Session Beans In Java

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Name : Dipak Rajendra Pawar
Roll_No: 580
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Session Beans

Objectives:

1. Description of session beans.
2. Types of session beans.
3. Stateless session beans.
4. Stateful session beans.
5. Singleton session bean.
6. Difference between Stateless and Stateful session beans.

Session Beans

Session Beans:

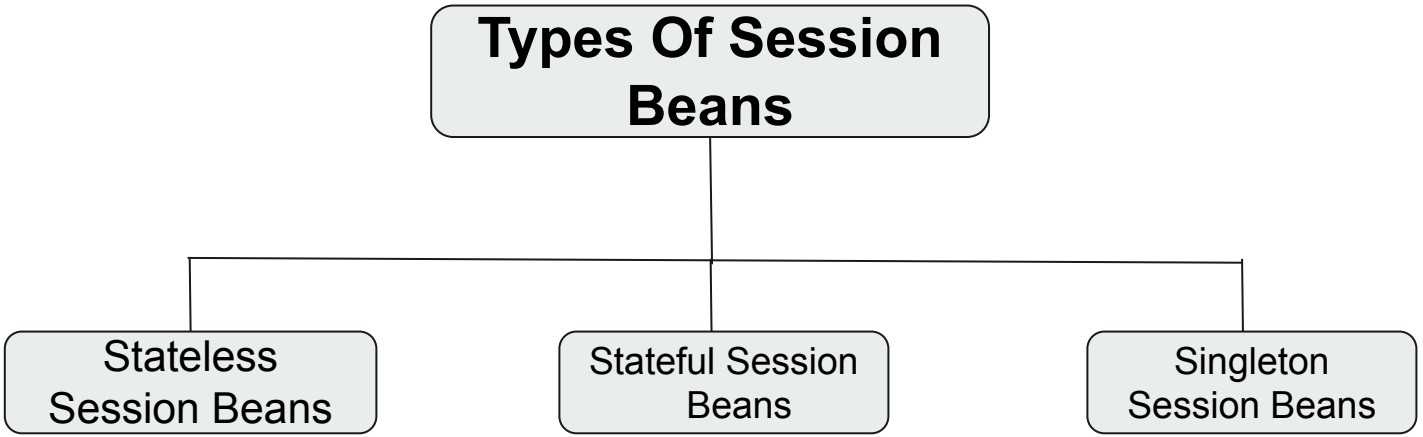
Session bean represents a conversation between client and server.

session bean encapsulates business logic that can be invoked programmatically by a client over local, remote, or web service client views. To access an application that is deployed on the server, the client invokes the session bean's methods. The session bean performs work for its client, shielding it from complexity by executing business tasks inside the server.

A session bean is not persistent. (i.e. its data is not saved to a database.)

Session Beans

Types Of Session Beans:



Session Beans

Stateless Session beans:

- A **stateless session bean** does not maintain a conversational state with the client.
- When a client invokes the methods of a stateless bean, the bean's instance variables may contain a state specific to that client but only for the duration of the invocation.
- When the method is finished, the client-specific state should not be retained.
- support multiple clients, stateless session beans can offer better scalability for applications that require large numbers of clients.

Session Beans

Example

1. It does not maintain state information between business method invocations
2. Performance is better than stateful session because a single stateless session bean can shared among many clients.
3. For Examples:

★ Stateless session to generate Fibonacci series:
- getFibonacciSeries(...)
- 1,1,2,3,5,8,…

★ Calculating Factorials:
- getFactorial(...)
- 4!=4*3*2*1 etc

Session Beans

Stateful Session:

- Stateful Session Bean is a business object that represents business logic like Stateless Session Bean .But it maintains state (data).

Session Beans

Example:

As we know it does maintain information between business method invocation.

For example, a stateless session for “Shopping Cart”

A.Would provide business methods for adding and removing items from the cart.

B. It store state information such as:

- Number of item in a cart
- Quantity of each item in the cart
- Total cost of item in the cart

Session Beans

Singleton Session Bean:

Singleton session beans maintain their state between client invocations but are not required to maintain their state across server crashes or shutdowns.
The singleton may perform cleanup tasks on application shutdown as well, because the singleton will operate throughout the lifecycle of the application
Eg.
Are created when the spring container is created and destroyed when the container is destroyed

Session Beans

Differences between Stateful,Stateless

Stateless Session Bean	Stateful Session Bean
Stateless Session Bean is a business object that only represents business logic	Stateful Session Bean is a business object that represents business logic like stateless session bean without maintaining states.
stateless session bean does not have states or data	stateful session bean has states or data.
@Stateless, @PostConstruct and @PreDestory are the annotations of Stateless Session Bean	@Stateless, @PostConstruct,@PreDestory, @PrePassivate, @PostActivate are the annotations of Stateful Session Bean.

Session Beans

References:

- https://docs.oracle.com/javaee/6/tutorial/doc/gipjg.htm
- https://www.slideshare.net/ReturnOnIntelligence/introduction-to-ejb

Thanks.....