
    }
    else{if(obj==查找1){
        if(课号.getText().equals("")&&课名.getText().equals("")){
            sql="select * from C ";System.out.print("00");//00
        }
        else{
            if(课号.getText().equals("")){sql="select * from C where Cname like'%" + 课

```



```

名.getText()+"%";System.out.print("01");}
        else{if(系别.getText().equals("")){sql="select * from C where Cno like'%" +课
号.getText()+"%";System.out.print("10");}
            else{sql="select * from C where   Cno like'%" +课号.getText()+"%' and
Cname like'%" +姓名.getText()+"%";System.out.print("11");}
        }
    }
    K1=new SelC(sql);}
    else{if(obj==查找 2){
        if( 课 号  1.getText().equals(""))&& 学 号  1.getText().equals(""))&& 成
绩.getText().equals("")){
            sql="select   SC.Cno,Cname,SC.Sno,Sname,C   from   SC,C,S   where
C.Cno=SC.Cno and S.Sno=SC.Sno";System.out.print("000");//000
        }
        else{
            if(课号 1.getText().equals("")){
                if(学号 1.getText().equals("")){
                    sql="select SC.Cno,Cname,SC.Sno,Sname,C from SC,C,S where C
like'%" +成绩.getText()+"%' and C.Cno=SC.Cno and S.Sno=SC.Sno";System.out.print("001");}
                    else{if(      成      绩      .getText().equals("")){sql="select
SC.Cno,Cname,SC.Sno,Sname,C from SC,C,S where  SC.Sno like'%" +学号 1.getText()+"%' and
C.Cno=SC.Cno and S.Sno=SC.Sno";System.out.print("010");}
                        else{sql="select  SC.Cno,Cname,SC.Sno,Sname,C from SC,C,S
where  SC.Sno like'%" + 学 号  1.getText()+"%'and  C like'%" + 成 绩 .getText()+"%' and
C.Cno=SC.Cno and S.Sno=SC.Sno";System.out.print("011");}}}
                    else{if(学号 1.getText().equals("")){
                        if(      成      绩      .getText().equals("")){sql="select
SC.Cno,Cname,SC.Sno,Sname,C from SC,C,S where  SC.Cno like'%" +课号 1.getText()+"%' and
C.Cno=SC.Cno and S.Sno=SC.Sno";System.out.print("100");}
                            else{sql="select  SC.Cno,Cname,SC.Sno,Sname,C from SC,C,S
where  SC.Cno like'%" + 课 号  1.getText()+"%' and  C like'%" + 成 绩 .getText()+"%' and
C.Cno=SC.Cno and S.Sno=SC.Sno";System.out.print("101");}}}
                                else{if(      成      绩      .getText().equals("")){sql="select
SC.Cno,Cname,SC.Sno,Sname,C from SC,C,S where   SC.Cno like'%" +课号 1.getText()+"%' and
SC.Sno   like'%" + 学 号  1.getText()+"%'   and   C.Cno=SC.Cno   and
S.Sno=SC.Sno";System.out.print("110");}
                                    else{sql="select  SC.Cno,Cname,SC.Sno,Sname,C from SC,C,S
where  SC.Cno like'%" +课号 1.getText()+"%' and SC.Sno like'%" +学号 1.getText()+"%' and C
like'%" +成绩.getText()+"%' and C.Cno=SC.Cno and S.Sno=SC.Sno";System.out.print("111");}}}
                    }
                }
            K2=new SelSC(sql);
        }
    }
}
}

```

```

    }

//    连接数据库方法
    public static Connection CONN(){
        String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载
        JDBC 驱动
        String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //
        连接服务器和数据库 test
        String userName = "sa";    //默认用户名
        String userPwd = "huangjiwei";    //密码
        Connection dbConn=null;

        try {
            Class.forName(driverName);
            dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
            System.out.println("Connection Successful!");    //如果连接成功 控制台输出
            Connection Successful!
        } catch (Exception e) {
            e.printStackTrace();
        }
        return dbConn;
    }
}

```

Student.java:

```

import java.sql.*;
import javax.swing.*;
import java.util.*;

public class Students extends JFrame {
    Vector rowData, columnNames;
    Statement stmt=null;

    String sql=null;
    JTable jt = null;
    JScrollPane jsp = null;
    PreparedStatement ps=null;
    ResultSet rs=null;
    public Students(String sql1){
        columnNames = new Vector();
        // 设置列名
        columnNames.add("学号");
        columnNames.add("姓名");
    }
}

```

```

        columnNames.add("性别");

        rowData=new Vector();
        sql=sql1;
        try{
            Connection dbConn1=CONN();

            stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
            rs=stmt.executeQuery(sql);

            while(rs.next()){
                Vector hang = new Vector();
                hang.add(rs.getString("Sno"));System.out.print(rs.getString("Sno"));
                hang.add(rs.getString("Sname"));System.out.print(rs.getString("Sname"));
                hang.add(rs.getString("Sx"));System.out.println(rs.getString("Sx"));
                rowData.add(hang);}

            jt=new JTable(rowData,columnNames);
            jsp=new JScrollPane(jt);
        this.add(jsp);
        this.setSize(400,300);
        this.setVisible(true);
    }catch(SQLException e1){
        System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
    }
}

// 连接数据库方法
public static Connection CONN(){
    String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载
    JDBC 驱动
    String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //
    连接服务器和数据库 test
    String userName = "sa";    //默认用户名
    String userPwd = "huangjiwei";    //密码
    Connection dbConn=null;

    try {
        Class.forName(driverName);
        dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
        System.out.println("Connection Successful!");    //如果连接成功 控制台输出
        Connection Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
}

```

```

        }
        return dbConn;
    }
}

```

Updatastu.java:

```

import java.awt.*;
import java.awt.event.*;
import java.sql.*;
import javax.swing.*;

```

```

public class Updatastu extends JPanel implements ActionListener{
    String save=null;
    JTextField 学号 1,学号,姓名,系别;
    JButton 修改,查找;

```

```

public Updatastu(){
    try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
    catch(Exception e){System.err.println("不能设置外观:    "+e);}

```

```

    学号 1=new JTextField(12);
    学号=new JTextField(12);
    姓名=new JTextField(12);
    系别=new JTextField(12);
    修改=new JButton("修改");
    查找=new JButton("查找");

```

```

    Box box1=Box.createHorizontalBox();//横放 box
    Box box2=Box.createHorizontalBox();
    Box box3=Box.createHorizontalBox();
    Box box4=Box.createHorizontalBox();
    Box box5=Box.createHorizontalBox();
    box1.add(new JLabel("学号:",JLabel.CENTER));
    box1.add(学号);
    box2.add(new JLabel("姓名:",JLabel.CENTER));
    box2.add(姓名);
    box3.add(new JLabel("系别:",JLabel.CENTER));
    box3.add(系别);
    box4.add(修改);
    box5.add(new JLabel("学号:",JLabel.CENTER));
    box5.add(学号 1);
    box5.add(查找);

```

```

        修改.addActionListener(this);
        查找.addActionListener(this);

        Box boxH=Box.createVerticalBox();//竖放 box
        boxH.add(box1);
        boxH.add(box2);
        boxH.add(box3);
        boxH.add(box4);
        boxH.add(Box.createVerticalGlue());
        JPanel picPanel=new JPanel();
        JPanel messPanel=new JPanel();
        messPanel.add(box5);
        picPanel.add(boxH);
        setLayout(new BorderLayout());
        JSplitPane splitV=new JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//
分割
        add(splitV,BorderLayout.CENTER);
        validate();
    }

    public void actionPerformed(ActionEvent e){
        Object obj=e.getSource();
        Statement stmt=null;
        ResultSet rs=null,rs1=null;
        String sql=null,sql1=null,sqlSC;

        if(obj==查找){if(学号 1.getText().equals(""))JOptionPane.showMessageDialog(this,"请填写查询的学号！");
        else{

            sql1="select * from S where Sno='"+学号 1.getText()+"'";
            try{
                Connection dbConn1=CONN();

                stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
                rs1=stmt.executeQuery(sql1);
                if(rs1.next()){学号.setText(rs1.getString("Sno").trim());
                    姓名.setText(rs1.getString("Sname").trim());
                    系别.setText(rs1.getString("Sx").trim());
                    save=学号 1.getText();
                }
            }
            else{JOptionPane.showMessageDialog(this,"没有这个学号的学生");}
        }
    }

```

```

        stmt.close();
        rs1.close();
    }catch(SQLException e1){
        System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
    }
}
}
else{
    if(obj==修改){if(save==null){JOptionPane.showMessageDialog(this,"还没查找需要
修改的学生");}
    else{
        if(学号.getText().equals("")||姓名.getText().equals("")||系别.getText().equals("")){
            JOptionPane.showMessageDialog(this,"学生信息填满才能修改！");
        }
        else{sql="update S set Sno='"+学号.getText()+"',Sname='"+姓
名.getText()+"',Sx='"+系别.getText()+"'"+'where Sno="'+save+'";
        if(save.trim().equals(学号.getText().trim())){
            try{
                Connection dbConn1=CONN();

                stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,R
esultSet.CONCUR_READ_ONLY);
                stmt.executeUpdate(sql);
                save=null;
                JOptionPane.showMessageDialog(this,"修改完成");
                学号.setText("");
                姓名.setText("");
                系别.setText("");
                stmt.close();
            }catch(SQLException e1){
                System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
            }
        }
        else{sql1="select * from S where Sno='"+学号.getText()+"'";
        try{
            Connection dbConn1=CONN();

            stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,R
esultSet.CONCUR_READ_ONLY);
            rs1=stmt.executeQuery(sql1);
            if(rs1.next()){JOptionPane.showMessageDialog(this,"已存在此学号学生
");
            }
            else{

```



```

import java.awt.event.*;
import java.sql.*;
import javax.swing.*;

public class UpdateC extends JPanel implements ActionListener{
    String save=null;
    JTextField 课号 1,课号,课名;
    JButton 修改,查找;

    public UpdateC(){
        try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
        catch(Exception e){System.err.println("不能设置外观:  "+e);}

        课号 1=new JTextField(12);
        课号=new JTextField(12);
        课名=new JTextField(12);
        修改=new JButton("修改");
        查找=new JButton("查找");

        Box box1=Box.createHorizontalBox();//横放 box
        Box box2=Box.createHorizontalBox();
        Box box3=Box.createHorizontalBox();
        Box box4=Box.createHorizontalBox();
        Box box5=Box.createHorizontalBox();
        box1.add(new JLabel("课号:",JLabel.CENTER));
        box1.add(课号);
        box2.add(new JLabel("课名:",JLabel.CENTER));
        box2.add(课名);
        box3.add(修改);
        box5.add(new JLabel("课号:",JLabel.CENTER));
        box5.add(课号 1);
        box5.add(查找);

        修改.addActionListener(this);
        查找.addActionListener(this);

        Box boxH=Box.createVerticalBox();//竖放 box
        boxH.add(box1);
        boxH.add(box2);
        boxH.add(box3);
        boxH.add(box4);
        boxH.add(Box.createVerticalGlue());
        JPanel picPanel=new JPanel();
        JPanel messPanel=new JPanel();

```



```

        messPanel.add(box5);
        picPanel.add(boxH);
        setLayout(new BorderLayout());
        JSplitPane splitV=new JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//
分割
        add(splitV,BorderLayout.CENTER);
        validate();
    }

    public void actionPerformed(ActionEvent e){
        Object obj=e.getSource();
        Statement stmt=null;
        ResultSet rs=null,rs1=null;
        String sql=null,sql1=null,sqlSC=null;

        if(obj==查找){if(课号 1.getText().equals(""))JOptionPane.showMessageDialog(this,"请填写查询的课号！");
        else{
            sql1="select * from C where Cno='"+课号 1.getText()+"'";
            try{
                Connection dbConn1=CONN();

                stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
                rs1=stmt.executeQuery(sql1);
                if(rs1.next()){课号.setText(rs1.getString("Cno").trim());
                    课名.setText(rs1.getString("Cname").trim());
                    save=课号 1.getText();
                }
                else{JOptionPane.showMessageDialog(this,"没有这个课号的课程");}
                stmt.close();
                rs1.close();
            }catch(SQLException e1{
                System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
            }
        }
    }
    else{
        if(obj==修改){if(save==null){JOptionPane.showMessageDialog(this,"还没查找需要修改的课程");}
        else{
            if(课号.getText().equals(""))||课名.getText().equals("")){
                JOptionPane.showMessageDialog(this,"课程信息填满才能修改！");
            }
        }
    }
}

```

```

        else{sql="update C set Cno='"+课号.getText()+"',Cname='"+课名.getText()+"'
where Cno='"+save+"'";
        if(save.trim().equals(课号.getText().trim())){
            try{
                Connection dbConn1=CONN();

                stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,R
esultSet.CONCUR_READ_ONLY);
                stmt.executeUpdate(sql);
                save=null;
                JOptionPane.showMessageDialog(this,"修改完成" );
                课号.setText("");
                课名.setText("");
                stmt.close();
            }catch(SQLException e1){
                System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
            }
        }
        else{sql1="select * from C where Cno='"+课号.getText()+"'";
            try{
                Connection dbConn1=CONN();

                stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,R
esultSet.CONCUR_READ_ONLY);
                rs1=stmt.executeQuery(sql1);
                if(rs1.next()){
                    JOptionPane.showMessageDialog(this,"已存在此课号课程
");
                }
                else{sqlSC="update SC set Sno='"+课号.getText()+"' where Cno='"+save+"'";
                stmt.executeUpdate(sql);
                stmt.executeUpdate(sqlSC);
                save=null;
                JOptionPane.showMessageDialog(null,"修改完成" );
                课号.setText("");
                课名.setText("");}
                stmt.close();
                rs1.close();
            }catch(SQLException e1){
                System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
            }
        }
    }
}
}
}

```

//连接数据库方法

```
public static Connection CONN(){
    String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载
    JDBC 驱动
    String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //
    连接服务器和数据库 test
    String userName = "sa";    //默认用户名
    String userPwd = "huangjiwei";    //密码
    Connection dbConn=null;

    try {
        Class.forName(driverName);
        dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
        System.out.println("Connection Successful!");    //如果连接成功 控制台输出
        Connection Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
    return dbConn;
}
}
```

UpdateSC.java:

```
import java.awt.*;
import java.awt.event.*;
import java.sql.*;

import javax.swing.*;
public class UpdateSC extends JPanel implements ActionListener{
    String saveC=null;
    String saveS=null;
    JTextField 课号 1,学号 1,学号,课号,成绩;
    JButton 修改,查找;

    public UpdateSC(){
        try {UIManager.setLookAndFeel(UIManager.getSystemLookAndFeelClassName());}
        catch(Exception e){System.err.println("不能设置外观:    "+e);}

        学号 1=new JTextField(12);
        课号 1=new JTextField(12);
```

```

课号=new JTextField(12);
学号=new JTextField(12);
成绩=new JTextField(12);
修改=new JButton("修改");
查找=new JButton("查找");

Box box1=Box.createHorizontalBox();//横放 box
Box box2=Box.createHorizontalBox();
Box box3=Box.createHorizontalBox();
Box box4=Box.createHorizontalBox();
Box box5=Box.createHorizontalBox();
box1.add(new JLabel("课号:",JLabel.CENTER));
box1.add(课号);
box2.add(new JLabel("学号:",JLabel.CENTER));
box2.add(学号);
box3.add(new JLabel("成绩:",JLabel.CENTER));
box3.add(成绩);
box4.add(修改);
box5.add(new JLabel("课号:",JLabel.CENTER));
box5.add(课号 1);
box5.add(new JLabel("学号:",JLabel.CENTER));
box5.add(学号 1);
box5.add(查找);
Box boxH=Box.createVerticalBox();//竖放 box
boxH.add(box1);
boxH.add(box2);
boxH.add(box3);
boxH.add(box4);
boxH.add(Box.createVerticalGlue());

修改.addActionListener(this);
查找.addActionListener(this);

JPanel picPanel=new JPanel();
JPanel messPanel=new JPanel();
messPanel.add(box5);
picPanel.add(boxH);
setLayout(new BorderLayout());
JSplitPane splitV=new JSplitPane(JSplitPane.VERTICAL_SPLIT,messPanel,picPanel);//
分割
add(splitV,BorderLayout.CENTER);
validate();
}
public void actionPerformed(ActionEvent e){

```

```

Object obj=e.getSource();
Statement stmt=null;
ResultSet rs=null,rs1=null,rsC=null,rsS=null;
String sql,sql1,sqlS,sqlC;

if(obj== 查 找 ){if( 课 号 1.getText().equals("")|| 学 号
1.getText().equals(""))JOptionPane.showMessageDialog(this,"请填写完成查询的信息！");
else{
    sql1="select * from SC where Cno='"+课号 1.getText()+"' and Sno='"+学号
1.getText()+"'";
    try{
        Connection dbConn1=CONN();

        stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,R
esultSet.CONCUR_READ_ONLY);
        rs1=stmt.executeQuery(sql1);
        if(rs1.next()){课号.setText(rs1.getString("Cno").trim());
            学号.setText(rs1.getString("Sno").trim());
            成绩.setText(rs1.getString("C").trim());
            saveC=课号 1.getText().trim();
            saveS=学号 1.getText().trim();
        }
        else{JOptionPane.showMessageDialog(this,"没有这个课号的学生");}
        stmt.close();
        rs1.close();
    }catch(SQLException e1{
        System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
    }
}

else{
    if(obj== 修 改 ){if(saveC==null||saveS==null)JOptionPane.showMessageDialog(this,"
还没查找需要修改的学生/课程");
    else{
        if(课号.getText().equals("")||学号.getText().equals("")){
            JOptionPane.showMessageDialog(this,"课程信息填满才能修改！");
        }
        else{
            sqlC="select * from C where Cno='"+课号.getText()+"'";
            sqlS="select * from S where Sno='"+学号.getText()+"'";
            sql1="select * from SC where Cno='"+课号.getText()+"' and Sno='"+学
号.getText()+"'";
            sql="update SC set Cno='"+课号.getText()+"',Sno='"+学号.getText()+"',C='"+成

```

```

绩.getText()+" where Cno='"+saveC+"' and Sno='"+saveS+"'";
    try{
        Connection dbConn1=CONN();

        stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
        rsC=stmt.executeQuery(sqlC);
        if(rsC.next()){
            rsS=stmt.executeQuery(sqlS);
            if(rsS.next()){
                if(课号.getText().trim().equals(saveC)&& 学号.getText().trim().equals(saveS)){
                    stmt.executeUpdate(sql);
                    JOptionPane.showMessageDialog(this,"添加成功");
                    saveC=null;
                    saveS=null;
                }
            }
            else{rs1=stmt.executeQuery(sql1);
                if(rs1.next()){JOptionPane.showMessageDialog(this,"学生与课程号以存在，无法修改");}
            }
            else{
                stmt.executeUpdate(sql);
                JOptionPane.showMessageDialog(this,"添加成功");
                saveC=null;
                saveS=null;
            }
            rs1.close();
        }
    }
    else{JOptionPane.showMessageDialog(this,"该学生不存在，无法修改");}
    rsS.close();
}
else{JOptionPane.showMessageDialog(this,"该课程不存在，无法修改");}
rsC.close();
stmt.close();
}
catch(SQLException e1){
    System.out.print("SQL Exception occur.Message is:"+e1.getMessage());
}
}
}
}

```

```

//      连接数据库方法
public static Connection CONN(){
    String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载
JDBC 驱动
    String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //
连接服务器和数据库 test
    String userName = "sa";    //默认用户名
    String userPwd = "huangjiwei";    //密码
    Connection dbConn=null;

    try {
        Class.forName(driverName);
        dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
        System.out.println("Connection Successful!");    //如果连接成功 控制台输出
Connection Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
    return dbConn;
}
}

```

User.java:

```

import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
import java.sql.*;

public class User extends JFrame{
    private JLabel use,password;
    private JTextField k1;//用户名输入框
    private JPasswordField k2;//密码输入框
    private JButton b1,b2;

    //登录窗口
    public User(JFrame f){
        super("系统登录");
        Container c=getContentPane();
        c.setLayout(new FlowLayout());
        use=new JLabel("username:");
        use.setFont(new Font("Serif",Font.PLAIN,20));

```

```

password=new JLabel("password:");
password.setFont(new Font("Serif",Font.PLAIN,20));
k1=new JTextField(12);
k2=new JPasswordField(12);
b1=new JButton("登录");
b2=new JButton("退出");

// 设置登录方法
BHandler b=new BHandler();
EXIT d=new EXIT();
b1.addActionListener(b);
b2.addActionListener(d);

//添加控件
c.add(use);
c.add(k1);
c.add(password);
c.add(k2);
c.add(b1);
c.add(b2);

setBounds(600,300,250,150);
setVisible(true);
setResizable(false);
setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
}
//主函数
public static void main(String[] args) {
    User f1=new User(new JFrame());
}
//登录按钮方法
private class BHandler implements ActionListener{
    public void actionPerformed(ActionEvent event){
        if(k1.getText().equals("")||k2.getText().equals("")){
            JOptionPane.showMessageDialog(User.this,"用户名密码不能为空！");
        }
        else{
            Statement stmt=null;
            ResultSet rs=null;
            String sql;
            sql="select * from admin where username='"+k1.getText()+"'";
            try{
                Connection dbConn1=CONN();

```



```

        stmt=(Statement)dbConn1.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,ResultSet.CONCUR_READ_ONLY);
        rs=stmt.executeQuery(sql);
        if(rs.next()){
            String xm=rs.getString("password");

            if(k2.getText().equals(xm.trim())){JOptionPane.showMessageDialog(User.this,"登录成功");

                dispose();
                new Menu();//管理窗口

            }
            else{JOptionPane.showMessageDialog(User.this,"密码错误");}
        }
        else{JOptionPane.showMessageDialog(User.this,"用户名错误");}
        rs.close();
        stmt.close();
    }
    catch(SQLException e){
        JOptionPane.showMessageDialog(User.this,"SQL Exception occur.Message is:"+e.getMessage());
    }
}

}

}

//退出方法结束
private class EXIT implements ActionListener{
    public void actionPerformed(ActionEvent even){
        System.exit(0);
    }
}

//连接数据库方法
public static Connection CONN(){
    String driverName = "com.microsoft.sqlserver.jdbc.SQLServerDriver";    //加载 JDBC 驱动
    String dbURL = "jdbc:sqlserver://localhost:1433; DatabaseName=student";    //连接服务器和数据库 test
    String userName = "sa";    //默认用户名
    String userPwd = "huangjiwei";    //密码
    Connection dbConn=null;
    try {
        Class.forName(driverName);
        dbConn = DriverManager.getConnection(dbURL, userName, userPwd);
    }
}

```

```
        System.out.println("Connection Successful!");    //如果连接成功 控制台输出
Connection Successful!
    } catch (Exception e) {
        e.printStackTrace();
    }
    return dbConn;
}
} //父类结束
```