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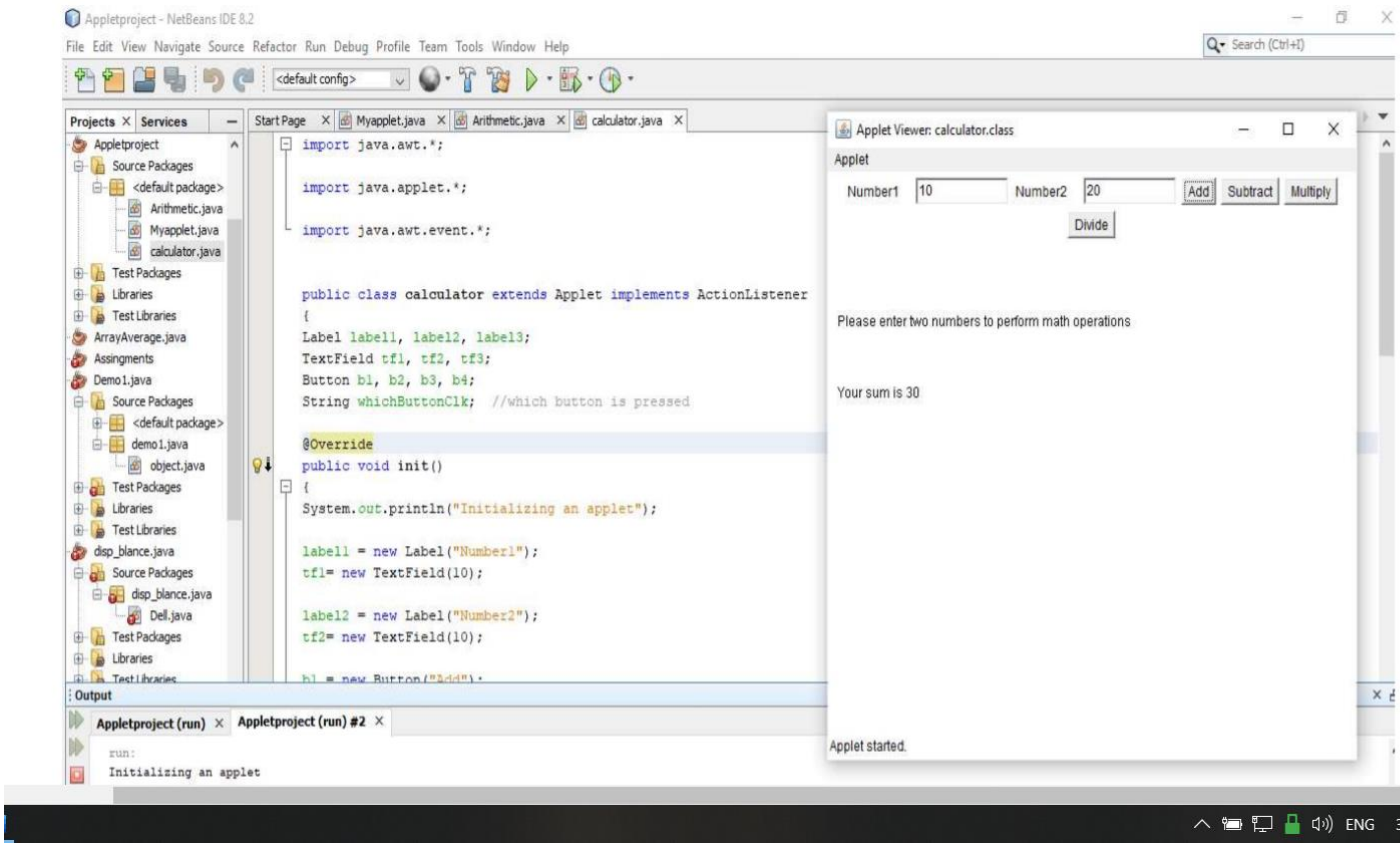
Java Practical Exam

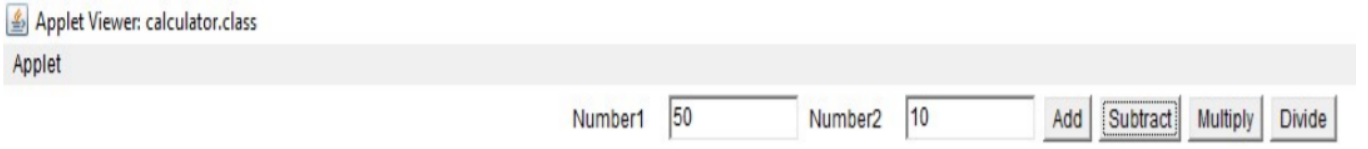
1. Write an applet program which can perform the arithmetic operations like Sum, Subtract, Multiplication & Division.

```
import java.awt.*;
import java.applet.*;
import java.awt.event.*;
public class calculator extends Applet implements
ActionListener
{
Label label1, label2, label3;
TextField tf1, tf2, tf3;
Button b1, b2, b3, b4;
String whichButtonClk; //which button is pressed
@Override
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); // first textfield event
tf2.addActionListener(this); // second textfield
event
b1.addActionListener(this); // first button event
b2.addActionListener(this); // second button event
b3.addActionListener(this); // third button event
b4.addActionListener(this); // fourth button event
}
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);
}
}
}
```



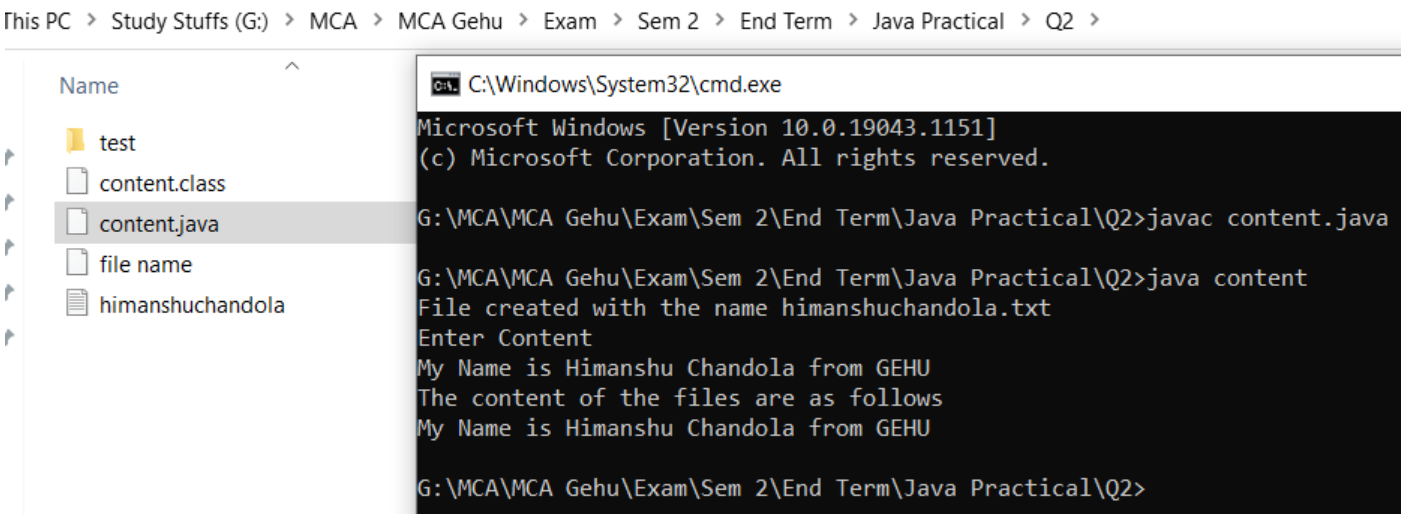


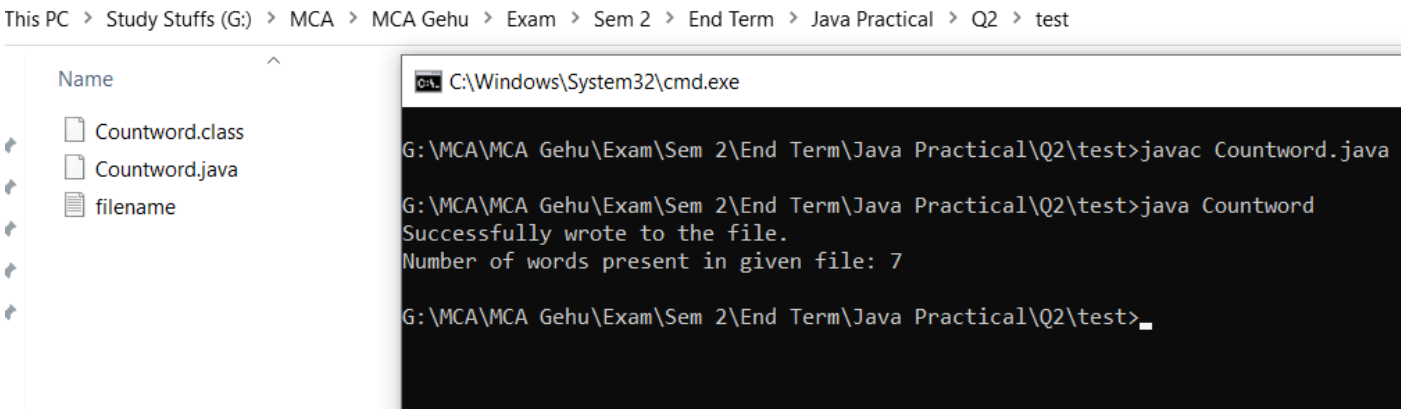
Please enter two numbers to perform math operations

Your subtract is 40

Here I performed all the basic arithmetic operations via applets in Java

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





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

Ans.

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();
```

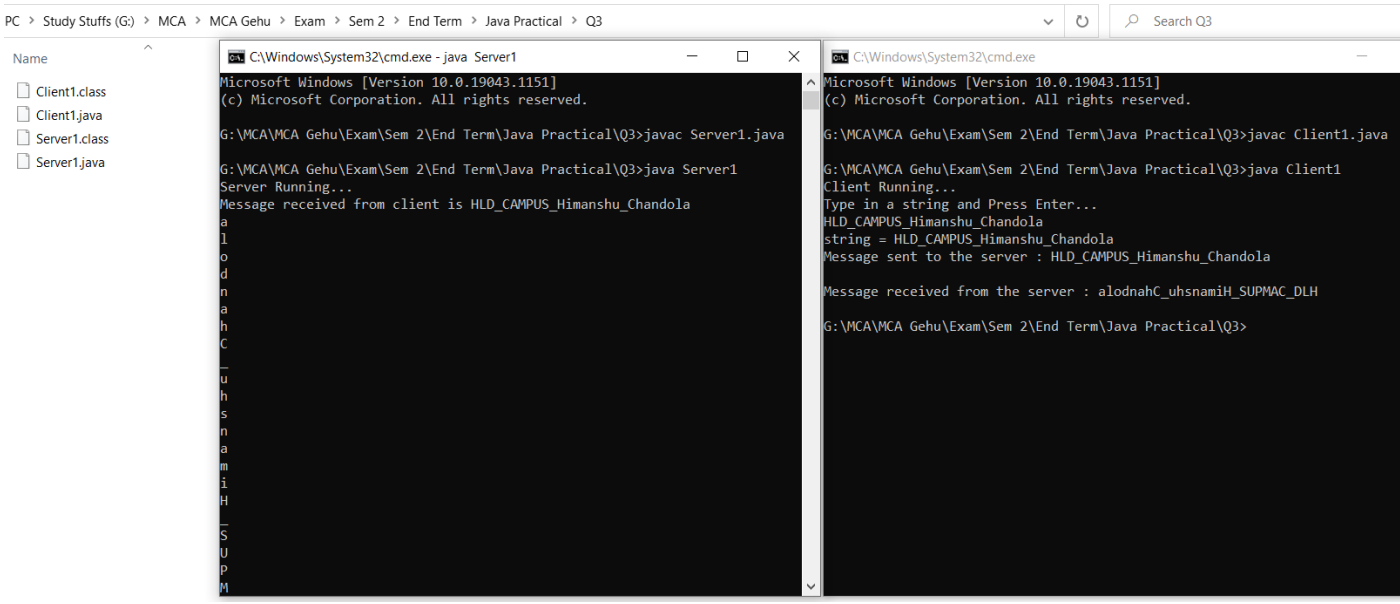
```
                        System.out.println("Message
received from client is " + string);

                        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();
            }
        }
    }
}
```

Output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Search Q3
Name
Client1.class
Client1.java
Server1.class
Server1.java
C:\Windows\System32\cmd.exe - java Server1
Microsoft Windows [Version 10.0.19043.1151]
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G:\MCA\MCA Gehu\Exam\Sem 2\End Term\Java Practical\Q3>javac Server1.java
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Server Running...
Message received from client is HLD_CAMPUS_Himanshu_Chandola
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G:\MCA\MCA Gehu\Exam\Sem 2\End Term\Java Practical\Q3>java Client1
Client Running...
Type in a string and Press Enter...
HLD_CAMPUS_Himanshu_Chandola
string = HLD_CAMPUS_Himanshu_Chandola
Message sent to the server : HLD_CAMPUS_Himanshu_Chandola
Message received from the server : alodnahC_uhsnamiH_SUPMAC_DLH
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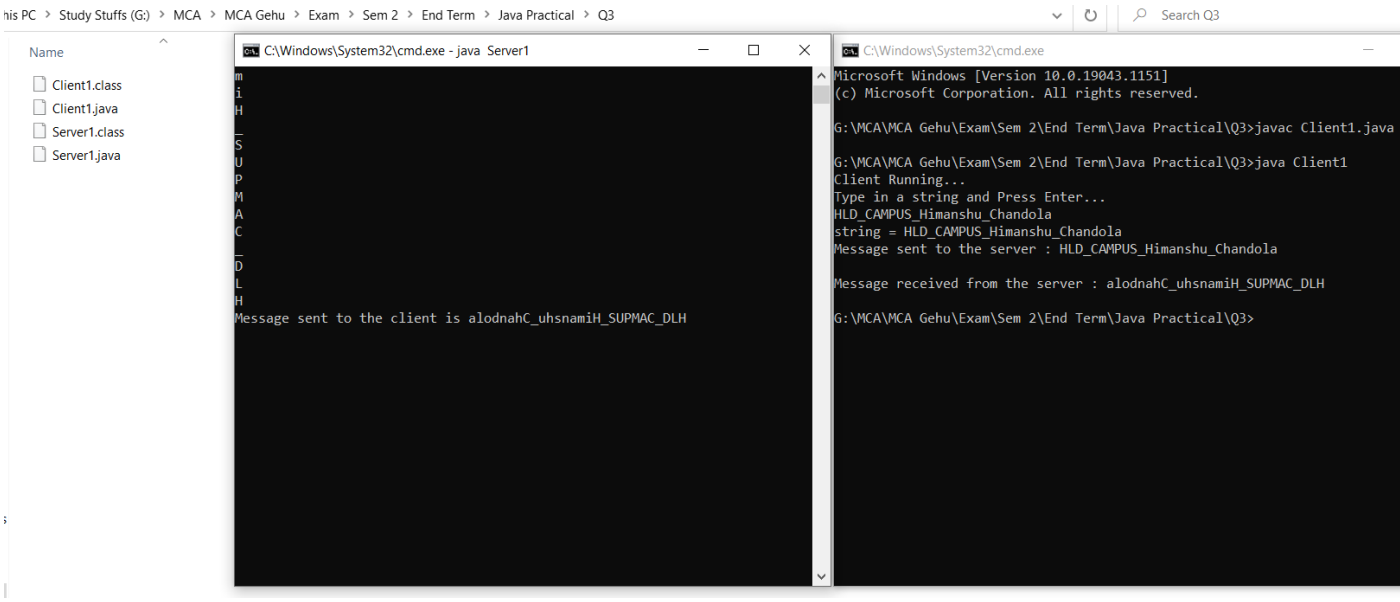
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Client1.class
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Server1.class
Server1.java
C:\Windows\System32\cmd.exe - java Server1
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Message sent to the client is alodnahC_uhsnamiH_SUPMAC_DLH
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G:\MCA\MCA Gehu\Exam\Sem 2\End Term\Java Practical\Q3>javac Client1.java
G:\MCA\MCA Gehu\Exam\Sem 2\End Term\Java Practical\Q3>java Client1
Client Running...
Type in a string and Press Enter...
HLD_CAMPUS_Himanshu_Chandola
string = HLD_CAMPUS_Himanshu_Chandola
Message sent to the server : HLD_CAMPUS_Himanshu_Chandola
Message received from the server : alodnahC_uhsnamiH_SUPMAC_DLH
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