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1. Write an applet program which can perform the arithmetic operations like Sum, Subtract, Multiplication & Division.

Ans-

```
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*/

//Evening handling in an applet

import java.awt.*;
import java.awt.event.*;
import java.applet.*;


public class AppletCalculator extends Applet implements ActionListener
{
Label label1, label2, label3;
TextField tf1, tf2, tf3;
Button b1, b2, b3, b4;
String whichButtonClk;          //This String object will tells us which button is pressed

public void init()
{
System.out.println("Initializing an applet");

label1 = new Label("Number1");
tf1= new TextField(10);

label2 = new Label("Number2");
tf2= new TextField(10);

b1 = new Button("Add");
b2= new Button("Subtract");
b3 = new Button("Multiply");
b4= new Button("Divide");
```
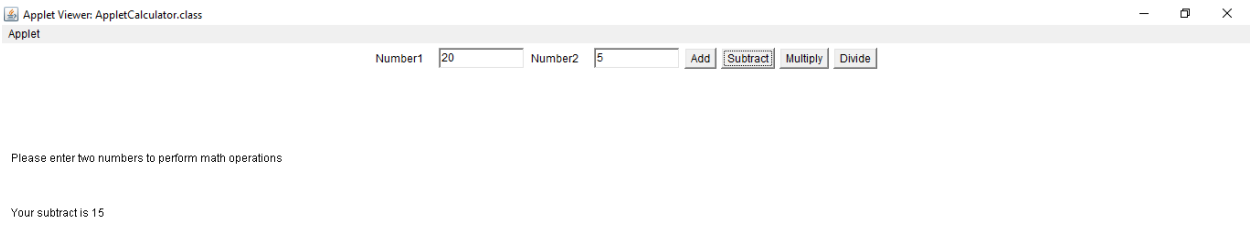
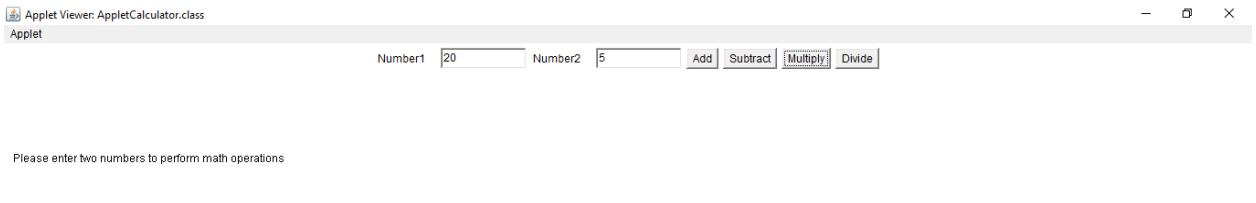

```
add(label1);
add(tf1);

add(label2);
add(tf2);

add(b1);
add(b2);
add(b3);
add(b4);


tf1.addActionListener(this);
tf2.addActionListener(this);
b1.addActionListener(this);
b2.addActionListener(this);
b3.addActionListener(this);
b4.addActionListener(this);

}


public void actionPerformed(ActionEvent ae)
{
if(ae.getActionCommand().equals("Add") || ae.getActionCommand().equals("Subtract")
 ||ae.getActionCommand().equals("Multiply") ||ae.getActionCommand().equals("Divide"))
// checking if an event of clicking the add/subtract/multiply/divide button is generated
{
whichButtonClk=ae.getActionCommand(); //initializing whichButtonClk to a String value of
Button which is clicked
repaint();
}
}

public void paint(Graphics g)
{
g.drawString("Please enter two numbers to perform math operations", 10,130);

if(tf1.getText().equals("") && tf2.getText().equals("")) //if the add button is clicked when textfields
are empty
{
}
```

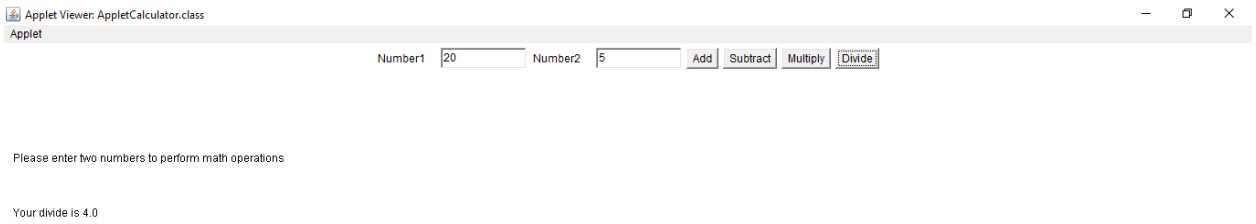
```
else
{
        Integer i1=  new Integer(tf1.getText());
        Integer i2= new Integer(tf2.getText());
        int sum = i1+i2;
        int subtract=i1-i2;
        int multiply=i1*i2;
        float divide=(float)i1/(float)i2; //Casting int to float, to get precise division of two values in
float

        if(whichButtonClk.equals("Add"))
                g.drawString("Your sum is "+ sum, 10,190);
        if(whichButtonClk.equals("Subtract"))
                g.drawString("Your subtract is "+ subtract, 10,190);
        if(whichButtonClk.equals("Multiply"))
                g.drawString("Your multiply is "+ multiply, 10,190);
        if(whichButtonClk.equals("Divide"))
                g.drawString("Your divide is "+ divide, 10,190);
}
}


}

/*<APPLET code="AppletCalculator.class" width="200" height="150">
</APPLET>
*/
```

**Output-**


Applet Viewer: AppletCalculator.class
Applet
Number1
20
Number2
5
Add
Subtract
Multiply
Divide
Please enter two numbers to perform math operations
Your sum is 25


Applet Viewer: AppletCalculator.class
Applet
Number1
20
Number2
5
Add
Subtract
Multiply
Divide
Please enter two numbers to perform math operations
Your subtract is 15



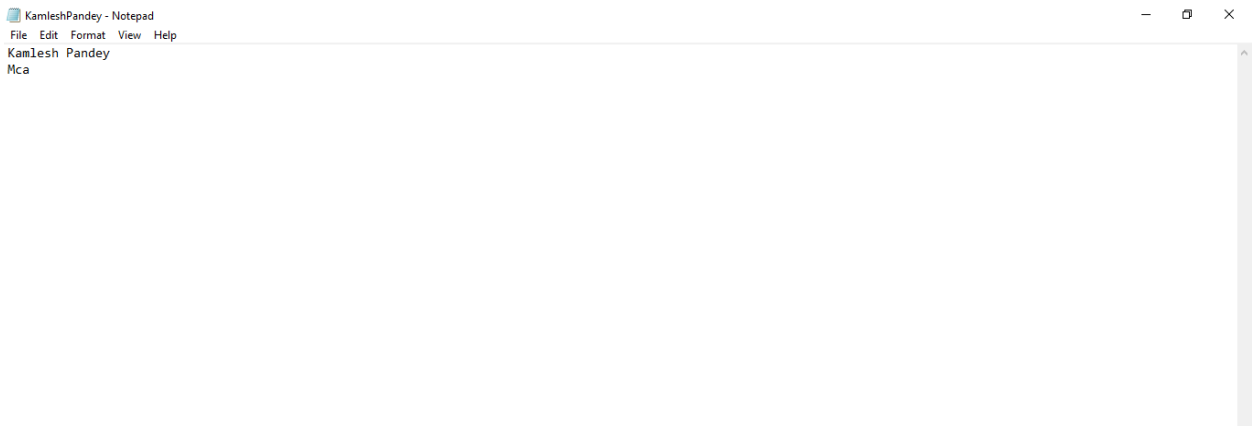




2.Write a program which writes the content on a file, save this file with your name, read this file and count the number of words in the file and print it in the console.

**Answer-**

```
import java.io.BufferedReader;
import java.io.FileReader;

public class CountWordFile
{
   public static void main(String[] args) throws Exception {
      String line;
      int count = 0;

      //Opens a file in read mode
      FileReader file = new FileReader("KamleshPandey.txt");
      BufferedReader br = new BufferedReader(file);
```

```
        //Gets each line till end of file is reached
        while((line = br.readLine()) != null) {
            //Splits each line into words
            String words[] = line.split(" ");
            //Counts each word
            count = count + words.length;
        }

        System.out.println("Number of words present in given file: " + count);
        br.close();
    }
}
```





3. Write a program where client sends a string and server returns the reverse of the string Using TCP/IP Socket Programming

Answer-

Server1.java

```
import java.io.BufferedReader;
```

```
import java.io.BufferedWriter;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.OutputStream;
import java.io.OutputStreamWriter;
import java.net.ServerSocket;
import java.net.Socket;

  public class Server1 {

        private static Socket socket;

        public static void main(String[] args) {
           try {
              ServerSocket serverSocket = new ServerSocket(4000);
              System.out.println("Server Running...");

              while (true) {

                 socket = serverSocket.accept();
                 InputStream is = socket.getInputStream();
                 InputStreamReader isr = new InputStreamReader(is);
                 BufferedReader br = new BufferedReader(isr);
                 String string = br.readLine();
                 System.out.println("Message received from client is " + string);

                 try {

                    StringBuilder input = new StringBuilder();

                    input.append(string);

                    input = input.reverse();
                    string = input + "\n";
```

```
                    for (int i = 0; i < input.length(); i++) {
                        System.out.println(input.charAt(i));
                    }
                } catch (Exception e) {

                    string = "Please send a proper text message\n";
                }

                OutputStream os = socket.getOutputStream();
                OutputStreamWriter osw = new OutputStreamWriter(os);
                BufferedWriter bw = new BufferedWriter(osw);
                bw.write(string);
                System.out.println("Message sent to the client is " + string);
                bw.flush();
            }
        } catch (Exception e) {
            e.printStackTrace();
        } finally {
            try {
                socket.close();
            } catch (Exception e) {
            }
        }
    }
```

Client1.java

```
import java.io.BufferedReader;
import java.io.BufferedWriter;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.OutputStream;
import java.io.OutputStreamWriter;
```

```
import java.net.Socket;
import java.util.Scanner;

public class Client1 {

    private static Socket socket;

    public static void main(String args[]) {
        try {
            socket = new Socket("127.0.0.1", 4000);
            System.out.println("Client Running...");


            OutputStream os = socket.getOutputStream();
            OutputStreamWriter osw = new OutputStreamWriter(os);
            BufferedWriter bw = new BufferedWriter(osw);
            System.out.println("Type in a string and Press Enter...");
            Scanner sc = new Scanner(System.in);
            String string = sc.next();
            System.out.println("string = " + string);
            String sendMessage = string + "\n"; ////Next to line
            bw.write(sendMessage);
            bw.flush();
            System.out.println("Message sent to the server : " + sendMessage);


            InputStream is = socket.getInputStream();
            InputStreamReader isr = new InputStreamReader(is);
            BufferedReader br = new BufferedReader(isr);
            String message = br.readLine();
            System.out.println("Message received from the server : " + message);
        } catch (Exception exception) {
            exception.printStackTrace();
        } finally {
```

```
            try {
                socket.close();
            } catch (Exception e) {
                e.printStackTrace();
            }
        }
    }
}
```