Application Design Using Java

Lecture 02

Version mismatch

```
C:\#\4963\L02>java L02
Error: A JNI error has occurred, please check your installation and try again
Exception in thread "main" java.lang.UnsupportedClassVersionError: L02 has been compiled by a more recent version of the Java Runtime (class file version 57.0), this version of the Java Runtime only recognizes class file versions up to 52.
0
        at java.lang.ClassLoader.defineClass1(Native Method)
        at java.lang.ClassLoader.defineClass(Unknown Source)
        at java.security.SecureClassLoader.defineClass(Unknown Source)
        at java.net.URLClassLoader.defineClass(Unknown Source)
        at java.net.URLClassLoader.access$100(Unknown Source)
        at java.net.URLClassLoader$1.run(Unknown Source)
        at java.net.URLClassLoader$1.run(Unknown Source)
        at java.security.AccessController.doPrivileged(Native Method)
        at java.net.URLClassLoader.findClass(Unknown Source)
        at java.lang.ClassLoader.loadClass(Unknown Source)
        at sun.misc.Launcher$AppClassLoader.loadClass(Unknown Source)
        at java.lang.ClassLoader.loadClass(Unknown Source)
        at sun.launcher.LauncherHelper.checkAndLoadMain(Unknown Source)
```

Class Path

- CLASSPATH environment variable
- -cp (-classpath) command line flag

Variables and Constants

- A variable name must begin with a letter and must be a sequence of letters or digits
- Can declare multiple variables on a single line but not recommended
- Declare variables as closely as possible to the point where they are first used
- $ is a valid Java letter but you should not use it in your own code
- List of keywords: https://docs.oracle.com/javase/tutorial/java/nutsandbolts/_keywords.html

main() method

- Several classes with main()
- CLI and GUI – together!
- Redirection of STDIN/STDOUT
- Console input/output
  - System.out.println();
    - String.format()
  - System.out.printf()
  - Scanner
  - Console

Packages

- package directive
- import directive

//TODO before next lecture:

- Practice problems (can post solutions on Submitty Forum if you wish)
- Challenge problem (can work in teams):
  - Write a complete program that demonstrates that floating point numbers are not exact and can accumulate roundoff errors. Post on Webex Teams or Submitty Forum.
- Java puzzler (posted on Submitty Forum)