Welcome Tejesh !

Performance History

Practice Test II

Review of attempt 1

LIVE CHAT

Ask for a Call Back

Finish review

Started on	Monday, 18 November 2013, 04:43 AM
Completed on	Monday, 18 November 2013, 04:43 AM
Time taken	20 secs
Grade	**0** out of a maximum of 64 (**0**%)
Feedback	FAIL

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

1. You have been recruited by MegaSoft Inc. to help on a new sales project. Your role within the project team is as the lead architect. Given the requirements set out below, what type of transaction management should you use? MegaSoft Inc. is launching worldwide sports betting site. The unique feature of this betting site is that all bets are spread across multiple sporting events with huge potential prizes.

   For example, a user may bet $25 on Manchester United beating Real Madrid 4-0, Brazil winning the world cup, and Australia winning the cricket world cup. If a user gets three or more bets correct and one wrong then they will take home a 50% cut of the original stake.

   - ⦿ a. Container Managed Transactions ✗
   - ○ b. Bean Managed Transactions ✓

   Choice B is the correct answer.

   The above scenario describes a betting web site. The key to the question is the complex logic behind each bet. You will need a fine level of control over the transactions.

   Bean managed transactions will give you more control than container managed transactions.

   Incorrect
   Marks for this submission: 0/1.

   Feedback to Author

2. Which J2EE technology would you use to replace Perl/PHP scripts in the solution described below?

   MegaSoft Inc. has a web-based legacy business-to-business sales system. The solution consists of Perl and PHP scripts (presentation and business logic) and a MSSQL database. Customers logon to the site, browse for the latest products and prices, and place orders with MegaSoft.

   - ○ a. Applets ✗
   - ○ b. JSP ✗
   - ⦿ c. JSP/Servlets ✗
   - ○ d. JSP/Servlets and EJBs ✓
   - ○ e. You would never replace PHP scripts with a J2EE technology ✗

   Choice D is the correct answer.

   When migrating a Perl/PHP-based solution to a J2EE solution, you need to consider the requirements of the original solution as opposed to taking the route of replacing like with like, e.g. replacing ASP with JSP. It may be the case that a solution using PHP and PERL technologies to handle presentation and business logic (and in some cases transaction management), could be better separated in J2EE with presentation logic being handled by JSP and Servlets and business logic by EJBs.

   If transactions are involved in almost all cases, this is enough justification for using a separate application server and

Enterprise JavaBeans. Therefore choice D is the correct answer.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

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3.   What Java EE feature provides SOA based implementations in business tier?

○   A. Stateless session beans can be exposed as Web Services in the Java EE model through annotations. ✓

○   B. Stateful Session Beans can be exposed as Web Services in the Java EE model through annotations. ✗

○   C. Entity Beans can be exposed as Web Services in Java EE model through annotations. ✗

○   D. Message Driven beans can be exposed as Web Services in Java EE model through annotations. ✗

Correct answer is A.

Based on the following options, Stateless session beans can be exposed as Web Services in the Java EE environment through annotations.

Option B is incorrect. Stateful Session Beans cannot be exposed as Web Services in the Java EE model through annotations. There is no support to expose the stateful session bean as a web service.

Option C is incorrect. Entity Beans cannot be exposed as Web Services in Java EE model through annotations. The Entity Beans are replaced with JPA in Java EE.The Java Persistence API provides an object/relational mapping facility to Java developers for managing relational data in Java applications. Java Persistence consists of three areas:The Java Persistence API, the query language and object/relational mapping metadata.

Option D is incorrect. In Java EE5, Message Driven beans can not be exposed as Web Services in Java EE model through annotations. A message-driven bean is an enterprise bean that allows Java EE applications to process messages asynchronously. It normally acts as a JMS message listener, which is similar to an event listener except that it receives JMS messages instead of events. The messages can be sent by any Java EE component (an application client, another enterprise bean, or a web component) or by a JMS application or system that does not use Java EE technology. Message-driven beans can process JMS messages or other kinds of messages.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

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4.   Your company has acquired ABC Company and will be building infrastructure for the merged entity. Now, You have a variety of mainframe applications, client server applications, and standalone programs that need to be integrated.

Which of the following will provide a unified platform for scalable, secure SOA development?

○   a. JAXB ✗

○   b. JAXR ✗

○   c. Enterprise Service Bus ✓

○   d. Simple Object Access Protocol ✗

○   e. REST ✗

Option C is correct.

Options A, B, D and E are incorrect because they do not satisfy the requirements.

Enterprise Service Bus is a set of infrastructure capabilities implemented by middleware technology that enable an SOA. The ESB supports service, message, and event-based interactions in a heterogeneous environment, with appropriate service levels and manageability.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

5.

An existing J2EE 1.3 application provides online stock quotes to the users. The web page refreshes every 60 seconds to show the latest stock prices. Customer is planning to add some minor features to this site and requested you for tips to improve the current features with minimal costs.

Which of the following would you recommend?

-    a. Recode the application using JSF, EJB and Entities. This will improve the overall performance of the application and also improves maintainability ✗
-    b. Replace the auto-refresh functionality with AJAX code. ✓
-    c. Recode the application using JSF, EJB and Web Services. ✗
-    d. Use frames and put the auto-refresh part in a different frame. ✗

Options A and C are costlier choices and may require the customer to buy a new server(supporting Java EE) as well.

Option D could be a choice but frames increases vulnerability for cross scripting threats.

Option B is correct. Replacing current auto-refresh functionality not only improves user experience but also has minimal effects on existing architecture.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

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6.   ABC Bank provides facility to transfer amounts from one account to another through its internet banking application. It also provides facilities for its consumer clients to upload payments in one-go through a file upload facility. File upload is a very resource-intensive operation which may take 3-10 minutes. Currently on submitting the file it displays an alert message and processes the request. Often the browser times out.

What would be your suggestion to improve this situation at minimal cost?

-    a. Remove the file upload feature from Internet Banking application ✗
-    b. Limit the no. of payments in upload files to minimum so that the overall request does not take more than 1 minute. Encourage customer to break the files and upload multiple times. ✗
-    c. Use AJAX to display progress bar displaying the % complete figures. ✓
-    d. Use JSF to reduce the processing times. ✗

Option C is the correct choice.

Option D is incorrect as JSF cannot reduce processing times.

Option B is not advisable as it may mean that the customer has to upload tens of files which would lead to user dissatisfaction.

Option A may lead to loss of business or providing an alternative solution which could be costlier. It is very easy to implement such requirements using Ajax and also improves usability of the website.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

7. In a project you have to architect, it is an assumption that significant requests will be for same set of data. Moreover the number of concurrent users are significant, so performance will be a concern. What will be best architecture, in your view ?

   ○ a. Use a 3 tier architecture (thin client -> application server -> database) because application server can execute business requests faster than executing requests on client side ✗

   ○ b. Use stored procedures to access data at fast speed and client application will invoke stored procedures directly ✗

   ○ c. Use a 2-tier architecture with thick client accessing data directly using JDBC ✗

   ○ d. Use a 3 tier architecture (thin client -> application server -> database) because it allows server to cache data with high number of hits to reduce database server load ✓

Choice D is correct.

Choice D is correct because data caching of frequently used data reduces load on the database server, hence improving response time

Choice A and C are incorrect because server side will still be accessing database for each request even though request may be for common data

Choice B is incorrect because multiple parallel calls to stored procedures will overload database server

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

8. You are analyzing architecture of a system under development. You find out that a single Webserver is proposed to be used in production deployment. What do you think can be the problems with this approach?

   ☐ a. Single point of failure ✓

   ☐ b. High Availability may not be guaranteed ✓

   ☐ c. Manageability may be an issue ✗

   ☐ d. With single webserver, scalability can be an issue ✓

Choice A, B and D are correct.
Choice A is correct because if single webserver goes down, system will fail.
Choice B is correct because with a single point of failure, the risk is high and here are no alternate servers to make the site available in case of any failure. Therefore the availability is always a concern.
Choice D is correct because with increasing number of requests to single webserver, it may get overloaded and fail to respond.
Choice C is incorrect because managing a single server is in fact easier than managing multiple servers.

Further Reference: It Architectures And Middleware: Strategies For Building Large, Integrated Systems by Chris Britton (Publisher: Addison-wesley Professional)

Incorrect
Marks for this submission: 0/1.

Feedback to Author

9. You have designed an Internet Banking Application for a major Bank and planning to host the same. It requires a high level of scalability, availability and security. You are planning to deploy the application.

   Which one would you choose?

   ○ a. Use a single web server, application server with very high-end configuration. ✗

Out of all the above 4 options, Option B offers the best configuration. So, option B is the correct choice.

In Options A and C, since there is only one web server it could act as a single point of failure.

In option D, a single application server may become single point of failure.

Out of all the options, Option B provides better availability and performance.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

10. You have an online shopping application with moderate userbase. The popularity of your application has increased and there has been a massive increase in users visiting your site. You have recommended adding 2 new web servers and 3 new application servers.

What is the impact of adding additional servers?

- ◦ A. This will increase security, extensibility, and decrease performance. ✗
- ◦ B. This will decrease manageability, performance, and increase maintainability. ✗
- ◦ C. This will increase availability, performance, and reliability ✓
- ◦ D. This will decrease security, performance, and increase manageability. ✗

Option C is correct.

Options A, B and D are incorrect because adding the additional servers will increase the performance of the application.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

11. Which of the following is true about Model-View-Controller (MVC) architecture? Select two choices.

- ☐ a. It is a security architecture ✗
- ☐ b. Changes to the user interface will not affect data handling, and that the data handling routines can be re-organized without changing the user interface. ✓
- ☐ c. A standard implementation is usually seen in Two-Tier thick client applications. ✗
- ☐ d. It applies separation of concerns principle ✓

Options B and D are correct.

Options A and C are incorrect statements. It is not a security architecture and usually seen in 3-Tier architectures.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

12. You are designing a new web application which will interact with another application using XML through a messaging system synchronously. Back-end changes will be completed more or less at the same time as yours.

Which of the following would you recommend to the application development team?

- ◦ a. Develop your application and wait for the back-end changes to complete before testing. ✗
- ◦ b. Develop a Simulator code which picks messages from the request queue of your application and puts hard-coded xml in response queue. This will ease testing. ✓
- ◦ c. Synchronous messaging is not possible with Messaging System. Explore another solution. ✗
- ◦ d. Use SOAP XML ✗

Option C is an incorrect statement.

Option D is incorrect as there is no requirement for SOAP protocol. If the interfacing request and response XMLs are defined, it is possible to develop a simulator and perform some level of testing rather than wait for the back-end changes to be completed. In this approach, some of the application related flows (test cases) can be tested through simulator.

Option B is better than option A so, option B is correct.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

13. You are designing an online shopping application. You need to display a list of products on the website in multiple pages. You want to read the data from the database and cache the results. Different views in the application display different categories of products. You only want one instance of this class to hold master data which can be filtered for each view.

What pattern will give you clear separation of concern?

- ○ a. Factory method ✗
- ○ b. Builder pattern ✗
- ○ c. Singleton pattern ✓
- ○ d. Prototype pattern ✗

Option C is correct.

Singleton pattern is a design pattern that is used to restrict instantiation of a class to one object. You can implement a single class which fetches data from database and caches the data in memory; different views in the application can access the data from this singleton object.

Option A is incorrect because the factory method provides a simple decision making class which returns one of several possible subclasses of an abstract base class depending on data it is provided.

Option B is incorrect because the builder pattern separates the construction of a complex object from its representation, so that several different representations can be created depending on the needs of the program.

Option D is incorrect because the prototype pattern starts with an initialized and instantiated class and copies or clones it to make new instances rather than creating new instances.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

14. Current website of your company is using Java enterprise technology. The website has used CMP beans heavily. Now the company needs another small non-web application for in-house team accessing number of model objects from the company website system. They want to reuse the existing code as as to control cost and improve performance. You should suggest them to move all CMPs to JPA. Why?

- ☐ a. JPA entities can be used outside container environment hence promoting re-usability and coding effort ✓
- ☐ b. JPA entities can be used on both presentation layer and business logic layer, thus reducing coding effort, size of code and maintenance cost associated ✓
- ☐ c. JPA supports lazy loading of objects hence improving performance ✓
- ☐ d. Clients currently accessing CMP beans will remain the same to work with JPA ✗

Choice A, B and C are correct

Choice A is correct because JPA can be used outside container environment for non-web project also. Therefore common JPA based API to manage entities will be reusable in multiple projects hence saving duplicate coding effort.

Choice B is correct because JPA entities can hold data and be passed to presentation layer again promoting re-usability and reducing coding effort.

Choice C is correct because JPA does support lazy loading. Objects can be loaded when required instead of always keeping them in memory.

Choice D is incorrect because client code to call a JPA entity is different from that to access a CMP bean. 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

15. What is the biggest difference between Message-Driven Beans and Entity and Session Beans? Select two choices.

   ☐ a. There is no difference in structure between Message-Driven Beans and Entity and
Session Beans. They all have home, remote interfaces and a bean class. ✗

   ☐ b. Message-Driven beans don't have a home interface. ✓

   ☐ c. A Message Driven bean is different from Session Bean because its state is persisted. ✗

   ☐ d. Clients do not access Message-Driven beans through interfaces. ✓

Choices B and D are correct.

Note: This type of question will not be in the EJB 1.1 version of the SCEA but is likely to be in the EJB 2.0 version of the SCEA.

Choice A is incorrect, Message-Driven beans do not have Home or Remote interfaces, they just have a bean class.

The state of Message-Driven beans is not persisted like Entity beans. So choice C is incorrect.

The following is taken from: http://java.sun.com/j2ee/tutorial/1_3-fcs/doc/EJBConcepts5.html

The most visible difference between message-driven beans and session and entity beans is that clients do not access message-driven beans through interfaces. Unlike a session or entity bean, a message-driven bean has only a bean class.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

16. What are two reasons why you would use an ORM approach? Select two choices.

   ☐ a. Application can be isolated from the database and the only connection to it is using the
ORM framework and a JDBC driver. ✓

   ☐ b. Manageability of a Java application increases. ✓

   ☐ c. They perform faster than direct JDBC connections. ✗

   ☐ d. ORM supports same level of data access as SQL. ✗

   ☐ e. ORM does little to improve developer productivity. ✗

Options A and B are correct.

ORM not only isolates the application from database but also improves manageability by developers as it generates code. Option C is incorrect.

ORM induces additional layer in application which implies some performance loss over direct JDBC access. Option D is an incorrect statement.

ORM provides good data access features but do not provide capabilities same as SQL.

Option E is wrong because they improve developer productivity.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

17. You are building a new Customer Relationship Management system. You have developed the design model and planning to choose persistence mechanism. The model has complex relationships between tables. You do not want any persistence mechanism code to be present in business objects.

Which of the following technologies would you choose?

   ○ a. Java Persistence API ✓

Option A is correct.

JPA supports the requirement, particularly does not require any persistence code in Business Objects.

Option B is incorrect. CMP supports requirements but has persistence mechanism related code in the objects (ejbCreate methods, must implement EntityBean interface).

Options C and D are incorrect as it requires coding.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

18. You are building a simple application which will read XML repositories and display the Web Service details on the browser. In addition, application tries to validate the XML file received from a third party vendor.

Which of the following APIs would you use for each scenario described?

   ○ A. JAXR, JAXP ✓
   ○ B. JAXB, JAXR ✗
   ○ C. JAXP, JAXB ✗
   ○ D. SAAJ, JAXR ✗

Option A is correct.

The Java API for XML Registries (JAXR) provides a uniform and standard Java API for accessing different kinds of XML registries. An XML registry is an enabling infrastructure for building, deploying, and discovering web services. The JAXP validation API decouples the validation of an instance document from the parsing of an XML document. This is advantageous for several reasons, some of which are:

Support for additional schema languages. As of JDK 1.5, the two most popular JAXP parser implementations, Crimson and Xerces, only support a subset of the available XML schema languages. The Validation API provides a standard mechanism through which applications may take of advantage of specialization validation libraries which support additional schema languages.
Easy runtime coupling of an XML instance and schema.

Options B, C and D are incorrect. The requirement clearly specifies that the xml repositories and validation of XML is needed from a third party vendor. The supported APIs are JAXR and JAXP only.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

19. You are developing an online ticketing system that requires standard data access technology to interact with Oracle Base. Part of another requirement, Application wants to store the state of saved searches for that user during his conversation between the screens?
What is your design strategy to implement these requirements in Java EE platform?

   ○ A. Entity Bean, Stateless Session Bean ✗
   ○ B. DAO and Stateless Session Bean ✗
   ○ C. JPA and Stateful Session Bean ✓
   ○ D. DAO and Stateful Session Bean ✗

Option C is correct.

Java Persistence API is now the standard API for persistence and object/relational mapping for the Java EE platform. Other requirement is that, state of saved searches between the conversations (state represents the interaction between the bean and a specific client) are done by Stateful Session Bean.

Option A is incorrect. The Entity Beans are replaced with JPA in EJB3.0 and is not the standard API for data access in Java EE platform. The state of saved searched between the conversations can not be maintained using Stateless Session Bean. Stateless Session Bean can not keep track of each client invocation.

Option B is incorrect. DAOs are Data Access Object separates the client interface from its client access mechanism and is not a standard part of Java EE. The state of saved searches between the conversations can not be maintained using Stateless Session Bean. Stateless Session Bean can not keep track of each client invocation.

Option D is incorrect. DAOs are Data Access Object separates the client interface from its client access mechanism and is not a standard part of Java EE. The state of saved searches between the conversations can be maintained using Stateful Session Bean.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

20.　Which of the following is FALSE about EJB3.0?

○　a.　Supports annotations　✗

○　b.　Supports resource injection　✗

○　c.　Simplifies enterprise bean types　✗

○　d.　Gives interceptor facility for session, message-driven and entity Beans.　✓

Option D is correct as interceptor facility is provided only for session and message-driven beans but not entity Beans.

Some of the EJB3.0 changes are:

- Definition of the Java language metadata annotations that can be used to annotate EJB applications. These metadata annotations are targeted at simplifying the developer's task, at reducing the number of program classes and interfaces the developer is required to implement, and at eliminating the need for the developer to provide an EJB deployment descriptor.
- Encapsulation of environmental dependencies and JNDI access through the use of annotations, dependency injection mechanisms, and simple lookup mechanisms.
- Simplification of the enterprise bean types.
- An interceptor facility for session beans and message-driven beans. An interceptor is a method that intercepts a business method invocation or a lifecycle callback event. An interceptor method may be defined on the bean class or on an interceptor class associated with the bean. An interceptor class is a class (distinct from the bean class itself) whose methods are invoked in response to business method invocations and/or lifecycle events on the bean class.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

21.　You are designing a business component as a Stateless Session Bean and decided to configure pool of beans in application server to server multiple user requests. What is true about bean pooling?

○　A.　Improves memory　✗

○　B.　Improves Scalability　✓

○　C.　Improves Security　✗

○　D.　Bean pooling can not be done using Stateless Session Bean　✗

Option B is correct.
Bean pooling is the technique used when there is a need for more users to use system with fewer resources and improves application scalability.

Option A, C and D are incorrect. With the usage of bean pooling there is nothing you can improve on security and memory usage of an application. Bean pooling is possible for Stateless Session Bean to improve Scalability.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

22.　Consider application security measures such as encryption, SSL, authentication and authorization and validations part of login process.
What is true about Performance and Security in an application?

○　a.　They are not related to each other in any way　✗

Choice D is correct.

Adding new security measures typically affect the application performance negatively. Security techniques such as encryption/decryption, SSL,authentication and authorization checks make our application execution slower than if we don't have all these security protections. Even a simple login screen would reduce performance, in the sense that user gets slower access to the functionality of the system. Hence, generally speaking, increased security results in a lower performance.

Choice D is therefore correct. Hence, choices A and B are incorrect.

A high performance is not a technical pre-requisite for secure systems although it may be a good idea to increase performance wherever possible to offset the performance loss due to higher security. Hence, choice C is incorrect.

Many poorly engineered secure systems exhibit poor performance. Hence, choice E is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

23. Happy Joe Banking Corporation is building a Banking application to provide online access to their account holders. They have chosen two SUN 450s for their web server cluster and one SUN E10000 for their application server. The business requirements indicate that to become a customer, a person must have at least a primary checking account with the bank. Further, since the customer will be using the Internet to view confidential information, security is considered paramount.

What do you understand about the requirements of the system?

- a. The need for Security is a classic example of a functional service level requirement and the checking account rule, an example of non-functional QoS requirement. ✗
- b. The discussion about Security and the mandatory checking account both illustrate functional service level requirements. ✗
- c. Neither Security nor the mandatory Checking Account is an example of any kind of requirements, theoretically speaking. ✗
- d. Security is an Architectural non-functional requirement and the Mandatory Checking Account a functional design requirement. ✓
- e. They are both examples of Business Use Cases. ✗

Choice D is correct.

Successful software architecture deals with addressing the non-functional service level requirements of a system. The Design process takes all functional business requirements into account. Security is considered a non-functional requirement and specific business rules, such as the one described with the checking account are considered functional requirements.

Choice D is the only choice that accurately describes this. Choice A is incorrect because the functional and non-functional requirements are flipped over.

Choice B is incorrect because only one of them is a functional requirement.

Choice C is incorrect because as described above, one of them is a functional requirement and the other, a non-functional requirement.

Finally, Choice E is incorrect because business analysis may start with use cases (where the checking account rules may be captured), but this discussion is specifically questioning functional vs. non-functional requirements.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

24. In a distributed systems environment, the replication is mainly used to provide fault tolerance.
Which of the following are true about Active Replication over Passive Replication? Select three choices.

- A. It is a fault-tolerance mechanism. ✓
- B. It is achieved by taking cold back ups. ✗
- C. Each replica attempts to process each request but extra calls may be intercepted via an interceptor. ✓

Choices A, C and F are correct.

Active Replication is a fault tolerance mechanism where each replica is identical to the main service and attempts to service each request. An interceptor is used to block extra responses. Active replication is similar in concept to hot backups. Hence, choices A, C and F are correct.

Active Replication is not achieved through cold backups. In cold backups, the replicas are not constantly updated. Their state is synchronized with the primary service in regular intervals. In the event that the primary service fails, one of the replicas has to be synchronized (perhaps with data from a storage device) before it can service requests. Hence, choice B is incorrect.

Choice D refers to the concept of Warm Backups. In warm backups, only the primary service responds to requests. However all activity is constantly logged.

Periodically these logs may also get flushed to the replicas. When the primary service fails, a replica takes over after its state is synchronized with the logs. Hence, choice D is incorrect.

With active replication, as mentioned before, the state of all replicas is constantly synchronized. Hence, choice E is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

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25. You have been asked to provide feedback about horizontal and vertical scaling techniques in a Java EE environment. Which of the following are true about Vertical Scalability when compared to Horizontal Scalability?
Select two choices.

   ☐ A. Achieved by adding additional servers to the current system architecture ✗

   ☐ B. Achieved by adding additional capacity (memory, CPU and so on) to the current system architecture ✓

   ☐ C. Vertical Scaling is generally more expensive than Horizontal scaling ✗

   ☐ D. Decreases manageability ✗

   ☐ E. Requires few or no changes to the system architecture ✓

   ☐ F. Not supported by J2EE ✗

Choices B and E are correct.

Vertical Scalability, by definition means increasing a system's capacity by adding memory, processors and so on.

Of the two types of Scalability (Vertical and Horizontal), Vertical Scalability is the easier to achieve because it involves few changes to the existing system's architecture. Also adding more CPU or memory to an existing system does not have any impact on reliability or availability because if the system or component fails, in the absence of redundant systems, availability and reliability would suffer. Hence, choices B, E and G are correct.

Choice A is incorrect because it actually describes Horizontal Scalability, which is achieved by adding more servers to a system. Horizontal Scalability is tougher to achieve because the architecture should inherently support a multi-server environment. However once implemented, it has a positive impact on the system's reliability and availability because it provides fault tolerance capabilities.

Choice C is incorrect because generally it is cheaper to add capacity than to add entire new systems.

Choice D is incorrect because adding capacity should have no impact on the manageability of a system.

Choice F is incorrect because Vertical Scalability is easy to achieve. Most J2EE vendors also provide support for the more difficult Horizontal Scalability.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

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26. You are designing a Sales Bean to handle the views/screens associated with it. The application will be designed as N-tier model using Java EE environment.
Which is the suitable tier you will place these components?

   ○ A. Client Tier ✗

Choice B is correct.
The sales Bean represents a JSF MangaedBean (which is a controller) in Java EE environment and views/screens represents the pages for that sales module using navigational support configured through faces-config.xml file. N-tier models typically follow a Model2 architecture where each tier has specific responsibilities. The view and most of the controller components are generally placed in the Web Tier. Hence choice B is correct.

Choice A is incorrect because the client tier is not responsible for the view and controller objects.

Choice C is incorrect because there is no such tier as MVC tier.

Choices D, E and F are incorrect because none of them hold the view components (although some controller components may be present in the Business logic tier.).

Incorrect
Marks for this submission: 0/1.

Feedback to Author

27.   A scenario is given to you based on the fact that, one of the dropdown list in a particular page takes lot of time to load when the page is getting refreshed. Your Management asked for a good solution and stating that page should not take long time to load dropdown values and reduce the page refresh. Application is running in Java EE environment.

What is your proposed solution to solve this problem ?

- ○ A. Use NON- AJAX based solution to retrieve dropdown values and do a partial refresh ✗
- ○ B. To load it faster make the dropdown list set to request scope and implement partial refresh ✗
- ○ C. Use AJAX based solution to retrieve dropdown values and do a partial refresh ✓
- ○ D. To load it faster make the dropdown list set to session scope and implement partial refresh ✗

Explanation :
Option C is the correct answer.

To solve the given problem, the most suitable answer is AJAX based solution to populate the dropdown and implement the partial refresh. using JSF with AJAX combination, it's easy to configure the dropdown list using rerender and on complete functions to load and partial refresh of the page.

Option A is incorrect. The statement "NON-AJAX based solution" is not clearly defined. Using Java Script you can make the dropdown to load faster and partial refresh is also possible, but need to write lot custom code and difficult to maintain.

Option B is incorrect. The session scope is used to store session data across the page invocations. Part of the problem, it will not help to load faster or slower the dropdown values and there is no feature for partial refresh using session scope attribute.

Option D is incorrect. The request scope is used to store request information based on the each form submit. Part of the problem, it will not help to load faster or slower the dropdown values and there is no feature for partial refresh using request scope attribute.

For more information, please refer -
http://www.oracle.com/technetwork/java/javaee/tutorial-jsp-140089.html

Incorrect
Marks for this submission: 0/1.

Feedback to Author

28.   Which of the following statements are true about Thin client when compared to Fat client based solutions from the given options?

- ☐ A. Minimal installation conflicts and environment issues. ✓
- ☐ B. No issues with cross-browser compatibility and support. ✗
- ☐ C. Provides very good client security. ✗
- ☐ D. Readily available standard development kits. ✗

Option A and E are correct.

Thin Client (Browser Based applications) :

- Minimal installation conflicts and environment issues.
- Eases deployment and UI changes are immediately available for all the users.
- Little data processing is done on the client side.
- Clients primary responsibility is merely to display data and collect input from the user for posting back to the server.
- The transmission of data to and from the thin client causes higher network bandwidth usage compared to thicker clients.
- It is not as easy to use plug-in's and third party APIs in a browser client than a thick Windows forms application.

Options B, C and D are incorrect. These statements are true for a Fat/thick client based solution.

Thick/Fat Client:

- No issues with cross-browser compatibility and supports.
- No inherent security issues. As the network calls are minimum when compared to thin clients, the security is easy to implement.
- There are readily available standard development kits available compared to build browser based applications.
- Thick clients can make use of the powerful PC hardware sitting on a users desk which can make for a more efficient processing model and can help reduce infrastructure costs.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

29.   You are designing a web service using JAX-WS features and wants to handle additional processing of inbound and outbound messages.
Select the components available to handle additional processing during runtime using Java EE platform?

- ○   A. Logical Handler and Protocol Handler ✓

- ○   B. Security Handler and Message Handler ✗

- ○   C. Resource Handler and HttpHandler ✗

- ○   D. There is no such feature available in Java EE platform ✗

Option A is correct.
Handlers are message interceptors that can be easily plugged in to the JAX-WS runtime to do additional processing of the inbound and outbound messages. JAX-WS defines two types of handlers, logical handlers and protocol handlers. Protocol handlers are specific to a protocol and may access or change the protocol specific aspects of a message. Logical handlers are protocol-agnostic and cannot change any protocol-specific parts (like headers) of a message. Logical handlers act only on the payload of the message.

Actual logic to implement the request must be in the Service Implementation class but not handler class. JAX-WS programming model provides an application handler facility that enables you to manipulate a message on either an inbound or an outbound flow.

You can add handlers into the JAX-WS runtime environment to perform additional processing of request and response messages. You can use handlers for a variety of purposes such as capturing and logging information and adding security or other information to a message. You can configure the handlers for the server or client.

Options B, C and D are incorrect. There are no such handlers available in Java EE platform part of JAX-WS web service handlers.

For more information, please refer -
http://jax-ws.java.net/articles/handlers_introduction.html/

Incorrect
Marks for this submission: 0/1.

Feedback to Author

30.   Lead Architect from your company suggested to use Java EE web services due to it's simplicity and easy to expose as a POJO based web services.
Which of the statements are true?

Select two options.

- ☐ A. Stateless session beans can be exposed as Web Services ✓
- ☐ B. Servlets can be exposed as Web Services ✓
- ☐ C. Stateful Session Beans can be exposed as Web Services ✗
- ☐ D. Message Driven beans can be exposed as Web Services ✗

Option A and B are correct. In Java EE, Servlet and Stateless session bean can be exposed as a Web Services.

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

Incorrect
Marks for this submission: 0/1.

Feedback to Author

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31.   Company ABC has a legacy application that can be accessed via CORBA. The company wants to integrate new Java-based development with the existing legacy services. Currently, no new services are planned. If the legacy application were primarily to be used as a CORBA server, which of the following connectivity option would you recommend?

- ○ a. RMI-JRMP ✗
- ○ b. RMI with JNI ✗
- ○ c. Java IDL ✓
- ○ d. RMI-IIOP ✗
- ○ e. HTTP tunneling ✗

Choice C is correct.

The important concept here is that the existing legacy system supports a CORBA interface and no new services are being currently planned. If Java code is primarily going to access CORBA services, the recommended connectivity tool is Java IDL. Java IDL gives Java code CORBA capability. Hence, choice C is correct.

RMI-JRMP should be used when dealing with distributed applications, all written primarily in Java. Hence, choice A is incorrect. The question does not specify anything about the legacy code's JNI capability. However, it specifically mentions about CORBA compatibility. Hence, choice B is incorrect.

RMI-IIOP is the protocol used with EJB. The legacy system is coded with a CORBA interface and the question mentions that no new coding is anticipated. Therefore, EJBs are not a good choice for this problem. Hence, choice D is incorrect.

When you wish to communicate with a system whose firewall does not permit requests of a certain protocol, the requests are sometimes masqueraded as HTTP requests. This concept is called HTTP tunneling. Hence, choice E is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

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32.   MegaDreamDating Inc. is expanding from one office to five throughout the US. As part of this expansion they wish to upgrade their 'Dream date match' application, which matches requirements an ideal partner will have with registered users. Currently the 'Dream date match' is a standalone application (no network code), written on C++. It is likely that the requirements for this application may be extended yet again.

How should you extend this application so that it can be deployed in all the five offices?

- ○ a. As there is no built in network code, a complete rewrite will be required. ✗
- ○ b. There is no need to extend the application, instead run five separate versions (one in each office). ✗
- ○ c. Extend the application by integrating CORBA (create a CORBA server at head office) then use Java IDL at the regional offices to connect to the CORBA server. ✗
- ○ d. Use JNI and RMI. Create a RMI server at head office and then create a client for use at the regional offices. ✓

Choice D is the correct answer.

Making the application available at all five regional offices will involve adding network code. But before this can be done, the C++ application needs to be able to talk to the network code. The most appropriate way of doing this is through the use of JNI. The new business logic can be added to the existing application and then made available to the other offices via RMI.

Choice C is incorrect because it isn't appropriate to make the solution available via the use of CORBA and then connect Java clients by Java IDL. (You should choose one or the other, do not mix the two unnecessarily.)

Choice E is incorrect because the question states that the application requirements may be extended, so although technically it would be possible to create a custom Java server that used JNI and allowed the applets to connect to it, the code would not be very extensible or maintainable.

Choice A is incorrect because we can use JNI.

Choice B is incorrect because it makes sense to synchronize the data.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

33. Application architect instructed that you need to read multiple xml documents at one time with a single thread and need to add application specific additions. What would you choose from the given options?

- A. StAX ✓
- B. DOM ✗
- C. SAAJ ✗
- D. SAX ✗

Option A is correct.

StAX provides a standard, bidirectional pull parser interface for streaming XML processing, offering a simpler programming model than SAX and more efficient memory management than DOM.

StAX enables developers to parse and modify XML streams as events, and to extend XML information models to allow application-specific additions.

Pull clients can read multiple documents at one time with a single thread.

A StAX pull parser can filter XML documents such that elements unnecessary to the client can be ignored, and it can support XML views of non-XML data.

Below is an excerpt from Java EE tutorial.

Streaming refers to a programming model in which XML infosets are transmitted and parsed serially at application runtime.Stream-based parsers can start generating output immediately, and infoset elements can be discarded and garbage collected immediately after they are used.Streaming models for XML processing are particularly useful when your application has strict memory limitations, as with a cell phone running J2ME, or when your application needs to simultaneously process several requests, as with an application server. Streaming pull parsing refers to a programming model in which a client application calls methods on an XML parsing library when it needs to interact with an XML infoset; that is, the client only gets (pulls) XML data when it explicitly asks for it. Streaming push parsing refers to a programming model in which an XML parser sends (pushes) XML data to the client as the parser encounters elements in an XML infoset; that is, the parser sends the data whether or not the client is ready to use it at that time.
Choice B is incorrect. The DOM model involves creating in-memory objects representing an entire document tree and the complete infoset state for an XML document. It won't handle the multiple documents at one time.
Choice C is incorrect. SAAJ - SOAP with Attachments API for Java - contains APIs for creating and populating SOAP messages which might or might not contain attachments. It also contains APIs for sending point to point, non-provider-based, request and response SOAP messages.
Choice D is incorrect. SAX parser is used to validate the XML documents based on the supplied DTD or XSDs.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

34. James Inc is the leading seller of different book magazines. They have more then 100 branches worldwide. They have a web based data tracking system for daily sales and that will be updated by admin staff from all the branches.

To avoid manual updates, company decided to automate the data entry process to a common database. Any updates to the common system should instantly send a response to know the status.
Select the best choice to implement automated data entry system and to get the instant response?

- A. Data entry system will be implemented as a Stateless Session bean and instance response will be done using JMS ✗
- B. Data entry system will be implemented as a JMS solution and instance response will be done using Stateless Session bean ✓
- C. Data entry system and instance response will be implemented using JMS ✗
- D. Data entry system and instance response will be implemented using Stateless Session Bean ✗

Choice B is correct.
The problem statement clearly specifies that the updates from all branches should be automated (means there should be a process which should be implemented as JMS to listen to the messages and process it). Other part is that, the system should send instance response once updates are done (means process should be implemented as Stateless Session Bean to get instant responses synchronously)

Choice A is incorrect. The solution proposed is reverse of choice B.

Choice C is incorrect. Both solutions should not be implemented using JMS. As instant response is not possible with JMS implementation.

Choice D is incorrect. For data entry system, the updates should be processed asynchronously and hence JMS is the best choice. Instance response can be done using Stateless Session Bean.

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

Incorrect
Marks for this submission: 0/1.

Feedback to Author

35. You are designing an online shopping application to make it easier for customers to order products from your company. The aim is that the majority of customers buying over the telephone will start using the web instead. When customers purchases goods online they will use credit cards and will require an instant response as to whether the sale has been approved or not. (Note that the credit card validation is carried out by another very powerful system.)

What type of messaging should be used?

- a. Synchronous messaging ✓
- b. Asynchronous messaging ✗
- c. You shouldn't be using messaging at all as its not transactional. ✗
- d. You could use messaging because it is transactional however it is not advised, as the system would never perform well enough for an instant response. ✗

Choice A is correct.

Synchronous messaging provides an instant response and is therefore the right answer. It is always arguable as to whether messaging should be used if you require an instant response but if you do decide to use messaging then you should always use synchronous messaging when needing an instant response.

Choice B is incorrect because asynchronous messaging does not provide an instant response. You can make messaging transactional by creating your own transactions in your code. Hence, choice C is incorrect.

Choice D is arguable too, but it is not the most appropriate answer because the question suggests that the system the messages will be sent to is very powerful and will be able to cope with the volume of traffic. Therefore, choice D would be incorrect as it suggests that the system will not perform well enough for an instant response.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

36. Select the technology suitable for moving the state of an object and it's behavior?

- ○ A. RMI ✓
- ○ B. RPC ✗
- ○ C. CORBA ✗
- ○ D. JNI ✗

Choice A is the correct answer. RMI - Remote method invocation moves state and object's behavior.

Choice B is incorrect. RPC - Remote Procedure Call is used part of the web service call and there won't be any state or object behavior maintained.

Choice C is incorrect. CORBA - Common Object Request Broker Architecture - Moves only state of an object.

Choice D is incorrect. JNI - Java Native Interface - Applications that use the JNI can incorporate native code written in programming languages such as C and C++, as well as code written in the Java programming language.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

37.   ABC Company has an existing complaint management system which is used only by its employees through a desktop application which updates the database. Company also has very good messaging infrastructure. Now, it would like to expose this system to worldwide users as a service.

Which of the following design patterns could help solve this requirement? Choose two options.

- ☐ a. Session Facade ✗
- ☐ b. Service Activator. ✓
- ☐ c. Web Service Broker ✓
- ☐ d. Service To Worker. ✗

Options B and C are correct.

The service can be exposed through WebService Broker which will put messages in Queue to be picked by Service Activator. On receiving a message,the Service Activator updates the database. See descriptions of patterns. Service To Worker is a presentation tier pattern and Session Facade is a business tier pattern.

Patterns from integration tier - Service Activator and Web Service Broker best suits above requirements.

Session Facade - Session Facade provides coarse-grained services to the clients by hiding the complexities of the business service interactions. A Session Facade might invoke several Application Service implementations or Business Objects. A Session Facade can also encapsulate a Value List Handler.

Service Activator - Service Activator enables asynchronous processing in your enterprise applications using JMS. A Service Activator can invoke Application Service, Session Facade or Business Objects. You can also use several Service Activators to provide parallel asynchronous processing for long running tasks.

Web Service Broker - Web Service Broker exposes and brokers one or more services in your application to external clients as a web service using XML and standard web protocols. A Web Service Broker can interact with Application Service and Session Facade. A Web Service Broker uses one or more Service Activators to perform asynchronous processing of a request.

The Service to Worker pattern, like the Dispatcher View pattern, describes a common combination of other patterns from the catalog. Both of these macro patterns describe the combination of a controller and dispatcher with views and helpers. While describing this common structure, they emphasize related but different usage of patterns. Both of these patterns differ in division of labour among components(Controller, Dispatcher and View).

In Dispatcher View content retrieval is done by View and in case of Service To worker content retrieval is done by controller.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

38.   ABC Bank has an internet Banking application. This application has been built with very-well defined Services. Bank would like to expose these services through mobile channel. Bank has partnered with XYZ mobile solutions company. It has been decided that when the XYZ company receives request through customer mobile, it makes a web service call to your application.

Which of the following design patterns best fit this situation?

○ a. Session Facade ✗

○ b. Domain Store ✗

○ c. Web Service Broker ✓

○ d. Service To Worker. ✗

Option C is correct.

See descriptions of patterns.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

39. You are creating a web application for an online product ordering system. You have developed an application level object to maintain connection pooling mechanism for ordering system. Your lead instructed that the resources should be efficiently utilized and should provide a global point of access to that instance.

What pattern should you use?

○ A. Abstract factory ✗

○ B. Factory Method ✗

○ C. Builder ✗

○ D. Prototype ✗

○ E. Singleton ✓

Choice E is correct.

The Singleton pattern ensures that a class has only one instance, and provides global point of access to that instance. It can also be used to create a variable number of instances of a class. The Abstract factory pattern is used for creating many objects that are dependent on each other so choice A is incorrect.

The Factory Method pattern provides an interface for creating an object, it defers creation to either sub classes or helper classes. Hence, choice B is incorrect.

The Builder pattern separates the construction and representation of an object. The client is shielded from the objects construction, only needing to specify its content and type.

Choice C is hence incorrect. The Prototype pattern is used to create new objects by copying its prototype.

Choice D is therefore incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

40. You have had enough with all the UML tools on the market as none do exactly what you want them to. Therefore, you have decided to design your own. However when designing it you realize that certain parts will be really complicated for example you have a Diagram object that is made up of lots of other objects. This diagram object can be used for a variety of different diagrams including class and sequence diagrams. When you create it you only want to specify its type and content.

What pattern should you use?

○ a. Abstract Factory ✗

○ b. Factory Method ✗

○ c. Builder ✓

○ d. Decorator ✗

Choice C is correct.

The builder pattern separates the construction and representation of an object. The client is shielded from the objects construction only needing to specify it's content and type. The Abstract Factory pattern is used for creating

many objects that are dependent on each other. Hence, choice A is incorrect.

The Factory Method pattern provides an interface for creating an object that allows either sub classes or helper classes to create that object. Hence, choice B is also incorrect.

The Decorator pattern is not used to build objects. It adds extra functionality to existing objects. Hence, choice D is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

41.   Which of the following options describe the Visitor pattern and the benefits of using it? Select two choices.

   ☐   a. Easy to add new operations ✓
   ☐   b. Simple interface for a complex subsystem ✗
   ☐   c. Separates abstraction and implementation ✗
   ☐   d. You need to group related operations ✓
   ☐   e. Easy to add functionality dynamically ✗

Choices A and D are the correct answers.

As stated in the GOF definition below, the Visitor pattern provides a way to add new operations without changing the class of the element on which it operates. The Visitor pattern should be used when the class defining the object structure rarely changes, but you need to add extra operations. It is a handy pattern when you need to upgrade old applications or when trying to save a design that didn't satisfy all the requirements, it should have.

Choice B describes the Facade pattern.

Choice C describes the Bridge pattern.

Choice E describes the Decorator pattern.

Visitor - "Represents an operation to be performed on the elements of an object structure. Visitor lets you define a new operation without changing the classes of the elements on which it operates."

Incorrect
Marks for this submission: 0/1.

Feedback to Author

42.   You are working on the design for a desktop publishing application. When the user selects a new tool from a menu, i.e. the paintbrush, you need to inform multiple objects of this new selection. (This is for them to change how they respond to events).

You recognize the problem of sending one message to multiple objects, but is there a GOF design pattern to handle this situation? If so, what is it called?

   ○   a. Chain of Responsibility ✗
   ○   b. Command ✗
   ○   c. Mediator ✗
   ○   d. Observer ✓
   ○   e. Proxy ✗
   ○   f. Strategy ✗

Choice D is the correct answer.

The Observer pattern provides a way for an object to broadcast messages (one-to-many).

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

Chain of Responsibility - "Avoid coupling the sender of a request to its receiver by giving more than one object a chance to handle the request. Chain the receiving objects and pass the request along the chain until an object handles it."

Command - "Encapsulates a request as an object, thereby letting you parameterize clients with different requests,

queue or log requests, and supports undoable operations."

Mediator - "Defines 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."

Proxy - "Provides a surrogate or placeholder for another object to control access to it."

Strategy - "Defines a family of algorithms, encapsulates each one, and make them interchangeable. Strategy lets the algorithm vary independently from clients that use it."

Incorrect
Marks for this submission: 0/1.

Feedback to Author

43. Which of the following are benefits of using Application Service pattern? Select two choices.

- ☐ a. Improves reusability of business logic ✓

- ☐ b. Provides asynchronous processing for any business-tier component ✗

- ☐ c. Centralizes reusable business and workflow logic ✓

- ☐ d. You want to provide access to one or more services using XML and web protocols. ✗

Options A and C describe the benefit of Application Service Design Pattern. So, Options A and C are correct.

Option D describes WebService Broker Pattern.

Option B is the benefit of Service Activator Pattern.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

44. Which of the following are benefits of using Composite Entity pattern?

- ○ a. You want to implement parent-child relationships efficiently when implementing business objects as entity beans. ✓

- ○ b. Improves Security. ✗

- ○ c. Provides a uniform data access API for a persistent mechanism to various types of data sources, such as RDBMS, LDAP, OODB, XML repositories, flat files ✗

- ○ d. You want to separate persistence from your object model. ✗

Option D is incorrect because it describes Domain Object.

Option A is correct because it describes Composite Entity.

Option C is incorrect because it describes benefit of DAO pattern.

Option B is incorrect as the Composite Entity pattern is not related security.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

45. What is the difference between the abstract factory pattern and the factory method pattern?

- ○ a. The factory method makes objects that should be used together. This is not the case for the abstract factory. ✗

- ○ b. The abstract factory pattern provides an interface for creating a family of objects whereas factory method provides an interface for creating one object. ✓

- ○ c. In the abstract factory pattern, the objects that the factory makes are to be used together. This is not necessarily true in the factory method pattern. ✗

- ○ d. The factory method pattern is used when the class does not know the class of the object it must create. But in the abstract factory this is known in advance. ✗

Choice B is correct.

Both the Abstract Factory and Factory Method are Creational patterns.

Abstract Factory - (GOF 87): "Provide an interface for creating families of related or dependent objects without specifying their concrete classes."

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."

Choice A offers a description of the abstract factory pattern not the factory method.

The descriptions in choices C and D are the wrong way round.

Choice E is incorrect, as the two patterns are different.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

46.   You are designing a paint application and as part of the user interface, you have a toolbar along the left-hand side of the screen. Each of the icons on the toolbar has different actions when you are using different tools. The way you have structured it, the application is required to pass commands from one object to another. When the appropriate object receives the command, it handles the request.

This is an example of which pattern?

- ○ a. Command ✗
- ○ b. Chain of Responsibility ✓
- ○ c. Adapter ✗
- ○ d. Interpreter ✗
- ○ e. Strategy ✗

Choice B is correct.

Chain of Responsibility - (GOF 223):"Avoid coupling the sender of a request to its receiver by giving more than one object a chance to handle the request. Chain the receiving objects and pass the request along the chain until an object handles it."

Below are descriptions of the other patterns:

Command - (GOF 233):"Encapsulate a request as an object, thereby letting you parameterize clients with different requests, queue or log requests, and support undoable operations"

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."

Adapter - (GOF 139):"Convert the interface of a class into another interface clients expect. Adapter lets classes work together that couldn't otherwise because of incompatible interfaces."

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."

Incorrect
Marks for this submission: 0/1.

Feedback to Author

47.   You have had enough of you existing IDE (Integrated Development Environment) and have started work on designing your own. Now you are working on the undo part of the application and you need to record an object internal state without violating encapsulation and reclaim it later without knowledge of the original object.

What pattern would you use to do this?

- ○ A. Memento ✓
- ○ B. State ✗
- ○ C. Mediator ✗

Choice A is correct.

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."

Choices D, E and F are not names of patterns. Rollback is something you would do if a transaction were terminated halfway through. Transaction is self-explanatory. ACID stands for Atomic, Consistent, Isolatable and Durable. All transactions must adhere to this.

Below are descriptions of the other patterns:

State - (GOF 305):"Allow an object to alter its behavior when it's internal state changes. The object will appear to change its class."

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

48. One of the advantages of using stateless session beans is that they are lightweight objects and do not have conversational state overheads. Further, the container swaps these bean instances in and out of the bean pool to appropriately manage resources. This allows the container to use fewer instances of the bean to service a larger number of clients.

What design pattern is being illustrated here?

- a. Decorator ✗
- b. Factory ✗
- c. Facade ✗
- d. Flyweight ✓
- e. Visitor ✗

Choice D is correct.

Flyweight (GOF 195) "Use sharing to support large numbers of fine-grained object efficiently." Here the container uses fewer instances of Stateless Session Beans to service a larger number of clients. Hence, choice D is correct.

Decorator (GOF 175) "Attach additional responsibilities to an object dynamically. Decorators provide a flexible alternative to subclassing for extending functionality." Hence, choice A is incorrect.

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, choice B is incorrect. Facade (GOF 185)"Provide a unified interface to a set of interfaces in a subsystem." Hence, choice C is incorrect.

Visitor (GOF 331) "Represent an operation to be performed on the elements of an object structure. Visitor lets you define a new operation without changing the classes of the elements on which it operates." Hence, choice E is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

49. A malicious hacker has created an applet to cause a denial-of-service style attack by sending packets from the client machine to a 'target' machine (different from the host machine).

Which of the following statements regarding this are true?

- a. This will work as expected. ✗
- b. This cannot be carried out by an applet. ✓
- c. This will only work if the applet is signed. ✗
- d. This may work, but it depends on the configuration of the users browser. ✗

Choice B is the correct answer.

Applets are permitted to make network connections back to the host that they were downloaded from. They aren't however allowed to connect to arbitrary hosts because this would provide a mechanism for denial of service attacks. Also if a firewall or server filters packets by IP address then it would be possible for a downloaded applet to be trusted automatically by the firewall/server (a downloaded applet sending requests from your machine would be sending them with your trusted IP address).

It is not possible to change the priority of the thread that was created by the browser for the applet to run in (to do this would require an O/S call). It is possible for an applet to create new threads and manipulate the threads in the thread group that the browser created for the applet.

The security manager does not monitor the memory, CPU or network bandwidth usage of an applet. (It is assumed that the operating system will guard against an applet using an excessive amount of resources). When an applet runs out of memory a java.lang.OutOfMemoryError will be thrown.Generally speaking, operating systems will allocate a certain amount of memory for processes to use but this not fixed (an applet can ask for more and if available the O/S may assign it).

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

Incorrect
Marks for this submission: 0/1.

Feedback to Author

50.   A disgruntled colleague has written an applet and uploaded on your company's website. The applet periodically spawns new threads to carry out time consuming tasks such as floating point arithmetic.

What effect will this applet have on your company's customers?

- ○ a. No effect, the security manager will not permit the applet to create new threads. ✗

- ○ b. If signed with the company's certificate the applet would execute as expected, using up resources on the customers machine. ✗

- ○ c. The applet would execute as expected, using up resources on the customers machine. ✓

- ○ d. The applet would execute as expected but when excessive amounts of resources were being used, the security manager would detect this and effectively starve the applet. ✗

- ○ e. The applet would execute as expected but when excessive amounts of resources were being used the security manager would detect this and kill the applet. ✗

Choice C is the correct answer.

It is possible for applets to spawn new threads and to manipulate threads within the thread group created by the browser. The security manager does not monitor the CPU, memory, or network bandwidth usage of an applet; instead it is assumed that the O/S will handle this.

Choice A is incorrect because applets can create new threads.

Choice B is incorrect because there is no need for the applet to be signed in order to create new threads.

Choices D and E are incorrect because the security manager does not monitor the resource usage of an applet.

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

Incorrect
Marks for this submission: 0/1.

Feedback to Author

51.   What is a Demilitarized Zone (DMZ)?

- ○ a. The logical separation of tiers in a J2EE application. Example: the separation between the Web Tier and the EJB Tier ✗

- ○ b. The logical separation of layers in a J2EE application. Example: The separation between the Operating System and the EJB Container. ✗

- ○ c. A type of protection offered by proxy firewalls, currently only available to the U.S armed forces under National Security laws. ✗

- ○ d. The region between two firewalls ✓

Choice D is correct.

Demilitarized Zone (DMZ) is an area between two firewalls. The outer firewall lets requests to publicly accessible services in. It will reject all other requests. The inner firewall will protect the company's internal network and prevent requests coming into the DMZ from passing through it.

Choice D is therefore correct.

Choices A, B and C are all incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

52.   You have a JAR file that has been signed by a third-party vendor. A Trusted Certificate Authority (CA) has signed the third-party vendor's certificate. Is it possible to add any more classes to this JAR file?

   ○ a. Yes ✓
   ○ b. No ✗

Choice A is correct, as it is possible to add more classes to the JAR file.

When you sign a JAR file, you are not signing the JAR file itself but individual files it contains. This means you can use a tool like WinZip to add new files (classes, images etc) to the existing JAR file without necessarily invalidating the signature.

Note: The files that are added later, will not be signed.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

53.   You have received an email from your Bank about a new campaign where you could win 5000$ prize in case you immediately login into the internet banking site. Email also provides url to the internet banking site. On closer observation you see that it differs from the normal URL that you use. Which of the following best describes the situation?

   ○ a. Denial of Service ✗
   ○ b. Man-in-the-Middle Attacks ✗
   ○ c. Cross-site scripting ✗
   ○ d. Phishing. ✓

Option D is correct.This is an example of phishing.

A Denial-of-Service attack (also DoS attack) is an attack on a computer system or network that causes a loss of service to users. Usually it is realized through consuming all of the bandwidth available to the victim network or by overloading the computational resources of the victim system. It can be prevented by using Service Request Queue technique - limiting the number of concurrent requests one application can get while queuing all excess requests.

A Man-in-the-Middle (MitM) attack is a technique where an attack intercepts another user's session, inspects its contents and tries to modify its data or otherwise use it for malicious purposes. Measures to prevent these attachs are to use encryption of sensitive data and prevent the data being read. Some examples are using SSL, avoiding Frames/IFrames, avoid URL rewriting (SessionId is exposed).

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 : 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.

Phishing is an attempt to criminally and fraudulently acquire sensitive information, such as usernames, passwords and credit card details, by masquerading as a trustworthy entity in an electronic communication. Phishing is a social engineering technique to fool users.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

54. You as a J2EE Architect of a Healthcare company are designing a website where user login and add their dependent details online. It involved basic database updates and retrieval of data. Your senior has suggested to filter special characters such as "; ? -- | " from text boxes.

What could be the reason for his suggestion?

- ○ a. To prevent buffer overflow ✗
- ○ b. To prevent SQL Injection ✓
- ○ c. To prevent weird output errors ✗
- ○ d. It is better to stop the invalid input in the web layer itself, as names seldom have these special characters. ✗

Option B is correct.

Hackers can input these characters and force some unnecessary SQL queries by sending them in input fields. Filtering such special characters can prevent SQL Injection. In similar way, hackers can also send standard HTML tags, which may spoil the display on subsequent pages. Since question does not mention filtering for HTML-related strings, option C is incorrect.

Java language is type-safe, and the runtime provides automatic memory management and range-checking on arrays. These features also make Java programs immune to the buffer overflow attacks possible in the C and C++ programming languages.So, option A is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

55. Which of the following is true about annotations for security roles in EJB?

- ○ a. Security roles must be defined either through annotations or ejb-jar.xml but not in both ✗
- ○ b. Security roles can be defined by both mechanisms (annotations & deployment descriptor) but annotations override settings in Deployment Descriptor ✗
- ○ c. Security roles can be defined by both mechanisms (annotations & deployment descriptor) but settings in deployment descriptor override annotations ✓
- ○ d. Both annotations & deployment descriptoy can be used and one of them can be chosen at deploy time. ✗

Option C is a correct statement.

Security roles can be defined by both mechanisms (annotations & Deployment descriptor) but settings in deployment descriptor override annotations.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

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

- ☐ a. EJBContext.getUserTransaction().isSecureTransaction ✗
- ☐ b. UserTransaction.isUserInRole ✗
- ☐ c. EJBContext.isCallerInRole ✓
- ☐ d. EJBContext.getCallerPrincipal ✓

Options C and D are correct.

Options A and B are incorrect as there are no such methods.

The javax.ejb.EJBContext application programming interface (API) provides two methods whereby the bean provider can access security information about the enterprise bean caller: isCallerInRole(String rolename) determines if a user is in a specific security role, getCallerPrincipal returning the java.security.Principal object.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

57. ABC Company has an old web application built using Servlets/JSP and in-house MVC framework. You are asked for expert advice on improving the quality of code as ABC Company has to spend lot of money time and again even for small changes in the application. Looking at the code, you have observed that lot of java code has been used in JSP and has been duplicated in multiple instances.

Which of the following technologies would you recommend to use?

- ☐ A. AJAX ✗
- ☐ B. Tag Libraries ✓
- ☐ C. Expression Language ✓
- ☐ D. Rewrite whole application using JSF. ✗

Option B and C are correct. Tag Libraries would help in modularize the logic and creates better maintainability. As EL would help in improving the re usability and also in passing parameters to any custom tag libraries.

Option A is incorrect as AJAX code executes on browser side.

Option D is incorrect as the problem is only with JSP's. There is no need to rewrite the whole web code.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

58. You have been asked to design scalable vector graphs to display the system performance results.
What is the most suitable technology you would choose?

- ○ A. JSP ✓
- ○ B. Servlet ✗
- ○ C. JPA ✗
- ○ D. EJB ✗

Options A is correct.
Java Server Pages (JSP) technology allows you to easily create web content that has both static and dynamic components. JSP technology makes available all the dynamic capabilities of Java Servlet technology but provides a more natural approach to creating static content.
JSP pages are more appropriate for generating text-based markup such as Scalable Vector Graphs (SVG), Wireless Markup Language (WML), HTML and XML.

Option B, C and D are incorrect.

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

Incorrect
Marks for this submission: 0/1.

Feedback to Author

59. Your Web application is deployed on Websphere & Weblogic Servers. A load balancer is configured to alternate requests between these two instances.

Which of the following is true about HttpSession?

- a. Data stored in HttpSession can be picked by any of the servers as it is stored in central database. ✗
- b. Since session ID is stored in cookies any Java EE Server can deserialize the sessionId to get the data ✗
- c. It will be replicated automatically ✗
- d. Data stored in HttpSession of WebSphere will not be available for WebLogic server and vice-versa. ✓

Option D is correct.

Generally server instances of single product when clustered replicates session information across JVM (common database or any other

mechanism), but session replication is not implicit between different products.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

60. Mega Inc company wants to re-engineer the current JSP code due to it's maintainability issues. You have been asked to use JSTL and list the features available from the library.
Which of the following statements are true about JSTL?

- A. JSTL provides support for standard flow control ✓
- B. JSTL provides support for XML processing but not for SQL queries ✗
- C. JSTL provides support for internationalization but not for XML processing ✗
- D. JSTL provides support for XML processing and also for executing SQL queries. ✓

Option A and D are correct.

JSTL provides support for standard flow control, XML processing and SQL through tag libraries.
Java Server Pages Standard Tag Library (JSTL) encapsulates as simple tags the core functionality common to many Web applications. JSTL has support for common, structural tasks such as iteration and conditionals, tags for manipulating XML documents, internationalization tags, and SQL tags. It also provides a framework for integrating existing custom tags with JSTL tags.

Option B is incorrect. JSTL provides support for XML processing and also to execute SQL queries.
Option C is incorrect. JSTL provides support for internationalization and also for XML processing.

For more information, please refer :
http://www.oracle.com/technetwork/java/index-jsp-135995.html

Incorrect
Marks for this submission: 0/1.

Feedback to Author

61. Which of the following is NOT true about JSF?

- a. Application configuration file must be faces-config.xml ✓
- b. It provides Validation model ✗
- c. It provides component rendering model ✗
- d. JSF application includes one or more backing beans, each of which is a JavaServer Faces managed bean that is associated with the UI components used in a particular page ✗

Option A is correct.

Configuration file is usually configured as faces-config.xml but there is no rule that it must be that name.

Options B, C and D are true statements about JSF.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

62. Which of the following is a valid sequence of JSF lifecycle?

- a. Restore View -> Process Validations -> Apply Requests -> Update Model Values -> Invoke Application -> Render Response ✗
- b. Restore View -> Process Validations -> Apply Requests -> Invoke Application -> Update Model Values -> Render Response ✗
- c. Restore View -> Apply Requests -> Process Validations -> Update Model Values -> Invoke Application -> Render Response ✓
- d. Restore View -> Apply Requests -> Process Validations -> Invoke Application -> Update Model Values -> Render Response ✗

Option C is correct.

Correct sequence is Restore View -> Apply Requests -> Process Validations -> Update Model Values -> Invoke Application -> Render Response.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

63. You are designing a travel booking application for employees of your organization. Through this application, employees can book online for various road, rail and air transport. Once the customer confirms the booking, your application will make calls to these transport companies through web services.

Which of the following would be useful for you to implement this?

- a. Stateless Session Beans ✗
- b. Servlets/JSP ✓
- c. Stateful Session Beans ✗
- d. Enterprise Service Bus. ✗

Option B is correct.

Once the user makes selections, web service invocations can be done from the web layer. There is no need to use session beans as there are no requirements for transactions/scalability.

Options A and C are incorrect. For a small application you would not require Enterprise Service Bus.

Option D is incorrect.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

64. You are building a real-time web based system with high usage and high volumes of transactions. Which of the following technologies would you choose? Select three choices.

- a. MDB ✗
- b. Swing GUI controls ✗
- c. JSP ✓
- d. EJB3 Entities ✓
- e. Stateless Session Beans ✓
- f. Java Cryptography Extension (JCE) ✗

Options C, D and E are correct.

Application can be built using JSP for UI, stateless session beans for business services and EJB3 entities for persistence.

Option A is incorrect because it is a real-time system, and MDBs are asynchronous.

Option B is incorrect because the requirement is for a web based application.

Option F is incorrect because nothing is mentioned about security requirements.

The Java Cryptography Extension (JCE) provides a framework and implementations for encryption, key generation

and key agreement, and Message Authentication Code (MAC) algorithms.

Incorrect
Marks for this submission: 0/1.

Feedback to Author

Finish review