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Design Patterns

Enterprise Application Level Design Patterns

5. Session Facade



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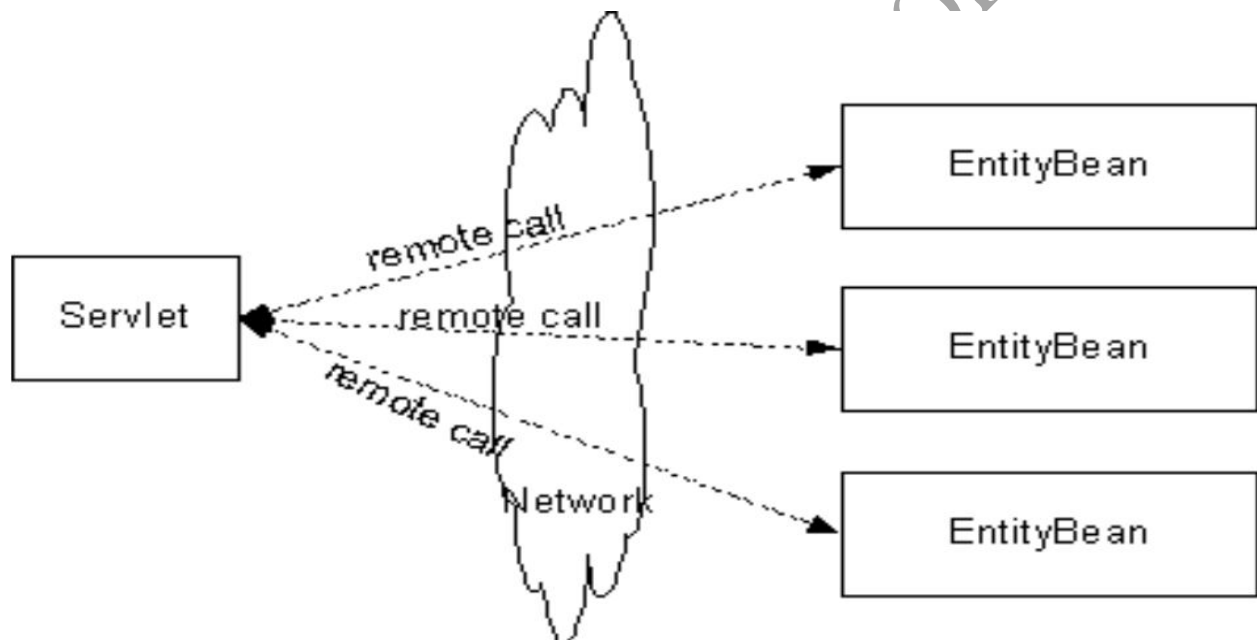
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Session Facade

Problem:

If remote client wants communicate with multiple business components then it has to use multiple network and remote calls to interact with these multiple business components that means more network calls will be there between client & business component.

Ex.EJB clients (swing, servlets, JSPs etc) can access entity beans directly. If EJB clients access entity beans directly over the network, it takes more network calls and imposes network overhead. The following figure illustrates this process:



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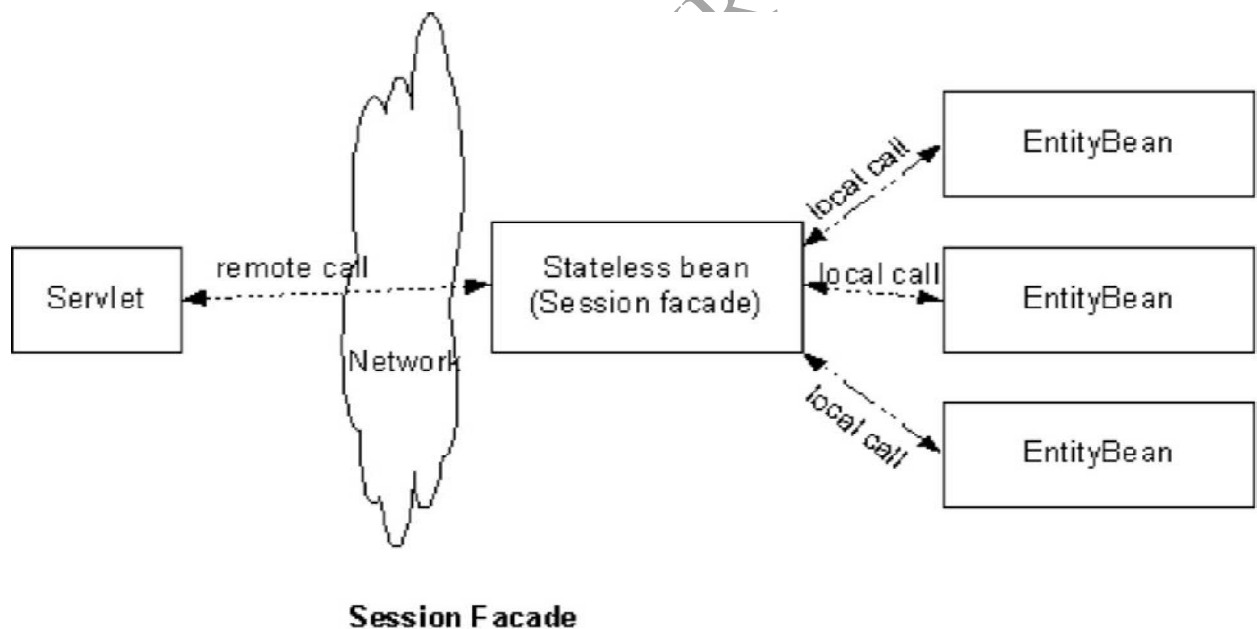
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Here in the above figure, the servlet calls multiple entity beans directly to accomplish a business process, thereby increasing the number of network calls.

Solution: Work with **Session Façade** design pattern. Session façade is a dummy business component that resides at server side, receives remote call from client and passes that call to multiple business components of server side **locally**.

The solution for avoiding number of network calls due to directly accessing multiple entity beans is to wrap entity beans with session bean (Facade). The EJB client accesses session bean (Facade) instead of entity beans through coarse grained method call to accomplish a business process.

The following figure illustrates how the session facade (session bean) acts as an interceptor between client and entity beans:



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Here the client makes only one coarse grained method call to session bean (facade) to process a business method instead of placing fine grained calls to entity beans. The session bean in turn calls entity beans to process client request. Entity beans can be made local by implementing EJB2.0 local interfaces to reduce remote overhead between session facade and entity beans. Therefore the session facade reduces the network traffic and increases performance.

Note: Here the **stateless bean** component i.e. acting as session façade does not contain any business logic but contains logic to communicate with other business components by receiving calls from the remote client.

Note:

- ❖ **Synchronous Communication:** If client is waiting or sitting idle to perform next operation until the given request related response comes to client from the server application then it is called as Synchronous Communication **ex:** Phone Call
- ❖ **Asynchronous Communication:** If client is free to generate next request or to perform client side operations without waiting for given request related response from the server application then it is called as Asynchronous Communication **ex:** SMS or Chatting Features

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