

SVKM's NMIMS
Mukesh Patel School of Technology Management & Engineering

Class Test 1

Programme : BTech IT Trim VIII
Marks : 15

Course : Service Oriented Architecture
Date : 15th Sep 2014 (Monday)

SET3

Note : Answer ANY TWO

- | | |
|---|-----|
| 1. Define the benefits of SOA. Explain the SOA infrastructure through a diagram. | 7 ½ |
| 2. What are the components of Web Service and how do they work together? Explain two types of XML messaging in Web Services. | 7 ½ |
| 3. Specify the importance of SOAP for messaging, fault & attachment tags. Describe the SOAP header & body blocks and map the SOAP structure with the WSDL format. | 7 ½ |

3. SOA defines standards which leads to common data language → XML and common open protocols → TCP/IP, HTTP, SOAP - HTTP, etc. which leads to platform - independence and interoperability, leading to service composition and service orchestration.



SUPERVISOR'S SIGNATURE WITH DATE

Set 3

DATE : 15/9/14

ROLL NO. A059

DIVISION: A

NAME : Chirag Birkha

TRIMESTER/SEMESTER : 7

PROGRAMME : BTech

SPECIALISATION : IT

MODULE(SUBJECT) : Service Oriented Architecture

TOTAL NO. OF SUPPLEMENTARY SHEETS ONLY : —

| QUESTION NOS. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | TOTAL MARKS OBTAINED | MAXIMUM MARKS |
|---|----------|----------|---|---|---|---|---|---|---|----|----|----|----------------------|---------------|
| MARKS TAINED) BE FILLED IN BY (MINER) | 12 04 | 12 05 | 2 | | | | | | | | | | 10 | 15 |

HP

SIGNATURE OF THE EXAM

INSTRUCTIONS TO BE STRICTLY FOLLOWED BY CANDIDATES

This answer-book contains eight pages. Check whether the relevant answer-book provided contains eight pages and whether the pages are properly numbered.

Candidates should occupy the correct seats as per the seating plan displayed and write appropriate details in the space provided for the purpose on the answer book.

Candidates must produce their photo identity card provided by the University for verification to the room supervisor during examination. Candidates will not be permitted to appear for the examination without it.

1] Benefits of SOA

1 Re-usability - Services can be provided once, then composed and orchestrated to achieve a business process. The same service may be called upon by different business processes.

2 The UDDI Registry provides a single access point for service discovery and the description of these services which leads to faster, automated discovery of services.

3 SOA defines standards which leads to common data language \rightarrow XML and common open protocols \rightarrow TCP/IP, HTTP, SOAP-HTTP, etc. which leads to platform interoperability and inter-operability, leading to service composition and service orchestration.

4 SOA can be implemented by any technology due to the nature of standardization into faces.

5 Functional Abstraction and Encapsulation leads to well defined interfaces with coarsely grained logic in the services.

6 SOA tackles problems associated with complexity and security (firewall) by using well known ports and easy to understand protocols and wrappers.

Question
No.

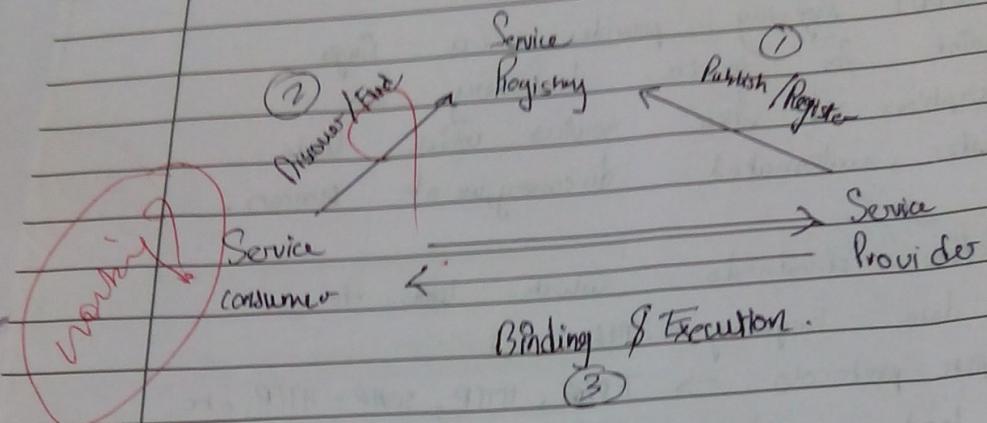
7. SOA, being well implemented via web services allows for greater reuse and a better community for service development.

SOA infrastructure

Messaging
JMS
frame work
paradigm

By
Rege
SOA
at the
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use

Re



Three main actors

- ① Service Provider / Creator - Company which develops and maintains a service
- ② Service Registry - Contains service name, description, end point
- ③ Service Consumer - One who uses the service provided by Service Provider

Steps

- ① SP, creator, publishes the service to SR.
- ② SC queries SR to find a service, get the URL for needed service. (URI = Endpoint)
- ③ SC requests the WSDL, agrees to it and sends a request message, SP executes the request, sends response.

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5
6

mechanics
a letter

3]

Messaging in SOAP

It's largely done via message-passing framework with a simple paradigm of "request-response".

By specifying the structure of Request and Response messages in SOAP-WSDL document, we adhere to the WSDL contract (collection of messages) which enable us to use SOAP.

By only having Request or Reply message types we greatly simplify programming and understanding of SOAP.

All these messages are in XML and transported via well-known ports and protocols. Q3

Fault tag

Is an envelope type which specifies error code, error string and description in case of errors, it's optional.

e.g. <soap:envelope "Fault">

<errorcode> 2028 </errorcode>

<errorstring> Authorization failed </errorstring>

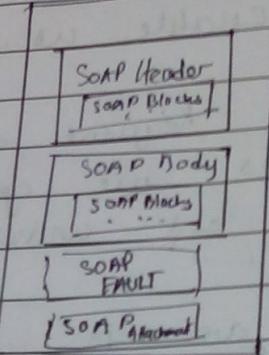
</soap:envelope>

= Question Nos

Attachment tag is used for conveying more information, usually in HTML file or WSDL documents, it usually has a link to the resource.

SOAP \rightarrow Envelope

SOAP Envelope



SOAP Header (optional)

↳ Helps with routing & security, can be extended by ws*

for more features

↳ Meta Information, self-sufficient

due to intelligence

- heavy nature -

SOAP Body (compulsory)

Holds \rightarrow Abstract definitions

\rightarrow Concrete definitions

Abstract Definitions are types, messages, port types.

They define request/reply messages structure, function prototype and data types used in the messages.

Concrete definitions

↳ Operations

↳ Services binding

↳ Service location (URI)

Operations are the end point which services provides

Binding is the technology used for transport

(BD)

* Service tag holds the URIs of all the services provided by the end point.

The WSDL document is usually served at a WSDL URI, i.e., either requested via HTTP or XML-RPC (SOAP is an extended version of the same).

SOAP Request asks for WSDL and SOAP Response usually comes with the attachment of the WSDL document.

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Question
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2A)

Project Management Activities

Management consists of the following activities

- 1] Planning → Plan the initial stages
- 2] Organizing → Organize the resources and manpower
- 3] Staffing → Select appropriate staff for the job
- 4] Decisions → Make project critical decisions.
- 5] Monitoring → Monitor project status and progress
- 6] Controlling → Intervene when necessary to steer the project in the right direction.

SPM mainly consists of

- Feasibility Study
- Planning
- Execution

Feasibility Study is in simple terms
is the project worth doing.

Planning involves outlining entire project
and detailed plans for initial stage.

For later stages, we plan more
in detail as information becomes available.

Execution is the plan being worked
upon.