

Assignment 1: Time and Date Service in CORBA

May 2, 2001

1 Overview

In this assignment, you will implement a remote time and date service using CORBA. Applications use this service to determine the current time and date in a network. In this service, CORBA remote operations are used to request the current date and time from a particular machine.

2 Design and Implementation issues

2.1 CORBA IDL Specification

The CORBA remote time/date server will be designed as a client/server pair using the following IDL specification:

```
// IDL scheme definition for Time
// and Date Service.
interface Time_Date
{
    void bin_time (out long time);
    // Obtain the time in binary format.

    void str_date (out string date);
    // Obtain the date in string format.
};
```

The time is returned as a long, and the date is returned as a string. You will use a CORBA IDL compiler to translate this specification into client side *stubs* and *skeletons*. The client application will use the stubs as a *proxy* to access the time and date service implemented by the server. You must also write the server, which provides the time and date service.

2.2 Client Functionality

For this assignment, the client driver program can be very simple. The client can read a command from the standard input and send it to a server. for example, you could send the following commands to the client.

```
>./client
>time
Time is 7387833
>date
Date is Thu Nov 14 5.49 2003
```

2.3 Server Functionality

On the server side you'll need to define a class that inherits from the skeleton generated by the IDL compiler. The Java class for this should look something like the following:

```
// Implement the Time_Date interface

class Time_date_i extends Time_DatePOA
{
    public void bin_time (long time_date);
    // Obtain the time in binary format.

    public void str_date (string date);
    // Obtain the date in string format.
};
```

To implement the `bin_time` method consider using `java.util.Date` class's `setTimeInMillis` and for the `str_date` method you could use `java.util.Calendar`'s `toString` method.

2.4 Invoking the Client and Server

You may use a file name to record the server's IOR. or use the Naming Service to register the server IOR.

2.5 Setting up JacORB

You can use your favorite ORB. The JacORB is also available on a CD with Heather or can be downloaded from <http://jacorb.inf.fu-berlin.de> You can send mail to us a pradeep,irfan@oomworks.com if you have any problems.