Assignment 1:

Implement multi-threaded client/server Process communication using RMI.

ServerInterface.java:

```
import java.rmi.*;
interface ServerInterface extends Remote{
	public double Addition(double num1, double num2)
		throws RemoteException;
	public double Subtraction(double num1, double num2)
		throws RemoteException;
	public double Division(double num1, double num2)
		throws RemoteException;
	public double Multiplication(double num1, double num2)
		throws RemoteException;
}
```

ServerImplementation.java

```
import java.rmi.*;
import java.rmi.server.*;
public class ServerImplementation extends UnicastRemoteObject implements
ServerInterface{
	public ServerImplementation() throws RemoteException{
	}
	public double Addition(double num1, double num2)
	throws RemoteException{
		return num1 + num2;
	}
	public double Subtraction(double num1, double num2)
	throws RemoteException{
		return num1 - num2;
	}
	public double Multiplication(double num1, double num2)
	throws RemoteException{
		return num1 * num2;
	}
	public double Division(double num1, double num2)
	throws RemoteException{
		return num1 / num2;
	}
}
```

Server.java:

```
import java.rmi.*;
public class Server{
```

```
	public static void main(String[] args){
		try{
			ServerImplementation serverImpl = new
			ServerImplementation();
			Naming.rebind("Server",serverImpl);
			System.out.println("Server is Ready.....");
		}
		catch(Exception e){
			System.out.println("Exception occured at Server! "+
			e.getMessage());
		}
	}
}
```

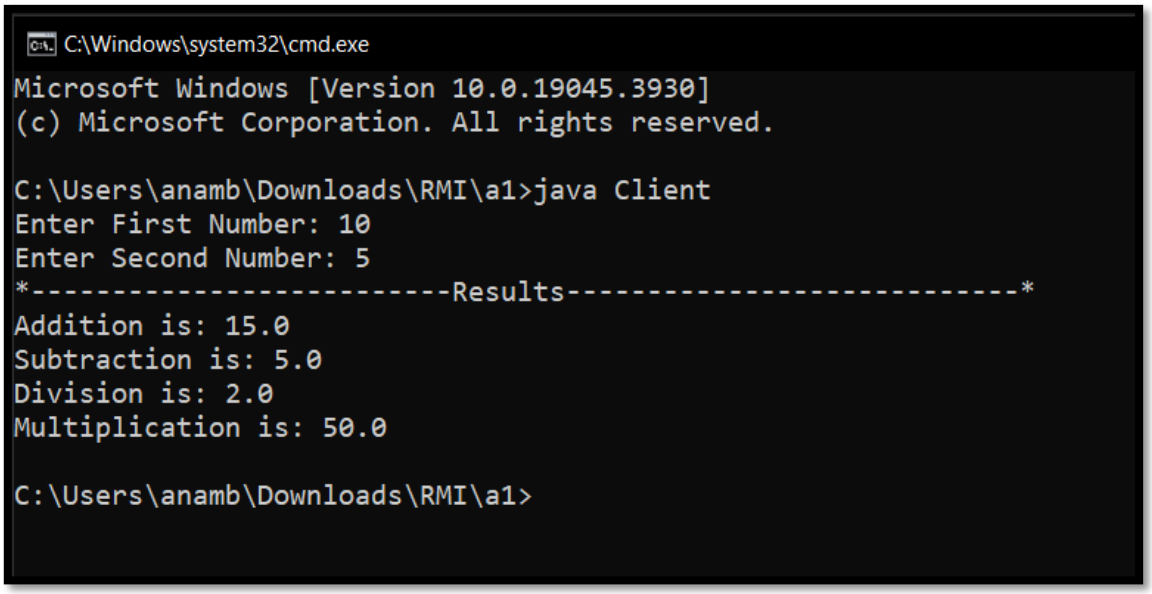
Client.java:

```
import java.rmi.*;
import java.util.Scanner;

public class Client{
	public static void main(String[] args){
		Scanner sc = new Scanner(System.in);
		try{
			String serverUrl = "rmi://localhost/Server";
			ServerInterface serverIntf = (ServerInterface)
			Naming.lookup(serverUrl);

			System.out.print("Enter First Number: ");
			double num1 = sc.nextDouble();

			System.out.print("Enter Second Number: ");
			double num2 = sc.nextDouble();

			System.out.println("*------Results----------*");
			System.out.println("Addition is: " +
			serverIntf.Addition(num1,num2));
			System.out.println("Subtraction is: " +
			serverIntf.Subtraction(num1,num2));
			System.out.println("Division is: " +
			serverIntf.Division(num1,num2));
			System.out.println("Multiplication is: " +
			serverIntf.Multiplication(num1,num2));
		}
		catch(Exception e){
			System.out.println("Exception occured at Client! " +
			e.getMessage());
		}
	}
}
```

Output:


C:\Windows\System32\cmd.exe - rmiregistry
Microsoft Windows [Version 10.0.19045.3930]
(c) Microsoft Corporation. All rights reserved.
C:\Users\anamb\Downloads\RMI\a1>javac *.java
C:\Users\anamb\Downloads\RMI\a1>rmiregistry


C:\Windows\System32\cmd.exe - java Server
Microsoft Windows [Version 10.0.19045.3930]
(c) Microsoft Corporation. All rights reserved.
C:\Users\anamb\Downloads\RMI\a1>java Server
Server is Ready.....


C:\Windows\system32\cmd.exe
Microsoft Windows [Version 10.0.19045.3930]
(c) Microsoft Corporation. All rights reserved.
C:\Users\anamb\Downloads\RMI\a1>java Client
Enter First Number: 10
Enter Second Number: 5
--------------------------Results----------------------------
Addition is: 15.0
Subtraction is: 5.0
Division is: 2.0
Multiplication is: 50.0
C:\Users\anamb\Downloads\RMI\a1>