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Mod 4

1. Explain J2EE Three tier architecture.

J2EE uses three tiers:

- i) Client tier
- ii) Middle tier
- iii) Enterprise Data.

1. Client Tier:

The client tier consist of programs or applications interact with the user. Usually they are located in a different machine from the server. Client tier prompts the user inputs into user requests then forwarded to the J2EE server then processed result returned back to the client. A client can be a web browser, standalone application or server ~~that~~ that runs on a different machine. Clients can be classified as a web client and application client.

2. Middle tier (web tier & EJB Tier):

Below are the components of Middle Tier.

✱ Web Tier / Web component: Web components can be servlet or JSP pages. Servlets can dynamically process the request and generate the responses compared to JSP and ~~serve~~ servlets - servlets are dynamic pages to some extent but JSP pages are static in nature.

During application assembly process clients static HTML programs and ~~applied~~ applet, codes

are bundled in web tier/ web components. Actually these HTML and applets are not considered as elements of web components. Actually these HTML and applets are not considered as elements of web components server-side utility classes are also bundled with web component but they are not considered as web components.

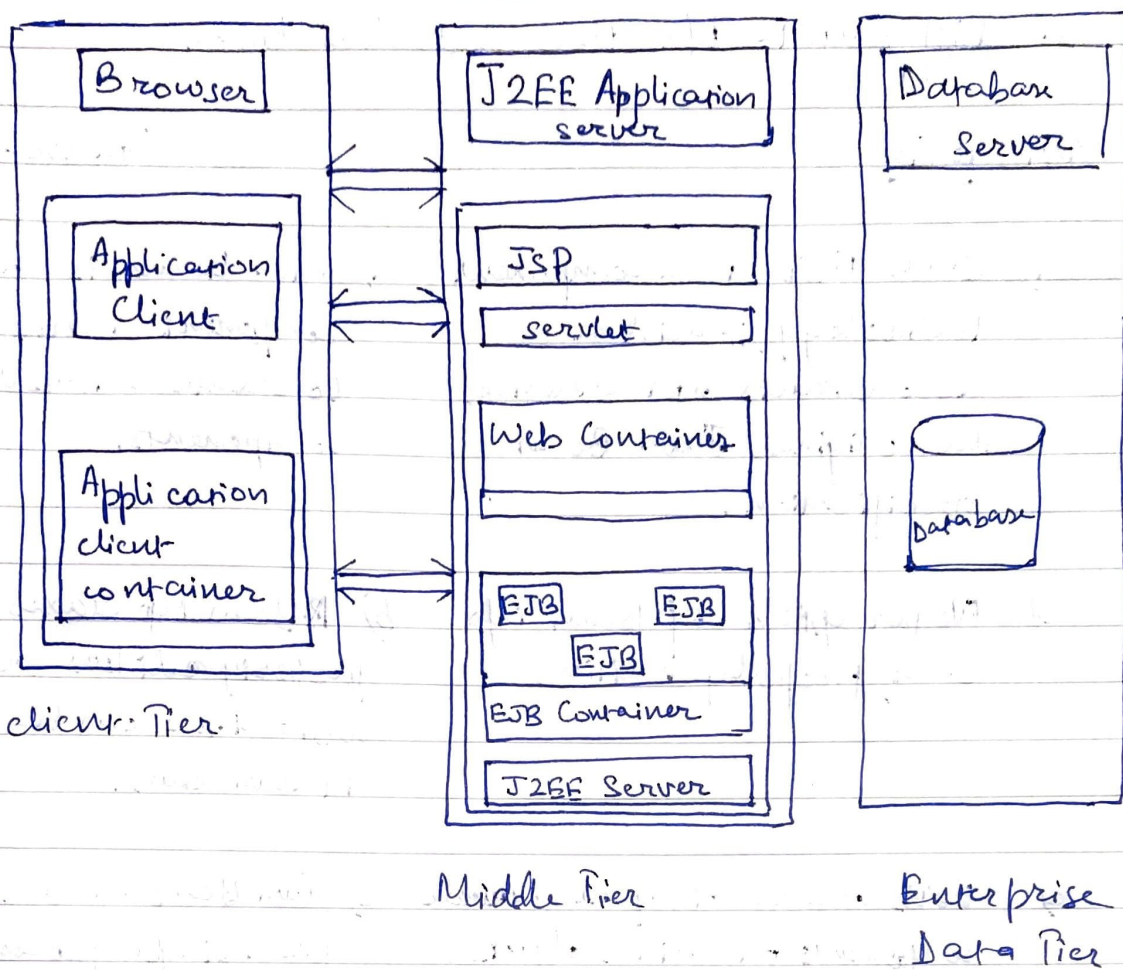
Web tier might include EJB components for processing user inputs and sends the input to Enterprise bean running in the business tier.

EJB Tier/ EJB Component:

Enterprise components handle usually business code ~~that~~ that is logic to solve particular business domains such as banking or finance are handled by enterprise bean running in the business tier. Enterprise container receives data from client processes if necessary send it to the enterprise information system for storage. Enterprise bean also retrieves data from storage, processes it and sends it back to the client.

3. Enterprise data Tier:

This tier consists of database servers, enterprise resource planning systems and other data sources. Resources are typically other data source. Resources are typically located on a separate machine than the J2E server and accessed by components on the business tier.



2 Differentiate between stub and skeleton.

Ans-i) Stub belongs to receiver side

ii) Skeleton belongs to service provider side.

ii) The stub hides the serialization of parameters and network-level communication in order to present a simple invocation mechanism to the caller.

The skeleton is responsible for dispatching the call to the actual remote object implementation.

iii) A stub is a small program routine that substitutes for a longer program, possibly to be loaded later on that is located remotely.

A skeleton for a remote object is a server-side entity that dispatches calls to the actual remote object implementation.

3. Differentiate b/n EJB and Java Bean

Ans: EJB

Java Bean

- | | |
|---|---|
| a) Even EJB is a component technology, it neither reconstructs nor enhances the original Java Bean specification. | a) Java beans is a component technology to create universal Java components. |
| b) No perception of Bean info classes, property editors | b) Bean info classes, property editors or customizers can be present in Java beans. |
| c) EJBs are remotely executable components on business objects. | c) Java Beans are designed for a single process and localized. |
| d) An EJB is a non-visual isolated object. | d) JavaBeans may be visible or non visible components. |

4. Explain different types of XML parser

Ans: XML parser provides a way to access or modify data in an XML document. Java provides multiple options to parse XML documents. Following are various types of parsers which are commonly used to parse XML documents.

- a) DOM parser - Parses an XML document by loading the complete contents of the document and creating its complete hierarchical tree in memory.

- b) SAX parser - Parses an XML document on event-based triggers. Does not load the complete document into the memory.
- g) JDOM Parser - Parses an XML document in a similar fashion to DOM parser but in an easier way.
- d) STAX parser - Parses an XML document in a similar fashion to SAX parser but in a ~~new~~ more efficient way.
- e) XPath Parser - Parses an XML document based on expression and is used extensively in conjunction with XSLT.
- f) DOM4J Parser - A Java library to parse XML, XPath, and XSLT ~~and~~ using Java Collections Framework. It provides ~~an~~ support for DOM, SAX and JAXP.