

Web-based Distributed EJB BugsTracker

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Outline

- Project Goal
- Overview of J2EE
- Overview of EJBs and its construct
- Overview of Struts Framework
- EJB BugsTracker demo
- Q & A

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Project Goal

- Integration effort of 4-tier EJB component architecture:
 - Web browser
 - Web server – Apache Tomcat
 - Jakarta Struts Framework
 - Application server – JBoss
 - Enterprise Java Bean
 - Container-Managed Persistence
 - Database server – HyperSonic
- The application is designed and built for software managers, engineers and quality assurance staffs that keep track of the software defects which are produced during the software development life cycle.

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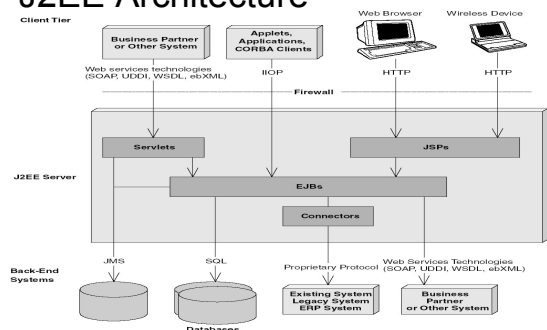
Overview of J2EE

- Java Platform 2 Enterprise Edition (J2EE) helps to overcome distribution challenges.
- Application deployed with J2EE technologies are:
 - Standardized
 - Adherent to specification guidelines
 - Written to Java
 - Deployable in any compliant application server
- Framework is being widely adopted by vendors:
 - Beas WebLogic Application Server
 - IBM WebSphere
 - Oracle 9iAS Internet Application Server
 - JBoss Application Server



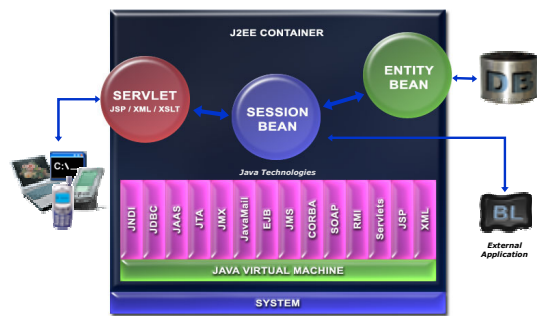
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J2EE Architecture



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J2EE Container



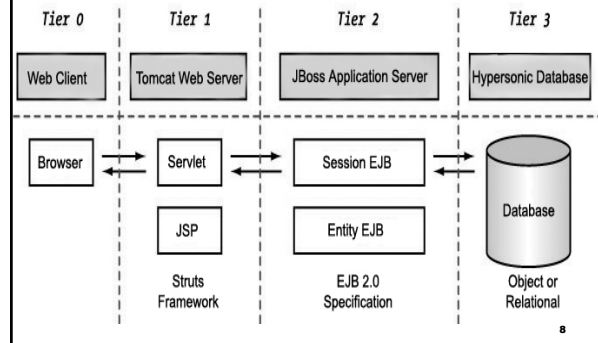
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J2EE Container

- JNDI
 - Namespaces, ldap
- JDBC
 - Database connectivity
- JAAS
 - Authentication
- JTA
 - Transactions
- JMX
 - Management & monitoring
- JavaMail
 - Email
- EJB
 - Business logic & data
- JMS
 - Messaging
- CORBA
 - Remote procedure calls
- SOAP
 - web services
- RMI
 - Remote method invocation
- Servlets
 - Web logic
- JSP
 - Web presentation
- XML
 - portability

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Four-Tiers Architecture



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Enterprise JavaBeans

- *Enterprise JavaBeans (EJBs) is a component architecture that defines the structure of beans, the structure of the container in which they operate, and the methods for interaction with their clients.*
- The EJB specification defines relationships between:
 - The EJB and its container
 - The container and the application server
 - The container and the client
- <http://java.sun.com/products/ejb/index.html>

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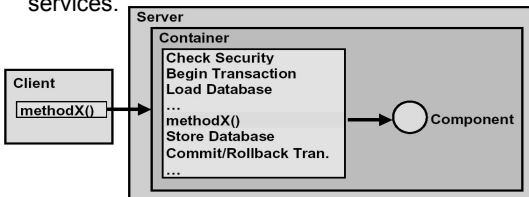
EJBs – Types of EJBs

- The EJB 2.0 specification discusses four types of components:
 - Stateless session beans
 - Stateful session beans
 - Entity beans
 - Message driven beans

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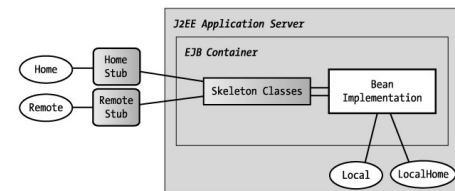
Containers's Infrastructure

- Containers intercept communication between client and component, providing infrastructure services.



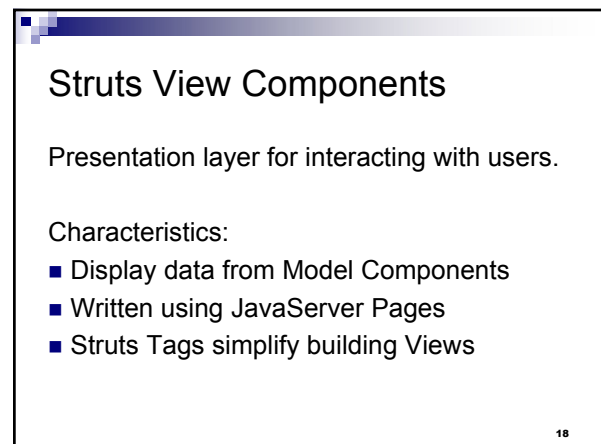
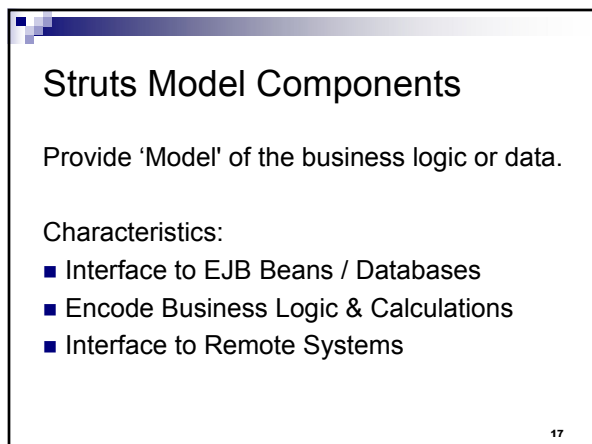
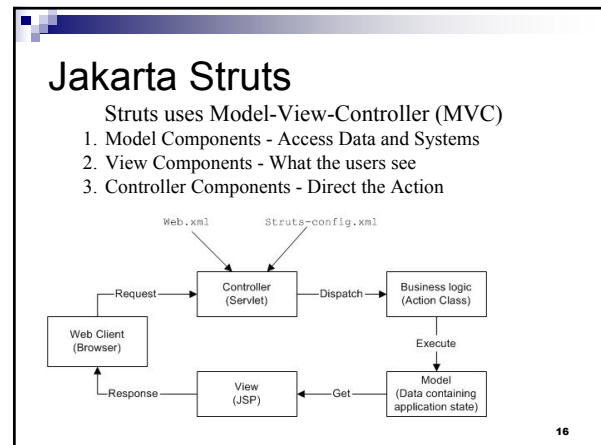
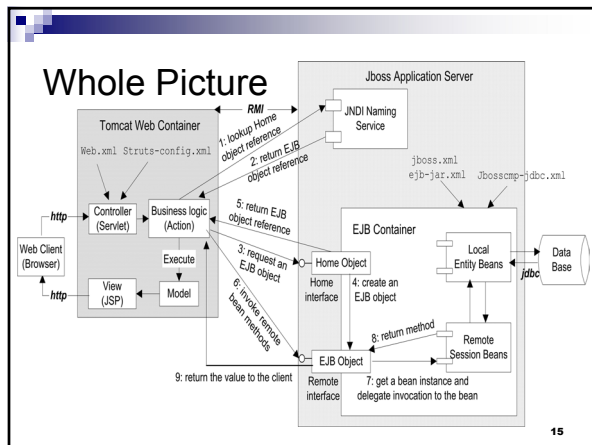
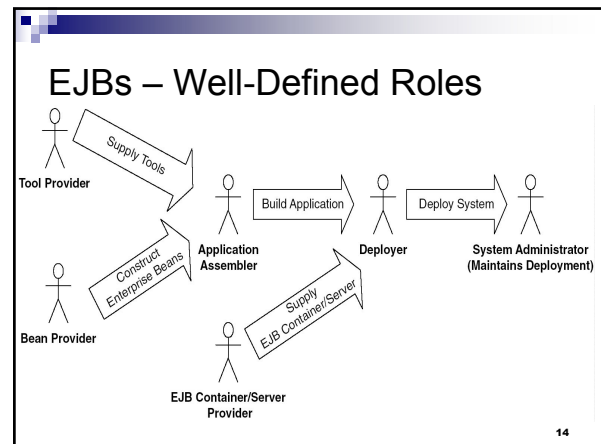
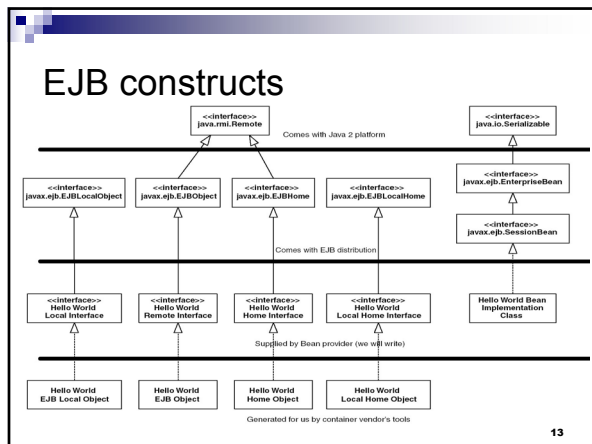
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EJB constructs



- = created by the developer
- = automatically generated by Application Server Tools

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Struts Controller Components

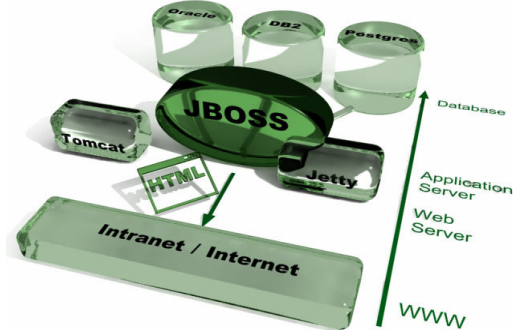
Control Program Flow.

Characteristics:

- Accept Input from Users
- Determine which Models to Update
- Determine which Views to Display
- Struts Tags simplify building Views

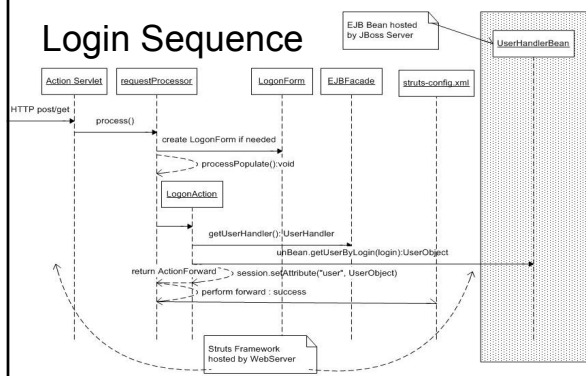
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JBoss Architecture



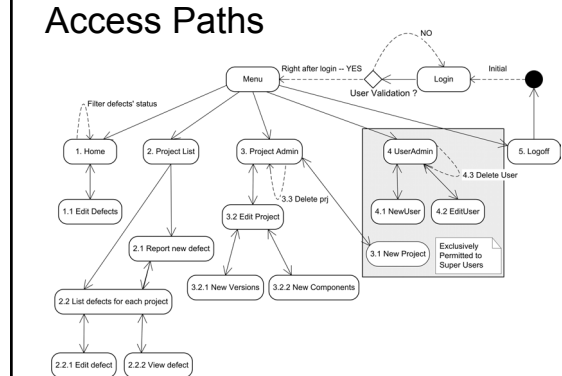
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Login Sequence



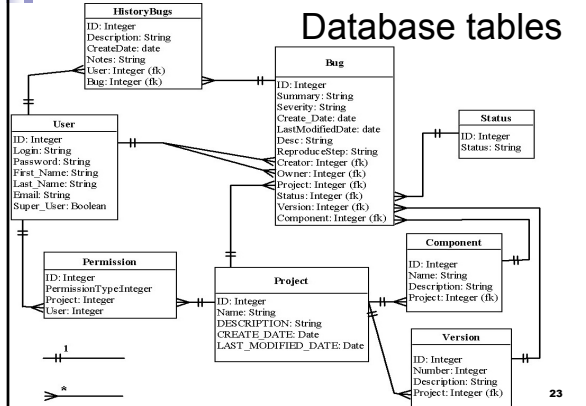
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Access Paths



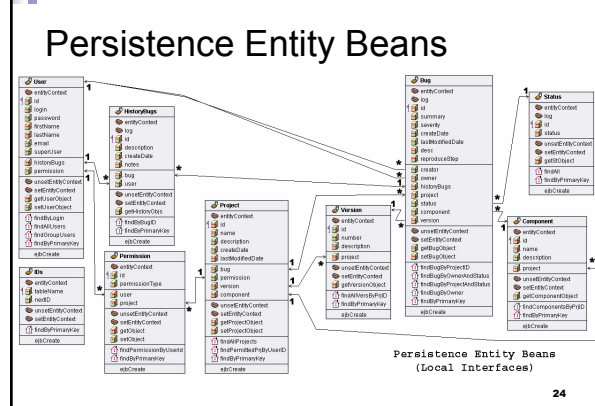
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Database tables



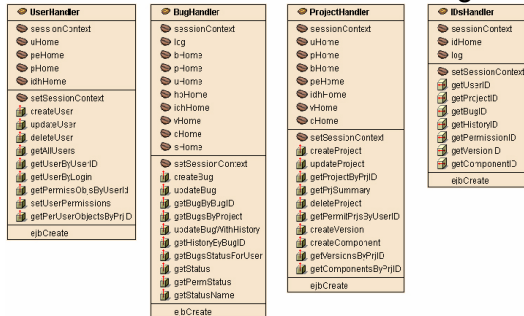
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Persistence Entity Beans



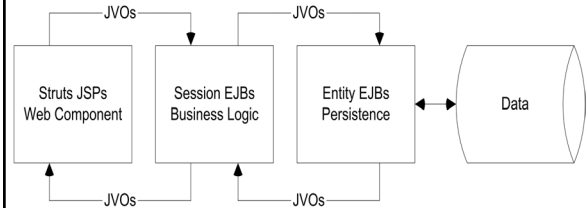
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Sessions Beans: Business Logic



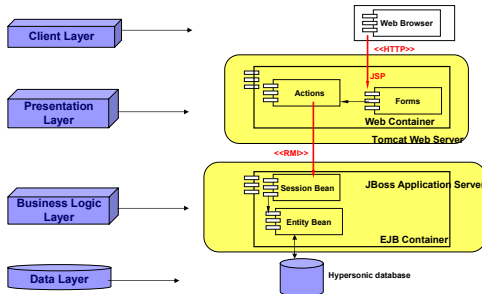
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Value Objects



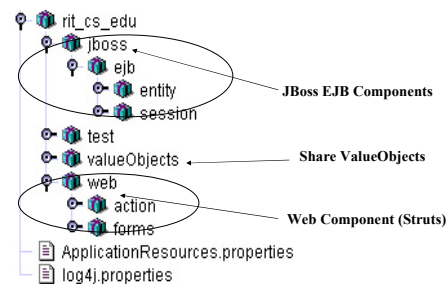
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Deliverable Architecture



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Deliverable packages



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Annotated references

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