

REMOTE PROCEDURE CALL USING SOAP

Objective

To execute a remote method with SOAP as the underlying protocol.

About SOAP

SOAP is the acronym for *Simple Object Access Protocol*. As its name suggests, it is a simple protocol – its primary feature being its lightweight. It is used for accessing remote objects. The object (or just code) can be in *any language*. This constitutes SOAP's other striking feature – language independency. It is also *Platform independent*.

SOAP was designed by several companies like Microsoft®, IBM® etc. Microsoft's SOAP is associated with .NET. We are using the Apache implementation of SOAP.

SOAP uses HTTP for transportation and XML as the data-encoding format. So the actual SOAP message will be in XML.

The Project

We use TomCat as the webserver for the project. The Server Code, which has the remote method to be executed, resides in the webserver. This method accesses a database and takes a *SQL query* as its parameter. The Client passes the query to the web server. This request is in the form of a SOAP message. Once the request reaches the Server, the SOAP Engine in the Server parses the XML, unwraps the SOAP message and provides the parameter (query) to the Server code. The Server code executes the query, gets the output, creates a SOAP message and sends it to the client. The Client unwraps the message and gets the output.

Demonstration

The project will be presented on 7th May 2002 at Room: G50, Mendel Hall. On the day the following will be presented.

1. *Presentation*: A PowerPoint presentation on SOAP.
2. *On the Web*: An extensive technical paper on *Web Services* will be made available on the Internet.
3. *Demonstration 1*: A SOAP Request is built using java methods and sent to the Server run by *xmethods.com*. This request takes a zip code as its parameter. The *xmethods.com* server response gives the temperature of the place. The various stages in the creation of the SOAP message will be dealt with.
4. *Demonstration 2*: A similar request is sent to our own Server running at LordPeter (153.104.203.41). This piece was explained under the heading, ***The Project***.
5. *Demonstration 3*: Since the java methods do all the wrapping and unwrapping, we cannot see the actual SOAP messages. In this demonstration, no such methods on SOAP will be employed so that the actual SOAP messages in XML can be seen.