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**Homework 2**

MGMT 540 90 2020/Summer

Architecture and Integration of Modern Enterprises

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**Problem 1:**

Middleware is a computer software used to connect remotely located database which helps to interact with each other on multiple machines. It can be described as Software glue.

In the text/slides it is given as set of common business unaware services and it lies above the network and below the business aware software whereas the definition states that it is a software to connect applications and user interact with each other on multiple machines.

Antivirus software, Router, Payment system, HTTP \*, cookies, proxyservers \*, Ajax, email, operating system, Java, inventory management system, RPC \*,C#, CRM system, SOAP \*, Web Services \*

* Distributed Data, Remote Data, Centralized
* Centralized
* Distributed Data
* Centralized
* Remote Presentation
* Remote Presentation
* I would use Distributed Programs, since this works concurrently and therefore provides communication to explicit message passing
* Distributed
* Thick Client, since we need lot of locals for each branch of Walmart
* Thin Client
* Centralized
* Remote presentation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | conf a | conf b | conf c | Conf d(business logic split in middle ) | Conf e (the data is duplicated) |
| 1.Middleware used (e.g., RPC, RSQL) | No Middleware | RPC | SQL/RSQL | RPC | RPC |
| 2. Security (Low, Medium, High) | High | Low | High | Medium | Low |
| 3. User Performance at Computer1 (Low, Medium, High) | Medium | Medium | Low | Medium | High |
| 4. Network traffic generated between computer 1 and computer2 | Medium | Low | Medium | Low | High |

**Problem 2:**



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

<HealthCareServices>

<MerchandisePlanning>

<ItemPlanning> NameoftheItem = “” </ItemPlanning>

<CategoryManagement> Category = “” </CategoryManagement>

<PriceOptimizations> Price = “” </PriceOptimizations>

<PromotionPlanning> Nameofthepromotion = “” </PromotionPlanning>

</MerchandisePlanning>

<StoreOperations>

<POS> PointofSale = “” </POS>

<InventoryManagement> InventoryCount = “” </InventoryManagement>

<WorkforceManagement> NameofWorkforce = “” </WorkforceManagement>

<LearningManagement> Learning = “” </LearningManagement>

</StoreOperations>

<SupplychainExecution>

<Sourcing> NameoftheSource = “” </Sourcing>

<WarehouseManagement> WarehouseInventory = “” </WarehouseManagement>

<HomeDelivery> Homedelivery = “” </HomeDelivery>

</SupplychainExecution>

<PeopleAttending>

<Name> NamesOfThePeopleAttending = “” </Name>

</PeopleAttending>

</HealthCareServices>

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

<?xml-stylesheet "href="Rule.XSL" type="text/xsl ?>

<PatientName>

<s>

<name> Chris </name>

<branch> Emergency</branch>

<age>18</age>

<city> Harrisburg </city>

</s>

<s>

<name> Annette </name>

<branch> HealthCare</branch>

<age> 20</age>

<city> Cleveland </city>

</s>

<s>

<name>Mike</name>

<branch> Urgent Care</branch>

<age> 23</age>

<city> Columbus</city>

</s>

<s>

<name> Nancy</name>

<branch> Pharmacy</branch>

<age> 17</age>

<city> Monroeville</city>

</s>

<s>

<name> Heather</name>

<branch> Emergency</branch>

<age> 25</age>

<city> Mckeesport</city>

</s>

</PatientName>

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

<xsl:stylesheet version="1.0"

xmlns:xsl="http://www.w3.org/1999/XSL/Transform">

<xsl:template match="/">

<html>

<body>

<h1 align="center">Patients Basic Details</h1>

<table border="3" align="center" >

<tr>

<th>Name</th>

<th>Branch</th>

<th>Age</th>

<th>City</th>

</tr>

<xsl:for-each select="student/s">

<tr>

<td><xsl:value-of select="name"/></td>

<td><xsl:value-of select="branch"/></td>

<td><xsl:value-of select="age"/></td>

<td><xsl:value-of select="city"/></td>

</tr>

</xsl:for-each>

</table>

</body>

</html>

</xsl:template>

</xsl:stylesheet>

<?xml version = “1.0” encoding = “UTF-8”?>

<rss version = “2.0”>

<channel>

<title> HealthCare Services</title>

<link> https://www.example.com</link>

<description> Offers multiple resources within a single pane of glass </description>

</channel>

</rss>

Definitely RDF as it is considered/deemed to be one of the frameworks in describing the resources

1. OWL is generally used as a relationaloperator which helps in describing elements. Example We are into HealthCare services and we hold Medical License to treat patients. This simply implies we can either treat the patient or sell medicines to the patients to save or protect people lives

a.

<owl:Class rdf:ID= “Health-Center"/>

<rdfs:subClassof rdf:resource= “#Emergency Center” />

<owl:disjointWith rdf:resource= “#Speciality Center”/>

</owl:Class>

<owl:Class rdf:ID= “Patient-Care”/>

<rdfs:subClassof rdf:resource= “#Healthcare-Center” />

<owl:disjointWith rdf:resource= “#Payment”/>

</owl:Class>

<owl:Class rdf:ID= “Payment”/>

<rdfs:subClassof rdf:resource= “#Healthcare-Center” />

<owl:disjointWith rdf:resource= “#PatientCare”/>

</owl:Class>

<owl:Class rdf:ID= “Specific”/>

<rdfs:subClassof rdf:resource= “#Healthcare-Center” />

{

"MerchandisePlanning": {

"ItemPlanning": "NameoftheItem = “”",

"CategoryManagement": "Category = “”",

"PriceOptimizations": "Price = “”",

"PromotionPlanning": "Nameofthepromotion = “”"

},

"StoreOperations": {

"POS": "PointofSale = “”",

"InventoryManagement": "InventoryCount = “”",

"WorkforceManagement": "NameofWorkforce = “”",

"LearningManagement": "Learning = “”"

},

"SupplychainExecution": {

"Sourcing": "NameoftheSource = “”",

"WarehouseManagement": "WarehouseInventory = “”",

"HomeDelivery": "Homedelivery = “”"

},

"PeopleAttending": {

"Name": "NamesOfThePeopleAttending = “”"

}

}

I prefer Json, as Json has a pretty format unlike xml feels little complex and hard to understand when compared to json, in simple terms Json format is human readable whereas XML is not, Json format is simple to read and write unlike xml

Biogen Idec – Supply Chain Mgmt

Media Mgmt – Time inc

Data Integration -Chevron

Completion of Python Module 1 & 2

![A picture containing screenshot

Description automatically generated]() A screenshot of a cell phone

Description automatically generated

**Problem 3:**

**3A.**

* Architecture: designing or constructing building

Integration: Integrating/Combining two systems for effective and efficient use

* Integrated System:

Desktop system Board which is also known as Motherboard and has multiple/various components built into the board which includes controller card, video card, sound card etcc

Non Integrated System

Desktop System Board what uses expansion slots , you can upgraded your video card by removing the old one and replacing it with a new one with superior config

**3B.**

* Web Services is a xml standardized base medium to communicate between client and server, they are built on the top of http, java , xml and involve documents, programs, objects and messages, it is nothing but an open protocol that is used to exchange data between system/apps

Example: any web service that include extensible markup language to exchange data messaging and provides standardized web protocol such as http and https to interoperate

API- SOAP, REST

* AWS is a secured cloud platform that offers data storage to help business to expand/grow. It offers computer power, data storage, content delivery and migration, network, analytics, mobile, Developer tools, management tools, IOT , Enterprise security etc

Example:

IAM – Secure cloud security service to manage users , group s and policies

WAF – Web Application Firewall that offers application level protection to block any unwanted malware

* Representations state transfer is an architectural format which is most important for web applications. Everything on the web utilizes resources, it can be in the form of picture , webpage, video etc and webservices provides a way to access these kind of resources

Example:

Amazon’s S3 Storage solution offered by Amazon.com has multiple REST services

RSS RESTful alternative is Atom

Mirror API by Google Glass

* SOA is an architecture in which multiple applications combine together to a larger service. They are implemented through SOAP or Rest APIs or combined. These services can be consumed by client for different applications as it a well-defined business functionality.

SOA is a standard XML based protocol whereas REST is architecture protocol. Easy to call Java script in REST but not in SOA.Performance is much better compared to SOA.SOAP cannot make use of REST but REST can use SOAP.SOA works for only XML but REST works for XML,HTML and JSON.

* Enterprise architecture defines the structure and is capable of achieving the objectives. Integrated Enterprise helps to ensure all the systems are available to meet Business requirements and works smoother and faster
* Webservice allows to communicate between subsystems so that they can work as expected and it helps to provide services to customers

**3C.**

* Bundle is nothing but a combination of services that is integrated with one another and show and enterprise wide as well as inter enterprise services. The integration of the services into bundles can be utilized to model agencies or different units and can be all managed under one single org
* Select service including sector

Combine various services from one or multiple sectors to create service bundles that inturn represents b2b services

* Four
* Stage 2 Docs

**Problem 4:**

1. True
2. True
3. False, it has Deliverable C for Reference
4. True
5. True
6. True
7. True

**Refrences**

<http://space4ict.com/sdg17/mainsdg.aspx>