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Question Bank

Chapter: 6. Java EE Patterns



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Unit-6: Java EE Patterns

Objectives

- 1. Given a scenario description with a list of issues, select a pattern that would solve the issues. The list of patterns you must know are: Intercepting Filter, Model-View-Controller, Front Controller, Service Locator, Business Delegate, and Transfer Object.
- 2. Match design patterns with statements describing potential benefits that accrue from the use of the pattern, for any of the following patterns: Intercepting Filter, Model-View-Controller, Front Controller, Service Locator, Business Delegate, and Transfer Object.
- Q1. Squeaky Beans Inc. hired an outside consultant to develop their web application. To finish the job quickly, the consultant created several dozen JSP pages that directly communicate with the database. The Squeaky business team has since purchased a set of business objects to model their system, and the Squeaky developer charged with maintaining the web application must now refactor all the JSPs to work with the new system. Which pattern can the developer use to solve this problem?
- A. Transfer Object
- B. Service Locator
- C. Intercepting Filter
- D. Business Delegate

Answer: D

Q2. A developer is designing a web application that must verify for each request: The originating request is from a trusted network.

The client has a valid session.

The client has been authenticated.

Which design pattern provides a solution in this situation?

- A. Transfer Object
- B. Session Facade
- C. Intercepting Filter
- D. Template Method
- E. Model-View-Controller

Answer: C

Q3. The Squeaky Bean company has decided to port their web application to a new J2EE 1.4 container. While reviewing the application, a developer realizes that in multiple places within the current application, nearly duplicate code exists that finds enterprise beans. Which pattern should be used to eliminate this duplicate code?

A. Transfer Object

C. Service Locator

E. Business Delegate

B. Front Controller

D. Intercepting Filter

F. Model-View-Controller

Answer: C

Q4. Which two are characteristics of the Transfer Object design pattern? (Choose two.)

- A. It reduces network traffic by collapsing multiple remote requests into one.
- B. It increases the complexity of the remote interface by removing coarse-grained methods.
- C. It increases the complexity of the design due to remote synchronization and version control issues.
- D. It increases network performance introducing multiple fine-grained remote requests which return very small amounts of data.

Answer: A, C



Q5. developer has created a special servlet that is responsible for generating XML content that is sent to a data warehousing subsystem. This subsystem uses HTTP to request these large data files, which are compressed by the servlet to save internal network bandwidth. The developer has received a request from management to create several more of these data warehousing servlets. The developer is about to copy and paste the compression code into each new servlet. Which design pattern can consolidate this compression code to be used by all of the data warehousing servlets?

A. Façade

C. Transfer Object

E. Composite Facade

B. View Helper

D. Intercepting Filter

Answer: D

Q6. Which two are characteristics of the Service Locator pattern? (Choose two.)

A. It encapsulates component lookup procedures.

B. It increases source code duplication and decreases reuse.

C. It improves client performance by caching context and factory objects.

D. It degrades network performance due to increased access to distributed lookup services.

Answer: A, C

Q7. The Squeaky Bean company has decided to port their web application to a new J2EE 1.4 container. While reviewing the application, a developer realizes that in multiple places within the current application, nearly duplicate code exists that finds enterprise beans. Which pattern should be used to eliminate this duplicate code?

A. Transfer Object

C. Service Locator

E. Business Delegate

Answer: C

B. Front Controller

D. Intercepting Filter

F. Model-View-Controller



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Q8. A developer is designing a web application that makes many fine-grained remote data requests for each client request. During testing, the developer discovers that the volume of remote requests significantly degrades performance of the application. Which design pattern provides a solution for this problem?

A. Flyweight

C. Service Locator

E. Business Delegate

Answer: B

B. Transfer Object

D. Dispatcher View

F. Model-View-Controller

Q9. In an n-tier application, which two invocations are typically remote, not local? (Choose two.)

A. JSP to Transfer Object

C. Controller to request object

E. Controller to Business Delegate

B. Service Locator to JNDI

D. Transfer Object to Entity Bean

F. Business Delegate to Service Locator

Answer: B, D

Q10. A developer has created a special servlet that is responsible for generating XML content that is sent to a data warehousing subsystem. This subsystem uses HTTP to request these large data files, which are compressed by the servlet to save internal network bandwidth. The developer has received a request from management to create several more of these data warehousing servlets. The developer is about to copy and paste the compression code into each new servlet. Which design pattern can consolidate this compression code to be used by all of the data warehousing servlets?

- A. Facade
- B. View Helper
- C. Transfer Object
- D. Intercepting Filter
- E. Composite Facade

Answer: D



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Q11. A developer is designing the presentation tier for a web application which requires a centralized request handling to complete common processing required by each request. Which design pattern provides a solution to this problem?

A. Remote Proxy
C. Service Activator
D. Intercepting Filter
E. Business Delegate
F. Data Access Object

Answer: B

Q12. You are designing an n-tier Java EE application. You have already decided that some of your JSPs will need to get data from a Customer entity bean. You are trying to decide whether to use a Customer stub object or a Transfer Object. Which two statements are true? (Choose two.)

- A. The stub will increase network traffic.
- B. The Transfer Object will decrease data staleness.
- C. The stub will increase the logic necessary in the JSPs.
- D. In both cases, the JSPs can use EL expressions to get data.
- E. Only the Transfer Object will need to use a Business Delegate.
- F. Using the stub approach allows you to design the application without using a Service Locator.

Answer: A, D

- Q13. You are designing an n-tier Java EE application. You have already decided that some of your JSPs will need to get data from a Customer entity bean. You are trying to decide whether to use a Customer stub object or a Transfer Object. Which two statements are true? (Choose two.)
- A. The stub will increase network traffic.
- B. The Transfer Object will decrease data staleness.
- C. The stub will increase the logic necessary in the JSPs.
- D. In both cases, the JSPs can use EL expressions to get data.
- E. Only the Transfer Object will need to use a Business Delegate.
- F. Using the stub approach allows you to design the application without using a Service Locator.

Answer: A, D

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Q14. Which two are characteristics of the Intercepting Filter pattern? (Choose two.)

- A. It provides centralized request handling for incoming requests.
- B. It forces resource authentication to be distributed across web components.
- C. It reduces coupling between presentation-tier clients and underlying business services.
- D. It can be added and removed unobtrusively, without requiring changes to existing code.
- E. It allows preprocessing and postprocessing on the incoming requests and outgoing responses.

Answer: D, E

Q15. A developer has created a web application that includes a servlet for each use case in the application. These servlets have become rather difficult to maintain because the request processing methods have become very large. There is also common processing code in many servlets because these use cases are very similar. Which two design patterns can be used together to refactor and simplify this web application? (Choose two.)

A. Proxy
B. View Helper
C. Front Controller
D. Session Facade

E. Business Delegate F. Model-View-Controller

Answer: C, F

Q16. A developer is designing a multi-tier web application and discovers a need to hide the details of establishing and maintaining remote communications from the client. In addition, the application needs to find, in a transparent manner, the heterogeneous business components used to service the client's requests. Which design patterns, working together, address these issues?

- A. Business Delegate and Transfer Object
- B. Business Delegate and Service Locator
- C. Front Controller and Business Delegate
- D. Intercepting Filter and Transfer Object
- E. Model-View-Controller and Intercepting Filter

Answer: B



Q17. A developer is designing a web application that must support multiple interfaces, including:

an XML web service for B2B

HTML for web-based clients

WML for wireless customers

Which design pattern provides a solution for this problem?

A. Session Façade

B. Business Delegate

C. Data Access Object

D. Model-View-Controller

E. Chain of Responsibility

Answer: D

Q18.developer is designing a web application which extensively uses EJBs and JMS. The developer finds that there is a lot of duplicated code to build the JNDI contexts to access the beans and queues. Further, because of the complexity, there are numerous errors in the code.

Which J2EE design pattern provides a solution for this problem?

A. Command

C. Service Locator

E. Business Delegate

B. Transfer Object

D. Session Facade

F. Data Access Object

Answer: C

Q19. Which two are characteristics of the Front Controller pattern? (Choose two.)

- A. It simplifies remote interfaces to distributed objects.
- B. It promotes cleaner application partitioning and encourages reuse.
- C. It provides an initial point of contact for handling all related requests.
- D. It reduces maintainability due to the increased complexity of the design.
- E. It provides loosely coupled handlers that can be combined in various permutations.

Answer: B, C

Q20. Squeaky Beans Inc. hired an outside consultant to develop their web application. To finish the job quickly, the consultant created several dozen JSP pages that directly communicate with the database. The Squeaky business team has since purchased a set of business objects to model their system, and the Squeaky developer charged with maintaining the web application must now refactor all the JSPs to work with the new system. Which pattern can the developer use to solve this problem?

A. Transfer Object
C. Intercepting Filter
B. Service Locator
D. Business Delegate

Answer: D

Q 21. A developer is designing the presentation tier for a web application that relies on a complex session bean. The session bean is still being developed and the APIs for it are NOT finalized. Any changes to the session bean API directly impacts the development of the presentation tier.

Which design pattern provides a means to manage the uncertainty in the API?

- A. View Helper
- B. Front Controller
- C. Composite View
- D. Intercepting Filter
- E. Business Delegate
- F. Chain of Responsibility

Answer: E

Q22. A developer is designing a multi-tier web application and discovers a need to log each incoming client request. Which two patterns, taken independently, provide a solution for this problem? (Choose two.)

A. Transfer Object
C. Front Controller
D. Intercepting Filter
E. Business Delegate
F. Model-View-Controller

Answer: C, D

- Q23. A developer is designing a multi-tier web application and discovers a need to hide the details of establishing and maintaining remote communications from the client. In addition, because the business and resource tiers are distributed, the application needs to minimize the inter-tier network traffic related to servicing client requests. Which design patterns, working together, address these issues?
- A. Front Controller and Transfer Object
- B. Front Controller and Service Locator
- C. Business Delegate and Transfer Object
- D. Business Delegate and Intercepting Filter
- E. Model-View-Controller and Intercepting Filter

Answer: C

