Currency Converter

Team Members Details

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PROBLEM STATEMENT:

Currently, people are in need to recognize the amount of the currency and to convert it manually. This is stressful especially to people who aren't so smart in calculations. So, this project is developed to replace human power to recognize the amount of the currency.

Currency Recognition and converter systems are implemented to reduce human power to automatically recognize the amount of currency and convert it into the other currency without human supervision.

SO WHAT IS CONVERSION?

The act of bringing out an equivalent of one commodity in another commodity is called conversion.

THE PROBLEM STATEMENT IS:

Given a scenario that asks to design a working currency converter. The converter will have to be able to convert a typed amount from one currency to another that will be chosen by the user beforehand.

SOLUTION (SOURCE CODE):

Given below is the Java code for Currency Converter.

WELCOME.JAVA:

```
//This class created to display the title of project
package currencyconverter;

import javax.swing.*; //import JFrame library
import java.awt.*;
import java.awt.Color;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;

public class welcome extends JFrame {

    welcome() {   //constructor

        this.setLayout(null);//to set the Layout null
        this.setLocation(200, 50);
        call(); //call the function call()
        this.setVisible(true); //to set frame as visible
    }

    void call() {
        this.setSize(650, 550); //set the size of the window
        this.setResizable(false); //for fixed window size
        this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE); //close the
application
        this.setIconImage(new
ImageIcon(getClass().getResource("icon.png")).getImage());
        this.getContentPane().setBackground(Color.LIGHT_GRAY);
        this.setTitle("CURRENCY CONVERTER"); //to set the title
        JButton b = new JButton(); //creating a button
        b.setSize(600, 500); //setting the size of the button
        b.setText("NEXT"); //setting the text in the button
```

```
        b.setBounds(490, 400, 80, 30); //to set the bounds of button i.e,
the x-dimension,y-dimension,height and width
        b.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                setVisible(false);
                welcome2 w1 = new welcome2();

            }
        }
        );
        add(b); //add button to the frame
        JLabel l = new JLabel(); //creating a new label
        l.setFont(new Font("Tahome", 1, 30)); //set the label font
        l.setText("CURRENCY CONVERTER");   //set the label text as
currency converter
        l.setBounds(140, 230, 590, 50); //set the bound of label
        add(l); //to add the label to frame
        JLabel l1 = new JLabel(); //creating another label
        l1.setIcon(new ImageIcon(getClass().getResource("icon.png")));
//to set the icon for the frame
        l1.setBounds(268, 48, 250, 250); //to set the bounds for label
        add(l1); //to add the label to the frame

    }

    public static void main(String args[]) {
        new welcome(); //object creation

    }
}
```

WELCOME2.JAVA:

```
//This class is created to display "WELCOME TO CURRENCY CONVERTER"
package currencyconverter;
```

```
import java.awt.*;
import java.awt.event.ActionEvent;
import java.awt.event.ActionListener;
import javax.swing.*; //import JFrame library

public class welcome2 extends JFrame {

    welcome2() {            //construtor
        this.setTitle("CURRENCY CONVERTER");//to set the title
        this.setLayout(null); // set the layout as null
        call2(); //call the function call2()
        this.setVisible(true); //to set the frame as visible
    }

    void call2() {
        this.setSize(650, 550); //set the size of the window
        this.setLocation(200, 50);
        this.setResizable(false); //for fixed window size
        this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);//close the
application
        this.setIconImage(new
ImageIcon(getClass().getResource("icon.png")).getImage());//to set the
icon for frame
        this.getContentPane().setBackground(Color.black);
        JLabel l3 = new JLabel();  //create a new label
        l3.setFont(new Font("Tahome", 1, 20)); //to set the font for label
        l3.setText("WELCOME TO CURRENCY CONVERTER");//set the text for
label
        l3.setForeground(Color.black);
        l3.setBounds(130, 196, 590, 50);//set the bounds for the label
        add(l3);//add the label to the frame
        Timer timer = new Timer(1000, new ActionListener() { //create a
timer object and set the time
            //and action to be performed after the above time is elapsed
            @Override
```

```
            public void actionPerformed(ActionEvent e) {

                setVisible(false); //to hide this frame
                Project p = new Project();//to create new object
            }
        });
        timer.setRepeats(false);//to prevent the repetition of the timer
        timer.start();//to start the timer
    }

    public static void main(String args[]) {
        new welcome2(); //object creation

    }
}
```

PROJECT.JAVA:

```
//This class is created to convert the different currencies
package currencyconverter;

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

public class Project {

    JFrame frame;
    JLabel label1, label2, label3, label4;
    JTextField text1, text2;
    JComboBox combo1, combo2;
    JButton btnConvert, btnClear;
    JMenuBar mb;
    JMenu edit, about;
    JMenuItem copy, cc;
    JTextField textField;
```

```
    JTabbedPane tp;

    Project() {
        currencyFrame();

    }

    public void currencyControls() {
        label1 = new JLabel("Select The Input Currency :");
//creating the first label and naming the label
        label1.setBounds(120, 50, 160, 30);
//setting the bounds for the label(x axis,y axis,width,height)
        label1.setForeground(Color.black);
        frame.add(label1);
//adding the created label to the frame

        String[] values1 = {"U.S Dollar", "Euro", "Japanese Yen", "Indian
Rupee", "Saudi Riyal"};    //array of string containing the input
Currencies
        combo1 = new JComboBox(values1);
//creating a combobox to select the input currencies
        combo1.setBounds(280, 50, 150, 30);
//set the bounds (x axis,y axis,width,height)
        frame.add(combo1);
//adding the created combobox to the frame

        label2 = new JLabel("Enter The Amount :");
//creating the second label and naming the label as enter the amount
        label2.setBounds(150, 110, 150, 30); //setting the bounds for the
label(x axis,y axis,width,height)
        label2.setForeground(Color.black);
        frame.add(label2);
//adding the created label to the frame

        text1 = new JTextField();
//creating  the text field to enter the amount
```

```
        text1.setBounds(270, 110, 150, 30);
//setting the bounds (x axis,y axis,width,height)
        frame.add(text1);
//adding the created text field to the frame

        label3 = new JLabel("Select The Output Currency :");
//creating the third label and naming the label as select the output
currency
        label3.setBounds(120, 170, 180, 30);//setting the bounds for the
label(x axis,y axis,width,height)
        label3.setForeground(Color.black);
        frame.add(label3);
//adding the created label to the frame

        String[] values2 = {"Swiss franc", "U.S Dollar", "Canadian
Dollar", "Chinese Yuan", "Indian Rupee"};               //array of string
containing the output Currencies
        combo2 = new JComboBox(values2);
//creating a combobox to select the output currencies
        combo2.setBounds(290, 170, 150, 30);
//set the bounds (x axis,y axis,width,height)
        frame.add(combo2);
//adding the created combobox to the frame

        btnConvert = new JButton("Convert");
//creating the button for convert
        btnConvert.setBounds(230, 230, 100, 30);
//set the bounds for the button(x axis,y axis,width,height)
        frame.add(btnConvert);
//adding the created button to the frame

        label4 = new JLabel("Converted Amount :");
//creating the fourth label and naming the label as Converted amount
        label4.setBounds(150, 290, 150, 30); //setting the bounds for the
label(x axis,y axis,width,height)
        label4.setForeground(Color.black);
```

```
        frame.add(label4);
//adding the created label to the frame

        text2 = new JTextField();
//creating  the text field to display the converted amount
        text2.setBounds(270, 290, 150, 30);
//setting the bounds (x axis,y axis,width,height)
        frame.add(text2);
//adding the created text field to the frame

        btnClear = new JButton("Clear");
//creating the button for clear
        btnClear.setBounds(230, 350, 100, 30);
//set the bounds for the button(x axis,y axis,width,height)
        frame.add(btnClear);
//adding the created button to the frame

    }

    public void currencyActionListeners() {
        btnClear.addActionListener(new ActionListener() {
//adding Action Listeners to perform an action method
            public void actionPerformed(ActionEvent e) {            //known
as actionPerformed for the clear button  which clears the textfield
                text1.setText(" ");
                text2.setText("  ");

            }

        });
 btnConvert.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                try {
                    double result;
```

```
                    String from = (String)
combo1.getItemAt(combo1.getSelectedIndex());//extract the value of from
                    String To = (String)
combo2.getItemAt(combo2.getSelectedIndex());//extract the value of to
                    double amount =
Double.parseDouble(text1.getText());//extract the value of the amount to
be converted

                    if (amount == (double) amount) {    //check if the
amount is valid

                        if (!from.equals("Indian Rupee")) { //basecurrency
is an Indian rupee
                            double subres = (Math.round((amount *
basecurrency(from)) * 100)) / 100.0d; //calculate the numerical part
                            //and round off to two decimal places
                            result = (Math.round((subres /
basecurrency(To)) * 100)) / 100.0d;//convert the currency and round off to
two decimal places
                        } else {  //if the currency to be converted from
itself is the base currency then

                            result = (Math.round((amount /
basecurrency(To)) * 100)) / 100.0d;
                        }
                        text2.setText((String.valueOf(result) + " " +
To));//output the result

                    } else {  //if the amount is not valid show the
message
                        JOptionPane.showMessageDialog(frame, "Enter valid
amount ");
                    }
                } catch (Exception ex) { //if any error in the calculation
then show the message
```

```
                    JOptionPane.showMessageDialog(frame, "Enter valid
amount  ");
                }
            }
        });
        copy = new JMenuItem("Copy");       //menuitem copy
        cc = new JMenuItem("Currency Converter"); //menuitem
        mb = new JMenuBar();              //creating menu bar
        edit = new JMenu("Edit");     //menu edit
        about = new JMenu("About");    //menu about
        edit.add(copy);    //adding menuitem copy to edit menu
        about.add(cc);  //adding menu item currency converter to the about
menu
        mb.add(edit); //adding menu edit to menubar
        mb.add(about); //adding menu about to the menu bar
        frame.add(mb);  //adding menubar to the frame
        frame.setJMenuBar(mb);
        cc.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                frame.setVisible(false);
                About ob = new About();
            }

        });
        copy.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                text2.selectAll(); //to select the text from the result
                text2.copy(); //to copy the result to the clipboard

            }
        });

    }

    public double basecurrency(String s) { //to fetch the base currency
values
```

```
        double a = 0;
        switch (s) {
            case "U.S Dollar":
                a = 74.61;
                break;
            case "Euro":
                a = 88.09;
                break;
            case "Japanese Yen":
                a = 0.68;
                break;
            case "Canadian Dollar":
                a = 59.14;
                break;
            case "Swiss franc":
                a = 81.19;
                break;
            case "Chinese Yuan":
                a = 11.52;
                break;
            case "Indian Rupee":
                a = 1;
                break;
            case "Saudi Riyal":
                a = 19.89;
                break;
        }
        return a;
    }

    public void currencyFrame() {
        frame = new JFrame("CURRENCY CONVERTOR");          //Creating a
new frame using JFrame
        frame.setSize(650, 550);                            //set the
bounds for the frame
```

```
        frame.setResizable(false);                          //to avoid the
user from resizing the frame
        currencyControls();
        currencyActionListeners();

        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
//default method for closing the frame
        frame.setLayout(null);                                      //using
no layout managers
        frame.setIconImage(new
ImageIcon(getClass().getResource("icon.png")).getImage()); // to set the
icon
        frame.getContentPane().setBackground(Color.LIGHT_GRAY);
        frame.setVisible(true);
        frame.setLocation(200, 50);//making the frame visible

    }

    public static void main(String[] args) {
        Project p1 = new Project();

    }

}
```

ABOUT.JAVA:

```
//this class is created to display the menu option in the frame
package currencyconverter;

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

public class About {
```

```
    JFrame f;

    public void init() {
        f = new JFrame("CURRENCY CONVERTER");    //new frame
        f.setSize(650, 550);
        JTabbedPane tabbedPane = new JTabbedPane();    //for creating
panels
        JPanel p1 = new JPanel();
        tabbedPane.addTab("Currency Converter", p1);   //first panel
        JTextArea ta = new JTextArea(20, 50);           //text area for
first panel
        ta.setText("Exchange rates tell you how much your currency is
worth in a foreign currency.\n\n"
                + "2 Kinds of Exchange Rates\n\n"
                + "There are two kinds of exchange rates: flexible and
fixed.\n\n"
                + " Flexible exchange rates change constantly, while fixed
exchange rates rarely change.\n\n"
                + "Most exchange rates are given in terms of how much a
dollar is worth in the foreign currency.\n\n "
                + "The euro is different. It's given in terms of how much
a euro is worth in dollars\n\n"
                + "Three Factors Affecting Exchange Rates\n\n"
                + "Interest rates, money supply, and financial stability
all affect currency exchange rates.\n\n"
                + " Because of these factors, the demand for a country's
currency depends on what is happening in that country.\n\n"
                + "A universal currency converter is an app or web tool
that allows for the quick conversion of any currency into any other
currency.\n\n"
                + "Universal converters typically use the most recent
market prices in the foreign exchange market.\n\n"
                + "Currency converters are useful to tourists,
multinational businesses, and forex traders.\n\n");
        p1.add(ta);   //addingadding text area to the first tab
```

```
        JScrollPane sp1 = new JScrollPane(ta,
JScrollPane.VERTICAL_SCROLLBAR_ALWAYS,
JScrollPane.HORIZONTAL_SCROLLBAR_ALWAYS);   //scroll bar for first panel
        p1.add(sp1); //adding scroll bar for the first panel
        p1.setBackground(Color.GRAY);
        ta.setEditable(false);//making text area not editable
        JPanel p2 = new JPanel();
        tabbedPane.addTab("Instructions", p2);     //second panel
        JTextArea textArea = new JTextArea(20, 30);   //text area for
second panel
        textArea.setText("How to use Currency Converter?\n*These are the
simple steps you need to follow:\n\n"
                + "->Enter the amount you have.\n\n"
                + "->Select the input currency which is given in the below
list.\n\n"
                + "->Select the output currency which is given in the
below list.\n\n"
                + "->Press the 'Convert' button.\n\n"
                + "->The following result will be shown in the converted
amount box.\n\n"
                + "->Use the clear button to reset the amount.\n\n");
        p2.add(textArea);   //adding text area for the second panel
        JScrollPane sp = new JScrollPane(textArea,
JScrollPane.VERTICAL_SCROLLBAR_ALWAYS,
JScrollPane.HORIZONTAL_SCROLLBAR_ALWAYS); //scroll bar for second panel
        p2.add(sp);   //adding scroll bar to the second panel
        p2.setBackground(Color.GRAY);
        textArea.setEditable(false);    //text area not editable
        JPanel p3 = new JPanel();
        p3.setBackground(Color.GRAY);
        p3.setForeground(Color.GRAY);
        tabbedPane.addTab("Team Members", p3);  //third panel
        String data[][] = {{"Jyothi Lisha Vas", "4SO19CS070"}, //data for
the rows in table
        {"K Divya Pai", "4SO19CS071"},
        {"Pooja ", "4SO19CS108"},
```

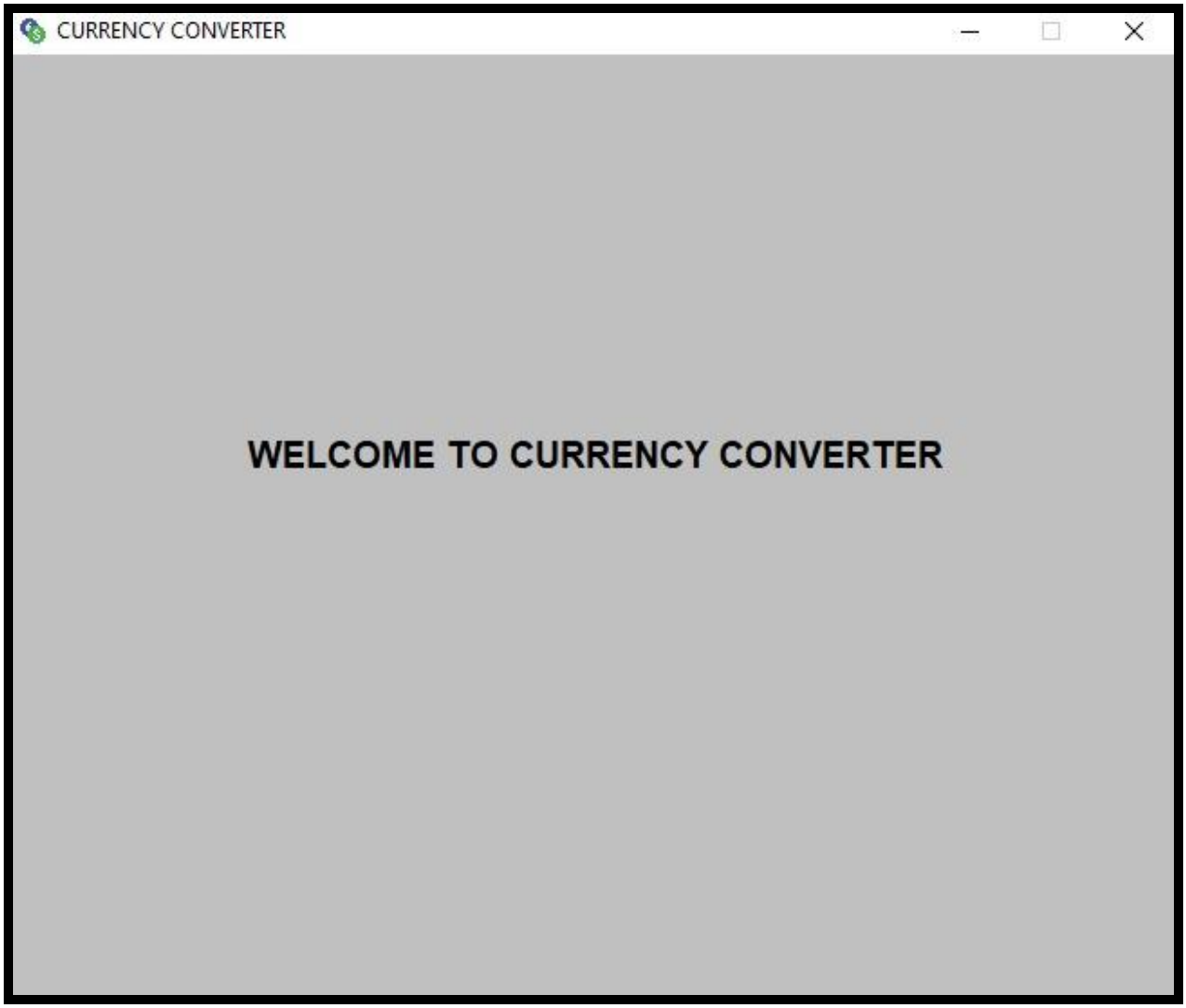
```
        {"Poorvi", "4SO19CS109"}};
        String column[] = {"NAME", "USN"};  //data for the columns in
table
        JTable jt = new JTable(data, column);    //create a new table
        jt.setBounds(30, 40, 100, 100);
        jt.setForeground(Color.black);
        JScrollPane sp2 = new JScrollPane(jt);  //scrollpane for the table
        jt.setEnabled(false);
        p3.add(sp2);   //add scrollpane to the table
        f.add(tabbedPane);    //adding jtabbedpane to jframe
        JButton b1 = new JButton(); //to create a new button
        b1.setText("BACK"); //to set the text of the button
        b1.setBounds(350, 480, 100, 100);//set the position of the button
        p1.add(b1);// to add the button to the panel
        b1.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                f.setVisible(false); //to hide this frame
                Project p = new Project();
            }
        });
        f.setLocation(200, 50);//set the position of the window
        f.setIconImage(new
ImageIcon(getClass().getResource("icon.png")).getImage());//to set the
icon
        f.getContentPane().setBackground(Color.GRAY);
        f.setVisible(true); //to display the frame

    }

    About() {
        init(); //function call to init()
    }

    public static void main(String args[]) {
        About a = new About(); //to create a new object
```

```
    }
}
```

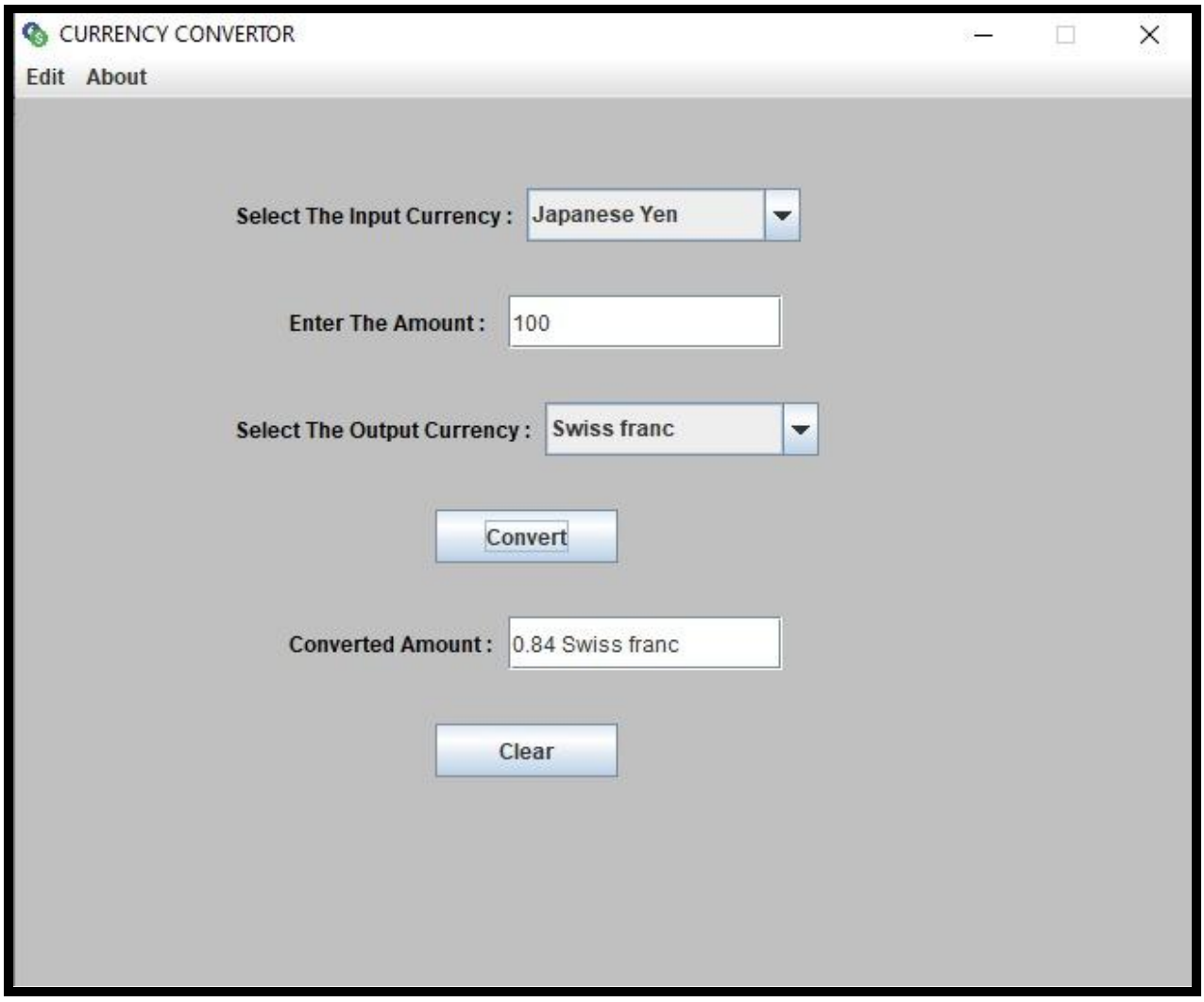
OUTPUT:

WELCOME.JAVA:

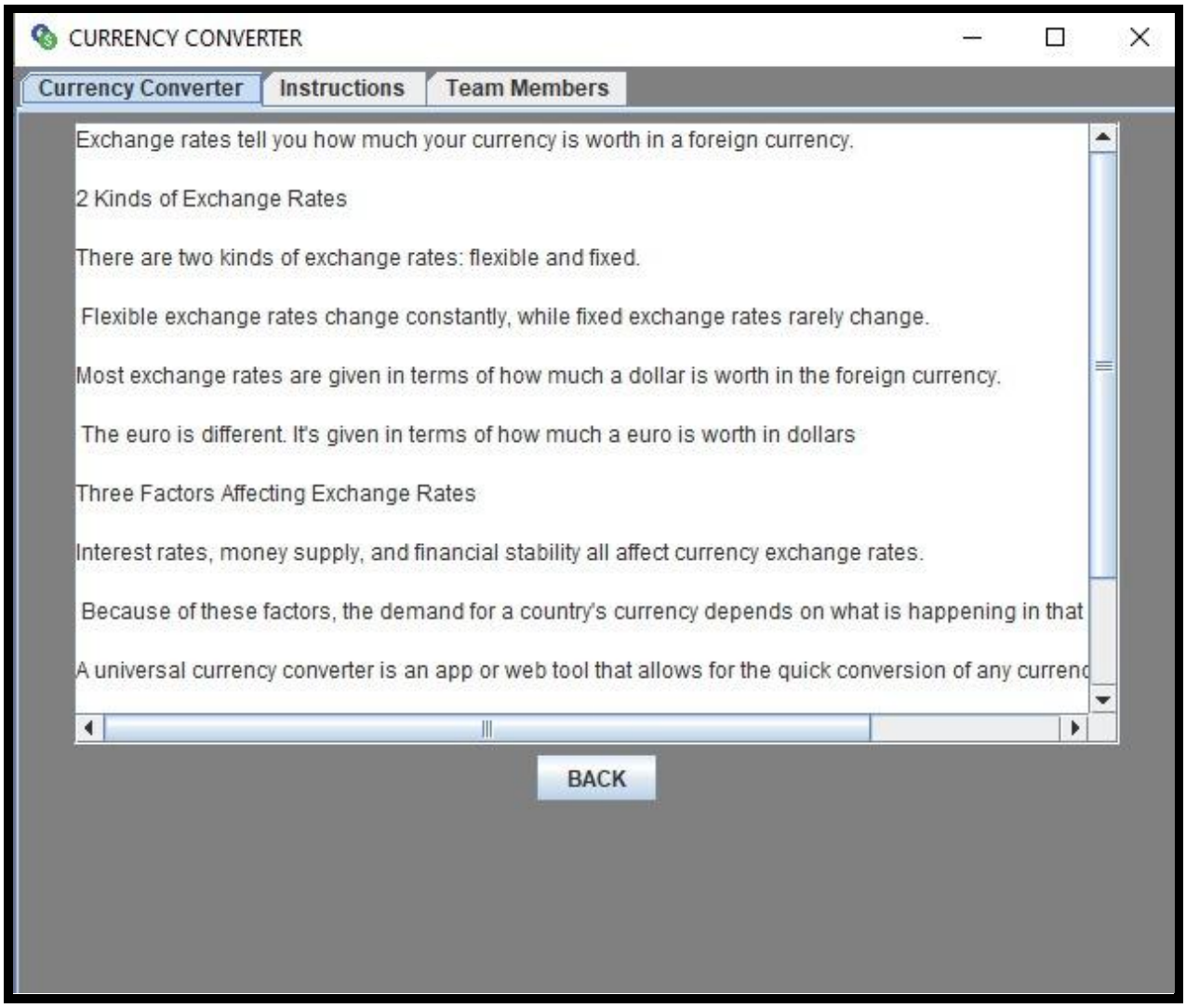
WELCOME2.JAVA:



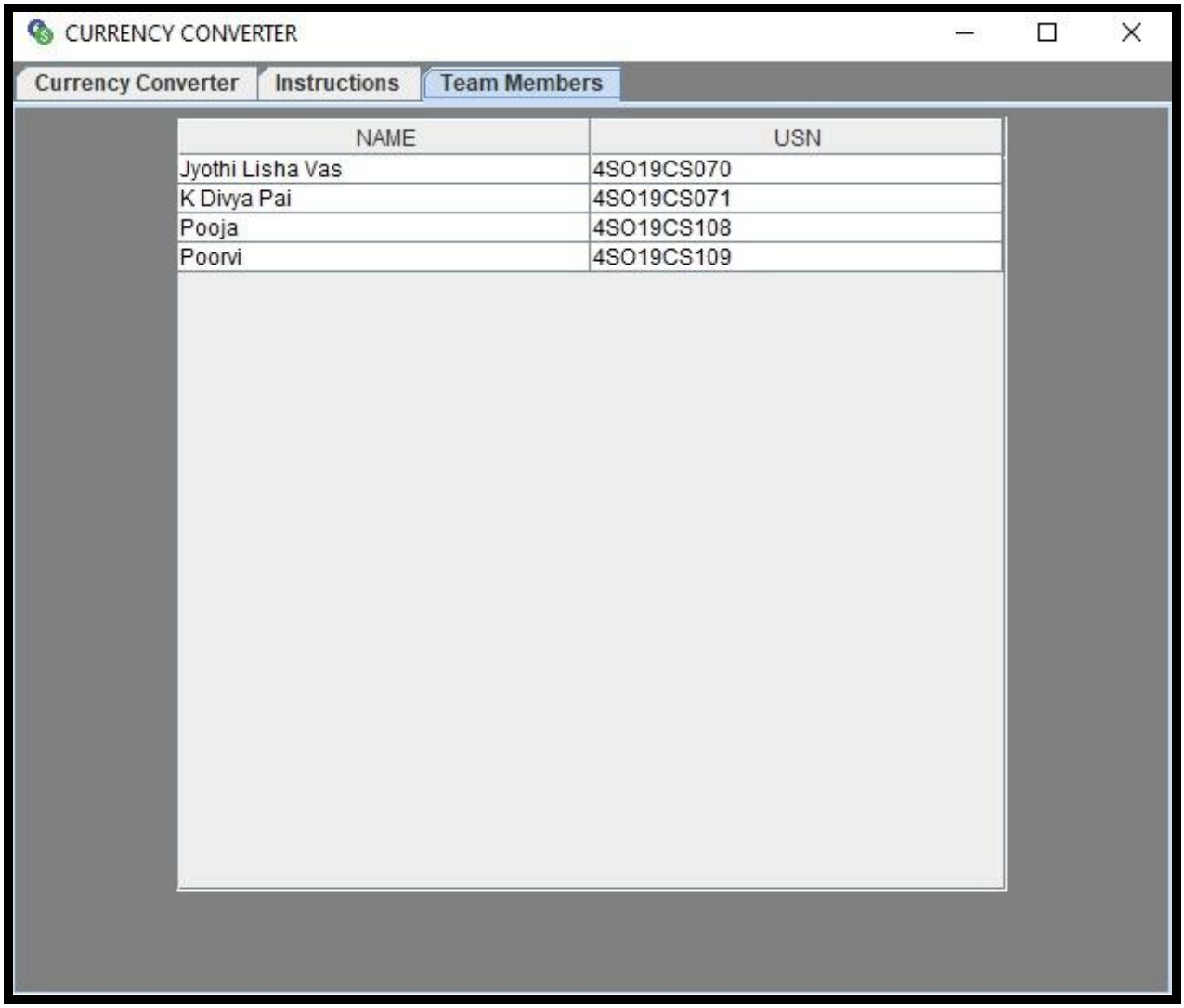
PROJECT.JAVA:



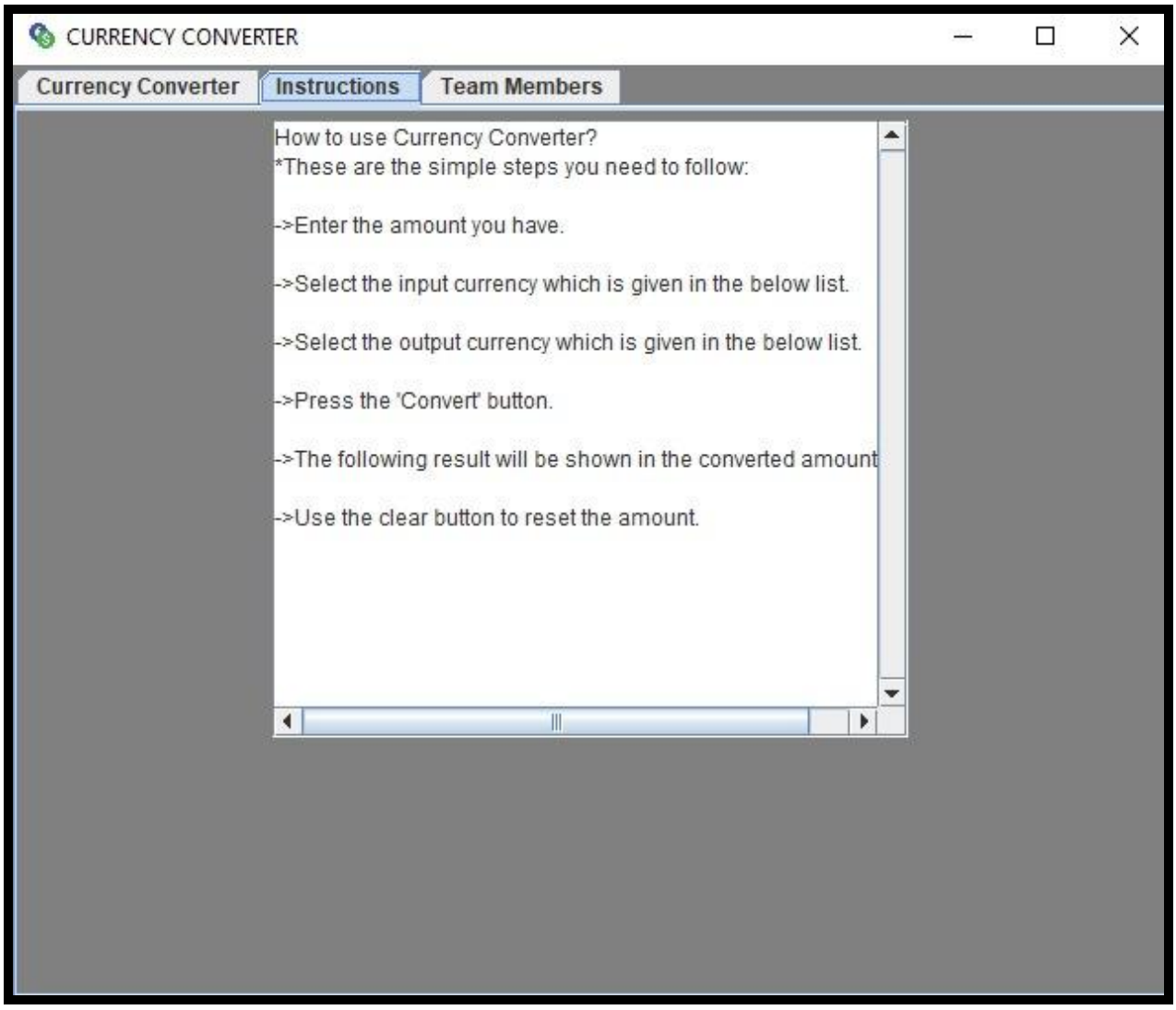
ABOUT.JAVA:


CURRENCY CONVERTER
Currency Converter
Instructions
Team Members
Exchange rates tell you how much your currency is worth in a foreign currency.
2 Kinds of Exchange Rates
There are two kinds of exchange rates: flexible and fixed.
Flexible exchange rates change constantly, while fixed exchange rates rarely change.
Most exchange rates are given in terms of how much a dollar is worth in the foreign currency.
The euro is different. It's given in terms of how much a euro is worth in dollars
Three Factors Affecting Exchange Rates
Interest rates, money supply, and financial stability all affect currency exchange rates.
Because of these factors, the demand for a country's currency depends on what is happening in that
A universal currency converter is an app or web tool that allows for the quick conversion of any currenc
BACK

ABOUT.JAVA:


CURRENCY CONVERTER
Currency Converter
Instructions
Team Members
NAME
USN
Jyothi Lisha Vas
4SO19CS070
K Divya Pai
4SO19CS071
Pooja
4SO19CS108
Poorvi
4SO19CS109

ABOUT.JAVA:


CURRENCY CONVERTER
Currency Converter
Instructions
Team Members
How to use Currency Converter?
*These are the simple steps you need to follow:
->Enter the amount you have.
->Select the input currency which is given in the below list.
->Select the output currency which is given in the below list.
->Press the 'Convert' button.
->The following result will be shown in the converted amount
->Use the clear button to reset the amount.

ABOUT.JAVA (INVALID INPUT):