**import** javax.swing.\*;

**import** javax.swing.table.DefaultTableModel;

**import** java.awt.\*;

**import** java.awt.event.\*;

**class** patient {

String name,age,gender,mobile,doc;

**int** id;

**public** patient(**int** i,String name,String age,String gender,String mobile,String doc){

**this**.age = age;

**this**.doc = doc;

**this**.name = name;

**this**.gender = gender;

**this**.mobile = mobile;

**this**.id=i;

}

}

**class** node

{

patient data;

node next,size;

node()

{

data=**null**;

next=**null**;

}

node(patient st)

{

**this**.data=st;

next=**null**;

}

}

**class** SLL

{

node head= **null**;

**int** size=0;

**void** insert\_first(patient st)

{

**if** (head==**null**)

head=**new** node(st);

**else**

{

node t=**new** node(st);

t.next=head;

head=t;

}

size++;

}

**void** insert\_last(patient st)

{

node n=**new** node(st);

node t=head;

**if**(t==**null**)

{head=n;head.next=**null**;size++;}

**else**

{

**while**(t.next!=**null**)

{

t=t.next;

}

t.next=n;

n.next=**null**;

size++;

}

}

**void** delete\_first()

{

**if**(head==**null**)

System.***out***.println("Empty list");

**else**

{head=head.next;

size--;}

}

**public** **int** checkEmpty()

{

**if**(head==**null**)

{

**return** 0;

}

**else**

**return** 1;

}

**public** **int** count()

{

**return** size;

}

**public** String[][] getData(){

String s[][] = **new** String[size][6];

**int** i = 0;

node aNode = head;

**while** (aNode != **null**) {

patient tmp = aNode.data;

s[i][0] = String.*valueOf*(tmp.id);

s[i][1] = tmp.name;

s[i][2] = String.*valueOf*(tmp.age);

s[i][3] = tmp.gender;

s[i][4] = String.*valueOf*(tmp.mobile);

s[i][5] = tmp.doc;

i += 1;

aNode = aNode.next;

}

**return** s;

}

}

**public** **class** Final\_DS **extends** JFrame **implements** ActionListener{

Container c;

JTextField txtName,txtAge,txtGender,txtMobile;

JLabel lblTitle,lblName,lblGender,lblAge,lblMobile,lblSpecialist;

JButton btnAdd,btnUpdate,btnDelete,btnPrint,btnSort,btnRefresh,btnCancel,btnDone,btnSpecial;

JTable table;

JTextArea textBox;

JComboBox cb,dc;

String data[][];

SLL l;

**public** Final\_DS(){

c = getContentPane();

c.setFont(**new** Font("Consolas", Font.***PLAIN***, 13));

c.setBackground(**new** Color(32,178,170));

setTitle(" Clinic Registration Form ");

c.setLayout(**null**);

l = **new** SLL();

// add lbl

lblTitle = **new** JLabel("ENTER PATIENT DETAILS ");

lblTitle.setFont(**new** Font ("Tahoma", Font.***BOLD*** , 18));

lblTitle.setBounds(40,20,250,20);

c.add(lblTitle);

lblName = **new** JLabel("Name");

lblName.setFont(**new** Font ("Tahoma", Font.***BOLD*** , 15));

lblName.setBounds(40,60,70,20);

c.add(lblName);

lblAge = **new** JLabel("Age");

lblAge.setFont(**new** Font ("Tahoma", Font.***BOLD*** , 15));

lblAge.setBounds(40,90,70,20);

c.add(lblAge);

lblGender = **new** JLabel("Gender");

lblGender.setFont(**new** Font ("Tahoma", Font.***BOLD*** , 15));

lblGender.setBounds(40,120,70,20);

c.add(lblGender);

lblMobile = **new** JLabel("Mobile");

lblMobile.setFont(**new** Font ("Tahoma", Font.***BOLD*** , 15));

lblMobile.setBounds(40,150,70,20);

c.add(lblMobile);

lblSpecialist = **new** JLabel("Specialist");

lblSpecialist.setFont(**new** Font ("Tahoma",Font.***BOLD*** , 15));

lblSpecialist.setBounds(40,180,80,20);

c.add(lblSpecialist);

txtName = **new** JTextField();

txtName.setBounds(140,60,120,20);

c.add(txtName);

txtAge = **new** JTextField();

txtAge.setBounds(140,90,120,20);

c.add(txtAge);

txtMobile = **new** JTextField();

txtMobile.setBounds(140,150,120,20);

c.add(txtMobile);

textBox = **new** JTextArea();

textBox.setFont(**new** Font("Consolas", Font.***BOLD***|Font.***ITALIC***, 18));

textBox.setSize(400, 200);

textBox.setLocation(550, 20);

textBox.setLineWrap(**true**);

textBox.setEditable(**false**);

c.add(textBox);

String sex[]={"Male","Female"};

cb=**new** JComboBox(sex);

cb.setBounds(140, 120, 120, 20);

c.add(cb);

String doctor[]={"Neurologist","Gynaecologist","Dermatologist","Cardiologist","Opthamologist"};

dc=**new** JComboBox(doctor);

dc.setBounds(140, 180, 120, 20);

c.add(dc);

// add btn

btnAdd = **new** JButton(" Add ");

btnAdd.setBounds(315,59,80,29);

c.add(btnAdd);

btnRefresh = **new** JButton("Refresh");

btnRefresh.setBounds(160,221,80,25);

c.add(btnRefresh);

btnCancel= **new** JButton("Exit");

btnCancel.setBounds(315,139,80,25);

c.add(btnCancel);

btnDelete= **new** JButton("Service");

btnDelete.setBounds(315,101,80,25);

c.add(btnDelete);

btnDone= **new** JButton("Done");

btnDone.setBounds(710,240,80,25);

c.add(btnDone);

btnSpecial= **new** JButton("Special");

btnSpecial.setBounds(315,179,80,25);

c.add(btnSpecial);

btnAdd.addActionListener(**this**);

btnRefresh.addActionListener(**this**);

btnCancel.addActionListener(**this**);

btnDelete.addActionListener(**this**);

btnDone.addActionListener(**this**);

btnSpecial.addActionListener(**this**);

setSize(1000, 920);

setLocationRelativeTo(**null**);

setDefaultCloseOperation(***EXIT\_ON\_CLOSE***);

setVisible(**true**);

}

**public** **void** actionPerformed(ActionEvent e){

table = **new** JTable();

Object col[] = {"Index","Name","Age","Gender","Mobile","Specialist"};

**if**(e.getSource() == btnCancel)

System.*exit*(0);

**else** **if**(e.getSource() == btnRefresh){

txtName.setText("");

txtAge.setText("");

txtMobile.setText("");

}

**else** **if**(e.getSource() == btnAdd){

**if**(txtName.getText().isEmpty()||txtAge.getText().isEmpty()||txtMobile.getText().isEmpty())

JOptionPane.*showMessageDialog*(**null**,"Please fill in all the details");

**else** **if**(isString(txtName.getText().trim()) == **false**)

JOptionPane.*showMessageDialog*(**null**,"you must use only letters in name");

**else** **if**(isCapital(txtName.getText().trim()) == **false**)

JOptionPane.*showMessageDialog*(**null**,"you must begin Name with capital Character");

**else** **if**(isString(txtMobile.getText().trim()))

JOptionPane.*showMessageDialog*(**null**,"Enter only numbers");

**else** **if**(is10Digit(txtMobile.getText().trim())==**false**)

JOptionPane.*showMessageDialog*(**null**,"Enter mobile no. with 10 digits");

**else** **if**(checkAge(txtAge.getText().trim()) == **false**)

JOptionPane.*showMessageDialog*(**null**,"You must enter real age in numbers");

**else**{

patient st = **new** patient(l.count()+1, txtName.getText(),txtAge.getText(),cb.getSelectedItem().toString(),txtMobile.getText(),dc.getSelectedItem().toString());

l.insert\_last(st);

data = l.getData();

DefaultTableModel model = **new** DefaultTableModel(data,col);

table.setModel(model);

JScrollPane scrollPane = **new** JScrollPane(table);

scrollPane.setBounds(9,300,965,565);

c.add(scrollPane);

// Change A JTable Background Color, Font Size, Font Color, Row Height

table.setBackground(Color.***LIGHT\_GRAY***);

table.setForeground(Color.***black***);

Font font = **new** Font("",1,22);

table.setFont(font);

table.setRowHeight(30);

c.setLayout(**null**);

}

}

**else** **if**(e.getSource() == btnSpecial){

**if**(txtName.getText().isEmpty()||txtAge.getText().isEmpty()||txtMobile.getText().isEmpty())

JOptionPane.*showMessageDialog*(**null**,"Please fill in all the details");

**else** **if**(isCapital(txtName.getText().trim()) == **false**)

JOptionPane.*showMessageDialog*(**null**,"you must begin Name with capital Character");

**else** **if**(isString(txtName.getText().trim()) == **false**)

JOptionPane.*showMessageDialog*(**null**,"you must use only letters");

**else** **if**(isString(txtMobile.getText().trim()))

JOptionPane.*showMessageDialog*(**null**,"Enter only numbers");

**else** **if**(is10Digit(txtMobile.getText().trim())==**false**)

JOptionPane.*showMessageDialog*(**null**,"Enter mobile no. with 10 digits");

**else** **if**(checkAge(txtAge.getText().trim()) == **false**)

JOptionPane.*showMessageDialog*(**null**,"You must enter real age in digits");

**else**{

patient st = **new** patient(l.count()+1, txtName.getText(),txtAge.getText(),cb.getSelectedItem().toString(),txtMobile.getText(),dc.getSelectedItem().toString());

l.insert\_first(st);

data = l.getData();

DefaultTableModel model = **new** DefaultTableModel(data,col);

// set the model to the table

table.setModel(model);

JScrollPane scrollPane = **new** JScrollPane(table);

scrollPane.setBounds(9,300,965,565);

c.add(scrollPane);

table.setBackground(Color.***LIGHT\_GRAY***);

table.setForeground(Color.***black***);

Font font = **new** Font("",1,22);

table.setFont(font);

table.setRowHeight(30);

c.setLayout(**null**);

}

}

**else** **if**(e.getSource() == btnDelete) {

**if**(l.checkEmpty()==0)

{

JOptionPane.*showMessageDialog*(**null**,"List is empty ");

}

**else**

{

l.delete\_first();

data=l.getData();

table = **new** JTable();

DefaultTableModel model = **new** DefaultTableModel(data,col);

// set the model to the table

table.setModel(model);

**if**(l.checkEmpty()!=0)

{

textBox.setText("Token no. " + model.getValueAt(0, 0).toString() + " " + "\n\n\n Please be ready");

Font font3 = **new** Font("",1,22);

textBox.setFont(font3);

}

JScrollPane scrollPane = **new** JScrollPane(table);

scrollPane.setBounds(9,300,965,565);

c.add(scrollPane);

// Change A JTable Background Color, Font Size, Font Color, Row Height

table.setBackground(Color.***LIGHT\_GRAY***);

table.setForeground(Color.***black***);

Font font = **new** Font("",1,22);

table.setFont(font);

table.setRowHeight(27);

}

}

**else** **if**(e.getSource() == btnDone){

**if**(l.checkEmpty()==0)

{

textBox.setText(" ");

JOptionPane.*showMessageDialog*(**null**,"List is empty!! ");

}

**else** {

data=l.getData();

table = **new** JTable();

DefaultTableModel model = **new** DefaultTableModel(data,col);

table.setModel(model);

textBox.setText(" Token no. "+model.getValueAt(0, 0).toString()+" \n '"+model.getValueAt(0, 1).toString()+

"' \n "+model.getValueAt(0, 5).toString()+" \n Please come in!!");

Font font = **new** Font("",1,22);

textBox.setFont(font);

DefaultTableModel model2 = **new** DefaultTableModel(data,col);

JScrollPane scrollPane = **new** JScrollPane(table);

scrollPane.setBounds(9,300,965,565);

c.add(scrollPane);

table.setBackground(Color.***LIGHT\_GRAY***);

table.setForeground(Color.***black***);

Font font2 = **new** Font("",1,22);

table.setFont(font2);

table.setRowHeight(30);

}

}

}

//~~~~~~~~~~~~ Constraints

**public** **boolean** is10Digit(String mobile){

**if**(mobile.length() == 10)

**return** **true**;

**return** **false**;

}

**public** **boolean** checkAge(String age){

**if**(!isNumber(age) || Integer.*parseInt*(age) > 100 || Integer.*parseInt*(age) < 6 )

**return** **false**;

**return** **true**;

}

**public** **boolean** isNumber(String id){

**for**(**int** i=0;i<id.length();i++){

**char** c=id.charAt(i);

**if**(c>'9'|| c<'0')

**return** **false**;

}

**return** **true**;

}

**public** **boolean** isString(String id){

**for**(**int** i=0;i<id.length();i++){

**char** c=id.charAt(i);

**if**(c<='9'|| c<='0')

**return** **false**;

}

**return** **true**;

}

**public** **boolean** isCapital(String Name){

**char** c=Name.charAt(0);

**if**(c>='A'&& c<='Z')

**return** **true**;

**return** **false**;

}

**public** **static** **void** main(String args[])

{

**new** Final\_DS();

}

}