Practical 5 : Design a distributed application using RMI.

Calculator Interface :

```
import java.rmi.Remote;
import java.rmi.RemoteException;
public interface CalcInterface extends Remote{
   public int add(int x, int y) throws RemoteException;
   public int sub(int x, int y) throws RemoteException;
   public int mul(int x, int y) throws RemoteException;
   public int div(int x, int y) throws RemoteException;
}
```

Calculator RMI :

```
import java.rmi.RemoteException;
import java.rmi.server.UnicastRemoteObject;
public class CalcRmi extends UnicastRemoteObject implements CalcInterface{
   public CalcRmi() throws RemoteException{
      int a,b;
   }
   public int add(int a,int b) throws RemoteException{
      return a+b;
   }
   public int sub(int a,int b) throws RemoteException{
      return a-b;
   }
   public int mul(int a,int b) throws RemoteException{
      return a*b;
   }
   public int div(int a,int b) throws RemoteException{
      return a/b;
   }
}
```

Calculator Server :

```
import java.rmi.registry.Registry;
public class CalcServer {
   public static void main(String args[]){
      try{
         Registry r = java.rmi.registry.LocateRegistry.createRegistry(1099);
         r.rebind("Calc", new CalcRmi());
         System.out.println("Server connected");
      }catch(Exception e){
         System.out.println("Server not connected "+e);
      }
   }
}
```

Calculator Client :

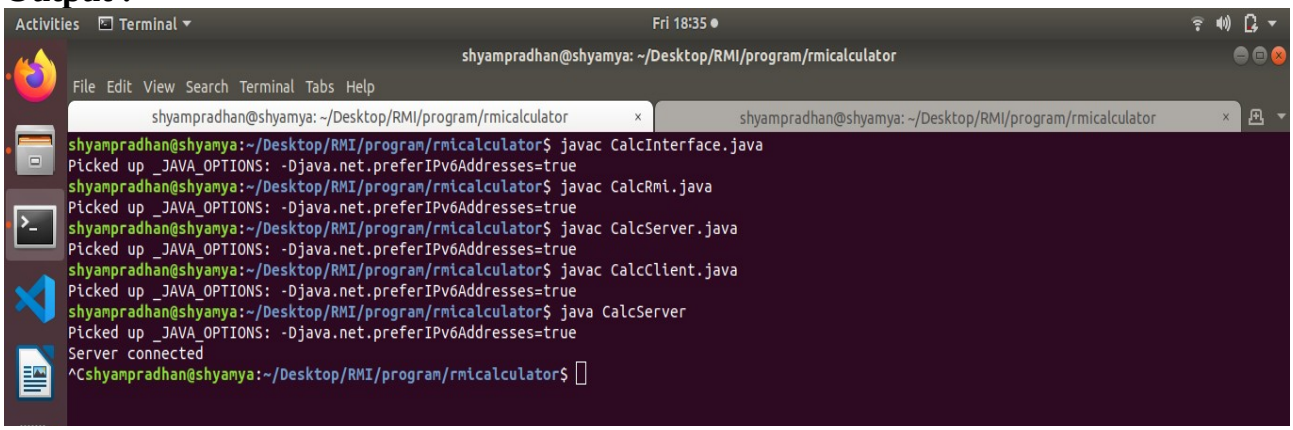
```
import java.rmi.Naming;
import java.util.Scanner;
public class CalcClient {
```

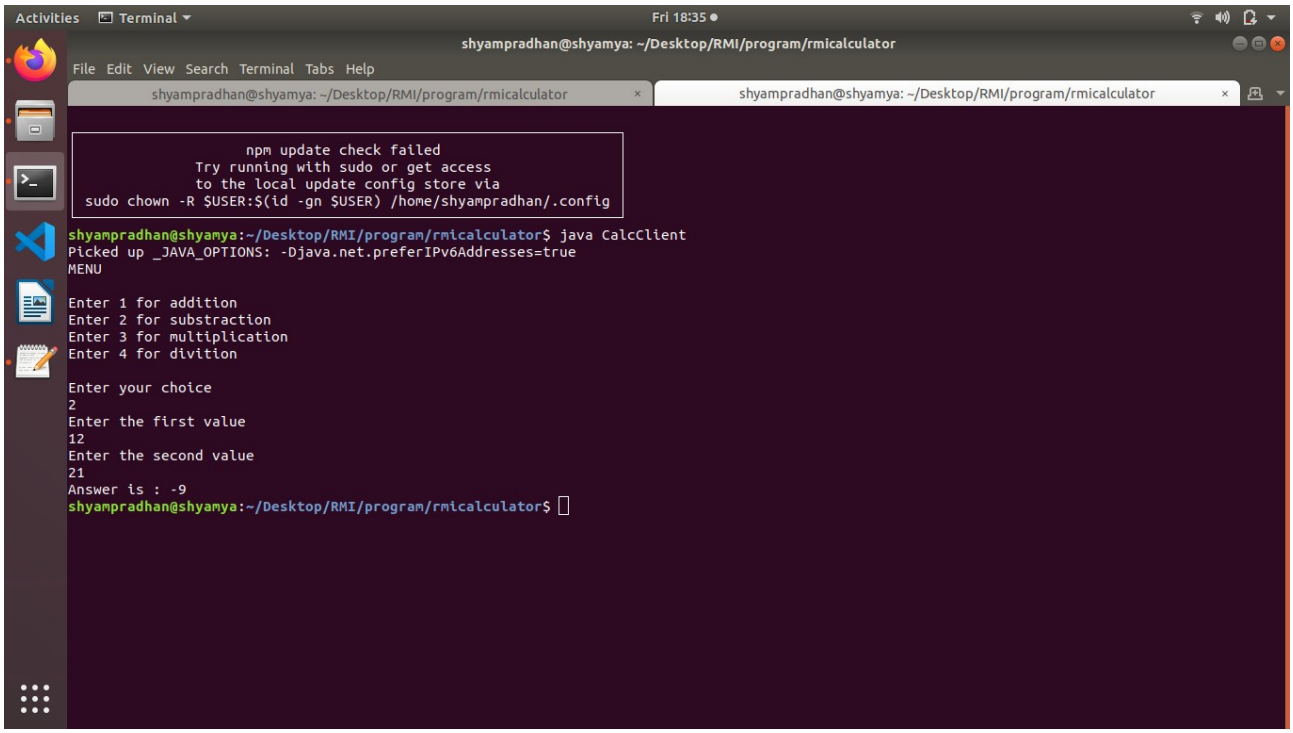
```
public static void main(String args[]){
    System.out.println("MENU");
    System.out.println("");
    System.out.println("Enter 1 for addition");
    System.out.println("Enter 2 for substraction");
    System.out.println("Enter 3 for multiplication");
    System.out.println("Enter 4 for divition");
    System.out.println("");
    System.out.println("Enter your choice");

    Scanner sc = new Scanner(System.in);
    try{
        CalcInterface c = (CalcInterface)Naming.lookup("//localhost/Calc");
        int choice = sc.nextInt();
        int x,y;
        switch(choice){
            case 1:{
                System.out.println("Enter the first value");
                x=sc.nextInt();
                System.out.println("Enter the second value");
                y=sc.nextInt();
                System.out.println("Answer is : "+c.add(x, y));
                break;
            }
            case 2:{
                System.out.println("Enter the first value");
                x=sc.nextInt();
                System.out.println("Enter the second value");
                y=sc.nextInt();
                System.out.println("Answer is : "+c.sub(x, y));
                break;
            }
            case 3:{
                System.out.println("Enter the first value");
                x=sc.nextInt();
                System.out.println("Enter the second value");
                y=sc.nextInt();
                System.out.println("Answer is : "+c.mul(x, y));
                break;
            }
            case 4:{
                System.out.println("Enter the first value");
                x=sc.nextInt();
                System.out.println("Enter the second value");
                y=sc.nextInt();
                System.out.println("Answer is : "+c.div(x, y));
                break;
            }
        }
    }catch(Exception e){
        System.out.println(e);
    }
```

```
    }
}
```

Output :


Activities
Terminal
Fri 18:35
shyampradhan@shyamya: ~/Desktop/RMI/program/rmicalculator
File Edit View Search Terminal Tabs Help
shyampradhan@shyamya: ~/Desktop/RMI/program/rmicalculator
shyampradhan@shyamya: ~/Desktop/RMI/program/rmicalculator
shyampradhan@shyamya:~/Desktop/RMI/program/rmicalculator$ javac CalcInterface.java
Picked up _JAVA_OPTIONS: -Djava.net.preferIPv6Addresses=true
shyampradhan@shyamya:~/Desktop/RMI/program/rmicalculator$ javac CalcRmi.java
Picked up _JAVA_OPTIONS: -Djava.net.preferIPv6Addresses=true
shyampradhan@shyamya:~/Desktop/RMI/program/rmicalculator$ javac CalcServer.java
Picked up _JAVA_OPTIONS: -Djava.net.preferIPv6Addresses=true
shyampradhan@shyamya:~/Desktop/RMI/program/rmicalculator$ javac CalcClient.java
Picked up _JAVA_OPTIONS: -Djava.net.preferIPv6Addresses=true
shyampradhan@shyamya:~/Desktop/RMI/program/rmicalculator$ java CalcServer
Picked up _JAVA_OPTIONS: -Djava.net.preferIPv6Addresses=true
Server connected
^Cshyampradhan@shyamya:~/Desktop/RMI/program/rmicalculator$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shyampradhan@shyamya: ~/Desktop/RMI/program/rmicalculator
shyampradhan@shyamya: ~/Desktop/RMI/program/rmicalculator
npm update check failed
Try running with sudo or get access
to the local update config store via
sudo chown -R $USER:$(id -gn $USER) /home/shyampradhan/.config
shyampradhan@shyamya:~/Desktop/RMI/program/rmicalculator$ java CalcClient
Picked up _JAVA_OPTIONS: -Djava.net.preferIPv6Addresses=true
MENU
Enter 1 for addition
Enter 2 for substraction
Enter 3 for multiplication
Enter 4 for divition
Enter your choice
2
Enter the first value
12
Enter the second value
21
Answer is : -9
shyampradhan@shyamya:~/Desktop/RMI/program/rmicalculator$