**Assihnment 1 :**

This code demonstrates a simple example of using Java RMI (Remote Method Invocation) to perform string concatenation on a remote server. RMI allows a Java program to invoke methods on objects that reside on a remote machine. Here's an explanation of each file in the code:

1. `Client.java`: This is the client-side code. It prompts the user to enter the server address, connects to the server using RMI, and then requests the user to enter two strings. It calls the `concat` method on the remote server object (of type `ServerInterface`) to concatenate the two strings and displays the result.

2. `Servant.java`: This file implements the `ServerInterface` interface and extends `UnicastRemoteObject`, which provides functionality for remote object communication. The `concat` method in this class takes two strings as parameters and concatenates them. It throws a `RemoteException` because remote method calls can potentially result in communication errors.

3. `Server.java`: This is the server-side code. It creates an instance of the `Servant` class and binds it to a name (in this case, "Server") using the `Naming.rebind` method. This makes the server object available for remote invocation.

4. `ServerInterface.java`: This interface extends `Remote`, indicating that its methods can be invoked remotely. It declares a single method `concat`, which takes two strings as parameters and returns the concatenated string. It also throws a `RemoteException` to handle any remote communication errors.

To summarize the flow of execution:

1. The server is started by running the `Server` class.

2. The client is run by executing the `Client` class. It prompts for the server address and establishes a connection to the server using RMI.

3. The client prompts for two strings, and after receiving the inputs, it invokes the `concat` method on the remote server object to perform the string concatenation.

4. The server receives the method invocation and executes the `concat` method, returning the concatenated result.

5. The client displays the concatenated string.

Note: In order for this code to work, you need to have the RMI registry running on the server machine.

RMI :

RMI stands for Remote Method Invocation, which is a Java API used for implementing distributed applications. It allows Java objects to invoke methods on remote objects running on different Java Virtual Machines (JVMs), enabling communication between distributed components of an application.

RMI uses a client-server architecture, where the client initiates a method call on a remote object, and the server (remote object) executes the method and returns the result to the client. RMI handles the communication between the client and server transparently, making it appear as if the remote method call is a local method invocation.