This assignment is on a project named "Address Book". This Address Book has 4 features.

1. Add contact.
   Where user can input new information of a particular person.

2. View details.
   Where user is able to see the information of everyone, sorted by name.

3. Search.
   Where user is able to search a person using his name or phone no.

4. Edit.
   where the user is able to edit the information of a specific person.

This report is containing 3 things,

1. The related code .
2. Screenshots of the GUI for the corresponding feature..
3. A short description about the implementation and working details.

Add contact

01. Code:

```java
b.addActionListener(new ActionListener() {
    @Override
    public void actionPerformed(ActionEvent e) {
        String a = t.getText();
        String s = product.getText();
        String df= pho.getText();
        String f = Ee.getText();
        String w = Adrr.getText();

        try{
            if (a.isEmpty() || s.isEmpty() || df.isEmpty()||f.isEmpty()||w.isEmpty()){
                JOptionPane.showMessageDialog(t,"You have to complete every fields!");
            }
            else
            {

                FileWriter fb =new FileWriter("Files/Contacts_data.txt",true);
                BufferedWriter p = new BufferedWriter(fb);
                p.write(a+"#"+s+"#"+f+"#"+df+"#"+w);

                p.newLine();

                p.close();

                JOptionPane.showMessageDialog(t,"Your data saved successfully");

                t.setText(" ");
                product.setText("");
                pho.setText("");
                Ee.setText("");
                Adrr.setText("");

            }


        }
        catch (Exception da){
            da.printStackTrace();
        }


    }
});


b1.addActionListener(new ActionListener() {
    @Override
    public void actionPerformed(ActionEvent e) {
        dispose();
    }
});
```
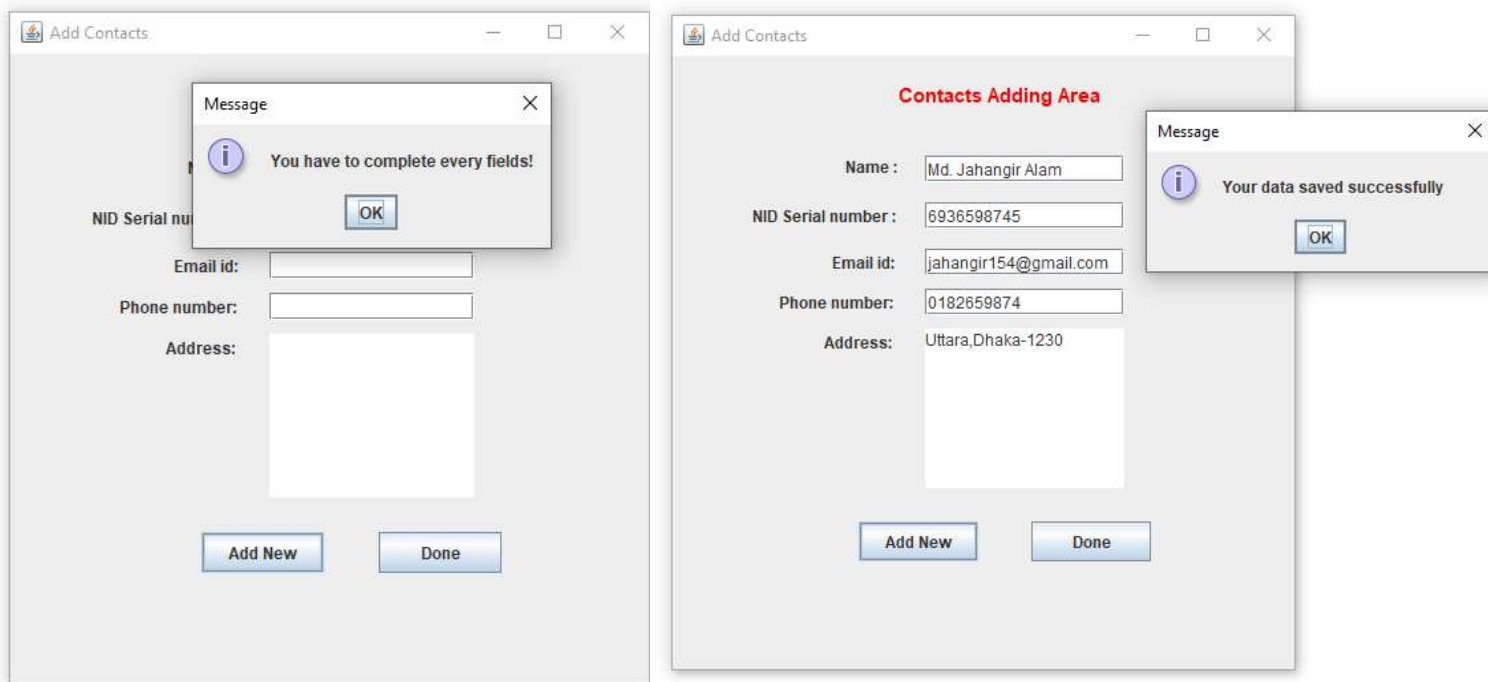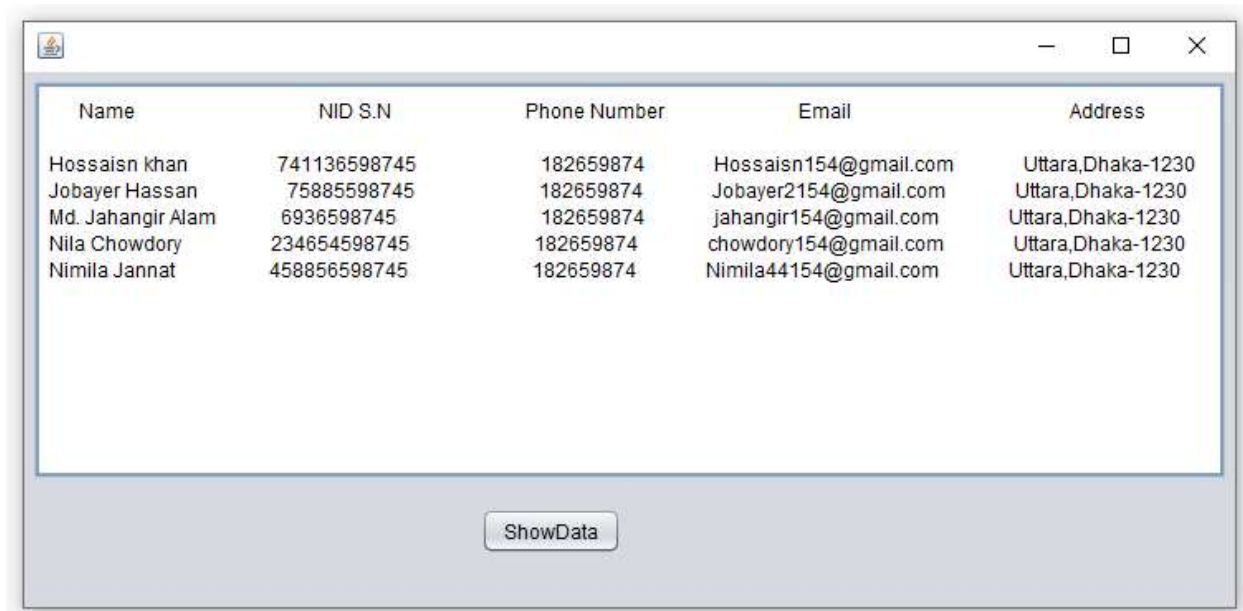
02. GUI

In this features user can input new information of a particular person. In thoses textFields user can input their details. If user don't input any data a dialogMessag will pop-up with a message that user have to complete every fields!. When user will complete all the details and click the Add New buton a dialogMessag will be pop up to confirm that all data is saved then all the details will save in a txt file and the data will separate with "#" sign. Then all the txtField will be blank so that again new details can add. When all the details adding will be finish then with the Done button user can close this window.

View details

01. Code:

```java
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {

    ArrayList<Contact_Data> Data = new ArrayList<>();
    jTextArea1.setText(" ");
    try{
        FileReader f = new FileReader("Files/Contacts_data.txt");
        BufferedReader b = new BufferedReader(f);
        String st;
        jTextArea1.append("     "+"Name"+"                                      "+"NID
S.N"+"                      "+"Phone Number"+"
"+"Email"+"                                   "+"Address");
        jTextArea1.append("\n");
        jTextArea1.append("\n");
        while (null != (st = b.readLine()))
        {

            String val[]=st.split("#");


            Contact_Data obj = new
Contact_Data(val[0],Long.parseLong(val[1]),val[2],Long.parseLong(val[3]),val[4]);
            Data.add(obj);


        }
        Data.sort(new Comparator<Contact_Data>() {
            @Override
            public int compare(Contact_Data o1, Contact_Data o2) {
                String n = o1.name;
                String n2 = o2.name;
                return n.compareTo(n2);
            }
        });
        for (Contact_Data s : Data){
          jTextArea1.append(s.name+"                    "+s.number+"
"    +s.phone+"               "+s.email+"              "+s.address);
            jTextArea1.append("\n");


        }



        b.close();



    }

    catch(IOException e){
        e.printStackTrace();
    }
}
```

02. GUI

In this features user can view all the information of everyone. When the ShowData button will be press all the information that user saved, will show in that txtArea. All the name is sorted here. I sorted all the names by using comparator. At first I split all the data that was saved in file with "#" sign. Then added in ArrayList. Then using for each loop I display all the information in txtArea.

Search contact

01. Code:

```java
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    jTextArea1.setText("");
    try {
        String a = jTextField1.getText();
        if (a.isEmpty()){
            JOptionPane.showMessageDialog(this,"Enter Name/Phone number to search.");
        }
        else {
            FileReader f = new FileReader("Files/Contacts_data.txt");
            BufferedReader b = new BufferedReader(f);

            jTextArea1.append("      "+"Name"+"
"+"NID S.N"+"                    "+"Phone Number"+"
"+"Email"+"                                      "+"Address");
            jTextArea1.append("\n");
            jTextArea1.append("\n");
            String take = jTextField1.getText();
            int i=0;
            String st;
            while(null != (st = b.readLine())){
                String line = st.toLowerCase(Locale.ROOT);
                if(line.contains(take)){
                    System.out.println(st);
                    String sval[]=st.split("#");


                    jTextArea1.append(sval[0]+"                    "+sval[1]+"
"+sval[2]+"        "+sval[3]+"            "+sval[4]);
                    jTextArea1.append("\n");


                    i++;
                }

            }
            if(i!=0){
                JOptionPane.showMessageDialog(this,i+"_Matched Data Found!");
            }
            else {
                JOptionPane.showMessageDialog(this,"Data Not Found!");
            }

            b.close();
        }
    }
    catch (Exception ad){
        ad.printStackTrace();
    }


}
```
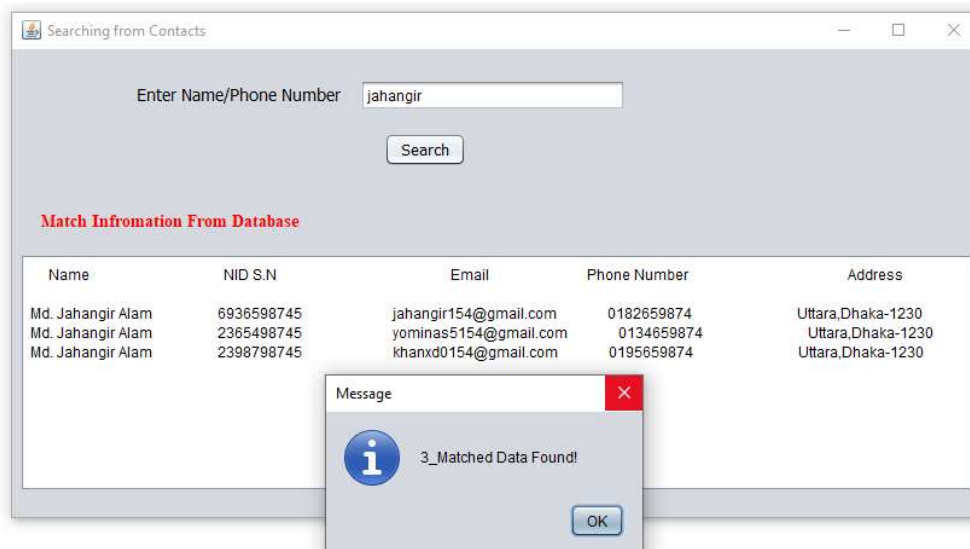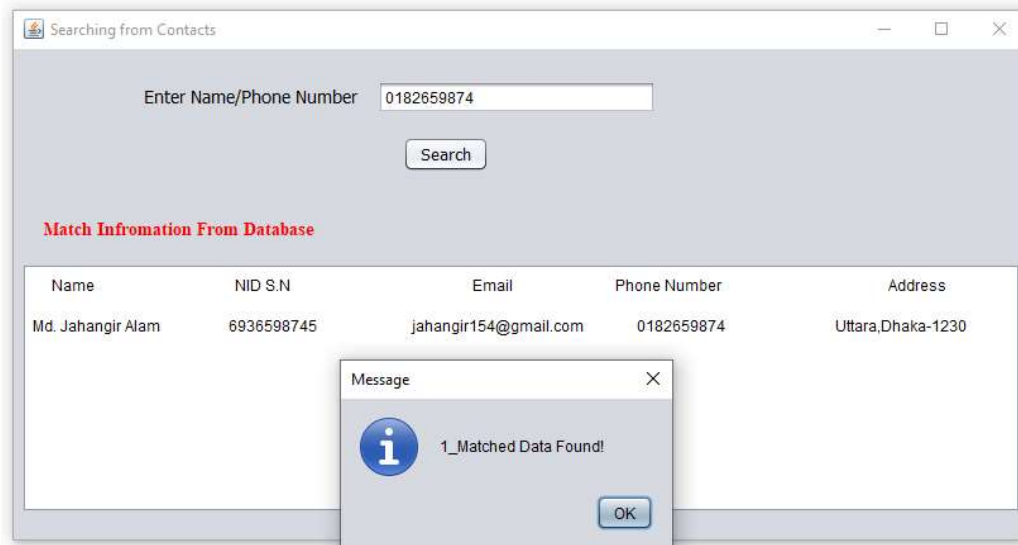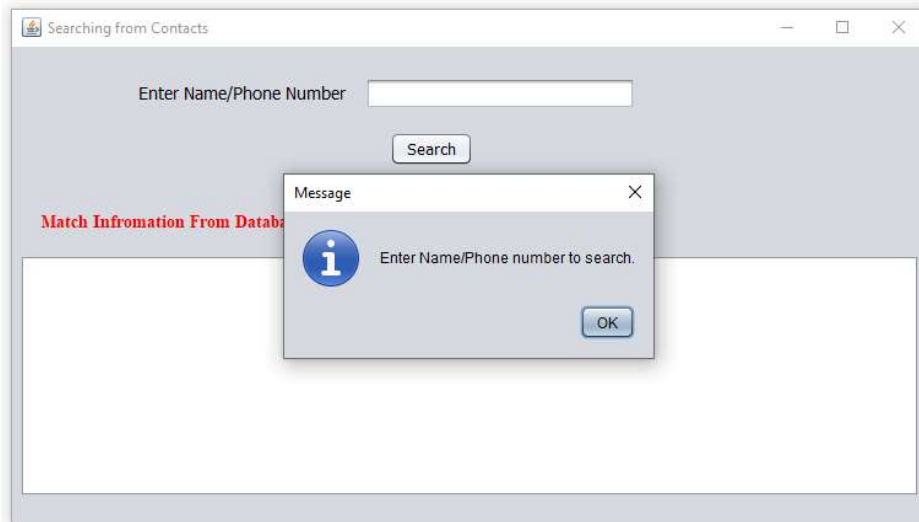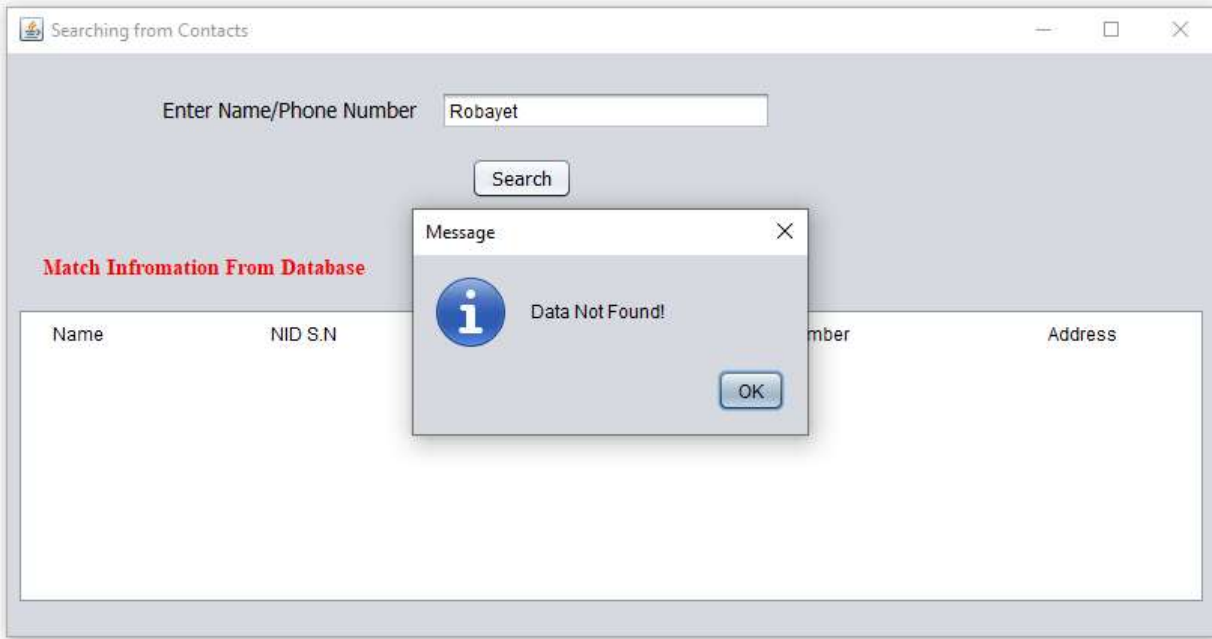
02. <u>GUI</u>

Searching from Contacts

Enter Name/Phone Number [   ]

[Search]

Message ×

ⓘ Enter Name/Phone number to search.

[OK]

Match Infromation From Database

Searching from Contacts

Enter Name/Phone Number [0182659874]

[Search]

Match Infromation From Database

Name	NID S.N	Email	Phone Number	Address
Md. Jahangir Alam	6936598745	jahangir154@gmail.com	0182659874	Uttara,Dhaka-1230

Message ×

ⓘ 1_Matched Data Found!

[OK]

Searching from Contacts

Enter Name/Phone Number [jahangir]

[Search]

Match Infromation From Database

Name	NID S.N	Email	Phone Number	Address
Md. Jahangir Alam	6936598745	jahangir154@gmail.com	0182659874	Uttara,Dhaka-1230
Md. Jahangir Alam	2365498745	yominas5154@gmail.com	0134659874	Uttara,Dhaka-1230
Md. Jahangir Alam	2398798745	khanxd0154@gmail.com	0195659874	Uttara,Dhaka-1230

Message ×

ⓘ 3_Matched Data Found!

[OK]

In this features user can search a person using his name or phone no. The search result will show the info of all the matched people. When the user will search with phone number and if the data is in file all matched details will show and a dialogMessage will pop up with how many matched data found in file. If the user don't input anything dialogMessage will pop up and will show that user must enter Name/Phone number to search. In another case if the searching data is not in saved file the dialogMessage will show "Data Not Found!". I use bufferedreader to read file and using while loop it read each and every data that already stroed in file.

Edit information

01. Code:

```java
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    jTextArea1.setText("");
    try {
        String a = jTextField1.getText();
        if (a.isEmpty()){
            JOptionPane.showMessageDialog(this,"Enter Name/Phone number to
search.");
        }
        else {
            FileReader f = new FileReader("F:\\Java
funda\\Java_Swing\\Files\\Contacts_data.txt");
            BufferedReader b = new BufferedReader(f);


            String take = jTextField1.getText();
            int i=0;
            String st;
            while(null != (st = b.readLine())){
                String line = st.toLowerCase(Locale.ROOT);
                if(line.contains(take)){
                    System.out.println(st);
                    String sval[]=st.split("#");

                    String print =
sval[0]+"__"+sval[1]+"__"+sval[2]+"__"+sval[3]+"__"+sval[4];
                    //jTextArea1.append("\n");
                    jTextArea1.append(print);

                    i++;
                }

            }
            if(i!=0){
                JOptionPane.showMessageDialog(this,i+"_Matched Data Found!");
            }
            else {
                JOptionPane.showMessageDialog(this,"Data Not Found!");
            }
            b.close();
        }
    }
    catch (Exception ad){
        ad.printStackTrace();
    }

}
```

```java
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    JOptionPane.showMessageDialog(this,"Now you can edit");

    String print22 = jTextArea1.getText();
    String st;

    String [] sval2 = print22.split(" ");
    print33 = sval2[0]+"#"+sval2[1]+"#"+sval2[2]+"#"+sval2[3]+"#"+sval2[4];




}

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    JOptionPane.showMessageDialog(this,"Your edited data is updated
successfully");

    print2 = jTextArea1.getText();

    String [] sval2 = print2.split(" ");
    String newVal =
sval2[0]+"#"+sval2[1]+"#"+sval2[2]+"#"+sval2[3]+"#"+sval2[4];

    oldval=print33;

    modifyFile("F:\\Java
funda\\Java_Swing\\Files\\Contacts_data.txt",oldval,newVal);

        jTextArea1.setText(" ");

       System.out.println(oldval+"\n"+newVal);

}


static void modifyFile(String filePath, String oldString, String newString)
{
    File fileToBeModified = new File(filePath);

    String oldContent = "";

    BufferedReader reader = null;

    FileWriter writer = null;

    try
    {
        reader = new BufferedReader(new FileReader(fileToBeModified));


        String line = reader.readLine();
```

```java
    while (line != null)
        {
            oldContent = oldContent + line + System.lineSeparator();

            line = reader.readLine();
        }



        String newContent = oldContent.replaceAll(oldString, newString);


        writer = new FileWriter(fileToBeModified);

        writer.write(newContent);
    }
    catch (IOException e)
    {
        e.printStackTrace();
    }
    finally
    {
        try
        {


            reader.close();

            writer.close();
        }
        catch (IOException e)
        {
            e.printStackTrace();
        }
    }
}
```
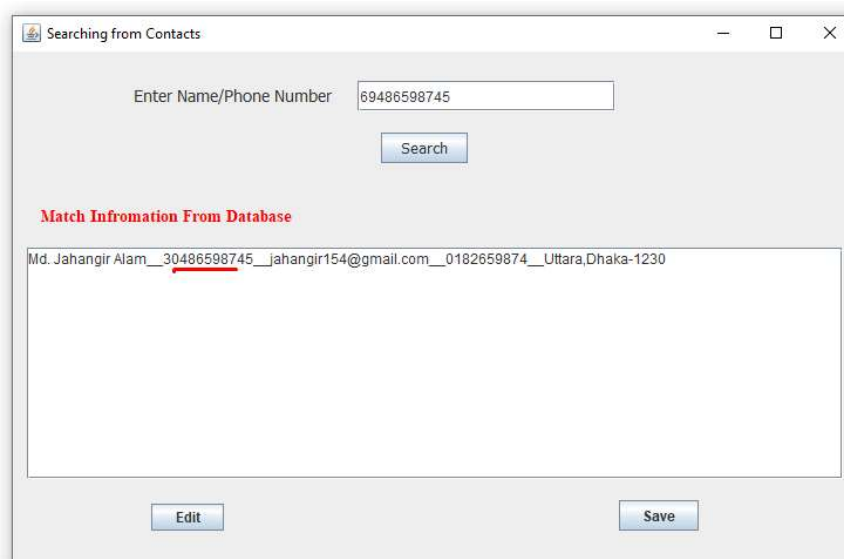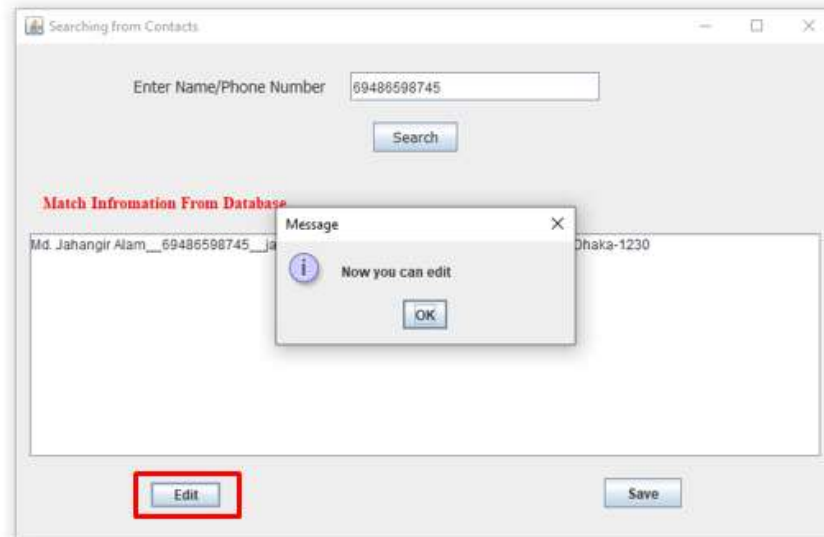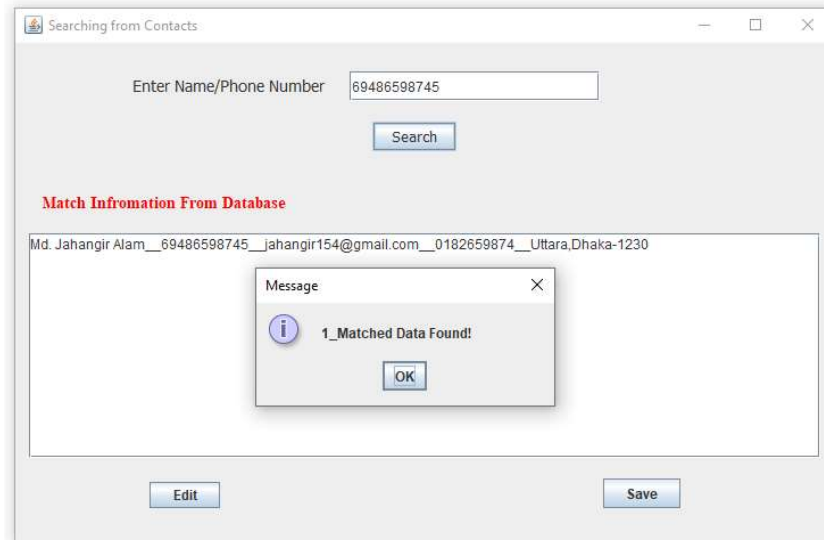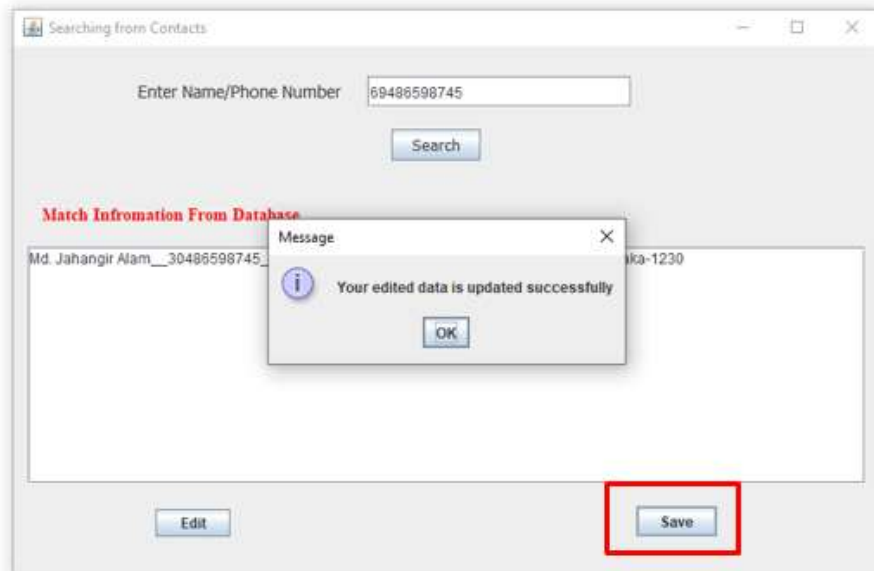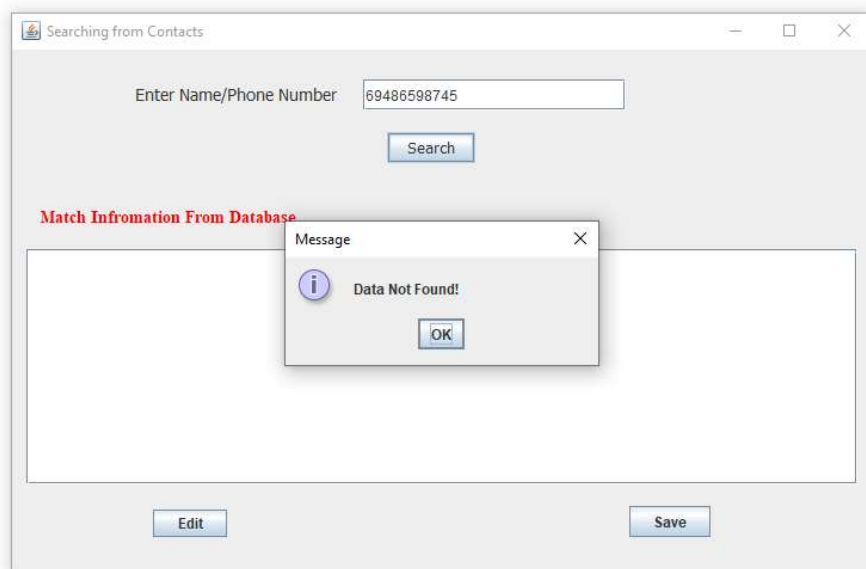
02. GUI

In this features user is able to edit the information of a specific person. User can search by number or name. All the matched information will be display in textArea. Form here by clicking edit button user can start his editing. After completing edition by clicking save button user can save new information and all the edited information will be update and save in the previous file.

For updating old data with new data

1. [Display] I read all the data using FileReader then split all the information and display it in txtArea. To display information I use "__" sign to separate data, so that user can understand which part is name and which on is NID or number.

2. [Edit] Only after clicking edit button user can edit information. In this part I take all data from txtArea, split it, stored it in newVal string and give it a same from as it is in file. But it will not show in that txtArea.

3. When the user edit all his desire data in that txtArea.Then I take all the edited data, as it is now separate with "__" so again I split it,give it file form data with "#"sign and store it in oldval String.

4. Now as I have old and new data I called modifyFile method. This method replace all the old data with new data.

When user will again search the old data in search bar, he will not get it and as the old data is now modified, so a dialogMessage will pop-up to confirm that "Data Not Found".