Program 1:

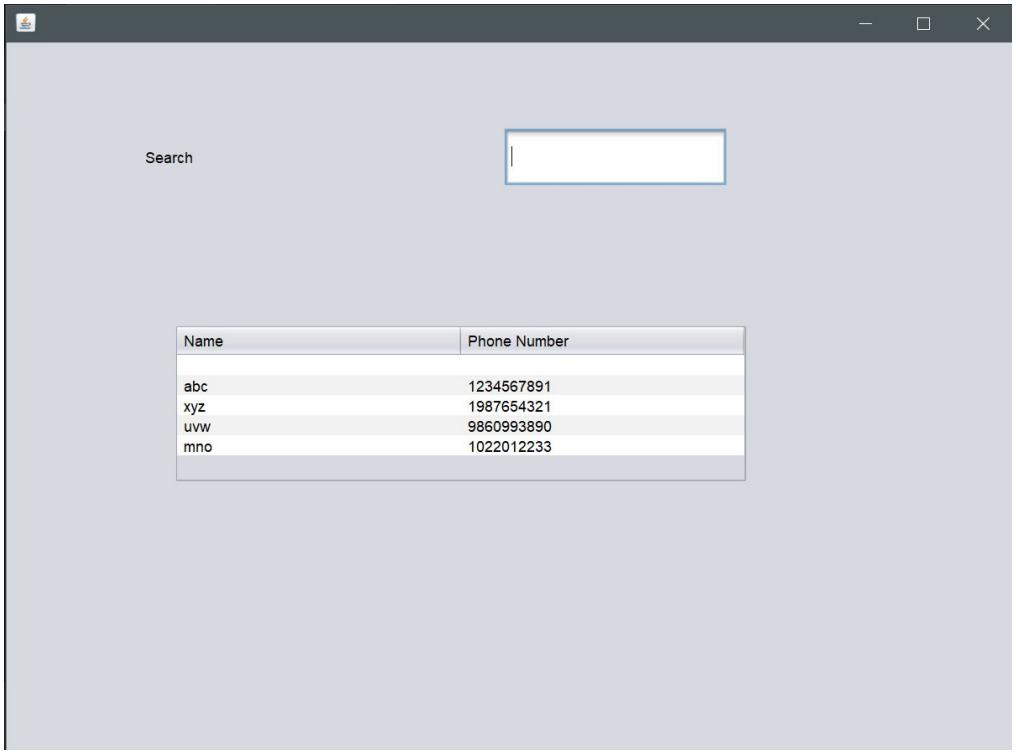
```
/*
Write a java program to store personal telephone directory in such a way that
when user hits a character, the names which starts with the character and
telephone numbers should appear.
*/

import javax.swing.RowFilter;
import javax.swing.table.DefaultTableModel;
import javax.swing.table.TableRowSorter;


public class telephone extends javax.swing.JFrame {

    private static final long serialVersionUID = 1L;

    public telephone() {
        initComponents();
    }

    private void initComponents() {

        search = new javax.swing.JLabel();
        tsearch = new javax.swing.JTextField();
        jScrollPane1 = new javax.swing.JScrollPane();
        dir = new javax.swing.JTable();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        search.setText("Search");

        tsearch.addKeyListener(new java.awt.event.KeyAdapter() {
            public void keyReleased(java.awt.event.KeyEvent evt) {
                tsearchKeyReleased(evt);
            }
        });

        dir.setModel(new javax.swing.table.DefaultTableModel(
            new Object [][] {
```

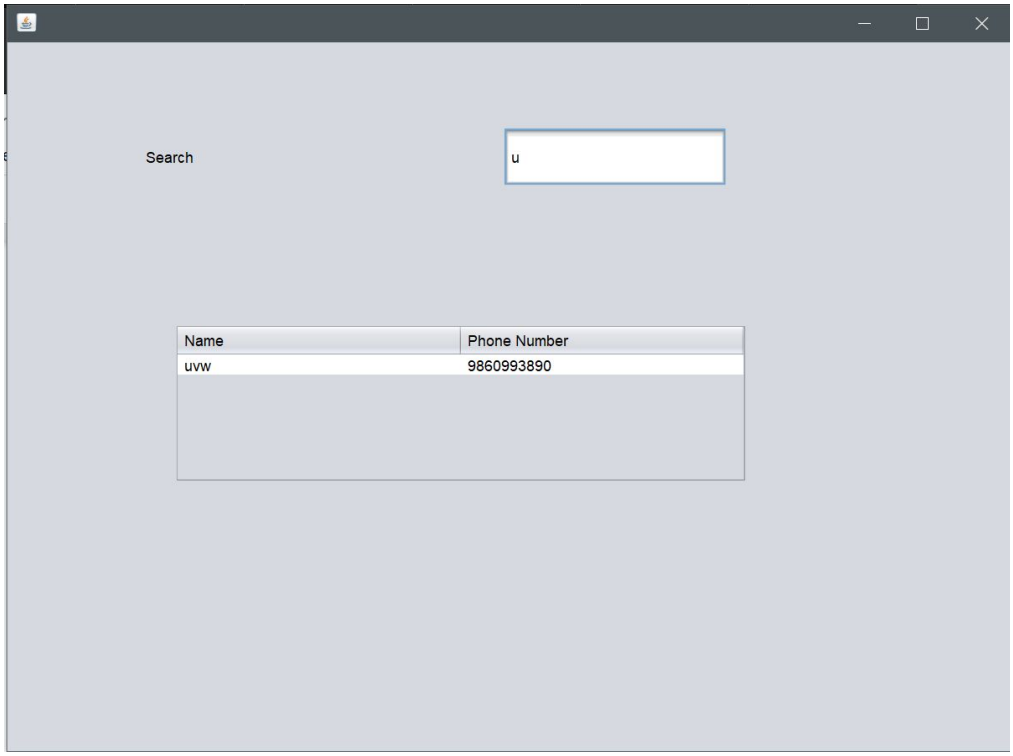
```
                {null, null},
                {"abc", "1234567891"},
                {"xyz", "1987654321"},
                {"uvw", "9860993890"},
                {"mno", "1022012233"}
            },
            new String [] {
                "Name", "Phone Number"
            }
        ));
        jScrollPane1.setViewportView(dir);

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(110, 110, 110)
                .addComponent(search, javax.swing.GroupLayout.PREFERRED_SIZE,
102, javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 183,
Short.MAX_VALUE)
                .addComponent(tsearch, javax.swing.GroupLayout.PREFERRED_SIZE,
177, javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(227, 227, 227))
            .addGroup(layout.createSequentialGroup()
                .addGap(133, 133, 133)
                .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(68, 68, 68)
```

```
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
false)
                    .addComponent(tsearch, javax.swing.GroupLayout.DEFAULT_SIZE,
46, Short.MAX_VALUE)
                    .addComponent(search, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 110,
Short.MAX_VALUE)
                .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE, 127,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(214, 214, 214))
        );

        pack();
    }

    private void tsearchKeyReleased(java.awt.event.KeyEvent evt) {
        DefaultTableModel d=(DefaultTableModel)dir.getModel();
        String s=tsearch.getText();
        TableRowSorter<DefaultTableModel> tr=new
TableRowSorter<DefaultTableModel>(d);
        dir.setRowSorter(tr);
        tr.setRowFilter(RowFilter.regexFilter(s));

    }


    public static void main(String args[]) {
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
                    break;
                }
            }
```

```
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(telephone.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(telephone.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(telephone.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(telephone.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
        }


        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new telephone().setVisible(true);
            }
        });
    }

    // Variables declaration - do not modify
    private javax.swing.JTable dir;
    private javax.swing.JScrollPane jScrollPane1;
    private javax.swing.JLabel search;
    private javax.swing.JTextField tsearch;
    // End of variables declaration
}
```

Output:


Search
Name
Phone Number
abc
1234567891
xyz
1987654321
uvw
9860993890
mno
1022012233


Search
u
Name
Phone Number
uvw
9860993890

Program 2:

Light.java

```
/*
Write a Java Program to simulate traffic signal light using AWT and Swing
Components.
*/
import java.awt.Color;
import java.awt.Graphics;
import javax.swing.JComponent;

public class Light extends JComponent{

    private static final long serialVersionUID = 1L;

    Color red = Color.red;
    Color yellow=Color.gray;
    Color green=Color.gray;
    String activelight="red";
    public void paintComponent(Graphics g){
        g.setColor(Color.yellow);
        g.fillRect(0, 0, 150, 250);
        g.setColor(Color.black);
        g.drawRect(0, 0, 150, 250);
        g.setColor(red);
        g.fillOval(50, 30, 50, 50);
        g.setColor(yellow);
        g.fillOval(50, 100, 50, 50);
        g.setColor(green);
        g.fillOval(50, 170, 50, 50);
    }
    public void changeColor(){
       red=Color.gray;
    yellow=Color.gray;
    green=Color.gray;
        if(activelight.equals("red"))
        {
            activelight="green";
            green=Color.green;
```

```
        }
        else if(activelight.equals("green"))
        {
            activelight="yellow";
            yellow=Color.orange;
        }
        else
        {
            activelight="red";
            red=Color.red;
        }
        repaint();
    }
}
```

LightPanel.java

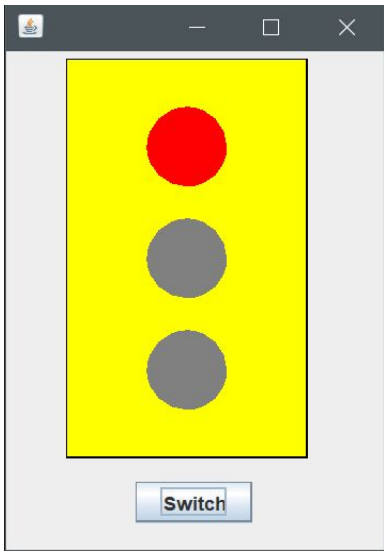
```
import java.awt.Dimension;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.JPanel;
import javax.swing.*;

public class LightPanel extends JPanel {

    private static final long serialVersionUID = 1L;
    Light l = new Light();
    public LightPanel(){
        JButton change=new JButton("Switch");
        l.setPreferredSize(new Dimension(160,260));
        buttonlistener bl=new buttonlistener();
        change.addActionListener(bl);
        add(l);
        add(change);
    }
    class buttonlistener implements ActionListener{
        @Override
        public void actionPerformed(ActionEvent e) {
            l.changeColor();
```

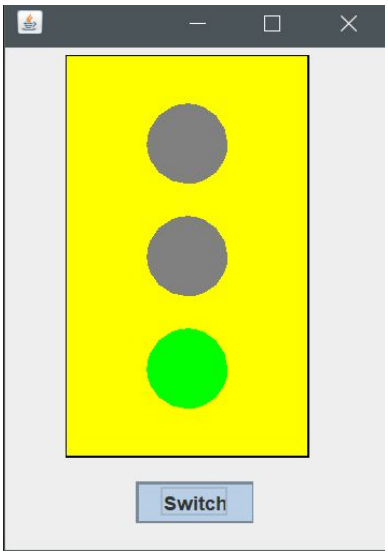
```
            throw new UnsupportedOperationException("Not supported yet."); //To
change body of generated methods, choose Tools | Templates.
        }
    }
}
```

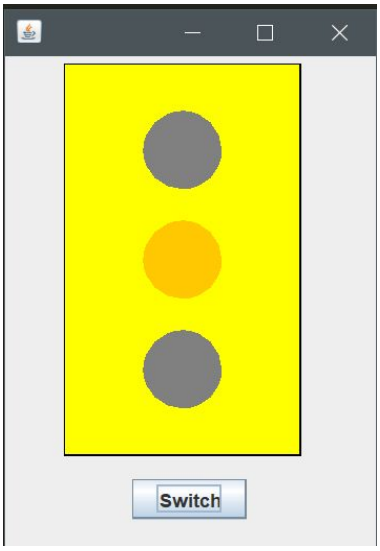
Traffic.java

```
import javax.swing.JFrame;
import javax.swing.*;

public class Traffic {
    public static void main(String[] args) {
        JFrame f=new JFrame();
        JPanel p=new LightPanel();
        f.add(p);
        f.setSize(250,350);
        f.setVisible(true);
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
    }
}
```

Output:







Questions:

Question 1:

```
import java.awt.Font;
/**
1. Write a program to create a window with four text fields for the name, street,
city
and pincode with suitable labels. Also windows contains a button MyInfo. When the
user types the name, his street, city and pincode and then clicks the button, the
types
details must appear in Arial Font with Size 32, Italics.
 */

public class Info extends javax.swing.JFrame {

    private static final long serialVersionUID = 1L;
    Font f = new Font("Arial", Font.BOLD, 32);

    public Info() {
        initComponents();
    }
    private void initComponents() {

        jLabel1 = new javax.swing.JLabel();
        jLabel2 = new javax.swing.JLabel();
        jLabel3 = new javax.swing.JLabel();
        jLabel4 = new javax.swing.JLabel();
        tname = new javax.swing.JTextField();
        tstreet = new javax.swing.JTextField();
        tcity = new javax.swing.JTextField();
        tpin = new javax.swing.JTextField();
        change = new javax.swing.JButton();
        reset = new javax.swing.JButton();

        setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jLabel1.setText("Name");

        jLabel2.setText("Street");
```

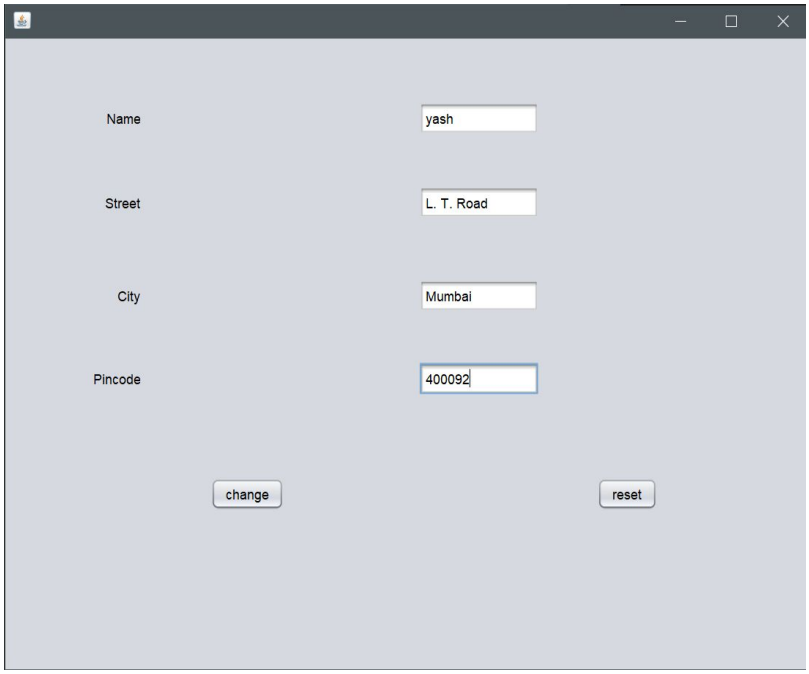
```
        jLabel3.setText("City");

        jLabel4.setText("Pincode");

        change.setText("change");
        change.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                changeActionPerformed(evt);
            }
        });

        reset.setText("reset");
        reset.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                resetActionPerformed(evt);
            }
        });

        javax.swing.GroupLayout layout = new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(80, 80, 80)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
                    .addComponent(jLabel4)
                    .addComponent(jLabel3)
                    .addComponent(jLabel2)
                    .addComponent(jLabel1))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED,
javax.swing.GroupLayout.DEFAULT_SIZE, Short.MAX_VALUE)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING,
false)
```

```
                    .addComponent(tname,
javax.swing.GroupLayout.Alignment.TRAILING, javax.swing.GroupLayout.DEFAULT_SIZE,
109, Short.MAX_VALUE)
                    .addComponent(tstreet,
javax.swing.GroupLayout.Alignment.TRAILING)
                    .addComponent(tcity,
javax.swing.GroupLayout.Alignment.TRAILING)
                    .addComponent(tpin,
javax.swing.GroupLayout.Alignment.TRAILING))
                .addGap(246, 246, 246))
            .addGroup(layout.createSequentialGroup()
                .addGap(187, 187, 187)
                .addComponent(change)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED, 285,
Short.MAX_VALUE)
                .addComponent(reset)
                .addGap(138, 138, 138))
        );
        layout.setVerticalGroup(
            layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addGap(55, 55, 55)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(jLabel1)
                    .addComponent(tname, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(45, 45, 45)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(jLabel2)
                    .addComponent(tstreet,
javax.swing.GroupLayout.PREFERRED_SIZE, javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(53, 53, 53)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(jLabel3)
```

```
                    .addComponent(tcity, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(44, 44, 44)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(jLabel4)
                    .addComponent(tpin, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE, javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(72, 72, 72)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BASELINE)
                    .addComponent(change)
                    .addComponent(reset))
                .addContainerGap(139, Short.MAX_VALUE))
        );

        pack();
    }

    private void changeActionPerformed(java.awt.event.ActionEvent evt) {
           tname.setFont(f);
           tstreet.setFont(f);
           tcity.setFont(f);
           tpin.setFont(f);
    }

    private void resetActionPerformed(java.awt.event.ActionEvent evt) {
        tname.setText(" ");
        tstreet.setText(" ");
        tcity.setText(" ");
        tpin.setText(" ");
    }

    public static void main(String args[]) {
        try {
            for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
                if ("Nimbus".equals(info.getName())) {
                    javax.swing.UIManager.setLookAndFeel(info.getClassName());
```

```
                    break;
                }
            }
        } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(Info.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(Info.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(Info.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(Info.class.getName()).log(java.util.logging.Le
vel.SEVERE, null, ex);
        }

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new Info().setVisible(true);
            }
        });
    }
    private javax.swing.JButton change;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JButton reset;
    private javax.swing.JTextField tcity;
    private javax.swing.JTextField tname;
    private javax.swing.JTextField tpin;
    private javax.swing.JTextField tstreet;
}
```

Output:


Name
yash
Street
L. T. Road
City
Mumbai
Pincode
400092
change
reset


Name
yash
Street
L. T. Road
City
Mumbai
Pincode
400092
change
reset