Diagnostic Test

Review of attempt 1

Finish review

Started on	Tuesday, 5 November 2013, 01:37 AM
Completed on	Monday, 18 November 2013, 04:46 AM
Time taken	13 days 3 hours
Overdue	13 days 1 hour
Grade	**1** out of a maximum of 64 (**2**%)
Feedback	FAIL

Show **All** / Correct / In-correct

1. You can use SOAP based web services for:

(Select two options.)

- A. Guaranteed delivery of messages ✗
- B. Send XML data over HTTP ✗
- C. Access another web service ✓
- D. Need ACID Transaction over a service. ✓

Explanation :
Choice C and D are the correct answer.

SOAP based web service can access other web services and SAAJ (SOAP with attachment API for java) allows sending attachments with SOAP messages to non-java clients.

Choice A is incorrect as SOAP protocol by itself does not guarantee delivery of messages.

Choice B is incorrect as REST mechanism is used to transfer XML over HTTP.

Further reference: The Java EE 5 Tutorial – Third Edition by Eric Jendrock Publisher – Pearson Education

Incorrect
Marks for this submission: 0/1.

Feedback to Author

2. A hotel company, with multiple hotel projects in pipeline, needs a web application to facilitate on-line hotel room booking to its customers, for now. In future more features like cancel booking and extend booking may also be added. You have to suggest best alternative to company. What architect do you suggest that will meet the current requirement and also ensure that future enhancements and maintenance are less expensive.

- a. 2 tier project with direct access of database from JSP will be low cost and sufficient for now ✗
- b. JSP for presentation and Servlets for accessing database will be a flexible solution ✗
- c. JSF and JPA are sufficient ✗
- d. Multi-layered application using JSP+ Servlets or JSF for presentation, Session Beans for business tier and JPA for persistence will be best ✓

Choice D is correct because project needs transaction and security features for secure on-line payment, which EJB specification takes care of. Project extensions in future demand loose coupling for low cost enhancements and maintenance, hence dedicate layers will be most appropriate.

Choice A, B and C are incorrect because they do not take security and transactional nature of project into

consideration. Enhancement is also difficult in tightly coupled layers.

Further Reference: "Professional Java Server Programming, Second Edition, 2nd edition By Subrahmanyam Allamaraju (Publisher: Wrox Press Ltd)

Incorrect
Marks for this submission: 0/1.

Feedback to Author

3. For EAI (enterprise application integration) to connect legacy applications, which technology is best suited in Java Enterprise Edition?

- a. JAAS ✗
- b. RMI ✗
- c. Java EE Connector Architecture ✓
- d. CORBA ✗

Choice C is correct as JCA is the API for connecting legacy applications and supports several features to solve problems falling in EAI domain

Choice A is incorrect as JAAS is an API for authentication and authorization

Choice B is incorrect as RMI is for java to java remote method call

Choice D is incorrect as CORBA is not a Java Enterprise Edition standard

Further Reference: "The Java EE 5 Tutorial – Third Edition by Eric Jendrock (Publisher – Pearson Education)

Correct
Marks for this submission: 1/1.

Feedback to Author

4. For an application that needs to transmit data to other applications and receive the same from other applications in XML format, which API is applicable?

- a. SAAJ ✗
- b. StAX ✓
- c. JAXB ✗
- d. JAXP ✗

Choice B is correct as StAX (streaming API for XML) is a technology dedicated for data streaming in XML

Choice A is incorrect as SAAJ is for sending SOAP messages with attachments

Choice C is incorrect as JAXB is for XML binding to java objects

Choice D is incorrect as JAXP is for parsing XML documents

Further Reference: "The Java EE 5 Tutorial – Third Edition by Eric Jendrock (Publisher – Pearson Education)

Incorrect
Marks for this submission: 0/1.

Feedback to Author

5. You have been approached by one of the developers to sort out an application problem they are facing.

They are developing an application for Employee claims department using JSF, JDBC and WebServices. Once user is logged-in, all pending claims are retrieved from the company database and displayed to him and once the claim is processed,the application calls a WebService of Bank to make payments to the employee. Developer has reported that the application slows down after first 10-15 requests to the Server. The server logs display some exceptions of type SQLExceptions.

What could be the most probable reason?

- A. Transaction timeout setting is too high, it needs to be lowered. ✗
- B. JDBC connections have not been closed properly in the code ✓
- C. There are two many threads created by Servlet Container which are not getting released, Servlet thread pool count needs to be modified. ✗
- D. Increase the RAM of the server. ✗

Option B is correct.

Since server logs are displaying SQLExceptions, the most probable cause is that the database connections are not closed properly after use.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

6. ABC Company has a relatively successful website serving 1000 users built using Servlets/JSP, EJB and JDBC. It is currently hosted on a server with optimum resource usage. ABC Company is anticipating an additional 500 high-value users from next month. These new users are high-spenders and the company wants to ensure good response times and high availability. Cost is not a constraint.

Which of the following approaches would you recommend?

- a. Deploy large development team, Refactor code and deploy the new application ✗
- b. Double the RAM of the server ✗
- c. Buy another Server and cluster with the existing server ✓
- d. Increase the JVM heap size, Web Container thread pool and database connection pool settings ✗

Option A is incorrect as it is an impractical approach (1 month!!).

Options B and D are purely vertical scaling strategies; these might give good performance and even availability but it becomes a single point of failure.

Option C is an appropriate choice as an additional server in a clustered environment will improve both response times and availability.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

7. Which of the following is NOT aligned with separation of concerns principle?
Select two options.

- A. Business object executing SQL queries through JDBC API and using javax.sql.DataSource. Application Server implementing database connection pooling logic. ✓
- B. Deploying static web content of application on web server and dynamic content on application server. ✗
- C. Model View Controller Pattern ✗
- D. JSP invoking Java EE Entities ✓

Explanation :
Correct answers are option A and D.

As per Separation of Concerns principle, every unit in the system needs to have a clearly defined responsibility and functionality. This applies to all levels of the system, from EARs to methods.

In Option A,business object is taking care of data access (via JDBC APIs) should be done using Data Access Objects,so, option A is correct.

Option D is correct,in this case presentation tier is coupled with the data access logic.

Web server is best suited for serving static content and application server for dynamic web content; so option B is inline with the separation of concerns principle.

Standard MVC implementations like JSF decouple data access, business logic,data presentation and user interaction.So option C is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

8. You are designing a web application which will handle a wide variety of requests. Request processing logic varies greatly for each request. Application has to be extensible as subsequent phases of the application are planned.

Which of the following choices will you make? Select two choices.

- A. Implement controller objects to perform action management for each request ✗
- B. Implement a front controller with a command handler. ✓
- C. Implement command objects ✓
- D. Implement scriptlets with page specific logic embedded into all JSP pages. ✗

Options B and C are correct.

You can implement a single controller object invoking appropriate command objects based on the request.

Option A is incorrect because it will eventually lead to duplication of logic. Common logic will be present in all controllers.

Option D is incorrect because view will be having controller logic (Losing benefit of MVC pattern).

Incorrect
Marks for this submission: 0/1.

Feedback to Author

9. Which of the following statements are true about Model View Controller design

- a. MVC improves coupling between view and data. ✗
- b. Implementation logic is tightly coupled between the View and Model. ✗
- c. A modification to the View will correspond to a modification of the Model. ✗
- d. It is aligned with the separation of concern principle. ✓

Option D is correct.

MVC approach is aligned with separation of concerns principle - Each of the components handling different set of activities.

Options A, B and C are incorrect as they state the opposite of MVC pattern.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

10. ABC company has an application which displays their product catalog. It is developed using Servlets/JSP and JDBC. It is deployed on a single web and application server. Due to high interest shown by customers they want to provide features to buy online(transactions) and also anticipate a high volume. Availability of the application also has to be enhanced.

Which of the following would you recommend?

- a. Maintain servlets and JSP's, separate data access logic through DAO pattern. ✗
- b. Maintain servlets and JSP's separate data access logic through DAO pattern. Deploy the application on two application servers and single web server. ✗
- c. Maintain servlets and JSP's, separate data access logic through DAO pattern. Increase the memory/RAM of current servers ✗
- d. Implement a solution with load balancing, web servers for presentation, a cluster of application servers in the business tier hosting EJB components.DAO pattern can be used for data access. ✓

Option D is correct.

Requirement of the application is high scalability (volume) and support for transactions; which is an excellent use case for EJB.

Another requirement is increasing the availability of the application - options A and C still have a single application server acting as single point of failure. Hence, Options A and C are incorrect.

In option B, a single web server acts as a single point of failure - which is taken care in option D through an additional web server and load balancer.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

11. You are building a new online ticket booking system through which users can book complete itenary (bus, train & air tickets). Your company can book train and air tickets but for bus tickets it has partnered with ABC Company. Your application has to interact with ABC Company through a custom protocol. ABC company will provide a client jar; they also start development at the same time and will not be able to deliver the jar until your development is over.

What would you suggest to your team management to ensure project success and mitigate risks?

- a. We cannot do ANYTHING until the jar is available. Adjust the project schedule ✗
- b. Define interface specifications clearly and create wrapper classes over client API in your application and hard-code the data for testing. ✓
- c. Develop the code and wait until jar is delivered for ANY testing. ✗
- d. Suggest ABC company to provide web services instead of jars. It reduces testing effort. ✗

Option A is incorrect.

It may lead to missing business opportunity and may not always be possible.

Option B is correct. You can cover some test cases for your functionality through this approach and can perform integration testing in minimal time.

Option C is incorrect as it is possible for your team to cover some testing through above approach (Option B).

Option D is incorrect as ABC company may be providing this service to other companies as well and may not be in a position to develop something new for your company.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

12. Which of the following are correct statements regarding Session Beans?

- a. Stateful Session bean instance is not shared, it can have only one client ✓
- b. Stateful session beans typically do not survive server crash ✓
- c. Stateful session bean can access other session beans but stateless session bean cannot do so ✗
- d. Stateless session beans can be exposed as web services ✓

Choice A, B and D are correct.

Choice A is correct because Stateful Session Bean instance is dedicated to a single client.

Choice B is correct because in case of server crash, client program cannot rely on state of Session Bean, Stateful Sessions Beans lose their state.

Choice D is correct because Stateless session beans can be exposed as webservice and any web service client can call methods, exposed by the bean.

Choice C is incorrect. Stateless and Stateful Session beans can access other session beans.

Further Reference: The Java EE 5 Tutorial – Third Edition by Eric Jendrock (Publisher – Pearson Education)

Incorrect
Marks for this submission: 0/1.

Feedback to Author

13. You have managed to work out what the next big online shop will be way ahead of everyone else, and are currently designing it. Although the design is still in a rough stage and you have yet to secure sponsors to take it into production, you have already decided on some of the Enterprise Beans that you will need. You know you will need a customer EJB, Shopping basket EJB, another EJB to be used when accessing data on a legacy system.

You know you will need many more but what would be an appropriate use for a Stateless Session Bean?

- a. To represent a shopping basket. ✗
- b. Provide a service to the client. ✓
- c. Store state for a particular client. ✗
- d. To access data on a legacy system. ✗

Choice B is correct.

Stateless session beans can't remember which client they were last talking to and any data they might hold is not saved in a database. Stateless session beans are used to provide a service. E.g. credit card validation.

Choice A is incorrect because a shopping basket would require state (a Stateful Session Bean).

Choice C would require a Stateful Session Bean or Entity Bean depending on whether the data needed to be permanently stored for that client.

Although choice D is possible, this is not the most appropriate use for a stateless session bean.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

14. You are designing a new application and need to decide on persistence mechanism. You need to support complex queries, bulk updates/deletes and disconnected operations. You do not want to write JDBC code.

Which of the following would you choose?

- a. Java Persistence API ✓
- b. CMP entity bean ✗
- c. BMP entity bean ✗
- d. DAO ✗

Entity Beans do not support bulk updates/deletes, so options B and C are incorrect.

DAO approach involves writing JDBC code. So, option D is incorrect.

Java Persistence API supports the requirement hence option A is correct.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

15. You are designing a simple application to store details of employee family. Employee can typically perform CRUD operations of his dependant details. This application will be deployed on a J2EE 1.3 compliant server. Your management reminds you of short timelines and also a company-wide guideline for not using any third-party jars.

Which one of the following would you choose for persistence?

- a. Java Persistence API ✗
- b. CMP entity bean ✓
- c. BMP entity bean ✗
- d. DAO ✗

Option A is incorrect. JPA is available only from Java EE 5.0 onwards.

Options C and D involves writing JDBC code/increased timelines.

Option B is correct. It reduces development timelines since the data access code is generated by server and is also supported by a J2EE 1.3 compliant server.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

16. This Java API is an event-driven, pull-parsing API for reading and writing XML documents. This Java API will enable you to create bidirectional XML parsers that are fast, relatively easy to program, and have a light memory footprint.

Which of the following is the API described above?

- a. StaX ✓
- b. JAXB ✗
- c. JAXP ✗
- d. SAAJ ✗

Option A is correct.

Stax is an event-driven, pull-parsing API for reading and writing XML documents. This Java API will enable you to create bidirectional XML parsers that are fast, relatively easy to program, and have a light memory footprint.

Java Architecture for XML Binding (JAXB) provides an API and tool that allow automatic two-way mapping between XML documents and Java objects. With a given Document Type Definition (DTD) and a schema definition, the JAXB compiler can generate a set of Java classes that allow developers to build applications that can read, manipulate and recreate XML documents without writing any logic to process XML elements.

The Java API for XML Processing (JAXP) enables applications to parse, transform, validate and query XML documents using an API that is independent of a particular XML processor implementation. JAXP provides a pluggability layer to enable vendors to provide their own implementations without introducing dependencies in application code.

The SOAP with Attachments API for Java provides the API for creating and sending SOAP messages by means of the javax.xml.soap package. It is used for the SOAP messaging that goes on behind the scenes in JAX-RPC and JAXR implementations.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

17. What statements about JPA are incorrect?

- a. JPA does not support bi-directional relationships ✓
- b. JPA can be used for web as well as standalone applications ✗
- c. JPA entity classes may extend both entity and non-entity classes ✗
- d. JPA does not allow cascade deletes ✓

Choice A and D are correct

Choice A is correct (statement is incorrect) because JPA supports bi-directional relationships

Choice D is correct because JPA does support cascade delete of related entities

Choice B is incorrect (given statement is correct) because JPA can be used for both web and non-web applications. There is no necessity of web or application server to use JPA.

Choice C is incorrect (given statement is correct) because JPA entities can extend other entity and non-entity classes.

Further Reference: The Java EE 5 Tutorial – Third Edition by Eric Jendrock (Publisher – Pearson Education)

Incorrect
Marks for this submission: 0/1.

Feedback to Author

18. In EJB3.0, Session Beans can be remotely accessed through

- a. Remote Home Interface ✗
- b. Remote Component Interface ✗
- c. Remote Business interface ✓
- d. Instantiate Bean class in the client code similar to how POJO is accessed. ✗

Option C is correct option.

Option D is incorrect, clients do not have access to the bean instance.

Options A and B applies to earlier version of EJB. EJB3.0 eliminates requirement of these two interfaces.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

19. Which of the following are true about EJB3.0 Session beans? Select two choices.

- a. The interface of session bean is an ordinary Java interface. ✓
- b. The interface of session bean must be of types EJBObject or EJBLocalObject. ✗
- c. Session Bean can obtain reference to resources through dependency injection. ✓
- d. A client cannot obtain a session bean's interface through a lookup in the JNDI namespace. ✗

Options A and C are correct.

Option B is incorrect because these are defined in the EJB 2.1 API and in EJB3.0 is a plain Java interface.

Option D is incorrect because you can obtain a session bean interface reference using a JNDI lookup.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

20. Which of the following are true about Passive Replication?
Select three choices.

- a. Primary Service and all replicas respond to all requests ✗
- b. Primary Service randomly delegates requests to one of the secondary replicas ✗
- c. Primary service handles all requests ✓
- d. State is periodically synchronized between the Primary service and all replicas ✓
- e. It is similar to hot backup ✗
- f. It is similar to Warm Backup ✓

Choices C, D and F are correct.

In Passive Replication, the primary service handles all requests. The state of the replicas is periodically synchronized. In the event that the primary service fails, one of the replicas takes over after its state is synchronized (with log files, for example.) In concept, passive replication is similar to that of warm backups. Hence, choices C, D and F are correct.

Only in Active Replication, the primary service and all replicas respond to all requests. Hence, choice A is incorrect.

Choice B seems to indicate that Passive replication uses some kind of load distribution mechanism. Hence, choice B is incorrect.

Passive replication is similar to warm backups as opposed to active replication(which is similar to hot backups). Hence, choice E is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

21. You have written an application to allow customers to reserve tables at their favorite restaurants. In return, your company receives 10% of the amount the customer spends at the restaurant. Now, the application is being run on a single Apache web server using PERL and CGI scripts for presentation and business logic with a separate server for the Sybase database containing the restaurant details.

What are the most notable weaknesses of this architecture? Select two choices.

- a. Fat Clients ✗
- b. Complexity ✗
- c. Scalability ✓
- d. Potential DB access bottlenecks ✓
- e. Reliability ✗

Choices C and D are correct.

The architecture being described here is a 2-Tier architecture with presentation and business tier logic in the same tier. The reason for poor scalability is the tight coupling of business logic and client presentation. There is always possibility of a database access bottleneck in 2-Tier architectures because there is a connection to the database required from every client.

Choice A is incorrect, as the client is simply a web page, a thin client.

Complexity is less for 2-tier architecture, so choice B is incorrect.

Reliability is not the best answer here, hence choice E also does not apply.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

22. You have just bought a brand new dual processor server with over 3 Gigabytes of memory, the fastest server in its class. This server will host Apache Web server (shipped with the Oracle Database) and an Oracle 8i database.

What are the most notable weaknesses of this architecture? Select two choices.

- a. Scalability ✓
- b. Manageability ✗
- c. Security ✗
- d. Performance ✓

Choice A is correct.

You can only vertically scale this system (add memory, add CPUs etc). As soon as this system comes under a heavy load, you would have to separate the Apache web server from the Oracle database and build up a cluster of web servers. This would be hard to accomplish as the Oracle database and the Apache web server are tightly coupled.

Note: A system can still be scalable even if it is only one machine provided it has a good separation of the business logic, data store and client presentation.

Choice B is incorrect because this system would be easy to manage as everything is in one place.

Choice C is incorrect, as you do not need to authenticate yourself to other machines or send traffic across the network to other machines.

Choice D is correct because although the system would perform well under light traffic as soon as it had heavy loads of traffic the performance would drop dramatically.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

23. Which of the following are NOT true about browser-based solutions? Select two choices.

- a. Minimal installation conflicts and environment issues.Eases deployment. ✗
- b. Rich GUI features ✓
- c. UI changes are immediately available for all the users. ✗
- d. Highly secure. ✓

Options B and D are correct.

Due to exposure to internet, browser-based applications need to address various security issues. Thick-clients provide more GUI features than browser-based applications.

Options A and C are advantages of browser-based applications.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

24. Before the World-Wide-Web was accessible to the masses, you had developed a system to generate lottery numbers. You stored the generated lottery numbers for each client so that if they returned they would get the same numbers (note: this was stored in a custom format in a data file).

What are the most notable weaknesses of this one-tier system? Select two choices.

- a. Security ✗
- b. Manageability ✗
- c. Maintainability ✓
- d. Performance ✗
- e. Scalability ✓
- f. Reliability ✗

Choices C and E are the correct answers.

Security and manageability are generally easier with smaller systems, i.e. one-tier solutions such as the one described in the question. The security system will not have to cope with network calls etc. The system is in one place, so manageability should be simple as opposed to having to administer multiple web servers, application servers, and databases.

The biggest weaknesses of one-tier systems are their maintainability and the scalability. The reason they are so hard to maintain is due to the tight coupling between the presentation, business logic and data. Changes to any of these layers will have a direct effect on the adjacent layers.

The performance of a one-tier system should (under small loads) be better than a three tier system because there will be no network delay. It's arguable that under heavy loads the performance will deteriorate but that is really referring to scalability. They may only be scaled vertically by adding extra CPUs or increasing the amount of RAM.

N-tier applications offer an increased level of scalability in that processing is shared between various tiers (client/server) and additional machines may be added at various tiers. There is no reason why a one-tier system would be more unreliable than a two or three-tier system.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

25. In an interview between the senior management of Happy Joe Banking Corporation and the J2EE application architect Scott Khosla, the following points were discussed:

1. The system needs to respond within 5 seconds
2. The system needs to have a 99.9% uptime
3. HJBC was in the process of acquiring another bank which would add two hundred thousand customers to their already existing half million.
4. Each phase of the SDLC is to have a clear signoff process.
5. The development team is expected to provide a detailed unit test plan and user documentation.
6. To ensure privacy, HTTPS is to be used.

What non-functional requirements were discussed?

- a. Scalability, Availability, Extensibility, Manageability and Security ✗
- b. Performance, Reliability, Elaboration, Transition, Documentation and Security ✗
- c. Specification, Elaboration, Construction, Transition, Use Cases and Security ✗

Choice D is correct.

The non-functional service level requirements discussed are Performance (1: The system needs to respond within 5 seconds), Availability (2: The system needs to have a 99.9% uptime), Scalability (3: Additional two hundred thousand subscribers will be added...) and Security (6: HTTPS is to be used.) Hence, choice D is correct.

There is no mention of extensibility (ability to easily add or extend functionality) and Manageability (ability to monitor the health of the system.) Hence, choice A is incorrect.

Specification, Elaboration, Construction, Transition, Documentation and use cases are not non-functional service level requirements. Hence, choices B and C are incorrect.

While scalability and reliability may be related (Will the system perform as reliably when more users operate on it?), there is no mention of reliability in the question. Hence, choice E is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

26. Your 3-tier application has been deployed in a production environment and has been running smoothly for over three months. However, recently you are getting three times the normal traffic due to a Television promotion campaign. To cope with increased traffic, you decided to introduce Round-Robin load balancing.

Which of the following is the closest description about how the Round-Robin load balancing technique copes with the increased traffic?

- a. Splitting requests evenly amongst all servers ✓
- b. The proxy sits behind the servers monitoring the performance of each one. When it notices one is being used too much it will automatically forward requests to a different server. ✗
- c. Splitting requests amongst all servers depending on the amount of spare CPU time each server has available. ✗
- d. A technique used to target certain requests to certain servers, for example, all Servlet requests from one server and all static HTML from another server. ✗

Choice A is correct.

Round-Robin load balancing is the process of splitting requests evenly irrespective of the request type (i.e. SSL, JSP, HTML). If you have three servers, the first request goes to the first server, the second request to the second server and the third request to the third server. When the fourth request comes in, the process starts again and the request goes to the first server again.

Choices B and C are not descriptions of any known load-balancing techniques and hence are incorrect.

Choice D is a description of reverse proxy load balancing that is normally used with servers having varied power (CPU and Memory). Then you may use more powerful servers just for SSL sessions and others servers to handle static HTML.

Such arrangement will maximize your application's performance. Thus, choice D is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

27. You are designing an application which employees can use to submit their claims. Users must be able to fill-in their claim details offline and submit to the central database when they connect to the company network.

Which of the following would you suggest?

- a. Thin browser-based clients ✗
- b. Three-Tier system that utilizes a web browser and application server. ✗
- c. Use Ajax. ✗
- d. Thick client-based solution deployed locally to the users PC. ✓

Option D is correct.

Options A, B and C are incorrect because they are browser-based solutions.

Thick-client can store the details locally and send it to database when connected. It is very difficult to provide such features with browser-based applications.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

28. You are designing a web application which is heavy on JavaScript and Ajax. Which of the following could be potential issues for such an application? Select two choices.

- a. Browser-compatibility ✓
- b. Reduction of page refreshes to enhance user experience. ✗
- c. Phishing. ✗
- d. Maintainability of the application will be affected. ✓

Options A and D are correct.

With lot of logic present in JavaScript (instead of Java) maintainability of the application decreases.

HTML/JavaScript is also not standardized across browsers and has variations. This may lead to browser-compatibility issues.

Phishing is a social engineering security problem.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

29. You are planning to use JAX-WS web service to design as a End Point Service part of your application requirement in Java EE environment.
What statements are true about requirements of a JAX-WS Endpoint? ?

- A. The business methods of the implementing class must be public , and must not be declared static or final ✓
- B. The implementing class must not have default public contructor ✗
- C. The implementing class must not be declared final and must be abstract ✗
- D. The implementing class must not be declared final and must not be abstract ✓
- E. The implementing class must not define the finalize method. ✓

Options A, D and E are correct.

Options B and C are incorrect. The implementing class must have default public constructor in JAX-WS Endpoint design In addition, the implementing class must not be declared final and must not be abstract. The implementation class should not be abstract, since the container will not be able to create the instance of bean and will throw runtime exception.

JAX-WS endpoints must follow these requirements:

The implementing class must be annotated with either the javax.jws.WebService or javax.jws.WebServiceProvider annotation.

The implementing class may explicitly reference an SEI through the endpointInterface element of the @Web Service annotation, but is not required to do so. If no endpointInterface is specified in @Web Service, an SEI is implicitly defined for the implementing class.

The business methods of the implementing class must be public, and must not be declared static or final.

Business methods that are exposed to web service clients must be annotated with javax.jws.WebMethod.

Business methods that are exposed to web service clients must have JAXB-compatible parameters and return types. See Default Data Type Bindings.

The implementing class must not be declared final and must not be abstract.

The implementing class must have a default public constructor.

The implementing class must not define the finalize method.

The implementing class may use the javax.annotation.PostConstruct or javax.annotation.PreDestroy annotations on its methods for life cycle event callbacks.

The @PostConstruct method is called by the container before the implementing class begins responding to web service clients.

The @PreDestroy method is called by the container before the endpoint is removed from operation.

For more information, please refer:
http://docs.oracle.com/javaee/5/tutorial/doc/bnayn.html

Incorrect
Marks for this submission: 0/1.

Feedback to Author

30. You have given a requirement to design a web service, which needs to transfer binary content from service to client and vice verse.
What would you choose from the given options?

- A. Using Message Driven Bean (MDB) ✗
- B. Using Message Transmission Optimization Mechanism (MTOM) ✓
- C. Using XML Binary Package(XMLB) ✗
- D. Using JAXB ✗

Option B is correct.

MTOM is a method of efficiently sending binary data to and from web services. It uses XOP (XML-binary Optimized Packaging) to transmit binary data.

Options A, C and D are incorrect.

For more information, please refer:
http://docs.oracle.com/cd/E17802_01/webservices/webservices/docs/2.0/jaxws/mtom-swaref.html

Incorrect
Marks for this submission: 0/1.

Feedback to Author

31. Promo Systems has a CORBA based application for sales order management. You are building a RMI based client-server for an application which is running in Java Platform. You need to interface with Promo Systems to retrieve sales order details.
How will you make a call from Java environment to CORBA based application?

- A. Migrate CORBA system to Java Platform ✗
- B. Java IDL ✓
- C. RMI-IIOP ✗
- D. JRMP ✗

Choice B is correct.

The following is taken from -
http://java.sun.com/j2se/1.3/docs/guide/idl/index.html

This is a fundamental question and it is important to understand the distinction between these two ways of integrating the Java programming language with CORBA. Java IDL is for CORBA programmers who want to program in the Java programming language based on interfaces defined in CORBA Interface Definition Language (IDL). This is "business as usual" CORBA programming, supporting Java in exactly the same way as other languages like C++ or COBOL. Although CORBA can slightly out perform RMI that is not a reason to use Java IDL. Therefore, choice A is incorrect.

Choice A is incorrect. Migrate CORBA system to Java Platform is not correct. Since the Sales Order Management is a huge system and migrating to Java is a huge effort in terms of cost.

Choice C is incorrect. RMI-IIOP (Remote Method Invocation over Internet Inter-ORB Protocol) is for Java programmers

who want to program to the RMI interfaces, but use IIOP as the underlying transport. RMI-IIOP provides interoperability with other CORBA objects implemented in various languages - but only if all the remote interfaces are originally defined as Java RMI interfaces. It is of particular interest to programmers using Enterprise JavaBeans (EJB), since the remote object model for EJBs is RMI-based.

Choice D is incorrect. RMI-JRMP - If all of your applications are written in the Java programming language, you will probably want to use Java RMI to enable communication between Java objects on different virtual machines and different physical machines. Using Java RMI without its IIOP option leverages its strengths of code portability, security, and garbage collection.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

32. You are working for a company that has yet to realize the full potential of Java. You offer to show them some of the great things Java can do by integrating a new application with an existing CORBA system. Your bosses will then assess the performance and reliability of this new system.

How will you connect your RMI application to the CORBA system?

- a. Use Java-IDL ✓
- b. This is a standard feature of RMI ✗
- c. Can't be done ✗
- d. Can only be done by using JNI ✗
- e. Use RMI-IIOP ✗

Choice A is correct.

There are several scenarios that will define how you will want to create distributed CORBA applications. Here are some of them:

- Java IDL - If you have been developing CORBA applications using IDL for some time, you will probably want to stay in this environment. Create the interfaces using IDL, and define the client and server applications using the Java programming language to take advantage of its "Write Once, Run Anywhere TM" portability, its highly productive implementation environment, and its very robust platform.
- RMI-JRMP - If all of your applications are written in the Java programming language, you will probably want to use Java RMI to enable communication between Java objects on different virtual machines and different physical machines. Using Java RMI without its IIOP option leverages its strengths of code portability, security, and garbage collection.
- RMI-IIOP - If you are writing most of your new applications using the Java programming language, but need to maintain legacy applications written in other programming languages as well, you will probably want to use Java RMI with its IIOP compiler option.

Choice B is incorrect because this is not a standard feature of RMI.

Choice C is incorrect because it can be done.

You do not need to use JNI to do this. Therefore, choice D is incorrect.

Existing system is a CORBA system. Therefore, it is better to use Java IDL. Hence, choice E is also incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

33. You have a requirement to develop a new web service and deliver it to third party. The requirements are clearly specified that it should support SOAP1.2 and should run on Java 5.0.
What are the possible choices would you choose from the given options?

- A. JAX-WS ✓
- B. JAX-RPC ✗
- C. JAXB ✗
- D. JAX-WS or JAX-RPC ✗

Option A is correct.
JAX-WS maps to Java 5.0. JAX-WS relies on many of the features new in Java 5.0. JAX-WS only supports SOAP 1.2.

Option B is incorrect. JAX-RPC maps to Java 1.4 and supports only SOAP1.1.
Java EE 5, the successor to J2EE 1.4, adds support for JAX-WS, but it also retains support for JAX-RPC, which could be confusing to today's web services novices

Option C is incorrect. The Java Architecture for XML Binding (JAXB) provides a fast and convenient way to bind between XML schemas and Java representations, making it easy for Java developers to incorporate XML data and processing functions in Java applications. As part of this process, JAXB provides methods for unmarshalling XML instance documents into Java content trees, and then marshalling Java content trees back into XML instance documents. JAXB also provides a way to generate XML schema from Java objects.

Option D is incorrect. JAX-WS is the right choice. JAX-RPC won't support SOAP1.2.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

34. You have been asked to use a dynamic dispatch invocation to call a web service in Java EE platform. Choose the best choice from the given options?

- A. JAX-WS Dispatch API ✓
- B. JAX-WS SOAP Dispatch API ✗
- C. SAAJ APIs ✗
- D. JAX-RPC using XML/HTTP ✗

Option A is correct.
JAX-WS provides a new dynamic Dispatch client API that is more generic and offers more flexibility than the existing Java API for XML-based RPC (JAX-RPC)-based Dynamic Invocation Interface (DII). The Dispatch client interface, javax.xml.ws.Dispatch, is an XML messaging oriented client that is intended for advanced XML developers who prefer to work at the XML level using XML constructs. To write a Dispatch client, you must have expertise with the Dispatch client APIs, the supported object types, and knowledge of the message representations for the associated Web Services Description Language (WSDL) file.

The Dispatch API can send data in either PAYLOAD or MESSAGE mode. When using the PAYLOAD mode, the Dispatch client is only responsible for providing the contents of the <soap:Body> and JAX-WS includes the input payload in a <soap:Envelope> element. When using the MESSAGE mode, the Dispatch client is responsible for providing the entire SOAP envelope.

For more information, please refer
http://pic.dhe.ibm.com/infocenter/wasinfo
/v6r1/index.jsp?topic=%2Fcom.ibm.websphere.wsfep.multiplatform.doc%2Finfo%2Fae%2Fae%2Ftwbs_jaxwsdynclient.html

Incorrect
Marks for this submission: 0/1.

Feedback to Author

35. You are designing a module where you are trying to pull the credit report details based on the critical parameters. The design should handle the instant response from the third party call to show the credit details to the end user. What is your design strategy?

- a. Design the instant response using synchronous call ✓
- b. Design the instant response using asynchronous call ✗
- c. Design the instant response using JMS point to point model ✗
- d. Design the instant response using JMS publish/subscribe model ✗

Choice A is correct. The problem statement clearly states that the system should provide instant response. This can be achieved only through Synchronous call.

Choice B is incorrect. As the requirement says, the system should provide instant response. With asynchronous call you can not expect instant response.

Choice C and D are incorrect. JMS is Java API that allows applications to create, send, receive, and read messages using reliable, asynchronous, loosely coupled communication. JMS supports Point to Point and Publish/Subscribe models.

For more information, please refer:
http://docs.oracle.com/javaee/5/tutorial/doc/bncdq.html

Incorrect
Marks for this submission: 0/1.

Feedback to Author

36. You have an online shopping application that has been deployed for some time. Previously all sales had been diverted to another company. Because of the popularity of your site now, you have decided that your application will handle credit card sales, going forward. You will use JMS to send requests to charge credit cards to a separate server. You need an instant response as to whether the credit card transaction was approved.

What type of messaging do you use?

- a. Publish/Subscribe ✗
- b. Point-to-Point ✗
- c. Topic Messaging ✗
- d. Instant Messaging ✗
- e. You wouldn't use messaging ✓

Choice E is correct.

If you need an instant response, you probably would not use messaging. The idea of messaging is that you can send messages to other applications and let them process the messages in their own time. For this solution, it will be better to use an EJB and directly query the credit card validation server.

Choice A suggests that messages will be broadcast (one-to-many). For credit card validations, there is no need to broadcast the request. Besides the question says that an "instant response is required." Messaging is inherently asynchronous. Hence, choice A is incorrect.

Point-to-Point or P2P is a one-to-one messaging architecture. JMS does provide APIs that allow send-and-forget and send-and-respond messages. Though a synchronous request is mimicked here, messaging architecture, unlike RPC models, is not truly synchronous.

Note: In some P2P implementations (where a synchronous response is required using messaging), the sender puts the message in a queue. The receiver polls its queue and reads the message. The receiver then sends a response to another queue, which the sender is polling for responses and so on. So though the credit card validation can be achieved through P2P messaging, if a synchronous RPC call is available, that would be the preferred option. Topic Messaging is the same as Publish Subscribe model. Hence, choice C is incorrect.

Instant Messaging refers to a method of chatting on the Internet. Hence, choice D is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

37. You are designing an application that will use SSL to transmit data securely from one application to another. You know that you can easily use existing SSL implementations but you would like to learn more about SSL and have decided to implement your own version. You know that the client and server must agree a method of encryption as part of the SSL handshake. However, you do not know which method of encryption to use.

Which design pattern will help with this? Note: This is NOT a web-based application.

- a. Decorator ✗
- b. Interpreter ✗
- c. Strategy ✓
- d. Composite ✗
- e. Template Method ✗

Choice C is correct.

There are really only two possible answers for this question - the Strategy pattern and the Template Method pattern. The Strategy pattern is the better choice because the algorithms are encapsulated so that they can be used interchangeably. So you can add RSA, DES, etc. and then during the handshake the server can select the appropriate encryption object.

Strategy - (GOF 315): "Define a family of algorithms, encapsulate each one, and make them interchangeable. Strategy lets the algorithm vary independently from clients that use it."

The other patterns were:

- Interpreter - (GOF 243): "Given a language, define a representation for its grammar along with an interpreter that uses the representation to interpret sentences in the language."
- Decorator - (GOF 175): "Attach additional responsibilities to an object dynamically. Decorators provide a flexible alternative to subclassing for extending functionality."
- Composite - (GOF 163): "Compose objects into tree structures to represent part-whole hierarchies. Composite lets clients treat individual objects and compositions of objects uniformly."
- Template Method - (GOF 325): "Define the skeleton of an algorithm in an operation, deferring some steps to subclasses. Template Method lets subclasses redefine certain steps of an algorithm without changing the algorithm's structure."

Incorrect
Marks for this submission: 0/1.

Feedback to Author

38. You have invented the next generation spell checker that can learn from and automatically correct the common typing mistakes of an individual user. You have already sold licenses to many major software vendors and plan to retire in the sun. However, you are required to make slight changes in the logic to suit each software vendor's individual application needs.

What design pattern will help you marginally change the logic in a class for use in different applications?

- a. Strategy ✗
- b. Adapter ✗
- c. Mediator ✗
- d. Interpreter ✗
- e. Template Method ✓

Choice E is correct.

Template Method - (GOF 325):"Define the skeleton of an algorithm in an operation, deferring some steps to subclasses. Template Method lets subclasses redefine certain steps of an algorithm without changing the algorithm's structure."

You can define core logic and default implementations in base class and override/defer the implementation of some of the steps to the subclasses.

The other design patterns are:

- Strategy - (GOF 315):"Define a family of algorithms, encapsulate each one, and make them interchangeable. Strategy lets the algorithm vary independently from clients that use it."
- Mediator - (GOF 273):"Define an object that encapsulates how a set of objects interact. Mediator promotes loose coupling by keeping objects from referring to each other explicitly, and it lets you vary their interaction independently."
- Interpreter - (GOF 243):"Given a language, define a representation for its grammar along with an interpreter that uses the representation to interpret sentences in the language."

Incorrect
Marks for this submission: 0/1.

Feedback to Author

39. Select the most appropriate design pattern used to pool the EJB instances to serve the client requests efficiently. Choose one from the given options.

- A. Observer ✗
- B. Flyweight ✓
- C. Mediator ✗
- D. Memento ✗

Choice B is correct. Flyweight Pattern - This pattern uses sharing to support large number of objects efficiently. EJB instance Pooling is an example of Flyweight Pattern. It handles more number of clients with less number of objects.

Choice A is incorrect. Observer Pattern - Defines a one-to-many dependency between objects so that when one object changes state, all its dependents are notified and updated automatically.

Choice C is incorrect. Mediator - (GOF 273): "Define an object that encapsulates how a set of objects interact. Mediator promotes loose coupling by keeping objects from referring to each other explicitly, and it lets you vary their interaction independently."

Choice D is incorrect. Memento - (GOF 283): "Without violating encapsulation, capture and externalize an object's internal state so that the object can be restored to this state later."

Incorrect
Marks for this submission: 0/1.

Feedback to Author

40. When would you use the Mediator pattern?

- a. When you need to co-ordinate the state changes between other objects by using one object. ✓
- b. When you need to add functionality to a class without changing its interface. ✗
- c. When you need create a separation between abstractions and classes that implement those abstractions. ✗
- d. You need a class that will be used in lots of different applications where the logic will only change slightly. ✗

Choice A is correct.

The Mediator pattern allows you to co-ordinate state changes between many objects by using one mediator object.

Choice B is a description of the Decorator pattern. The Strategy pattern is described in choice D.

Choice C describes the Bridge pattern.

Mediator - (GOF 273): "Define an object that encapsulates how a set of objects interact. Mediator promotes loose coupling by keeping objects from referring to each other explicitly, and it lets you vary their interaction independently."

Incorrect
Marks for this submission: 0/1.

Feedback to Author

41. You have designed a web application which is rich in UI features with lots of images & HTML. You would like the data to be compressed when sent from web server to browser. You have identified a mechanism to compress that data, but not sure if it would work for all browser types, but have decided that this mechanism should be configurable.

Which of the following design patterns should you implement?

- a. FrontController ✗
- b. Intercepting Filter ✓
- c. View Helper ✗
- d. CompressionFacade ✗

Option B is correct.

There is no CompressionFacade pattern, So Option D is incorrect.

Options A and C are incorrect.

- Intercepting Filter: Intercepting Filter intercepts incoming requests and outgoing responses and applies a filter. These filters may be added and removed in a declarative manner, allowing them to be applied unobtrusively in a variety of combinations. After this preprocessing and/or post-processing is complete, the final filter in the group vectors control to the original target object. For an incoming request, this is often a Front Controller, but may be a View.
- Front Controller : Front Controller is a container to hold the common processing logic that occurs within the presentation tier and that may otherwise be erroneously placed in a View. A controller handles requests and manages content retrieval, security, view management, and navigation, delegating to a Dispatcher component to dispatch to a View.
- View Helper: View Helper encourages the separation of formatting-related code from other business logic. It suggests using Helper components to encapsulate logic relating to initiating content retrieval, validation, and adapting and formatting the model. The View component is then left to encapsulate the presentation formatting. Helper components typically delegate to the business services via a Business Delegate or an Application

Service, while a View may be composed of multiple subcomponents to create its template.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

42. You are designing a new Java EE application and have come up with logical design diagram which identified Business Objects.You would like them to be implemented in such a way that persistence code is separated from the Business Objects.

Which of the following patterns would you choose?

- a. Transfer Object ✗
- b. Data Access Object ✗
- c. Domain Store ✓
- d. Business Object ✗

Option C is correct.

- Transfer Object: The Transfer Object pattern provides the best techniques and strategies to exchange data across tiers (that is, across system boundaries) to reduce the network overhead by minimizing the number of calls to get data from another tier.
- Data Access Object : Data Access Object enables loose coupling between the business and resource tiers. Data Access Object encapsulates all the data access logic to create, retrieve, delete, and update data from a persistent store. Data Access Object uses Transfer Object to send and receive data.
- Domain Store : Domain Store provides a powerful mechanism to implement transparent persistence for your object model. It combines and links several other patterns including Data Access Objects.
- Business Object : Business Object implements your conceptual domain model using an object model. Business Objects separate business data and logic into a separate layer in your application. Business Objects typically represent persistent objects and can be transparently persisted using Domain Store.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

43. An application has three Stateless Session Beans - SB1, SB2 and SB3. The stubs that implement the respective Home Interfaces are SH1, SH2 and SH3. A client application performs a JNDI lookup to obtain a reference to one of these Home Objects. This is then narrowed and used to create the remote reference to the corresponding remote object.

What design pattern best explains the creation of the Remote Object, in this case?

- a. Prototype ✗
- b. Builder ✗
- c. Factory Method ✓
- d. Business delegate ✗
- e. Service Locator ✗

Choice C is correct.

Factory Method (GOF 107) "Define an interface for creating an object, but let subclasses decide which class to instantiate. Factory method lets a class defer instantiation to subclasses." Hence, the closest pattern this concept is similar to is the Factory Method pattern. Therefore, choice C is correct.

Prototype (GOF 117)" Specify the kinds of objects to create using a prototypical instance, and create new objects by copying this prototype." Hence, choice A is incorrect.

Builder (GOF 97)"Separate the construction of a complex object from its representation so that the same construction process can create different representations." Hence, choice B is incorrect.

The following excerpt is from: http://java.sun.com/blueprints/patterns/BusinessDelegate.html
"In distributed applications, lookup and exception handling for remote business components can be complex. When applications use business components directly, application code must change to reflect changes in business component APIs. These problems can be solved by introducing an intermediate class called a business delegate, which decouples business components from the code that uses them. The Business Delegate pattern manages the complexity of distributed component lookup and exception handling, and may adapt the business component

interface to a simpler interface for use by views." Hence, choice D is incorrect.

The following excerpt is from: http://java.sun.com/blueprints/patterns/ServiceLocator.html
Enterprise Applications require a way to look up the service objects that provide access to distributed components. Java(tm) 2 Platform, Enterprise Edition (J2EE) applications use Java Naming and Directory Interface (JNDI) to look up enterprise bean home interfaces, Java Message Service (JMS) components, data sources, connections, and connection factories. Repetitious lookup code makes code difficult to read and maintain. Furthermore, unnecessary JNDI initial context creation and service object lookups can cause performance problems. The Service Locator pattern centralizes distributed service object lookups, provides a centralized point of control, and may act as a cache that eliminates redundant lookups. It also encapsulates any vendor-specific features of the lookup process." Hence, choice E is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

44. When remote calls are made on the container provided implementations of EJBHome and EJBObject, various transactional and security checks are applied before the call is actually passed on to the bean instance. The Container provided implementations of EJBHome and EJBObject are performing what Design Pattern's task?

- a. Command ✗
- b. Adapter ✗
- c. Bridge ✗
- d. Decorator ✓
- e. Facade ✗

Choice D is correct.

The intent of the Decorator pattern as described by GOF (175) -"Attach additional responsibilities to an object dynamically. Decorators provide a flexible alternative to subclassing for extending functionality." A request intended for a component is routed to the decorator instead. The decorator forwards the request to the component. It may perform pre or post processing tasks before or after forwarding the request. J2EE is filled with examples of the use of design patterns. The container provided implementations of EJBHome and EJBObject decorate bean classes by providing transactional and security functionalities.

Choice A is incorrect because Command is used to encapsulate a request as an object (GOF 233.)

Choice B is incorrect because Adapter (GOF 139) converts the interface of a class into another interface clients expect.

Choice C is incorrect because Bridge (GOF 151) decouples an abstraction from its implementation so that the two can vary independently and choice E is incorrect because Facade (GOF 185) provides a unified interface to a set of interfaces in a subsystem.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

45. What are the key benefits of using design patterns? (Select the two most suitable answers)

- a. The code will execute faster ✗
- b. The code will be more maintainable ✓
- c. Loose coupling between components ✗
- d. Faster software development ✓
- e. Smaller program size ✗

Choices B and D are the correct answers.

A design pattern is a reusable solution to a problem. This means that when developing new software there are already many solutions (design patterns) to problems you may encounter. (The art is in knowing which pattern to use and where to use it.) This means you should experience faster software development when using design patterns, so choice D is correct.

By using well-known and established design patterns your code (and software as a whole) should become more maintainable because you have used patterns that other programmers/developers should recognize. Although there are many design patterns that promote loose coupling between components this is not a key feature of using design patterns.

For example, it is equally possible to have loose coupling between components without using design patterns as it is with using them. Using design patterns will have no impact upon the speed with which the program will execute or on the size of the program. So choices A and E are incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

46. Which of the following statements describe the Bridge pattern and the benefits of using it? Select two choices.

- a. Provides a way for classes with incompatible interfaces to work together ✗
- b. Decouples abstraction and implementation ✓
- c. Provides a simple interface to a complex subsystem ✗
- d. Provides means to dynamically add extra functionality to an object ✗
- e. Increased extensibility ✓

Choices B and E are the correct answers.

The Bridge patterns separates abstraction and implementation, by doing this your application will benefit from increased extensibility. In more detail, the bridge pattern separates functional abstraction and internal representation. These are put into two separate inheritance hierarchies [Cade, 2002]; therefore changes to either one of these can be made independently. Bridge - "Decouple an abstraction from its implementation so that the two can vary independently."

Choice A describes a feature of the Adapter pattern.

Choice C describes the Facade pattern.

Choice D describes the Decorator pattern.

Adapter - "Converts the interface of a class into another interface clients expect. Adapter lets classes work together that couldn't otherwise because of incompatible interfaces."

Facade - "Provides a unified interface to a set of interfaces in a subsystem. Facade defines a higher-level interface that makes the subsystem easier to use."

Decorator - "Attaches additional responsibilities to an object dynamically. Decorators provide a flexible alternative to sub classing for extending functionality."

Incorrect
Marks for this submission: 0/1.

Feedback to Author

47. What are three benefits of using the Business Delegate pattern? Select three choices.

- a. Cache results and references to remote business services. ✓
- b. You want to separate persistence from your object model. ✗
- c. Avoid unnecessary invocation of remote services. ✓
- d. Handles exceptions thrown from the business services. ✓
- e. You want to avoid duplicating sub views ✗

Options A, C and D describes the benefits of Business Delegate pattern.

Option B is incorrect because it describes Domain Object Pattern.

Option E is incorrect because it is for Composite View.

Consequences of Business Delegate Pattern are (Refer http://www.corej2eepatterns.com/Patterns2ndEd/BusinessDelegate.htm):

- Reduces coupling, improves maintainability
- Translates business service exceptions
- Improves availability
- Exposes a simpler, uniform interface to the business tier -Improves performance
- Introduces an additional layer
- Hides remoteness

Incorrect
Marks for this submission: 0/1.

Feedback to Author

48. What are the three benefits of using the Service Locator pattern? Select three choices.

- a. Centralize and reuse the implementation of lookups. ✓
- b. You want to implement parent-child relationships efficiently when implementing Business Objects as entity beans. ✗
- c. You want to reduce remote requests across the network. ✗
- d. Reestablish connections to previously accessed EJB instances. ✓
- e. Encapsulate vendor dependencies for registry implementations. ✓
- f. You want to maintain the search results on the server side. ✗

Options A, D and E describe benefits of the Service Locator pattern.

Option B is incorrect because it is for Composite Entity.

Option C is incorrect because it is for Transfer Object.

Option F is incorrect because it is for Value List Handler.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

49. Fire Hall, manufacturers of fire extinguishers, is building a corporate Intranet and wants its employees to access payroll information via the Intranet. They are planning to use applets, because of its richer GUI capabilities. The View401K applet requires a Java 1.4 plug in on the host where it is being executed. This applet will read data cached on a temporary directory on the browser machine to calculate 401K distributions.

What are your observations on the use of Applets for this purpose?

- a. The Applet technology is not a viable solution for this application because applets are subjected to the sandbox model, which prevents them from reading from or writing to the host where they are being executed. ✗
- b. The Applet technology is a viable solution for this application because the Security policy of the Java 2 Platform is totally flexible. ✓

Choice B is correct.

Unsigned applets loaded over the net are prevented from reading and writing files on the client file system, and from making network connections except to the originating host. But a digitally signed applet can access client machine resources, if the public key used to verify the signature is trusted. The current requirement can be achieved by using signed applets.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

50. Your colleague is always boasting about how fast his PC is. Therefore, as a lighthearted joke, you decide to write an applet to slow his PC down. This applet tries to work out the square roots of huge numbers. To use up his resources, your applet will spawn a new thread every twenty to thirty seconds.

Will this applet work or would the Java security manager stop it?

- a. It will work. ✓
- b. The security manager kills the applet as soon as it tries to use more resources than are specified in the security.policy file. ✗
- c. The Applet will only use up the memory it's initially allocated and therefore won't use up any more resources than that. ✗

Choice A is correct.

Although applets have very tight restrictions and execute within a sandbox, they can actually use as many system resources as the operating system allows them. There is no reference to the amount of memory an applet can use in the security.policy file. Hence, choice B is incorrect.

Choice C is almost right but not the most appropriate choice. The operating system will allocate memory initially for the JVM to run in but it is possible for this to be extended once the JVM is running but this is entirely dependent on the operating system.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

51. Which of the following statements regarding a DMZ are true?

- a. A DMZ is the zone behind a firewall. ✗
- b. A DMZ is the zone in front of a firewall. ✗
- c. A DMZ is the zone between two firewalls. ✓
- d. A DMZ is the zone behind an inner firewall (assuming there is also an outer firewall). ✗
- e. A DMZ is the zone in front of two firewalls. ✗

Choice C is the correct answer.

As stated in the choice, a DMZ(Demilitarized zone) is the zone between two firewalls.

Consider the following system architecture that you must secure: Company web server - 5 Office machines - 2 Development servers. The company web server needs to serve pages to remote users and office machines need access to the Internet.You would secure this by creating a DMZ that contains the company web server.

You should put machines that provide services to Internet clients in the DMZ and the office machines and development servers behind an inner firewall. You would then configure a proxy server in the DMZ to forward the requests from the office machines to the Internet.

For more information please see: http://java.sun.com/sfaq/

Incorrect
Marks for this submission: 0/1.

Feedback to Author

52. Consider the following scenario: John has a public/private key pair that has been signed by the trusted CA Verisign. Bill already has a copy of John's public key. Bill sends John an encrypted jar file. John successfully decrypts the jar file using the private key.

Which of the following statements regarding this scenario are true? Select two choices.

- a. The jar file may contain malicious code. ✓
- b. Bill has written the jar file. ✗
- c. The jar file may not have been signed with John's public key. ✗
- d. The code has not been modified in transit. ✓

Choices A and D are the correct answers.

Firstly, the scenario described seems to be somewhat misleading, you would imagine John would be sending a message, and not receiving one. The jar file may contain malicious code because anyone can create a signed jar file as long as they have a copy of John's public key. You don't know if Bill has written the jar file; all you know is that it has been signed with John's public key.

With asymmetric encryption the public key is used to encrypt and the private key to decrypt, therefore the code could not have been modified in transit (nobody else has access to the private key), so choice D is correct.

Symmetric encryption - one key for both encrypting and decrypting. Asymmetric encryption - two keys, one public and one private, encrypt with the private key and decrypt with the public key.

For more information please see: http://java.sun.com/sfaq/

Incorrect

Marks for this submission: 0/1.

Feedback to Author

53. Which of the following measures decrease vulnerability for Cross Site Scripting? Select two choices.

- a. Use PreparedStatements for JDBC calls. ✗
- b. Avoid using Frames/IFrames. ✓
- c. Use JSF SecureJavascript features. ✗
- d. Users disabling Javascript on the browser ✓

Options B and D are correct.

Option A mitigates SQL injection and Option C is incorrect as there is no such feature.

Cross Site Scripting (XSS) is a type of computer security exploit where information from one context, where it is not trusted, can be inserted into another context, where it actually is trusted. From the trusted context, attacks can be launched. Cross site scripting (also known as XSS) occurs when a web application gathers malicious data from a user. The data is usually gathered in the form of a hyperlink which contains malicious content within it. The user will most likely click on this link from another website, instant message, or simply just reading a web board or email message. Usually the attacker will encode the malicious portion of the link to the site in HEX (or other encoding methods) so the request is less suspicious looking to the user when clicked on. After the data is collected by the web application, it creates an output page for the user containing the malicious data that was originally sent to it, but in a manner to make it appear as valid content from the website.

Some of the measures to prevent it are: encode the data on the generated pages, escape user input (special characters,tags), validate user input(maximum length) using Frameworks like Struts Validator, users disable javascript, avoid using Frames/IFrames.

SQL Injection is a technique that enables an attacker to perform unauthorized SQL queries in web applications using dynamic SQL statements. Using SQL Injection, attackers might be able to retrieve data you didn't intend for the user to see.

Some of the measures to prevent it are: escape user input, validate user input, use Java PreparedStatements than Statements.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

54. Which of the following best describes Phishing?

- a. Sending large amount of requests in small amount of time to Webserver ✗
- b. Monitoring the HTTP request/response between the Bank server and customer browser ✗
- c. Inserting SQL statements into the input controls of HTML as request parameters ✗
- d. Sending an email requesting for credit card information with an authorized bank email address. ✓

Option D is correct.

Option A describes Denial of Service attack.

Option B describes Cross-site scripting.

Option C describes SQL Injection.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

55. Which of the following can be specified in the web.xml deployment descriptor? Select two choices.

- a. SSL certificate to be used for data transfer between browser and web server ✗

Option A is incorrect as SSL certificates are configured in application server.

Option C is incorrect as mapping roles to actual usernames is done at deployment time.

Options B and D are correct. In web.xml, one can use <security-constraint/> element to define the access privileges to a collection of resources and login-config element to configure how the user is authenticated.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

56. Which of the following could be used for programmatic security in web applications? Select two choices.

- a. UserTransaction.isSecureTransaction ✗
- b. HTTPServletRequest.isUserInRole ✓
- c. HTTPServletRequest.isAuthorized ✗
- d. HTTPServletRequest.getUserPrincipal() ✓

Options A and C are incorrect as no such methods exist.

Options B and D are correct.

Methods of the HttpServletRequest interface for programmatic security are: getRemoteUser, isUserInRole, getUserPrincipal.

You can use the getRemoteUser method to determine the user name with which the client authenticated.

The isUserInRole method is used to determine if a user is in a specific security role. The getUserPrincipal method returns a java.security.Principal object.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

57. You are creating a new website with dynamic content. Resource Manager has said that there are several web designers with HTML and some Java experience available but it would take few months to get resources with real programming experience. Management has suggested you to explore if you can utlise the available resources. Which of the following technologies could help you in this case? (Choose three.)

- a. JSP ✓
- b. JCE ✗
- c. JSF ✓
- d. Custom JSF Components ✗
- e. Expression Language ✓

Options A, C and E are correct. Web developers can easily design look and feel of web application in html/jsp using JSF tags, JSP and expression language.

Option B is incorrect because encryption is not indicated by the requirements.

Option D is incorrect because development of Custom JSF components requires core developers.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

58. You are building a new website with JSF. You have recommended graphic designers to use JSF tags. What challenge will they have with a standard HTML editor?

- a. JSF tags cannot be put into HTML. ✗
- b. Special JSF JavaScript will need to be written. ✗

Option C is correct.

You must deploy the application to accurately see the JSF rendered.

Option A is incorrect because it is false.

Options B and D are incorrect because they are not accurate statements.

Option E is incorrect because it is not relevant.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

59. You are designing a web application based on the MVC pattern. Part of this design, you want to avoid duplicate control logic and apply common logic to multiple requests.
What would you choose from the given options?

- A. Front Controller ✓
- B. Intercepting Filter ✗
- C. Application Controller ✗
- D. View Helper ✗

Option A is correct. Front Controller - Front Controller provides the initial point of contact for handling all related requests. The Front Controller centralizes control logic that might otherwise be duplicated, and manages the key request handling activities.

Option B is incorrect. Intercepting Filter - Use an Intercepting Filter as a pluggable filter to pre and post process requests and responses. A filter manager combines loosely coupled filters in a chain, delegating control to the appropriate filter. In this way, you can add, remove, and combine these filters in various ways without changing existing code.

Option C is incorrect. Application Controller - Use an Application Controller to centralize retrieval and invocation of request-processing components, such as commands and views.

Option D is incorrect. View Helper - Use Views to encapsulate formatting code and Helpers to encapsulate view-processing logic. A View delegates its processing responsibilities to its helper classes, implemented as POJOs, custom tags, or tag files. Helpers serve as adapters between the view and the model, and perform processing related to formatting logic, such as generating an HTML table.

For more information, please refer :
http://corej2eepatterns.com/Patterns2ndEd/ViewHelper.html

Incorrect
Marks for this submission: 0/1.

Feedback to Author

60. You would like to have centralized, common processing across requests, such as checking the data-encoding scheme of each request, logging information about each request and compress the data transfer between Web container and Browser.
Which of the following is best suited for the given scenario?

- A. Servlets ✗
- B. JSP ✗
- C. Servlet Filter ✓
- D. JSTL ✗

Option C is correct.

Servlet Filter as a pluggable filter to pre and post process requests and responses. A filter manager combines loosely coupled filters in a chain, delegating control to the appropriate filter. In this way, you can add, remove, and combine these filters in various ways without changing existing code

Chances are high that compression logic you develop could be browser-dependent and it is desirable to keep the option to remove it if necessary, which makes filter the best place to put the logic.

Incorrect

Marks for this submission: 0/1.

Feedback to Author

61. Which three are the steps of the JSF request lifecycle? Select three choices.

- a. Process Validations ✓
- b. Passivated State ✗
- c. Restore view ✓
- d. Does not exist ✗
- e. Ready State ✗
- f. Apply Request Values ✓

Options A, C and F are correct.

The steps of JSF request lifecycle are Restore view, Process Validations, Apply Request Values and the steps of JSF response lifecyle are Update Model Values, Invoke Application and Render response.

Options B, D and E are incorrect because these are the stages of a stateful session bean.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

62. What are the three steps of the JSF response lifecycle? Select three choices.

- a. Invoke application ✓
- b. Managed ✗
- c. Detached ✗
- d. Update model values ✓
- e. Render Response ✓
- f. Removed ✗

Options A, D and E are correct.

Options B, C and F are incorrect because these are stages of the EJB3 entity.

The steps of JSF request lifecycle are Restore view, Process Validations, Apply Request Values and the steps of JSF response lifecyle are Update Model Values, Invoke Application and Render response.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

63. You are designing a new application for a Housing Loan company that allows Sales personnel to create various loan options for customers. The system is used to display various loan options and amortization schedules. Application also provides features to store some data into the system for each client. The usage of the system is fairly low.

What two technologies would you choose for the system? Select two choices.

- a. UDDI ✗
- b. Stateful Session Beans ✗
- c. Pojo's implementing DAO pattern ✓
- d. JavaServer Pages ✓
- e. Web Service Broker ✗

Options C and D are correct.

Option A is incorrect because there is no requirement for UDDI.

Option B is incorrect because usage is low and there are few transactions, so EJBs are not required.

Options E and A are incorrect because there are no requirements for web services. UDDI (Universal Description, Discovery, and Integration) is an XML-based registry for businesses worldwide to list themselves on the Internet.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

64. You are designing a web application which will display details of each employee, their dependants and related medical claims. If required an employee can also add new dependant information. Employees use this system once in a month.

Which of the following technologies would you choose? Select two choices.

- a. Web Services ✗
- b. Stateless Session Beans with DAO for DataAccess. ✗
- c. JSF ✓
- d. Simple POJO for data access with DAO pattern ✓

Options C and D are correct.

Since it is a simple system with less complicated requirement, it can be quickly built using JSF and Simple POJO for data access. There is no requirement for Webservices/exposing services so option A is incorrect.

Since there are no transactions & usage is less, EJBs are not required.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

Finish review