



# CMSC 150

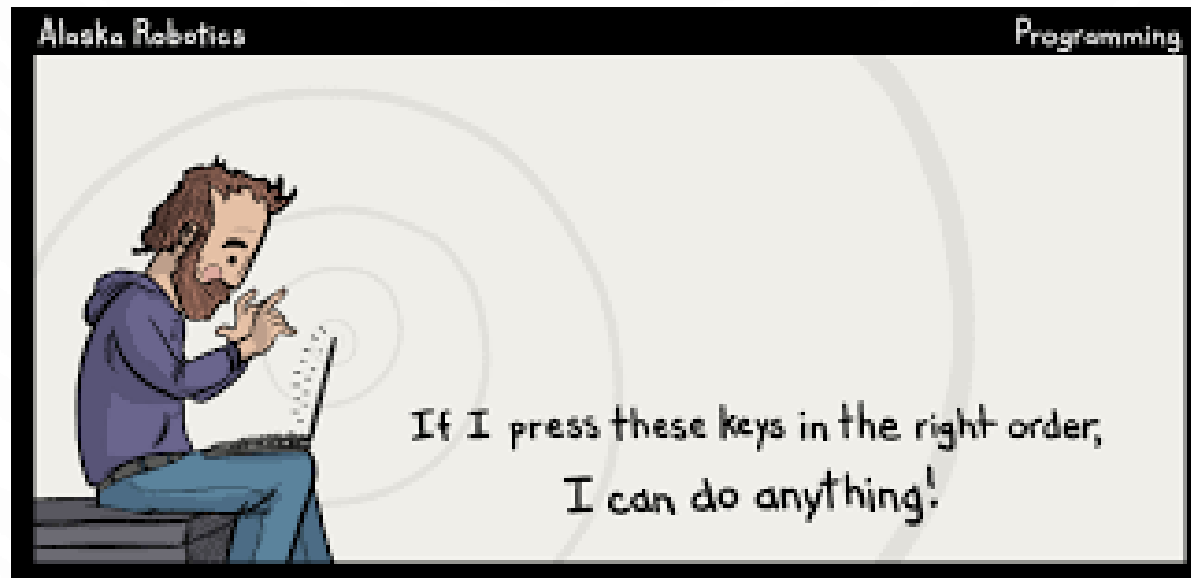
# INTRODUCTION TO COMPUTING

LAB – WEEK 1

- INTRODUCTION TO PROGRAMMING
- HELLO WORLD
- COMMAND LINE INPUT

# PROGRAMMING

- Purpose
  - Tell computer what to do!
- Allows you to solve complex problems and change the world!



# PROGRAMMING IN JAVA

- We are going to use Java as a language
- Note that Java is one of many...many languages to program with. It is a nice language to learn with and see the power of computing!
- Why not 0s and 1s?
- Why not English?



# NOTE ON PROGRAMMING ENVIRONMENT

## GREATEST PHILOSOPHICAL QUESTION OF OUR AGE

### VIM, EMACS, IDE????

- Vim, emacs, other editor + terminal compile
- Integrated Development Environment (IDE) – complete package and visual
- I will use exclusively vim + terminal, but you get to choose what you want!
- If you don't know how to do something....Google, Piazza, or ask 😊



Hackles

By Drake Emko & Jen Brodzik

# EVERYONE'S FIRST PROGRAM (I STILL DO THIS PROGRAM TO START EVERY PROJECT!!!)

- Hello world!
  - Open up programming environment and type the following in a file called HelloWorld.java

```
public class HelloWorld {  
    public static void main(String args[]) {  
        System.out.println("Hello World!");  
    }  
}
```
  - Compile: `javac HelloWorld.java`
  - Run: `java HelloWorld`

# A CLOSER LOOK...

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

Here name **MUST** match filename!

More boiler plate. Every program must have a main function – it is what ‘java’ runs.

Here we list commands for our program to do. System.out.println() will output a string to the console program followed by a new line.

There are a lot of terms and jargon. IF you want to know more ask, otherwise we will cover more later in the class

# COMPILE-TIME ERRORS

- Try
  - Removing a single '{', '}', and ';'
  - Misspelling HelloWorld
  - Forgetting one of the keywords in the boiler plate
- These are compiler errors. Anatomy of a compiler error:  
filename.java:line\_num: error: Confusing description of error including code where it occurs.
- Deal with errors by experience, google, stack overflow, etc. After you have exhausted these resources...piazza/ask me. Advice, always handle the first error...not the last one.

Note – the compiler tells you where and what the error is. However, it may be here or anywhere before that line!

# RUN-TIME ERRORS

- Try
  - Misspelling main or missing the “String args[]” part
- The code should compile, so try running it.
- These errors are from ‘java’ encountering an issue running the program. These are runtime errors and sometimes more difficult to handle.



# A TOUCH OF STYLE

- Programs are typically written for others. As such, they need to be easily read and understandable. Here are some tips...
  - Add comments to explain intent behind code. Either block comments or line comments:
    - `/* Block comments can  
span multiple lines */`
    - `// Line comments do not`
  - Name classes, functions, and variables in a descriptive way, “HelloWorld” vs “hw01”...
  - Tab classes, functions, etc properly. Everytime you see an { tab over 1, } tab back by 1.

# COMMAND LINE INPUT

- We learned output, now for some simple input:

- Type this program:

```
public class HelloWorld {  
    public static void main(String args[]) {  
        System.out.print("Hello ");  
        System.out.println(args[0]);  
    }  
}
```

- Compile: `javac HelloWorld.java`
- Run: `java HelloWorld JLDiablo`
- Try `java HelloWorld` and `java HelloWorld 1 2 3`. What happens?


`System.out.print()` will output a string to the console program without the new line.

The first input is a 0...not 1. The second is at 1, then 2, and so forth. This is for a historical reason in computing. More later in the semester.



# EXERCISES



1. Create a program to share three things about yourself. Please have each of the items nicely formatted with multiple `System.out.println()` commands.
  2. Create a program that introduces two people to each other. The people's names will be provided as command line arguments.
  3. Work on Programming Assignment 1 – Due week of August 29
- 
- 