

# Basic Java OOP

Hsuan-Tien Lin

Department of CSIE, NTU

OOP Class, February 25, 2013

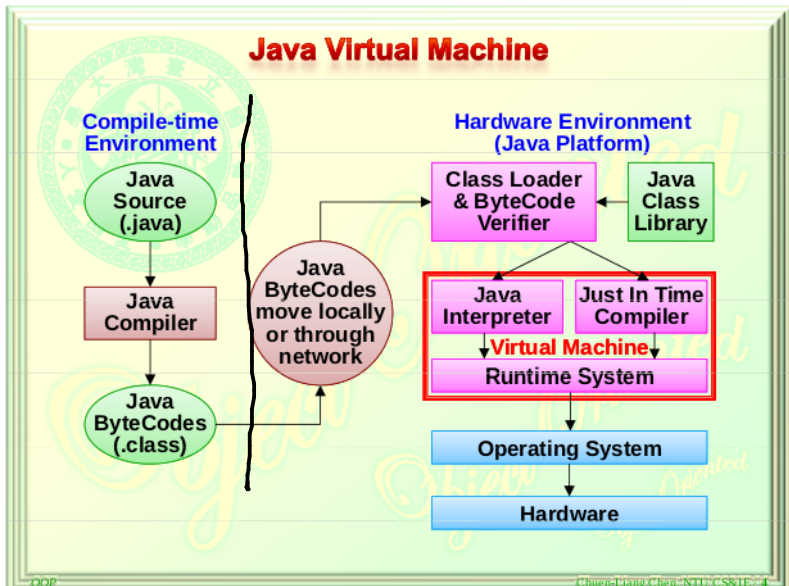
# From HelloWorld.c to HelloWorld.java

```
1  /* HelloWorld.c */ ✓
2  #include <stdio.h>
3  int main(){
4      printf("Hello_World\n");
5      return 0;
6  }
```

```
1  /* HelloWorld.java */ ✓
2  public class HelloWorld{
3      /** The comment that
4       * will show up in the doc
5       */
6      public static void main(java lang.String [] argv){
7          System.out.println("Hello_World"); // another comment ✓
8      }
9  }
```

# Your Work Cycle

- 1 edit your Java source file(s)
- 2 compile
  - `javac HelloWorld.java Other.java OtherOther.java`
  - output: `HelloWorld.class Other.class OtherOther.class ...`
- 3 execute
  - `java HelloWorld`
- 4 generate document
  - `javadoc -d doc/ HelloWorld.java`



writing Java methods is very similar to writing C procedures (with some minor differences here and there), except that

- an instance method shall access its own (within instance) data or local variables (not strict requirement, more to be discussed later)
- can declare, initialize, call other instances
- can also call its own methods

writing Java classes is very similar to writing C structures, except that

- a class can provide actions in addition to the data definition

# Eight Java Primitive Types

primitive type: defining direct memory interpretations

- byte, short, int, long: 1/2/4/8 byte (big-endian) integers
- float, double: 4/8 byte floating point numbers
- boolean: true or false
- char: 2 byte unicode

all (except boolean) very similar to C

# Many Java Extended Types

```
class WhateverYouWant
```

- class OOPStudent
- class java.io.PrintStream
- class java.util.Scanner
- class java.lang.String

read the API, **guess**, and write the program you want

## A Minor Hint: on `import` et al.

```
1  /* POOUser.java */
2  public class POOUser{
3      private java.lang.String ID;
4      private java.lang.String name;
5      private int onlineCount;
6
7      public void setName(java.lang.String the_name){ name =
           the_name; }
8      public boolean isFrequent(){ return (onlineCount > 10000); }
9  }
10 /* POOUserDemo.java */
11 public class POOUserDemo{
12     public static void main(String [] args){
13         POOUser u = new POOUser();
14         java.io.PrintStream ps = java.lang.System.out;
15         ps.println(u.isFrequent());
16     }
17 }
```

~~import java.lang.String;~~  
~~import java.lang.\*;~~  
~~import java.io.\*;~~