Extreme Java
G22.3033-007

Session 3 - Main Theme
Java Core Technologies (Part I)

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Agenda

- Summary of Previous Session
- Java Platforms and Features
- Java Core APIs
- Swing
- Collections Framework
- Input Method Framework
- Introduction to J2EE
- XML and Java
- Readings
- Class Project & Assignment #2a

Summary of Previous Session

- Java Platform Architectures, and Files
- Traditional Java Tools
- Java Virtual Machine
- Java Project Management Approach
- Class Project & Assignment #1b
Java Platforms, and Features

- **J2ME**
  - Highly optimized Java runtime environment targeting a wide range of consumer products, including pagers, cellular phones, set-top boxes and car navigation systems.

- **J2SE**
  - Java 2 SDK, tools, runtimes, and APIs for developers writing, deploying, and running applications and applications in the Java programming language.

- **J2EE**
  - Combines a number of technologies in one architecture with a comprehensive Application Programming Model and Compatibility Test Suite for building enterprise-class server-side applications.

Java Component APIs

See Handout on Java Platform Component APIs

Java 2 Core APIs

- Collections Framework
- Java Foundation Classes (JFC)
- Swing Components
- Pluggable Look & Feel (PLAF)
- Accessibility
- Drag and Drop
- Security
- Java IDL
- JDBC
- JavaBeans
- Remote Method Invocation
- Java 2D
Java 2 Optional Packages

- Java Secure Socket Extension (JSSE)
- JavaBeans Activation Framework (JAF)
- Java Communications (COMM)
- JSDK
- JavaMail
- InfoBus
- Java 3D
- Java Media Framework
- Java Advanced Imaging
- Java Servlet
- Java Cryptography (JCE)
- JavaHelp
- JNDI
- JavaMail
- InfoBus
- Java 3D
- Java Media Framework
- Java Advanced Imaging
- Java Servlet
- Java Cryptography (JCE)
- JavaHelp
- JNDI
- JavaMail

J2EE Technologies

- EJB Architecture
- Java Server Pages (JSP)
- Java Servlet (SRV)
- Java Naming and Directory Interface (JNDI)
- Java IDL
- J2EE
- Java Message Service (JMS)
- Java Transaction (JTA)
- Java Transaction Service (JTS)
- JavaMail
- RMI-IIOP

J2ME Technologies

- Connected Limited Device Configuration (CLDC)
- Connected Device Configuration (CDC)
- K Virtual Machine (KVM)
- C Virtual Machine (CVM)
- PersonalJava Application Environment
- EmbeddedJava Application Environment
- Java Card
- JavaPhone API
- Java TV API
- Jini Network Technology
- JavaSpaces
- Mobile Information Device Profile
Core Technologies in Scope

- Collections Framework
- Input Method Framework
- Swing
- Drag and Drop
- JavaBeans
- Threads
- JNI

Swing

- See Sub-Topic 1 Presentation on Swing
- See Handout on Detailed Review of Swing

Collections Framework

- See Sub-Topic 2 Presentation on Collections Framework
- See Handout on Detailed Review of the Collections Framework
Input Method Framework Architecture

(See http://java.sun.com/J2SE/1.3/docs/guide/imf/spec.html)

Input Method Framework APIs

- Client API
  - Defines the classes and interfaces that text editing components can use to implement an integrated text input user interface.
- Context Management
  - Manages communication paths between the text editing components and input methods
- Engine SPI
  - Defines the interfaces that allow input method engines and adapters to be plugged into the framework
  - Adapters translate information between the data models used by native input methods and the input method framework (e.g., Java Speech, Internet-Intranet Input Method Protocol (IIIMP), etc.)

J2EE Features

- Standard Documents and Software Libraries
  - Specification
  - Programming Model
  - Platform
  - Reference Implementation
  - Compatibility Test Suite
  - http://www.javasoft.com/j2ee/docs.html
### J2EE Connector Architecture
- Component-Container Architecture
- J2EE Container Environment
  - J2SE Platform
  - Java Enterprise APIs
  - Java Enterprise Implementations
  - Deployment Services
  - Management Services
- Component-Container Models
  - EJB App Servers, Web App Servers (SRV/JSP), Applet Clients, Application Clients

### XML and Java
- See Sub-Topics 3-6 Presentations on XML and Java

### Assignment
- **Readings**
  - Building Java Enterprise Systems: Part I (4-5)
  - Slides and handouts posted on the course website
- **Assignment #2a:**
  - Modify the XML Tree Viewer sample application to add a query facility.
  - See Homework Handout for details
- **Project Framework Required**
  - IDE
  - IBM4J/LotusXSL, Apache’s Xerces/Xalan
  - TreeViewer Sample Application