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DISTRIBUTED COMPUTING (DC)
EXPERIMENT 01

AIM: To implement Client-Server using RMI.

CODE:

AddInterface.Java

```
import java.rmi.*;
public interface AddInterface extends Remote {
    // Declaring the sum method to be used remotely
    public int sum(int n1, int n2) throws RemoteException;
}
```

Add.Java

```
import java.rmi.*;
import java.rmi.server.*;
public class Add extends UnicastRemoteObject implements AddInterface {
    // Default constructor for Add
    public Add() throws RemoteException {
        super();
    }
    // Implementation of the sum method
    @Override
    public int sum(int n1, int n2) throws RemoteException {
        return n1 + n2;
    }
}
```

AddServer.Java

```
import java.rmi.Naming;
public class AddServer {
    public static void main(String[] args) {
        try {
            // Binding the remote object to the name "Add"
            Naming.rebind("Add", new Add());
            System.out.println("Server is connected and waiting for the client...");
        } catch (Exception e) {
            System.out.println("Server could not connect: " + e);
        }
    }
}
```

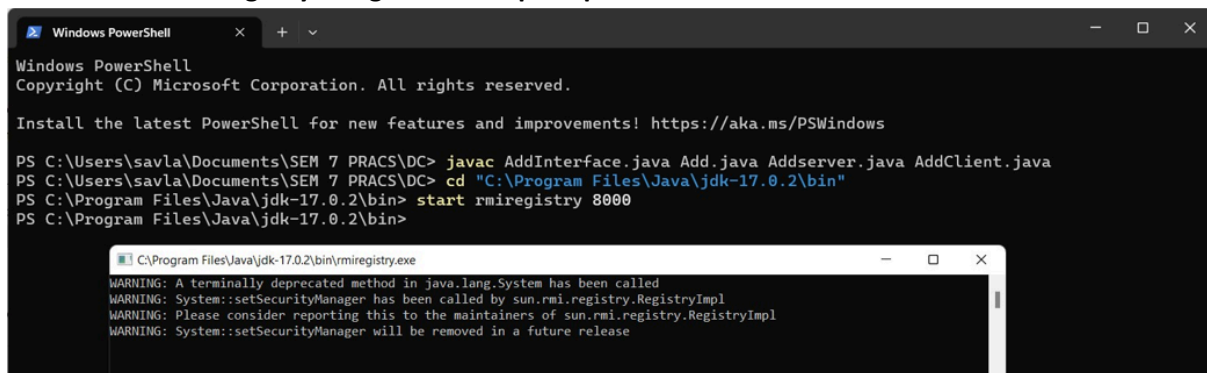
AddClient.java

```
import java.rmi.Naming;

public class AddClient {
    public static void main(String[] args) {
        try {
            // Looking up the remote object using its name
            AddInterface ai = (AddInterface) Naming.lookup("//localhost/Add");
            System.out.println("The sum of two numbers is: " + ai.sum(10, 1));
        } catch (Exception e) {
            System.out.println("Client Exception: " + e);
        }
    }
}
```

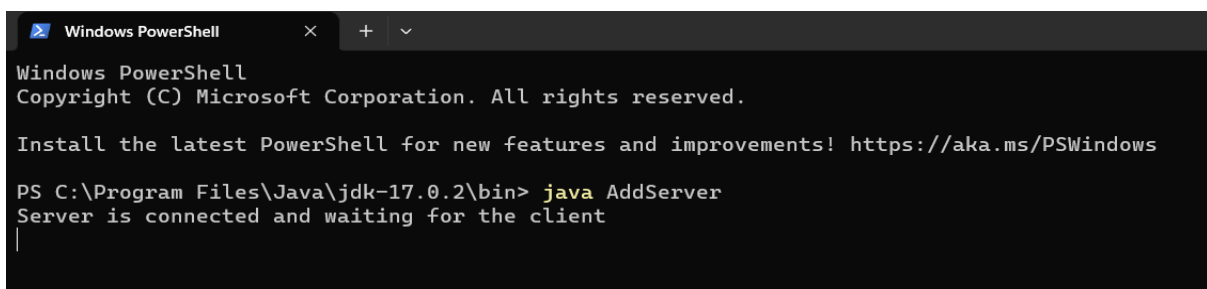
OUTPUT:

- Compile AddInterface.java, Add.java, AddServer.java and AddClient.java
- Start RMI registry using command prompt



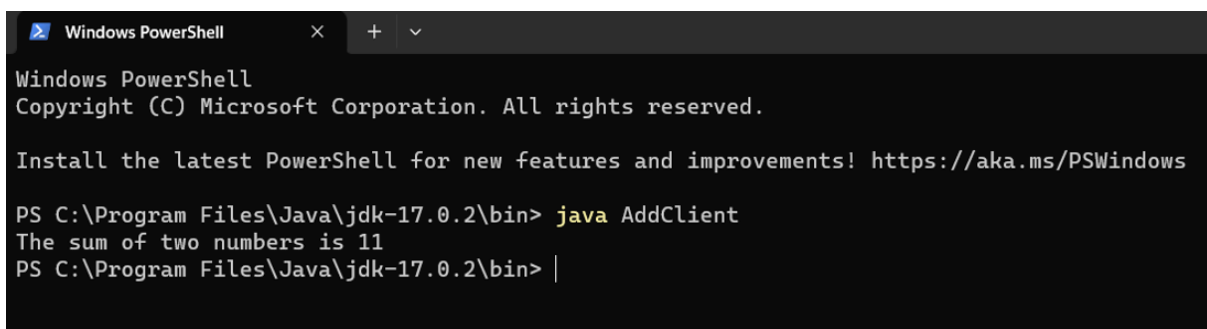
The screenshot shows a Windows PowerShell terminal window. The first part shows the compilation of four Java files: `javac AddInterface.java Add.java Addserver.java AddClient.java`. The second part shows the directory change to `C:\Program Files\Java\jdk-17.0.2\bin` and the execution of `start rmiregistry 8000`. A second, smaller terminal window is overlaid, showing the output of the RMI registry: `WARNING: A terminally deprecated method in java.lang.System has been called`, `WARNING: System::setSecurityManager has been called by sun.rmi.registry.RegistryImpl`, `WARNING: Please consider reporting this to the maintainers of sun.rmi.registry.RegistryImpl`, and `WARNING: System::setSecurityManager will be removed in a future release`.

- Execute AddCServer.java



The screenshot shows a Windows PowerShell terminal window. The first part shows the directory change to `C:\Program Files\Java\jdk-17.0.2\bin` and the execution of `java AddServer`. The output shows `Server is connected and waiting for the client`.

- Execute AddClient.java



The screenshot shows a Windows PowerShell terminal window. The first part shows the directory change to `C:\Program Files\Java\jdk-17.0.2\bin` and the execution of `java AddClient`. The output shows `The sum of two numbers is 11`.