

838p Final Exam

Don't panic.

There are 12 questions. **Answer any 10 of them (i.e., pick two questions to not answer)**. Each question is worth 10 points.

1. Discuss pass-by-value vs. pass-by-reference, with regards to:
 - Web services
 - EJB Local interfaces
 - EJB Remote interfaces
2. How would you decide whether something should be implemented as a stateful session bean or as an entity bean. Give several rules for deciding this (e.g., if it is colored blue, it should be an entity bean). Discuss something which could be implemented as either an entity bean or a stateful session bean.
3. Here are some methods. State which interfaces they might reasonably appear in (e.g., [remote/local] [home/component] interface of a [stateless session bean / stateful session bean / entity bean]). Some (most) methods may appear in multiple interfaces, please list concisely using wildcards as appropriate. Note: the methods don't list return types or thrown exceptions.
 - create()
 - create(String firstName, String lastName)
 - findByPrimaryKey(String key)
 - getHandle()
 - remove()
 - remove(Handle h)
4. Suppose you had two different entity beans, X and Y. There are three different relationships between X and Y. Relationship R1 is a one-to-one bidirectional relationship from X to Y. Relationship R2 is a one-to-many relationship from X to Y. Relationship R3 is a many-to-many relationship from X to Y. Describe how these relationships could be implemented in an underlying database.
5. What are the mechanisms that a servlet container might use to track sessions? What requirements do they impose on browsers and/or servlets?
6. In Servlets/JSP, what is the difference between forwarding, including and redirecting?
7. What special functionality/convenience is made available by using JavaBeans in a JSP or servlet?

8. Given a container managed, 1-1 bidirectional relation:

```
Foo <--> Bar
```

and the object relations:

```
f1 <--> b1  
f2 <--> b2
```

Which boolean expressions will be true after the following code runs?

```
b2.setFoo(b1.getFoo());
```

Note all that apply:

- (a) `f1.getBar() == null`
- (b) `f2.getBar() == null`
- (c) `b1.getFoo() == null`

9. What situations/circumstances would force you to use bean-managed transactions? Contained-managed transactions?
10. What is the difference between a Get request and a Post request in HTTP/Servlets?
11. Which of the following design patterns is normally used to reduce the number of remote calls made by the clients to the server? Select the one that best applies.
- (a) Business Delegate
 - (b) Model View Controller
 - (c) Facade
 - (d) Factory
 - (e) Value Objects
12. Compare and contrast the following. In particular, give situations that would call out for or preclude the use of these technologies.
- JDBC ResultSets
 - JDBC RowSets
 - JDO
 - EJB Entity beans