



COURSE TITLE : Web Programming
COURSE PREREQUISITE : Introduction to Programming 2
COURSE DURATION : 16 weeks (3 hours/week)
COURSE METHODOLOGY: Lecture, Laboratory Exercises and Case Study

Course Description

Course Outline

Week	Topics
1	Introduction to Web Programming <ul style="list-style-type: none">● Client-Server Architecture● HTML● HTTP● Dynamic Over Static Pages● J2EE Web Tier Overview● Containers● Basic Structure of a Java Web App● Exercise

Course Outline

Week	Topics
2-3	<p>Servlets</p> <ul style="list-style-type: none">● Introduction<ul style="list-style-type: none">○ Servlet Architecture Overview○ Servlet First Look○ Testing the Sample Servlet● Servlet Life Cycle<ul style="list-style-type: none">○ Instantiation○ Initialization○ Service○ Destruction○ Garbage Collection● Handling Requests and Responses<ul style="list-style-type: none">○ Form Data and Parameters○ Retrieving Info from the Request URL○ Header Information○ Output Generation● Configuration, Packaging and Deployment<ul style="list-style-type: none">○ Web Application Configuration○ Packaging the Web Application○ Deployment into Server● Servlet and Application Parameters<ul style="list-style-type: none">○ ServletContext and Application Parameters○ ServletConfig and Servlet Initialization Parameters
4	<p>Advanced Servlets</p> <ul style="list-style-type: none">● Response Redirection<ul style="list-style-type: none">○ RequestDispatcher○ sendRedirect● Scope Objects<ul style="list-style-type: none">○ Storing and Retrieving Data from Scope● Session Tracking and Management<ul style="list-style-type: none">○ Traditional Methods for Maintaining Session State○ Session Tracking in Servlets● Filters<ul style="list-style-type: none">○ Creating a Filter○ Filter Chains○ Filter Configuration
5	<p>Basic JSPs</p> <ul style="list-style-type: none">● Overview● JSP Life Cycle● JSP Syntax and Semantics<ul style="list-style-type: none">○ Scripting Elements○ Predefined Variables○ JSP Directives○ JavaBeans in JSP○ Error Handling
6	<p>Database Connectivity: SQL and JDBC</p> <ul style="list-style-type: none">● Relational Databases● SQL Statements<ul style="list-style-type: none">○ Data Retrieval○ Data Manipulation● JDBC<ul style="list-style-type: none">○ Releasing System Resources

Course Outline

Week	Topics
7	Advanced JSP <ul style="list-style-type: none"> ● JSP Expression Language <ul style="list-style-type: none"> ○ EL Syntax ○ Accessing Scoped Variables and Properties ○ EL Implicit Objects ○ The [] Notation ● JSTL <ul style="list-style-type: none"> ○ Custom Tags ○ Core Library
8-9	MVC I – Introduction to MVC and the Struts Framework <ul style="list-style-type: none"> ● Introduction to Model-View-Controller Architecture <ul style="list-style-type: none"> ○ Motivation ○ Solution ○ Model ○ View ○ Controller ● MVC Architecture for the Web: The Model 2 Architecture ● Struts <ul style="list-style-type: none"> ○ Controller ○ Model ○ View
10-11	Advanced Struts Topic <ul style="list-style-type: none"> ● DynaActionForms ● Validators <ul style="list-style-type: none"> ○ Configuring the Validator Plug-In ○ Defining the resource bundle ● Tiles <ul style="list-style-type: none"> ○ Templates ○ Preparing Tiles ○ Building a Layout Template ○ Creating Screen Definitions
12-13	MVC Frameworks II – JavaServer Faces <ul style="list-style-type: none"> ● Introduction to JSF <ul style="list-style-type: none"> ○ Controller ○ Model ○ View ● JSF-JSP Integration <ul style="list-style-type: none"> ○ Value Binding ○ Registering Action Handlers to View Components ○ Page Navigation ● Other JSF Component tags
14-15	Advanced JavaServerFaces Topics <ul style="list-style-type: none"> ● Introduction to JSF ● FacesContext <ul style="list-style-type: none"> ○ FacesContext and the Component Tree ○ FacesContext and the External Context ● Validators <ul style="list-style-type: none"> ○ JSF Standard Validators ○ Customized Validation ○ Validator Component ○ Adding Attributes to Validator ● Converters <ul style="list-style-type: none"> ○ DateTimeConverter ○ NumberConverter ○ Custom Converters

Course Outline

Week	Topics
16	Web Security <ul style="list-style-type: none">● SSL● The Top 10 Security Flaws in Web Applications

Requirements

Supported Operating Systems

The NetBeans IDE 6.0.1 runs on operating systems that support the Java VM.

- Microsoft Windows XP Professional SP2 or newer
- Microsoft Windows Vista
- Mac OS X 10.4.9 or newer
- Ubuntu 7.x
- Red Hat EL 4
- Solaris™ 10 Operating System Update 1 (SPARC® and x86/x64 Platform Edition)

Note: The NetBeans IDE's minimum screen resolution is 1024x768 pixels.

Operating System	Processor	Memory	Disk Space
Microsoft Windows	800 MHz Intel Pentium III or equivalent	512 MB	750 MB of free disk space
Linux	800 MHz Intel Pentium III workstation or equivalent	512 MB	650 MB of free disk space
Solaris OS (SPARC)	UltraSPARC II 450 MHz	512 MB	650 MB of free disk space
Solaris OS (x86/x64 Platform Edition)	AMD Opteron 100 Series 1.8 GHz	512 MB	650 MB of free disk space
Macintosh OS X operating system	PowerPC G4 or Dual Core Intel	512 MB	650 MB of free disk space

Recommended Hardware Configuration

Operating System	Processor	Memory	Disk Speed
Microsoft Windows	2.6 GHz Intel Pentium III workstation or equivalent	1 GB	1 GB of free disk space
Linux	2.6 GHz Intel Pentium III workstation or equivalent	1 GB	850 MB of free disk space
Solaris OS (SPARC)	UltraSPARC IIIi 1 GHz	1 GB	850 MB of free disk space
Solaris OS (x86/x64 Platform Edition)	AMD Opteron 100 Series 1.8 GHz	1 GB	850 MB of free disk space
Macintosh OS X operating system	PowerPC G5 or Dual Core	1 GB	850 MB of free disk space

Required Software

NetBeans IDE runs on the J2SE (Java SE Development Kit) JDK 5.0 Update 12 and higher (including JDK 6.0), which consists of the Java Runtime Environment plus developer tools for compiling, debugging, and running applications written in the Java language. You can download the JDK for your platform from one of the sites listed below:

Solaris: <http://java.sun.com/j2se/1.5.0/download.html>

Windows: <http://java.sun.com/j2se/1.5.0/download.html>

Linux: <http://java.sun.com/j2se/1.5.0/download.html>

Mac OS X: <http://www.apple.com/support/downloads/javaformacosx104release5.html> (Mac OS X 10.4.8 or later). Java upgrades for Mac OS-X are also available via Apple's Software Update mechanism.

Open VMS: <http://h18012.www1.hp.com/java/download/index.html>

For more information, please visit: <http://www.netbeans.org/community/releases/60/relnotes.html>

Java™ DB is supported on the Solaris, Linux and Windows operating systems and Sun Java 1.4 or later.