Assignment NO: 7 DS

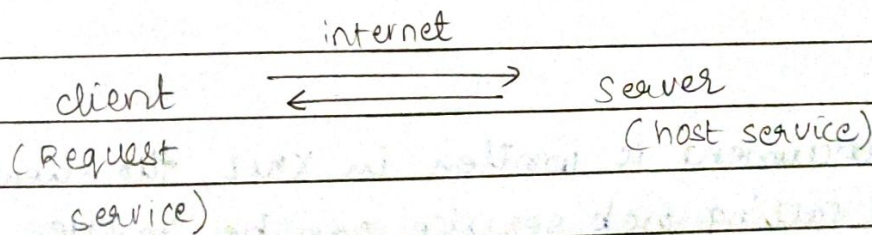Aim : Build a web service and a Distributed application to consume it.

Software used : Java, SOAP, Restful API

Theory :
web service is standardized medium to propagate communication between the client & server application on www. A web service is software module that is designed to perform a certain set of tasks.

Working of web service

internet

client ⇄ Server
(Request (host service)
service)

• The client would invoke series of web services calls via requests to a server which would host actual web service.
• These requests are made through what is known as RPC.
• Eg: Amazon web services.

The main component of web service is data which is transferred between the client and server, and that is XML. XML is counterpart to HTML and easy to understand intermediate language that is understood by many programming languages.

So when applications talk, they talk in HTML, XML. This provides a common platform for application developed in various prog. lang.

Web services use something known as SOAP (Simple Object Access Protocol), for sending the XML data between applications. The data is sent from normal HTTP. The data which is sent from web service to application is called SOAP message.

Since the document is written in XML, the client application calling web service can be written in any programming language.

→ Needs of web service:

• develop web based application
• support heterogenous application.
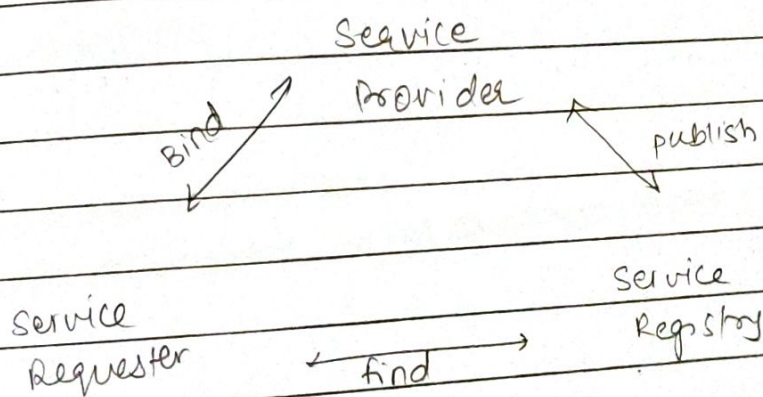• allows diff programs to co-ordinate with each other.

Type of web service
1) SOAP web serviced
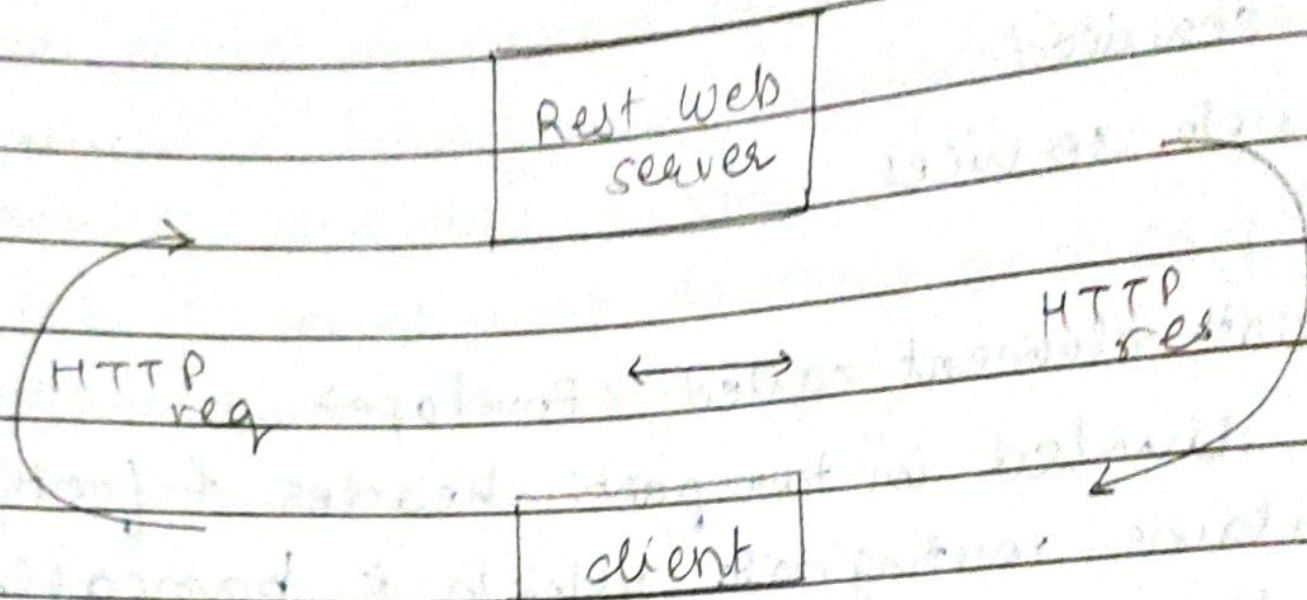2) RESTFul web services

1) SOAP has root element called <Envelope>.
Envelope is divided in two parts header & footer.
Header contains routing data which is basically
the information which tells xml doc to go to client
Body has actual message.

Architecture:

Service
Provider

Bind

publish

Service
Requester

find

Service
Registry

2) RESTfull web service: stateless client server
architecture where web services are resources
and can be identified by their URL's.
REST client applications can use HTTP Get/post
methods to invoke Restful web services.

Eg: Facebook, twitter, google

Conclusion: In this way by SOAP / restful API any distributed application consumes web services.