Quiz 8: Resource-Oriented Architecture

Due Oct 14, 2016 at 11:59pm **Points** 100 **Questions** 6
Available Oct 8, 2016 at 8am - Oct 14, 2016 at 11:59pm 7 days **Time Limit** 60 Minutes

This quiz was locked Oct 14, 2016 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	38 minutes	80 out of 100

Score for this quiz: **80** out of 100
Submitted Oct 14, 2016 at 9:10pm
This attempt took 38 minutes.

Question 1

0 / 20 pts

What are the six concepts that form the foundation of representational state transfer (REST)?

Your Answer:

Concepts:

1. A resource should be created using the PUT operation. This identifies the resource to be created by the URI of app.

2. GET is the read operation for retrieving the resource. The result of GET is the downloading of a resource representation.

3. POST operation results in the updation of the specified resource. The PUT operation uses for the latter replacement a POST operation is intended for the former appendation.

4. The PATCH operation is used to upgrade a resource to a newer version of that resource.

5. The HTTP specifies a DELETE operation for deleting a resource. It is also identified by URI.

6. The HEAD method retrieves just the metadata for a resource from a server, without requiring the retrieval of a representation for the entire resource.

1. Resources 2. Addressability: resources are identified by URIs 3. Representations: units of data exchange 4. Uniform interface: fixed vocabulary of operations 5. Statelessness: all interaction state in the client 6. Connectedness: representations link to related resources

Question 2

15 / 15 pts

Match the semantics below with the corresponding HTTP operation.

Correct!	**Query a resource**	GET
Correct!	**Create or replace a resource (idempotent)**	PUT
Correct!	**Extend or append to a resource (non-idempotent)**	POST
Correct!	**Edit a resource (non-idempotent)**	PATCH
Correct!	**Delete a resource**	DELETE
Correct!	**Query the metadata for a resource**	HEAD
Correct!	**What operations does a resource support?**	OPTIONS

Question 3

15 / 15 pts

What are the four layers of the REST maturity model, in increasing order of maturity? For each layer, give an example of a popular Web service that realizes that maturity level.

Your Answer:

1. The simplest level of RESTful Web Services, like the so called 'zero-th' level, is that of plain old XML services. In this approah, a "RESTful" Web service simply is the use of the SOAP stack but otherwise communicate the data in xml or json over the http protocol. Example: Flicker and Amazon API

2. The first level of RESTful Web services is one that takes the notion of resources seriously by identifying the resources that are acted upon through the use of URIs.

3. The second level of enlightenment is one that adopts the RESTful notion of the uniform interface, through proper use of the HTTP verbs. Example: To book a ticket we need an HTTP verb that doesn't change the state, a POST or PUT.

4. The final level of enlightenment for the REST model is one where applications take seriously the notion of application execution as navigation of a hypermedia network. Example: It deals with how to get from a list of available tickets to knowing what to do to book the ticket.

4. Connectedness.

Question 4

15 / 15 pts

What are the three components of a domain application protocol (DAP) specification?

Your Answer:
Components:
1. The format of the resource representations exchanged in the protocol.
2. A delineation of where the links to other resources can be found in the representation of a resource.
3. For each link, a specification of the semantic role that link represents in the workflow represented by the linking of resources.

Question 5

15 / 15 pts

We saw the use of vendor media types, such as `vnd.trains+xml` and `vnd.purchases+xml`, as media types in DAP links to specify the form of representations that clients should provide when operating on a resource. What are two things left unspecified in these media types, that would be useful for checking for conformance of clients with the DAP?

Your Answer:
Two things that we can add and that would be useful,
1. type attribute: It specifies the data model, but not resource-specific type.
Example: mediaType="application/vnd.purchases+xml;type=PurchOrder"
2. op attribute: It specifies the relation, but not the HTTP operation.
Example: mediaType="application/vnd.trains+xml;op=POST"

Question 6

20 / 20 pts

What are the four principles of resource-oriented architecture?

Your Answer:

Four principles of resource-oriented architecture:

1. Data Abstractions Via Addressable Resources: The representations should decouple clients from the internal details of the resources. The url's should be abstract. It should not reveal the file name.

2. Loose Coupling via Explicit State: It keeps the application state on to the client. The violation: The session state is shared between client and server. So, Client send state to server on every operation. It also identify the server-side state as a resource.

3. Workflow Logic as Hypermedia Networks: The data flow should be between the client and the server and it should execute the service operations with arguments.

4. Canonical Expression via an Unifrom Interface: It should not be just a CRUD interface. It also should not be limited to HTTP.

Quiz Score: **80** out of 100