# Command Lines and Misc.

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# Debugging

- It is infuriating
- The most important thing: THINK!
- Do not “program by coincidence”
  - But by all means experiment
- Check what you think you know
  - System.out.println
- Many advanced tools

Everyone knows that debugging is twice as hard as writing a program in the first place. So if you're as clever as you can be when you write it, how will you ever debug it?
- Brian Kernighan

# Command Line

- dir
- cd folder
  - cd ..
- mkdir
- del folder
  -
- move, copy
- command_name /?

- ls
- cd folder
  - cd ..  cd ~
- mkdir
- rm file
  - rm -r folder
- mv, cp
- man command

# Why Command Line?

- More power (especially Linux / OSX)
- Not every system has a GUI
- Tons of tools!
- You can easily write the tools!
- Can be scripted

# Write Tools?

```
public class Hello {
  public static void main(String args[]) {
    if (args.length >= 1) {
      System.out.println("Hello " + args[0]);
    } else {
      System.out.println("Hello Anonymous");
    }
  }
}
```

# Arrays

- A group of variables that are all of the same type
  - **`String names[] = new String[6];`**
  - **`int grades[] = new int[6];`**
- Indexed from 1 to size – 1
- Accessed using an index
  - **`names[3] = “Lucas”;`**

# Arrays and Loops

- Often need to iterate over an array

```
for (int i=0; i < grades.length; i++) {
  grades[i] = grades[i] + 256;
}
```

# Scripting?

```
#!/usr/bin/perl
if ($#ARGV >= 0) {
  foreach $file(`find ./ -name "$ARGV[$0].java"`)
  {
    print `javac "$file"`;
    print "--------------\n"
  }
} else {
  print "Requires the file name.\n";
}
```

# Command Lines - ULTRA

- Redirect output (to file instead of terminal)
  - java my_prog > output.txt
- Hit “tab” for auto-completion
- Hit “up-arrow” for previous command

# What We Need

- Typically we would use “java” and “javac”
- For NXT, we use “nxj” and “nxjc”
  - From LeJOS project
  - Need to set up environment variables

# Compile

- Turns your human readable code into machine readable code
- Use “nxjc”
  - nxjc my_program.java

# Run

- Executes the machine readable code from the compiler
- Use “nxj”
  - nxj my_program
  - Note: omit “.class” and “.java”
  - Robot must be on and connected
  - Won't automatically run the program