Exam 1 Review

**Know what a compile time error v. runtime error (java)**

Run time error happens while the code is being run, while a compile time error occurs during compilation

A compile time error occurs when: there’s a syntax error in a Java statement

A runtime error occurs when: bytecodes can’t be interpreted properly

**Know what a servlet is**

A servlet stores the Java code that does the server-side processing

**Where does a servlet run? On a server.**

**Know what the servlet java class extends from. We don’t have a main method, it extends what? HttpServlet class**

**Open tutorial**

**Know what a session is? When it ends and when it begins**

A session object is created when a browser makes the first request to a site. It is destroyed when the session ends.

A session ends when a specified amount of time elapses without another request or when the user exits the browser

**What is one way that session will end? Close a browser and know other way it ends**

Other way: a specified amount of time elapses without another request

**Know what a web application is**

A *web application* is a set of web pages that are generated in response to user requests. A web application is a type of *client/server application*. The components of a web application are stored on either the *client* computer or the *server* computer.

A set of pages that are generated in response to user requests is called a/an web application

**Know what a syntax error is**

A syntax errors occurs when there’s a syntax error in a java statement

Netbeans places a squiggly red line under syntax errors

**Know what an html form is**

**Generically called controls (things on forms)**

An HTML form contains one or more controls like:

b. text boxes and check boxes

c. combo boxes and list boxes

d. radio buttons

**Know what an HTTP request is.**

**Initiates from browser**

**Starts at browser from server**

**Response is server to browser**

**Know what block scope means**

**{} Block scope is java (inside braces)**

**Variable declared in braces can’t be accessed outside braces**

**Know what bytecode is**

**What part of the JDK makes the bytecode? The compiler turns it into bytecode**

**What allows the bytecode to run? The Java Interpreter. That’s why java is platform independent; it’s running inside its own sandbox that’s communicating with the machine**

Bytecodes are input to the Java interpreter

Java bytecode is the instruction set of the Java virtual machine. Each bytecode is composed by one, or in some cases two bytes that represent the instruction (opcode), along with zero or more bytes for passing parameters.

**Know what cookies are**

A [cookie](http://www.webopedia.com/TERM/C/cookie.html) is the term given to describe a type of message that is given to a [Web browser](http://www.webopedia.com/TERM/B/browser.html) by a [Web server](http://www.webopedia.com/TERM/W/Web_server.html).  The main purpose of a cookie is to identify users and possibly prepare customized Web pages or to save site login information for you.

Stores session id within client’s browser

**Where are cookies stored? Client**

**Know what EL is and how it works with Javabeans**

The JSP Expression Language (EL) provides a compact syntax that lets you access attributes and JavaBean properties from a request object

Properties

El provides a compact syntax that lets you get data from a JavaBean that has been stored as an attribute of the request.

**Know what a web application is (again)**

**Where can you store data in a web app**

b. databases

c. XML files

d. text files

**Know what a main method is with a class?**

**When is it run? When the class runs**

**javac MyFile.java compiles into byte code**

**java MyFile interpreter runs it**

**Know what inline elements are in html**

Inline elements do not display on their own lines in browsers.

**What’s an html element you could use that’s inline? <span> tag no break**

**Do not display on their own lines**

**Know how servlets are mapped**

**They’re mapped with the servlet-mapping tag and servlet-name and url-pattern tags inside it (in tutorial)**

Examples:

In the code that follows, DiagnoseTrouble

<servlet-mapping>

<servlet-name>DiagnoseTrouble</servlet-name>

<url-pattern>/diagnostics/diagnoseTrouble</url-pattern>

</servlet-mapping>

is the internal name for the servlet class that’s used in the deployment descriptor

<servlet-mapping>

<servlet-name>DiagnoseTrouble</servlet-name>

<url-pattern>/diagnostics/diagnoseTrouble</url-pattern>

</servlet-mapping>

the /diagnostics/diagnoseTrouble URL of the document root directory

There’s also the @WebServlet notation

A servlet that uses an annotation to map itself to a URL

@WebServlet(“/test”)

How to map a servlet to multiple URLs

@WebServlet(urlPatterns={“/emailList”, “/email/\*”})

How to specify a name for the servlet

@WebServlet(name=”MurachTestServlet”, urlPatterns={“/test”})

**If I have a class named MyFile, what must the source file be named. MyFile.java (case-sensitive)**

**class BusinessComputation must be named BusinessComputation.java**

**Know what persistent cookies are**

Stored on the PC

**Know what HTML5 semantic elements are**

**An aside tag, a footer tag,** header, section, article, nav, figure

**Know what jsp expression language is and how to get data**

Through javabeans

EL provides a compact syntax that lets you et data from JavaBeans, maps, arrays, and lists that have been stored as attributes of a web application.

**Know what the advantages of EL are**

EL has a more elegant and compact syntax

EL allows you to access nested properties

EL does a better job of handling null values

EL provides more functionality

**Know the advantages of using hidden fields over url-rewriting**

One advantage is that hidden fields can pass spaces and other special characters in the names

There is no limited on # of characters that can be stored in a hidden field

Uses HTTP POST method, so it doesn’t display the parameter values in the URL, which removes security risks

**Know what MVC is what it stands for and what the different parts are**

**Know diff between model viewer and controller**

**The controller always provides the flow of how the web application will go for the user. The controller is a servlet in java server pages.**

**Know how the set path method works with cookies**

To allow the entire application to access the cookie, set the cookie’s path to “/”

setPath(String path)

**Know what a session object is and how it’s available (servlets and jsps)**

Stores data for each session

**Diff between float, double, and int datatypes**

double stores floating point numbers

int stores whole numbers only

float: The float data type is a single-precision 32-bit IEEE 754 floating point. Its range of values is beyond the scope of this discussion, but is specified in the Floating-Point Types, Formats, and Values section of the Java Language Specification. As with the recommendations for byte and short, use a float (instead of double) if you need to save memory in large arrays of floating point numbers. This data type should never be used for precise values, such as currency. For that, you will need to use the java.math.BigDecimal class instead. Numbers and Strings covers BigDecimal and other useful classes provided by the Java platform.

**Know what the presentation layer is**

**The presentation layer in the MVC is usually handled by the html and jsp**

**Know the scope of EL**

**The 4 types of scopes: page, request, session, and applications**

**Bytecode and JVM**

**Know how to create a persistent cookie and delete a persistent cookie**

**Create it with positive # set age to 0 for delete**

**Know what the typical uses are for cookies**

To allow users to skip login and registration forms

TO customize pages

To focus advertising

**Know the difference between debugging and testing an application**

Debugging: Identifying and fixing any bugs.

Testing: Running it to see if it works correctly.

**Make sure you know what an MVC is and the different parts**

Model

View   
Controller

Separates code for an application into 3 layers

**Know what an Applet is**

**How does an applet run? Inside a java enabled browser**

**Know where the classes go**

WEB-INF\classes directory

**What subdirectory? Class directory**

**In WEB-INF**

**Know the differences between a jsp comment and a java comment**

<%-- JSP comment --%>

//java comment

**Know how you do a valid class name v. a valid variable name**

ClassName vs. variableName

**Know how you would initialize a double data type**

double v = 120.0;

**Know what JPA stands for and why we use it**

The Java Persistence API (**JPA**) is a Java application programming interface specification that describes the management of relational data in applications using Java Platform, Standard Edition and Java Platform, Enterprise Edition.

Used for working with databases

**Know what an IDE is and the benefits of using an IDE**

Integrated Development environment is a tool that provides all of the functionality that you need for developing web applications

Benefits:

a. The syntax of your code is checked as you enter it.

b. The IDE helps you complete code as you type.

c. The debugging features make it easier for you to find bugs in your applications.

**Know what java.lang is for**

Automatically available to all Java programs

**Why do we need sessions? What doesn’t the HTTP not provide for us? It does not maintain state.**

**Know what a servlet is**

A servlet is a special type of Java class that runs on a server and does the processing for the dynamic web pages of a web application

**Know the diff between javascript and jquery for a data validation on a client**

**Know what the scanner object is used for**

**import java.util.Scanner;**

It makes the Scanner class available to the application without qualification.

You can use a Scanner object to: get the next token in an input line

**Know what an escape sequence is**

<http://web.cerritos.edu/jwilson/SitePages/java_language_resources/Java_Escape_Sequences.htm>

A character preceded by a backslash (\) is an escape sequence and has special meaning to the compiler.

Include a special character in a string

**Know what the JSTL is**

JSP Standard tag library

Enable java statements directly in a JSP

**Know what a javabean is**

A special type of Java class to temporarily store and process data. A JavaBean is typically used to define a business object such as a User or Invoice Object

A JavaBean is a java class that:

|  |
| --- |
|  |

a. provides a zero-argument constructor

b. implements the Serializable or Externalizable interface

c. provides get and set methods for all of its private instance variables that follow standard Java naming conventions

Correct d. all of the above