SOAP SIMPLE OBJECT ACESS PROTOCOL

- Messaging protocol for exchanging structured information.
- Uses XML instruction set for message format and communicates over HTTP, SMTP etc.
- SOAP consists of three parts
  - Message format
  - Encoding rules
  - Representation of procedure call & response

An application sends 'SOAP' request to a server. The server returns 'SOAP' response with resulting data.

SOAP Nodes Physical | Virtual machines which transmit | forword | process SOAP messages.

SOAP binding (protocol) SOAP needs to work together with other protocol (such as TCP) to transfer messages.

SOAP features

- Extensibility (supports extension) eg. security
- Neutrality (overate over any protocol like HTTP | SMTP | TCP | UDP)
- Independence (Allows any programming model)

SOAP Nodes

- Sender ——— initial sender
- Receiver ——— Ultimate receiver
- Message path
- Intermediary

Advantage

- Supports existing transport | application layer protocol
- Supports existing firewalls | proxies ——— doen't require to modify communication infrastructure
- Platform independent

Disadvantage

- Interactions among the clients are not allowed.
- Slows down performance

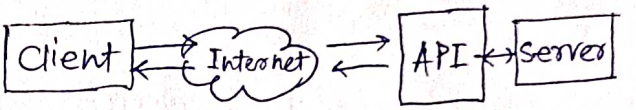
REST REPRESENTATIONAL STATE TRANSFER

REST + API = RESTful API

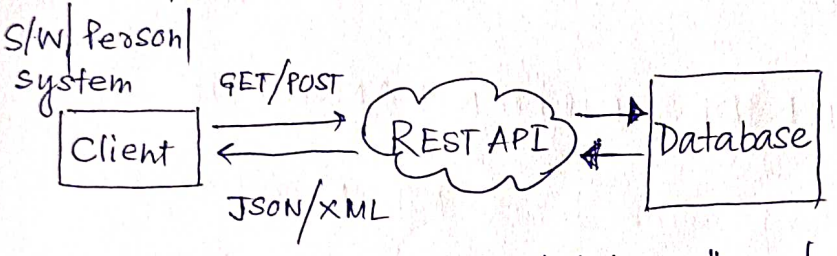
- A software architecture style
- Decouples clients & server as much as possible (Separates) —— i.e loose design of client & server
- Simplifying by uniform interface
- REST API uses HTTP request

API is a code that helps two different softwares to communicate without knowing how they are implemented

Example:



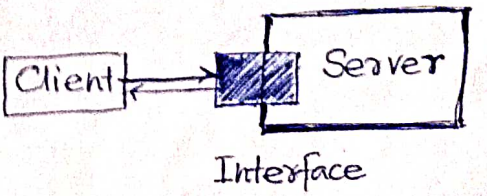
eg. Youtube API
Facebook API



Client sends data to database through REST API
Server returns response

Features

- Uniform interface
- Client Server separation
- Stateless (Server does not have to keep track of user who uses API)
- Layered approach (Lots of intermediate layers between client & server)
- Abstraction
- Cacheable (Making data cache helps to avoid repeatative request)



Functionality of webservice

WSDL WEB SERVICE DESCRIPTION LANGUAGE

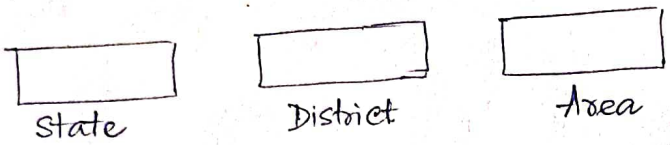
A standard specification for XML based service

WSDL allows service provider to specify

- Name of the web service
- Protocol
- Encoding style
- Operations | Parameters | Data types |

Document of service description

Dependent combo box



State {A, B, C}

District {{A1, A2, A3}, {B1, B2}, {C1, C2, C3, C4}}

Area For State A, District A1

{A11, A12, A13 ...}

Principle ⟶ When A is selected only Districts of A will appear, and when (For example) District A1 is selected, only Districts of A1 appears. Same is true for other states.

HTTP

Simple Object Acess Protocol (SOAP)

Web Services

REST

- WSDL based interface