

# Lesson 08: HelloWorld in Eclipse (W02D4)

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- 1 Convert 107 to (a) binary and (b) then into hex.
- 2 How many bits are in a file of size 2MB?<sup>1</sup> For simplicity, use  $1\text{MB} = 10^6\text{B}$ .
- 3 If your Internet connection can run at a steady 16Mbps (16 megabits per second) downstream (i.e., from the Internet to your computer), how long would a 250MB file take to download? *If you've taken Physics, this problem isn't so bad!*

**Announcement: There will be a quiz on Tues, 9/1!**  
**Topics list appears at the end of the slides.**

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<sup>1</sup>Capital 'B' stands for *bytes*, while lowercase 'b' is for *bits*. 

Students will compile Java source code via (a) the command line and (b) Eclipse.

# Mounting Your Locker Folder in Linux

- You are using the generic student user account when you “log in” to Linux
- Use the *Mount APCS/AOIT Locker* launcher on your desktop
- Once mounted, the Nautilus file manager will allow you to locate your remote home directory as a “local” folder
- From a terminal shell, let's make a temporary working directory:

```
cd MOUNTED/apcs-locker  
mkdir tmp
```

# Review HelloWorld via CLI

- 1 Start terminal shell
- 2 Change directory to `~/MOUNTED/apcs-locker/tmp`
- 3 Edit → Compile → Run:
  - 1 `gedit HelloWorld.java &`
  - 2 `javac HelloWorld.java`
  - 3 `java HelloWorld`

- **BEFORE** starting Eclipse, create a workspace folder called `workspace0` in your locker directory:

```
~/MOUNTED/apcs-locker/workspace0
```

# First Foray into Eclipse

- A *project* in Eclipse contains items related to your program.
- Project folders contain...
  - 1 or more `.java` files<sup>2</sup>
  - 1 or more `.class` files<sup>3</sup>
  - *metafiles* that Eclipse uses to hold information about your project/workspace
  - image files, sound files, etc. that may be used by your program

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<sup>2</sup>Java source files

<sup>3</sup>compiled Java bytecode files

# First Foray into Eclipse



- Start Eclipse using shortcut on dock or “eclipse &” at shell prompt
- Make sure you point Eclipse to your newly-created workspace0 folder



- Pay close attention as I demonstrate how to create a new Java project...

# HelloWorld in Eclipse

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- Let's add a file to our project: HelloWorld.java

# HelloWorld in Eclipse

- Pay close attention as I demonstrate how to create a new Java project...
- Let's add a file to our project: HelloWorld.java
- Populate the source file with Java code that prints this text to the console:

```
Hello, World!
```

# HelloWorld in Eclipse

- Pay close attention as I demonstrate how to create a new Java project...
- Let's add a file to our project: HelloWorld.java
- Populate the source file with Java code that prints this text to the console:

```
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- How do we compile and run in Eclipse?

# What is Eclipse?

- it's an IDE [Integrated Development Environment]
- built-in editor with code highlighting & auto-indenting
- written in Java!
- free!

# Pushing Project to GitHub

- Starting with PS #1, you'll need to push code to GitHub.
- Let's push HelloWorld project using `github-push.sh`...
- See our code at <http://github.com>.
- How do you make changes when at home?

# Quiz #1 Topics

- UNIX commands: `ls`, `cd`, `mkdir`, & `cp`
- Wildcards to specify multiple files
- Filesystem basics: root dir, special directory entries `.` and `..`
- Conversions: decimal  $\leftrightarrow$  binary  $\leftrightarrow$  hex
- Determining # of bits & bytes needed to represent decimal numbers
- Finding problems with a broken HelloWorld
- Carrying out the edit-compile-link process in Java from the command line
- Roles of an operating system
- *This list may not be all-inclusive!*

- 1 Finish PS #1, §4 — so that you're done with §§1-4 and ready to begin §5 next week.
- 2 Set up Eclipse @ home:
  - download Eclipse (Mars release) from [here](#)
  - Windows users: unzip<sup>4</sup> to C:\Program Files\  
make desktop shortcut to  
C:\Program Files\eclipse\eclipse.exe
  - make a working directory in Documents folder called workspace0
  - start Eclipse, pointing it to your workspace0 directory
  - Repeat today's HelloWorld exercise in Eclipse

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<sup>4</sup>Don't have a good zip program? Try [7-zip](#).