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703128 PS/2 Web Services

Web Services

Tuesday, 2016-01-12

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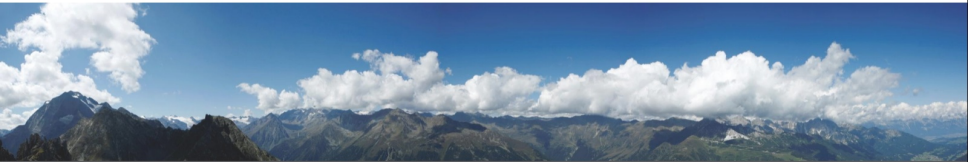
No.	Date	Bi-Weekly Exercise	Project	
			Presentation	Report
1	Tue, 2015-10-13			
2	Tue, 2015-10-20	✓		
3	Tue, 2015-10-27		✓	
4	Tue, 2015-11-03	✓		
5	Tue, 2015-11-10		✓	
6	Tue, 2015-11-17	✓		
7	Tue, 2015-11-24		✓	
8	Tue, 2015-12-01	✓		
9	Tue, 2015-12-15		✓	✓
10	**Tue, 2016-01-12**	✓		
11	Tue, 2016-01-19		✓	
12	Tue, 2016-01-26	✓		
13	Tue, 2016-02-02		✓	✓

- Web Services overview
  - SOAP
  - WSDL
  - UDDI

- Exercise – Web Tools Platform (WTP) Eclipse
 - Invocation of WSDL web services
  - Design of WSDL files

Web Services

- Web services are yet another approach to distributed systems
  - Using open protocols
  - Self-contained and self-describing
  - Can be discovered using UDDI

- XML is the basis for Web services

How Does it Work?

- The basic Web services platform is XML + HTTP

- XML provides a language which can be used between different platforms and programming languages and still express complex messages and functions

- The HTTP protocol is the most used Internet protocol

- Web services platform elements:
    - (i) SOAP (Simple Object Access Protocol)
    - (ii) WSDL (Web Services Description Language)
    - (iii) UDDI (Universal Description, Discovery and Integration)

- SOAP is an XML-based protocol to let applications exchange information

SOAP−ENV: Envelope

SOAP−ENV: Header

SOAP−ENV: Body
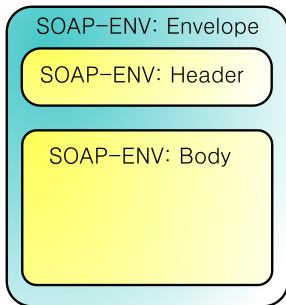
```
POST /InStock HTTP/1.1
Host: www.example.org
Content-Type: application/soap+xml; charset=utf-8
Content-Length: nnn

<?xml version="1.0"?>
<soap:Envelope
   xmlns:soap="http://www.w3.org/2001/12/soap-envelope"
   soap:encodingStyle="http://www.w3.org/2001/12/soap-encoding">

   <soap:Body xmlns:m="http://www.example.org/stock">
      <m:GetStockPrice>
         <m:StockName>IBM</m:StockName>
      </m:GetStockPrice>
   </soap:Body>

</soap:Envelope>
```
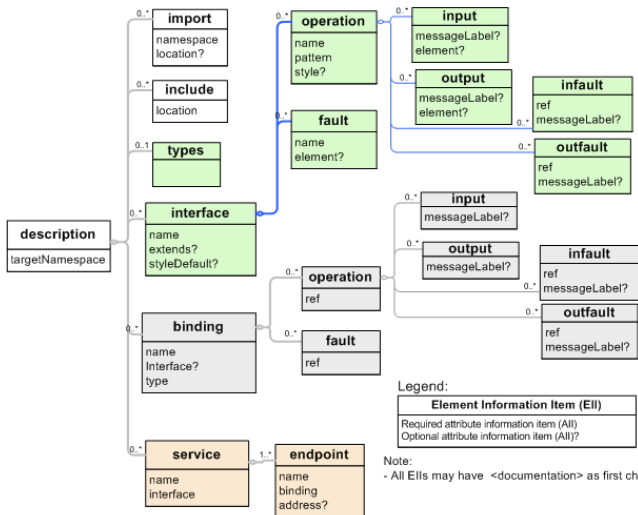
- WSDL is a document written in XML describing a Web service
- It specifies the location of the service and the operations (or methods) the service exposes
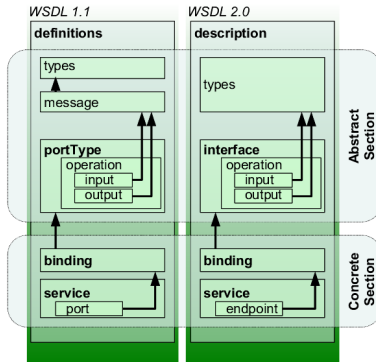

```
The data types used
by the web service


The operations performed
by the web service


The communication protocols used
by the web service
```

What is UDDI?

- UDDI is a platform-independent framework for **describing** services, **discovering** businesses, and **integrating** business services by using the Internet

- UDDI is a directory service where companies can register and search for Web services

- Problems the UDDI specification can help to solve, for example:
  - (i) Making it possible to discover the right business from the millions currently online
  - (ii) Solving customer-driven need to remove barriers to allow for rapid participation in the global Internet economy
  - (iii) Describing services and business processes programmatically in a single, open, and secure environment

Exercises

Assignment:

1. Download the worksheet from the course webpage
2. Complete the exercises in the worksheet
3. Send it to the tutors (`ws1516@sti2.at`) before the next two sessions

Thank You