**API:-**

It is an interface that define interactions between multiple applications.

APIs are customizable according to need make it efficient to use.

APIs enable modular programming, allowing users to use the interface independently of the implementation.

**Use**

Web Application

Operating System

**Step to Modelling API**

1. Identify the participants, or actors, that will interact
2. Identify Activities which need to be achieve
3. Create small step from activity
4. Create list of API method from the step
5. Validate API by using scenarios to test

**Type of API**

GET

POST  
PUT

**REST**

**REST** stands for Representational State Transfer.

REST is an architectural style, or design pattern for APIs.

Constraints for REST:-

1. Uniform interface
2. Client-server separation
3. Stateless
4. Layered system
5. Cacheable
6. Code on demand

SOAP

It is stand for Simple Objects Access Protocol

It is mainly used to expose web services and transmit data over HTTP/HTTPS.

It is a language as well as platform independent.

SOAP only works with xml data format.

SOAP message structure consist of

Envelope

Header

Body

Fault (optional)

SOAP is ACID compliance which make it more stable and secure to while exchanging sensitive information

Disadvantage

Resource-consuming

Hard learning curve

Lacks Flexibility