

# Homework 8

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**Instructions:** Questions 1 and 2 should be 2 separate **plain-text** documents (this means that you should write them in a command-line editor, or save them as .txt before changing the file extension to .sh). Everything else can be in the same text document. Submit all files to ELMS. Due April 21.

## 1 Fizz buzz

1. Fizz buzz is a classic intro programming exercise. If a number is divisible by 3, print `fizz`. If a number is divisible by 5, print `buzz`. If a number is divisible by 15, print `fizz buzz`. Otherwise print the number. Write a Bash script (in its own file, with a shebang) called `fizzbuzz.sh` that takes a number and prints the correct answer. You can assume that the first argument (`$1`) is an integer. It should work like this (where lines starting with `$` are commands entered at the prompt):

```
$ fizzbuzz.sh 3
fizz
$ fizzbuzz.sh 5
buzz
$ fizzbuzz.sh 15
fizz buzz
$ fizzbuzz.sh 238
238
```

2. Create a script `fizzbuzz-range.sh` that takes a start and an end number. First check that the start and end numbers are integers. If they aren't, print an error message and exit with status code 1 (the exact message doesn't matter as long as it's informative). Then check that the start is less than the end. If it isn't, swap the start and the end variables so that this condition holds. Finally run `fizzbuzz.sh` on the range of numbers in between. It should work like this:

```
$ fizzbuzz-range.sh BSCI 238G
Error: expecting 2 integers
$ fizzbuzz-range.sh 1 5
1
```

```
2
fizz
4
buzz
$ fizzbuzz-range.sh 5 1
1
2
fizz
4
buzz
$ fizzbuzz-range.sh 1 1
1
```

## 2 Exit codes

3. Most programming languages state that "zero values" are false and "not zero values" are true. For example, in Python, the `false` keyword, empty containers, and the number 0 are false-y, and the `true` keyword, non-empty containers, and nonzero numbers are truth-y. Why does Bash use 0 as the truth-y value, and not-0 as the false-y value?
4. How do you test that a variable matches a regular expression using `[[`? What does the variable `$BASH_REMATCH` contain after a successful match?