

BITS, Pilani-Dubai, Campus
Knowledge Village, Dubai
IVth Year FIRST Semester 2004-2005
Degree: B.E. (Hons) Branch: C.S.E

COURSE NO. : EA UC441

COURSE TITLE: Web services and internet based distributed computing

Time : 50 mts

Test1

Date: 16-10-2005

(Weightage = 20%)

Closed book

Max Marks: 32

Answer all the questions

Q1.a) Outline the need for XSLT. (2 Marks)

b) With specific scenarios outline when you prefer client side XSLT processing and when you prefer server side XSLT processing in a client server architecture. (4 M)

Q2. a) A web service is hosted in different web servers to improve the scalability. How will you incorporate the appropriate information in WSDL. ? (3 M)

b) using appropriate example distinguish between abstract and concrete elements in WSDL ? (3 M)

Q3.a) What is the purpose of having XML schema ? (2 M)

b) Outline the differences between XML schema and DTDs ? (3 M)

c) Outline the XML schema for the document given below (3 marks) .

<?xml version="1.0" encoding="UTF-8"?>

<BOOK>

<AUTHOR> Aho, A. V. </AUTHOR>

<TITLE> Compilers: Principles, Techniques, and Tools </TITLE>

<PUBLISHER> Addison-Wesley </PUBLISHER>

<YEAR> 1985 </YEAR>

</BOOK>

Q4.a) Outline the difference in invoking a web service through http and SOAP protocol. (3M)

b) How the WSDL gets modified when you make use of http protocol for invoking a web service ? (3M)

Q5.a) What are the two types of web services ? (2)

b) Outline the usage scenarios of the above two types of web services ? (4 M)

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IV th Year FIRST Semester 2005-2006

Degree:B.E.(HONS) Branch:C.S.E

COURSE NO. : EA UC441

**COURSE TITLE : Web services and Internet based
distributed computing**

Time :45 mts

Date : 21-11-2005

Marks: 15 Quiz1

**Answer all the questions . All questions carry equal marks
closed book. Answers should be brief and upto the point**

Quiz1 on web services

Q1.What is the difference between category bag and identifier bag ?

Q2.What is meant by tModel of a web service ?

Q3.List out broad steps involved in publishing a web service under a business.

Q4.Specify two uses of findqualifier element during search of UDDI

Q5.what is meant by solicit response message in wsdl ?

Q6. What is meant by notification message in WSDL?

Q7. List out the most important information provided by the service element.

Q8. How can you delete a business from the UDDI ?

Q9. How can you delete a service from UDDI ?

Q10. Outline different means of searching a web service from uddi ?

Q11. Draw the interaction model of web service provider, UDDI and service consumer ?

Q12. What are meant by abstract elements in WSDL ?

Q13. What are meant by concrete elements in wsdl ?

Q14. What is the information provided under binding details of wsdl ?

Q15. What sort of information is stored in white pages, yellow pages and green pages of UDDI ?

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Test 2: Open book Time: 50 mts Date : 5-12-2005 Total marks: 27

Answer all the questions

Q1. I want to save a business whose details are given below:

Name : IBM

Description: Software solutions provider

For order information in the company, you have to contact a person called Andrew by name who is a sales manager responsible for providing sales information. His e-mail ID is Andrew@ibm.com. . Further the business categorized itself as "Software

Products Company" with key value=55555 under NAICS category. Further the business has been allocated a DUNS number whose key value is 00-222-1111.

Using appropriate XML syntax outline the necessary the soap request message for the above business to get published in the UDDI.

After publishing the business into the UDDI a new person called Bilal Siddique joins the organisation as a CTO for technical information. He handles the technical information of the organization. He is having a phone in branch office and the phone number is 2.312.444.0002. Now information about Bilal also has to be updated in the UDDI. Using appropriate XML syntax outline the necessary the soap request message for the same. Make any valid assumptions if required. (8)

Q2. In question 1 under the above mentioned business I want to publish a web service whose name is "stock quote service". The description of the service is "Can be used for finding the latest stock quote". <http://www.ibm.com/services/stockquote> is the URL for accessing the web service. The web service is accessed using http based protocol. Using appropriate XML syntax outline the necessary the soap request message for the same. Make any valid assumptions if required. (5)

Q3. From the UDDI I want to search a business whose name starts with I. I am interested only the latest 3 businesses which got registered under the business names which have 'I' as the first letter. Using appropriate XML syntax outline the necessary soap request message for the same. Make any valid assumptions if required. (3)

Q4. a) Suppose I want to search the UDDI for the services registered under the business as mentioned in question 1 and question 2. Using appropriate XML syntax outline the necessary soap request message for implementing the search operation using any three different techniques. Make any valid assumptions if required. (3)

b) Using appropriate XML syntax outline how the above business can be deleted from the UDDI. (2)

Q5. Using appropriate reasoning classify the following application interactions under any one of three standard classifications you are aware of. In case any interaction comes under B to B then try to give sample interactions between any two entities for carrying out the business using ebXML (briefly). (6 marks)

a) A client is invoking a stock quote web service and get appropriate response.

b) An organization has deployed customized applications to manage their internal sales, purchase, payroll, finance, and HR departments. Such applications running within the enterprise need to be integrated with each other for consolidated decision making, accurate system information, and better performance and monitoring.

c) Consider a tour operator who designs and offers customizable vacation tours. The tours will contain all the information related to destinations, hotels to stay at, flights to take, etc. As tours are customizable, customers have some level of flexibility in choosing the details of a trip; for example, a vacation tour may offer a choice between different hotels or car rental companies. The tour operator takes care of airline booking. He contacts an independent hotel enterprise for room booking and an independent car enterprise for car rental service.

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IV th Year FIRST Semester 2005-2006

Degree:B.E.(HONS) Branch:C.S.E

COURSE NO. : EA UC441

COURSE TITLE : Web services and Internet based distributed computing

Time :3 hrs

Date : 29-12-2005

Marks: 70 Comprehensive Examination

Closed Book

Part-A (10*2=20 marks)

Answer any Ten questions

- Q1. Outline very briefly what is meant by XML digital signature
Q2. What is the need for web services flow language?
Q3. With examples outline briefly the difference between ebXML and EAI.
Q4. With a block diagram outline briefly the J2EE support for web services.
Q5. What are meant by qualifiers and outline the need for them in searching the UDDI
Q6. Outline the protocols for intranet based distributed computing and their limitations for internet based distributed computing.
Q7. Outline the need for factory object in case of SAX parser.
Q8. What is the difference between valid , invalid and well formed XML documents ?
Q9. Give the XML sequence for searching a business from the UDDI.
Q10. Outline briefly any four types of node manipulation possible in DOM parser.

- Our goal is to turn *this*:

```
<?xml version="1.0"?>
```

```
<library>
```

```
<book>
```

```
<title>XML</title>
```

```
<author>Gregory Brill</author>
```

```
</book>
```

```
<book>
```

```
<title>Java and XML</title>
```

```
<author>Brett McLaughlin</author>
```

```
</book>
```

```
</library>
```

- Into HTML that displays something like *this*.

Book Titles:

- XML
- Java and XML

Book Authors:

- Gregory Brill
- Brett McLaughlin

Q11.

With respect to the above diagram derive the book.xsl required to display the XML document in the HTML browser as given in the right hand side?
Q12. Outline very briefly the difference in usage scenario of XML-RPC and XML messaging based web services.

Part-B

*Answer all the questions (5*10=50 marks)*

- Q1. a) With a simple example outline the need for XML Namespaces. (3)
b) Outline the relative merits and demerits of parsing XML document using SAX and DOM parsers. (4)
c) Outline how various callback functions are invoked by the SAX parser when it parses the following document (3)

```
<?xml version="1.0" encoding="UTF-8"?>
<BOOK>
<AUTHOR> Aho, A. V. </AUTHOR>
<TITLE> Compilers: Principles, Techniques, and Tools </TITLE>
<PUBLISHER> Addison-Wesley </PUBLISHER>
<YEAR> 1985 </YEAR>
</BOOK>
```

- Q2. a) Outline how using single-sign on a user can log into different web sites and access information or invoke different web services across multiple servers? (3)
b) Outline briefly the different types of assertions possible using SAML. (3)
c) A user called "Joe user" authenticates to the site "Company.com". Now he wants to invoke an application called reserve_hotel.cgi from Travel.com to do the reservation without any additional authentication. Outline how the above can be made possible using SAML assuming that both the companies have formed a federation of trusted industries. (4)

- Q3. a) Assume that an application wants to do secured communication through public key cryptography. It has the capabilities of generating a Private/public key pair. It wants to register its keys with any of the PKI service providers with minimum overhead. Even if the PKI provider goes for some upgradation in future that should not act as any hindrance for further communication with the application. Outline briefly a mechanism to achieve the same. (3)
b) Outline using relevant examples briefly the usages of any three methods supported by XML key registration service specifications (4)
c) Outline briefly the usage of different methods supported by XML Key Information Service Specification (XKISS) (3)

- Q4. a) Outline with the help of an example the so called occasionally connected application running in a mobile handset. (2)

b) Justify whether we can use distributed protocol like DCOM for performing distributed computing of application running in a mobile device with another application running on a desktop system. (2)

c) Using appropriate block diagram outline the architecture of an occasionally connected application running in a mobile handset. (3)

d) Outline the need for hosting web services or web service client in mobile devices and the issues involved in the same. Specify any one technique to resolve the above issue. (3)

Q5. a) Outline with the help of diagrams any three types of web services implementation architectures. (3)

b) Outline the architecture of Microsoft dotnet for hosting web services. (3)

c) With the help of an appropriate example outline the need for web service transactions. (4)