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classmate
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Assignment 3

Aim : CORBA using Java ~~STI~~ IDL

Problem statement : To develop any distributed application with CORBA program using java IDL

Objectives : To implement any distributed application based on CORBA

Theory :

CORBA

1. It stands for common Object Request Broker Architecture.
2. It is a specification for creating distributed objects & NOT a programming language.
3. It promotes design of applications as a set of co-operating objects clients are isolated from server by interface.
4. CORBA objects run on any platform can be located anywhere on the network and can be written in any language that has idl mapping.
5. CORBA is integral part of JAVA platform. It consist of Object Request Broker, API's for the RMI programming model and API's for IDL programming model. Thus, the java CORBA ORB supports both RMI and IDL programming models.
6. CORBA app is developed using Interface Definition Language (IDL). The IDL is used to define interfaces and the JAVA IDL is used compiler generate skeleton code.
7. IDL is Interface Definition language which define protocol to access objects stub lives on client and pretend to be remote object. Skeleton lives

on servers to be receives requests from stub, talks to the remote object and delivers response to stub.

* Architecture

1. ORB is an object manages in CORBA. It is present on client side as well as server side of the remote object.

2. On the client side, ORB is responsible for
   - Accepting responses for a remote objects
   - Funding implementation of the object
   - Accepting client side reference to the remote object. (converted in a specific language eg java stub object)
   - Routing client methods call through the object reference to the object implementation

3. On the server side, the ORB
   - lets object servers register new objects
   - receives request from client ORB
   - uses objects skeleton interface to invoke objects activation method
   - creates interface for new object and sends it back to client

4. Between the ORB's, Internet Inter ORB Protocal is used for communication

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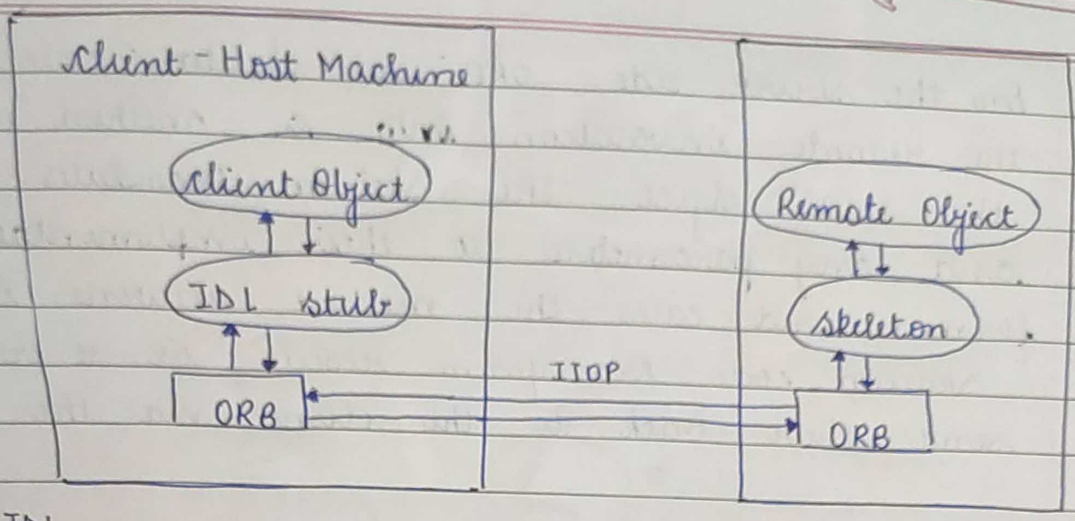
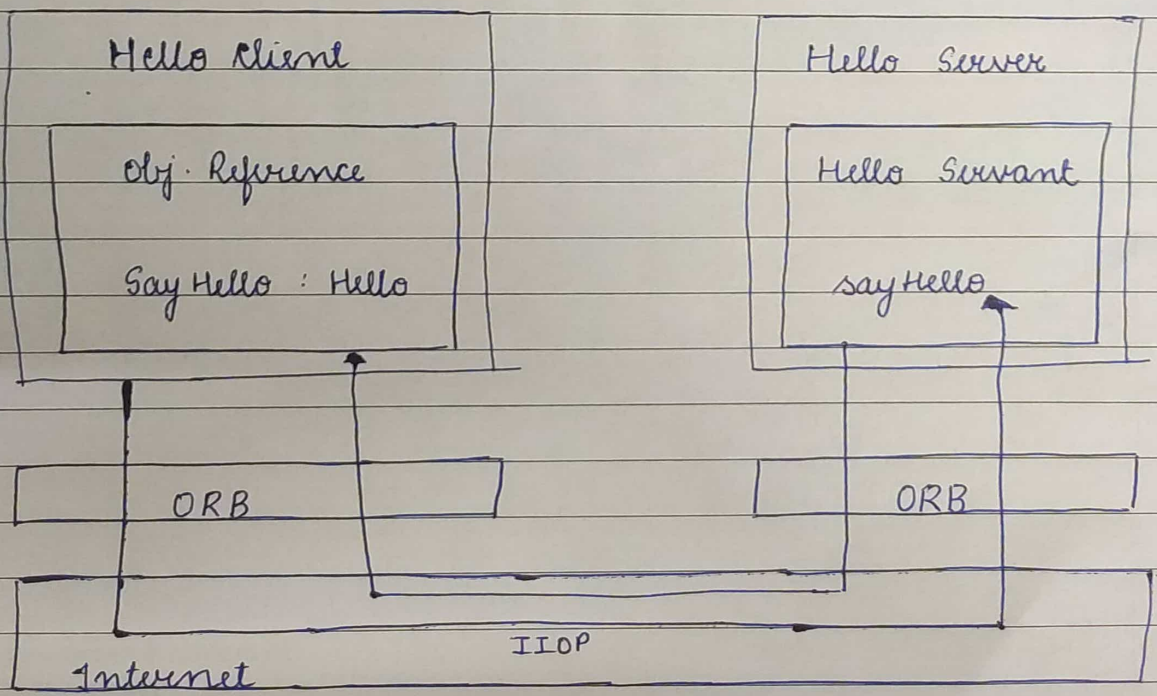


* Java IDL

On the client side, the application includes two references for the remote object. The object reference has a stub method, which is a stand in for method being called remotely.
The stub is actually wired in the ORB so that calling it invokes the ORB's connection capabilities which forwards the invocation to the server.



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On the server side, ORB uses skeleton code to translate the remote invocation into a method call on the local object. The skeleton translates the call and any parameters to their implementation specific format and calls the method returns the skeleton code transform result or errors & send them back to the client via the ORB's.

Conclusion :

Thus, I have studied various CORBA elements like : IDL, IIOP, stub, skeleton, ORB and implemented a distributed application in CORBA.