

# Module 2 note

(SOAP and WSDL)

Introduction.

① Web service basics (3 paragraphs, just introduce)

② Use an example to introduce SOAP and WSDL.

WSDL: a standard for describing web services

SOAP: a standard for accessing web services

用自己的话: WSDL: 读 WSDL 文件得知服务信息, (进而加以选择)

SOAP: 使用 SOAP 调用 服务的某函数  
(call/invoke)



Service Message Exchange SOAP

client use SOAP to actually invoke the functions listed in the WSDL document.

① SOAP definition.

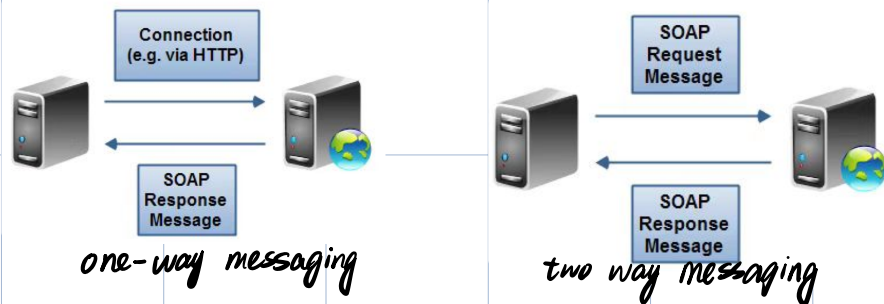
② SOAP - evolved as a successor of XML-RPC.

③ SOAP uses

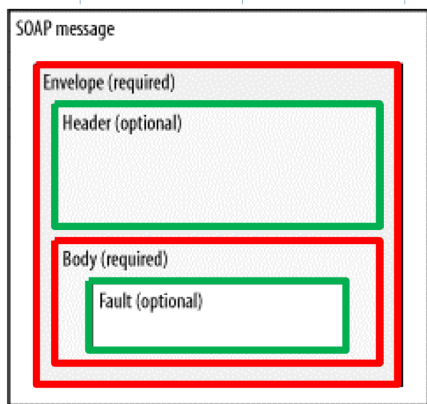
{ B2B Business to Business  
EAI Enterprise application integration

## ④ SOAP specification 规范.

three parts { SOAP envelope specification  
Data encoding rules  
RPC conventions (★ one-way, two way!)



## ⑤ Data encapsulation concepts (SOAP 信息结构)



必须的: Envelope, Body

可选的: Header, Fault

## ⑥ An example to learn about SOAP request and response

XML namespaces ...

### ① SOAP characteristics

Extensibility. Neutrality. Independence.

⑧ SOAP benefits (1/2 PPT)

⑨ Disadvantages – not simple!

alternatives: REST, JSON

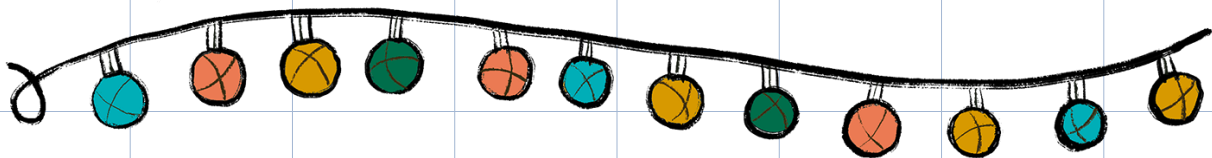
⑩ SOAP vs REST → a set of architectural principles

↓  
an official protocol

REST APIs – lightweight

↓  
use for complex, secure...

⑪ JSON web services 1/2.



Service Description WSDL

client reads WSDL to understand what a web service can do

① WSDL definition (What is WSDL)

② WSDL Benefits

③ WSDL specification major elements

definitions, types, message, portType, binding, service.

example: then real example – Amazon SimpleDB

## ② Interoperability 互用性

(definition)

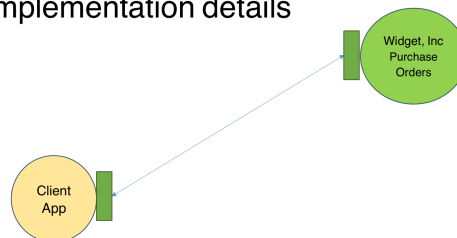
- 1) interface - web services Interoperability
- 2) WSDL file is what binds everything together
- 3) Web Services interoperability (benefits)

③ 1) Does a Web Service need to be developed from scratch?

- Any existing application can become a Web Service as long as it is wrapped by a Web Services interface (WSDL) and then published in a registry.

2) What if we do want to develop the web service from scratch?

- Start by modelling its potential interfaces before moving to implementation details



## ③ Application Design

web services toolkits

## ⑦ Reusability

- 1) Services reusability
- 2) WSDL and reusability

## ⑧ WSDL Authoring Style Recommendation

enhance reusability and maintainability .

- 1) 3 separate parts 

{	Data type definitions
	Abstract definitions
	specific service binding

- 2) import!