



SOAP (Simple object access protocol)

It is xml based messaging protocol for exchanging information among computers. SOAP is an application of XML specification.

SOAP is basically an XML way of defining what information is sent and how.

A SOAP message is ordinary XML document containing the following elements:

Envelope: Defines the start and end of the message. It is mandatory element.

Header: Contains optional attributes used while processing the message. It is an optional element.

Body: Contains XML data comprising of the message which is being sent. It is mandatory element.

Fault: An optional fault element that provide information about errors that occur while processing the message.



T M G

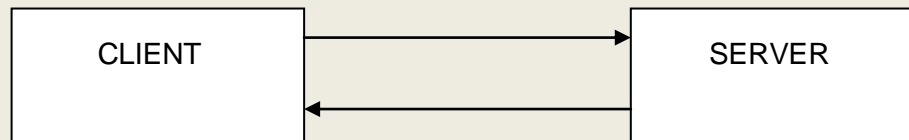
A Sample SOAP message is shown below:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:emp="http://tempur
  <soapenv:Header/>
  <soapenv:Body>
    <emp:GetEmpDetailsRequest>
      <emp:EmpId>125</emp:EmpId>
    </emp:GetEmpDetailsRequest>
  </soapenv:Body>
</soapenv:Envelope>
```



Web Service

Web service is a standardized medium to propagate communication between the client and server applications on the World Wide Web.



A SOAP web service uses WSDL (Web service description language).

WSDL

It is XML standard document used to describe a web service. This description is required so that client applications are able to understand what a web service actually does.



Why WSDL?

It is written in plain XML so that it can be read by any programming language.

General Structure of a WSDL file

It contains following components:

- **Types:** Used to define all the complex datatype, which will be used to define the type of data in the message exchanged between client and web service. For example:

Complex Data type: EmployeeRequestType

Elements of EmployeeRequestType

◆ EmployeeName type of string

◆ EmployeeID Type of Integer

- **Messages:** This tag is used to define all the message which is exchanged between client and server. These messages explain the input and output operations which can be performed by the web service.



- **PortType:** tag is used to encapsulate every input and output message into one logical operation.
- **Binding:** Used to bind the operation to a particular PortType. When a client applications calls the relevant port type, it will then be able to access all the operations bound to particular port type.
- **Service:** Tells the client how a webservice can be consumed.It basically can tell the address(URL) of a web service so that client can know where a web service is located.

All the above tags are enclosed in an element called <definitions>, which is basically a root element responsible for defining name of web service and declares multiple name spaces.