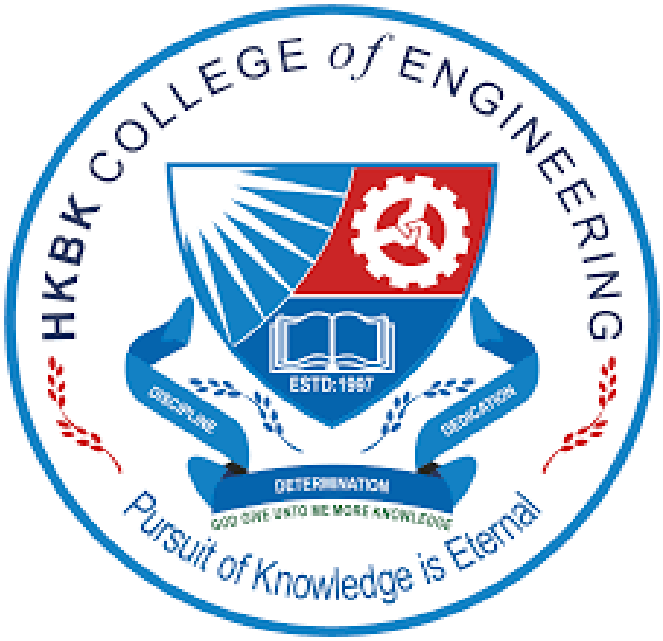

Assignment on: Designing an applet GUI (Cyrptography)

Submitted by:

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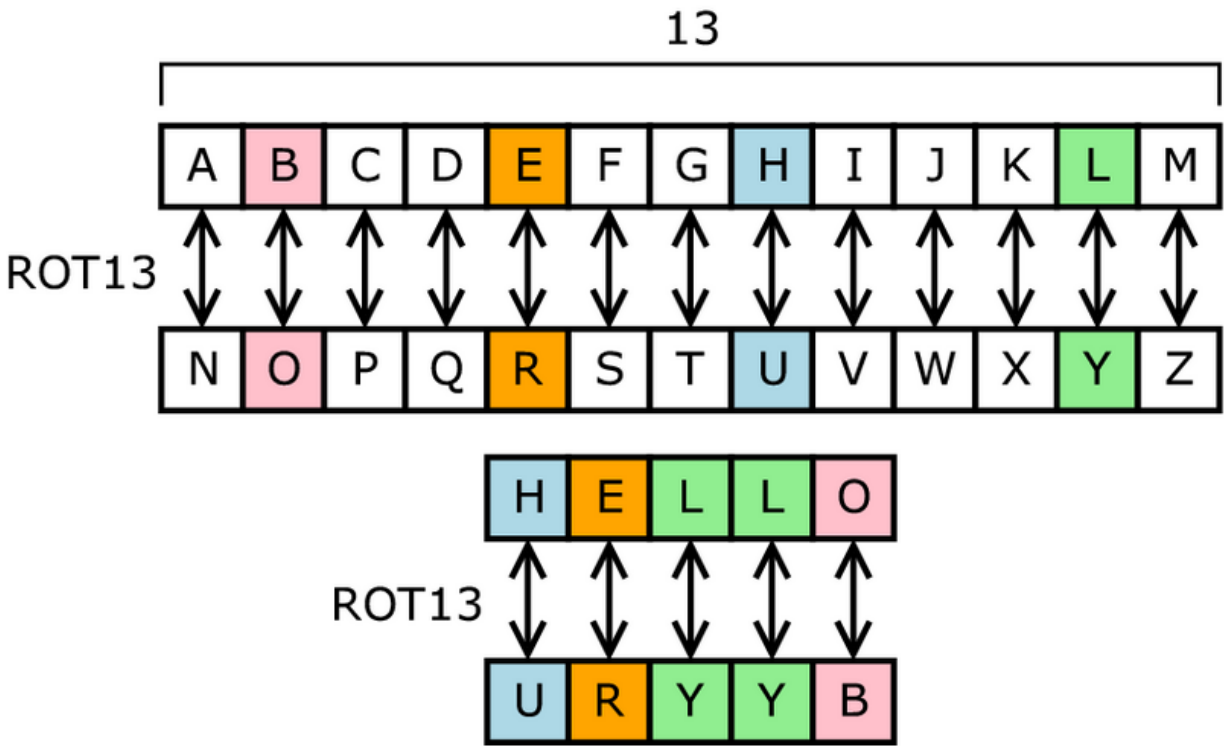
Encryption Method :

ROT13 ("**rotate by 13 places**", sometimes hyphenated **ROT-13**) is a simple letter substitution cipher that replaces a letter with the 13th letter after it, in the alphabet. ROT13 is a special case of the Caesar cipher which was developed in ancient Rome.

Because there are 26 letters (2×13) in the basic Latin alphabet, ROT13 is its own inverse; that is, to undo ROT13, the same algorithm is applied, so the same action can be used for encoding and decoding. The algorithm provides virtually no cryptographic security, and is often cited as a canonical example of weak encryption.



Source Code

1. Encryption and Decryption (Encdec.java) :

```
package assignment;

public class Encdec {

	public String enc(String s1) {

		int c;

		char c1=0;

		String s2="";

		for(int i=0;i<s1.length();i++) {

			c=(int)s1.charAt(i);

			if(c!=32) {

				if(c>=65&&c<=90)

			    c1=(char)((c%26)+65);

				else if(c>=97&&c<=122) {

					c=(int)Character.toUpperCase((char) c);

					c1=Character.toLowerCase((char)((c%26)+65));

					}

				else

					c1=(char)c;

			}

			else

				c1=32;

			s2+=Character.toString(c1);

		}

		return s2;

	}
```

2. Applet (Swing) (EDApplet.java) :

```
package assignment;

import java.awt.event.*;

import java.io.*;

import javax.swing.*;


public class EDApplet extends JFrame implements ActionListener
{       private static final long serialVersionUID = 1L;
        BufferedWriter p;
        BufferedReader reader;
        Encdec en=new Encdec();
        File f=null;
        String read,s1=null;
        int n = 0;
        private JPanel pnl = null;
        private JTextField tf=null;
        private JFileChooser jf=null;
        private JButton openbtn=null;
        private JButton enc=null;
        private JButton denc=null;


        public Encryption()
        {
                super("CyPTiC");
                pnl = new JPanel();
                tf = new JTextField(40);
                jf = new JFileChooser();
                openbtn = new JButton("File Path");
```

```
        enc = new JButton("Encrypt");
        denc = new JButton("Dencrypt");
        tf.setEnabled(false);

        tf.setToolTipText("Selected File");
        openbtn.setToolTipText("Browse");
        enc.setToolTipText("Click to encrypt");
        denc.setToolTipText("Click to dencrypt");

        openbtn.addActionListener(this);
        enc.addActionListener(this);
        denc.addActionListener(this);

        pnl.add(tf);
        pnl.add(openbtn);
        pnl.add(enc);
        pnl.add(denc);

        this.add(pnl);
        this.setSize(500,150);
        this.setVisible(true);
        this.addWindowListener(
         new WindowAdapter()
         {   public void windowClosing(WindowEvent we)
                    {       System.exit(0);
                     }
         });
}
```

```
public void actionPerformed(ActionEvent ae)
{       if (ae.getSource()==openbtn)
        {       jf.showOpenDialog(this);
                tf.setText(jf.getSelectedFile().getAbsolutePath());
        }
        if (ae.getSource()==enc)
        {       if(tf.getText().length()!=0) {
                        this.encrpt(tf.getText());
                        try {
Runtime.getRuntime().exec("notepad "+(new File("C:/Users/S. Asief
H/Documents/enc.txt")));
                        }
                        catch (IOException e) {
                                e.printStackTrace();
                        }
                }
                Else   JOptionPane.showMessageDialog(this,"First select the file.");
        }
        if (ae.getSource()==denc)
        {       if(tf.getText().length()!=0) {
                        this.decrpt(tf.getText());
                        try {
                                Runtime.getRuntime().exec("notepad "+(new
File("C:/Users/S. Asief H/Documents/dec.txt")));
                                }
                        catch (IOException e) {
                                e.printStackTrace();
                        }
                }
```

```
            else
                JOptionPane.showMessageDialog(this,"First select the file.");
             }
        }
        private boolean requery(int digit,String filename)
        {       try
                {       n = 0;
                    if(digit==0) {
                            p=new BufferedWriter(new FileWriter("C:/Users/S. Asief H/Documents/enc.txt"));
                            reader = new BufferedReader(new FileReader(filename));
                            read = reader.readLine();
                            while(read!=null) {
                                s1=en.enc(read);
                                p.write(s1);
                                n+=(int)s1.length();
                                read=reader.readLine();
                            }
                            p.close();
                            reader.close();
                            if(s1!=null)    return true;
                            else return false;
                            }
                        if(digit == 1) {
                            p=new BufferedWriter(new FileWriter("C:/Users/S. Asief H/Documents/dec.txt"));
                            reader=new BufferedReader(new FileReader("C:/Users/S. Asief H/Documents/enc.txt"));
                            read = reader.readLine();
```

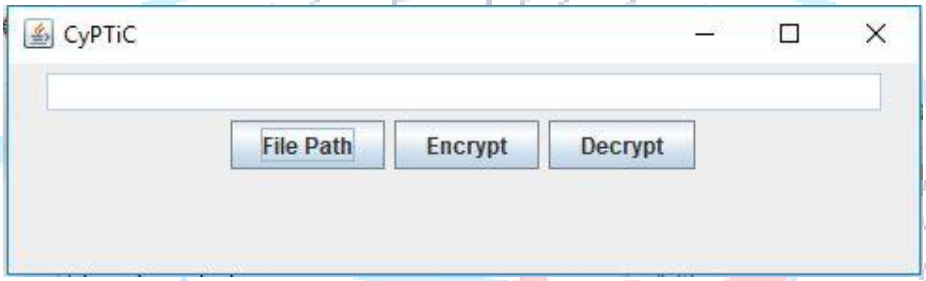
```
                while(read!=null) {
                        s1=en.enc(read);
                        p.write(s1);
                        n+=(int)s1.length();
                        read=reader.readLine();
                }
                p.close();
                reader.close();
                if(s1!=null)    return true;
                else return false;
                }
            }
          catch (IOException ioe)
          {
                JOptionPane.showMessageDialog(this,"Error : " +ioe);
           }
         return false;
         }
         public void encrpt(String filename)
         {       if(requery(0,filename))
                        JOptionPane.showMessageDialog(this,"The file is Encrypted."+"\nThe size of this file is : "+this.n);
                        n=0;

         }
         public void decrpt(String filename)
         {       if(requery(1,filename))   JOptionPane.showMessageDialog(this,"The file is Dencrypted."+"\nThe size of this file is : "+this.n);        n=0;    }
         public static void main(String[] args)
          {      @SuppressWarnings("unused")
```

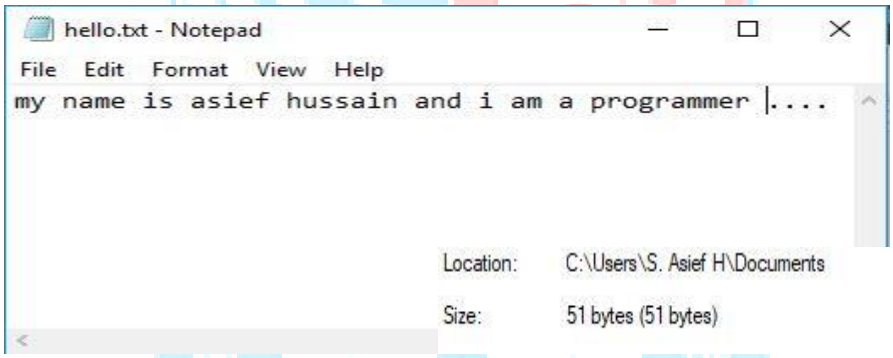
```
        EDApplet e = new EDApplet();
    }
}
```

3. Snapshots:

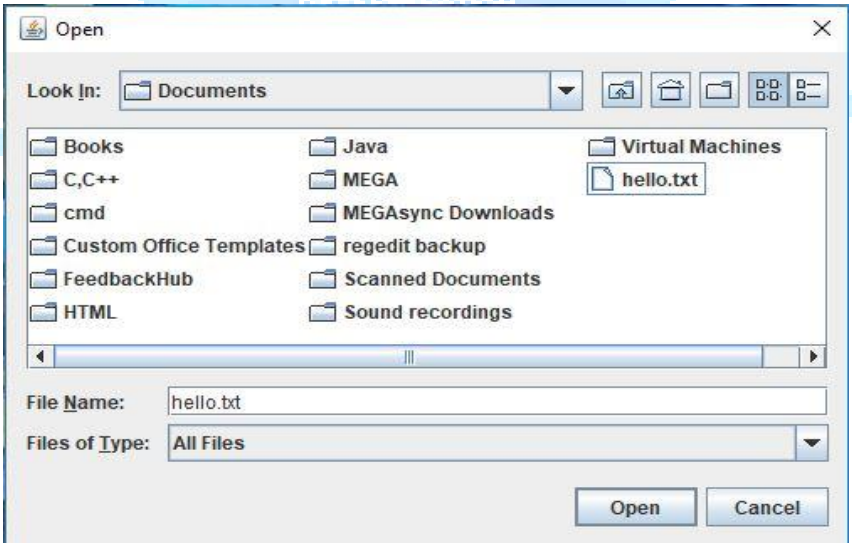
a. Applet GUI Main (JFileChooser, JButton and JTextField) :



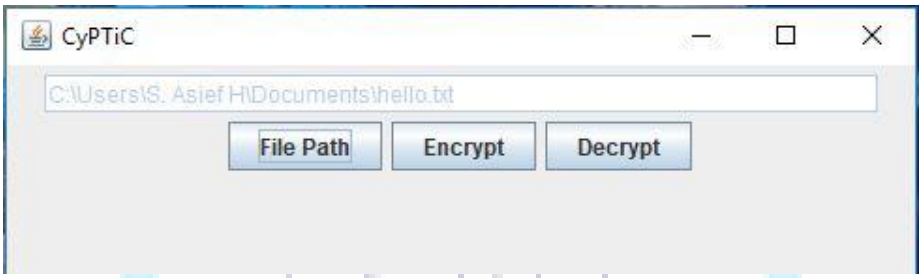
b. Input Text File (hello.txt):



c. Browsing for hello.txt (Source Event : Button , File Path)

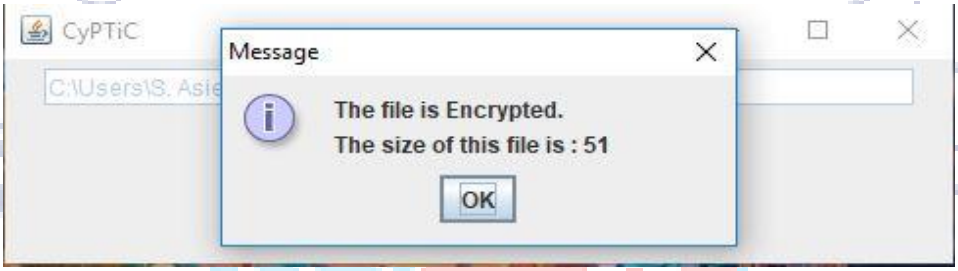


d. Selected File Path Displayed in the Text field

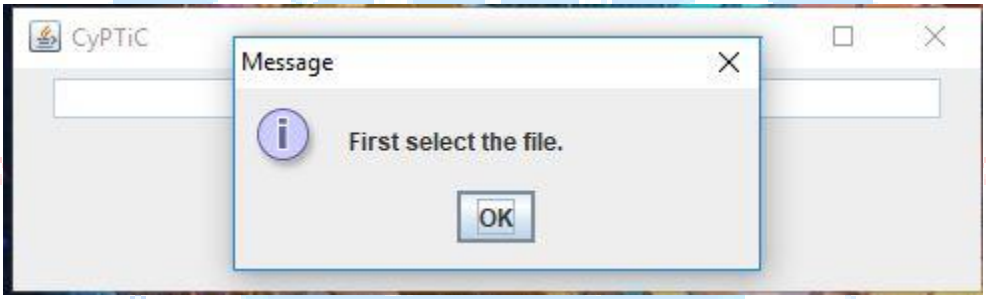


e. Action performed encryption (Source Event : Button , Encrypt)

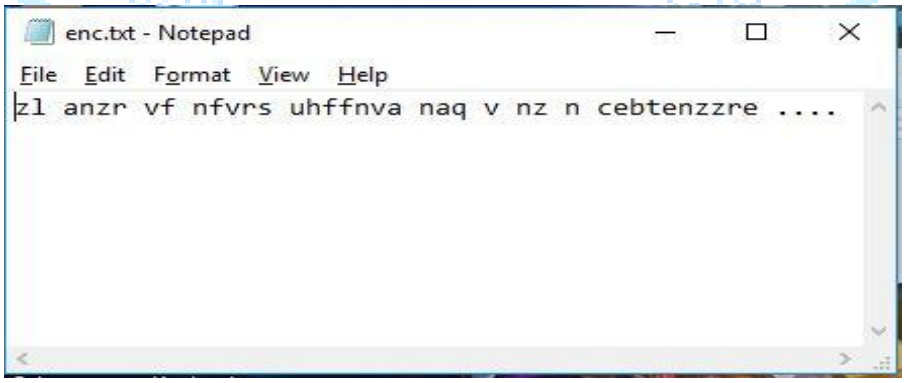
- If file is selected (hello.txt)



- If file is not selected

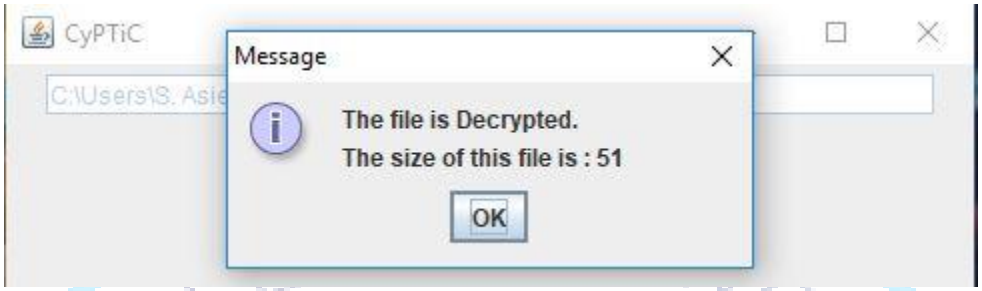


f. Displaying the Encrypted text file (Source Event : Button , Encrypt)

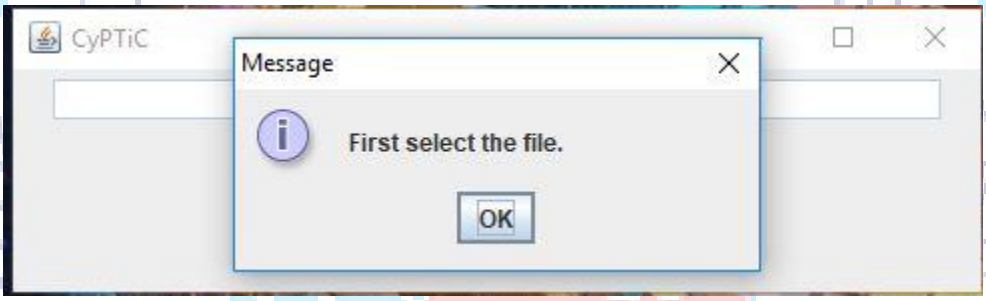


g. Action performed decryption (Source Event : Button , Decrypt)

- If file is selected (hello.txt)



- If file is not selected



h. Displaying the Encrypted text file (Source Event : Button , Decrypt)