Intro1 Study Guide | CS 61B Spring 2018

sp18.datastructur.es/materials/lectures/lec1/lec1.html

Lecture Code

Code from this lecture available at https://github.com/Berkeley-CS61B/lectureCode-sp18/tree/master/intro1.

Overview

Our First Java Program. Printing Hello World is as easy as:

```
public class HelloWorld {
    public static void main(String[] args) {
        System.out.println("Hello world!");
    }
}
```

Key Syntax Features. Our first programs reveal several important syntax features of Java:

- All code lives inside a class.
- The code that is executed is inside a function, a.k.a. method, called `main`.
- Curly braces are used to denote the beginning and end of a section of code, e.g. a class or method declaration.
- Statements end with semi-colons.
- Variables have declared types, also called their “static type”.
- Variables must be declared before use.
- Functions must have a return type. If a function does not return anything, we use void,
- The compiler ensures type consistency. If types are inconsistent, the program will not compile.

Static Typing. Static typing is (in my opinion) one of the best features of Java. It gives us a number of important advantages over languages without static typing:

- Types are checked before the program is even run, allowing developers to catch type errors with ease.
- If you write a program and distribute the compiled version, it is (mostly) guaranteed to be free of any type errors. This makes your code more reliable.
- Every variable, parameter, and function has a declared type, making it easier for a programmer to understand and reason about code.

There are downside of static typing, to be discussed later.

Coding Style. Coding style is very important in 61B and the real world. Code should be appropriately commented as described in the textbook and lectures.

Command line compilation and execution. `javac` is used to compile programs. `java` is used to execute programs. We must always compile before execution.

Exercises

None for this lecture. However, we strongly encourage you to complete the optional HW0, which covers a bunch of basic Java syntax.