

# Getting Started

2 – 4 pm Tuesday 6/24/2008 @JD2211

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# Agenda

- What is Java?
- Compiling and executing Java programs
- The first program
  - Print "Hello World!"
- IDE
- Lab

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# Programming Language Tree

- <http://www.levenez.com/lang/>
- [http://www.levenez.com/lang/lang\\_letter.pdf](http://www.levenez.com/lang/lang_letter.pdf)

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## Java

- Developed by Sun Microsystems
- Internet
- Applet
- Application

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## Characteristics of Java – Upside

- Platform-independent
- Object-oriented
- GUI
- Parallel program – multi-threading
- Internet

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## Characteristics of Java – Downside

- Speed -- slow

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### Traditional Program

- Editor → Source code
- Compiler → Object code
- Linker → Executable code
- OS runs executable code

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### Java Program

- Editor → Source code
- Compiler → Java bytecode
- Bytecode → Interpreter (Java Virtual Machine)
- JVM runs bytecode
- [http://en.wikipedia.org/wiki/Java\\_bytecode](http://en.wikipedia.org/wiki/Java_bytecode)

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### Java 2 Platform, JVM and JDK

- J2SE
- J2EE
- J2ME
- JRE
- JDK (Java SDK)

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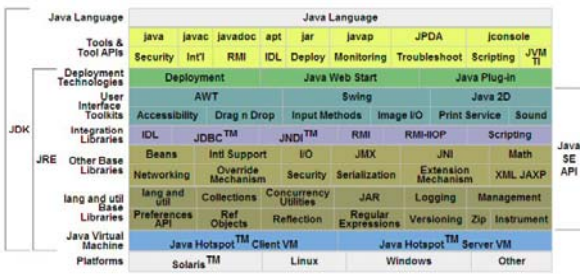
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## J2SE



<http://upload.wikimedia.org/wikipedia/en/0/0f/JavaPlatform.jpg>

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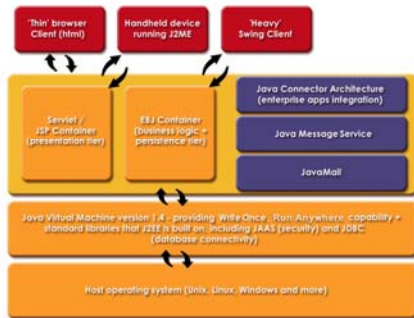
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## J2EE



<http://www.javaworld.com/javaworld/jw-06-2002/images/jw-0628-j2eevsnetf1.jpg>

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## CASE Tools

- Computer Aided Software Engineering (CASE) Tools
- Tool
- Workbench
- Environment
- Integrated Development Environment (IDE)

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## Java IDEs

- Light-weight IDEs
  - jGRSP, BlueJ, etc.
- Heavy-weight IDEs
  - Netbeans, Eclipse, JBuilder, etc.

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## The First Program – “Hello World!”

- Print “Hello World!”
  - A command-prompt window
- Using
  - JDK
  - jGRASP
  - Netbeans

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```
// This is the first Java program.  
// It prints "Hello World!" to the command  
// prompt window.  
  
public class welcome  
{  
    public static void main (String args[])  
    {  
        System.out.println("Hello World!");  
    }  
}
```

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## Compiling and Executing

- Compiling and executing your first Java application
  - javac Welcome.java → Welcome.class
  - java Welcome → "Hello World!"

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## jGRASP

- jGRASP is a lightweight development environment
  - <http://www.jgrasp.org/>

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## NetBeans

- A free, open-source Integrated Development Environment for software developers. You get all the tools you need to create professional desktop, enterprise, web, and mobile applications with the Java language, C/C++, and Ruby.
- <http://www.netbeans.org>

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## The First Program – “Hello World!”

- Print “Hello World!”
  - A dialog box
- Using
  - JDK
  - jGRASP
  - Netbeans

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```
// This is the first Java program.
// It prints "Hello World!" to the dialog box.

import javax.swing.*;

public class Hello {
    public static void main (String[] arg) {
        JOptionPane.showMessageDialog
            (null, "Hello World!");
    }
}
```

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## Self-Review Questions

- The \_\_\_\_\_ command from the Java 2 Software Development Kit executes an application
- The \_\_\_\_\_ command from the Java 2 Software Development Kit compile an application
- A Java program file must end with the \_\_\_\_\_ file extension
- The file produced by the Java compiler contain \_\_\_\_\_ that are interpreted to execute a Java application

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## Lab

- Print your name, your home address, your cell phone number, and your email address to the command prompt window and dialog box – using JDK, jGRASP and NetBeans.

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