Intro to Programming

Foundations of Science and Mathematics

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https://github.com/jtwool/FSM-Intro

Recap of Lesson 1

Programming is a process by which people provide instructions to computers

We use functions to organize our code

We use variables to store information
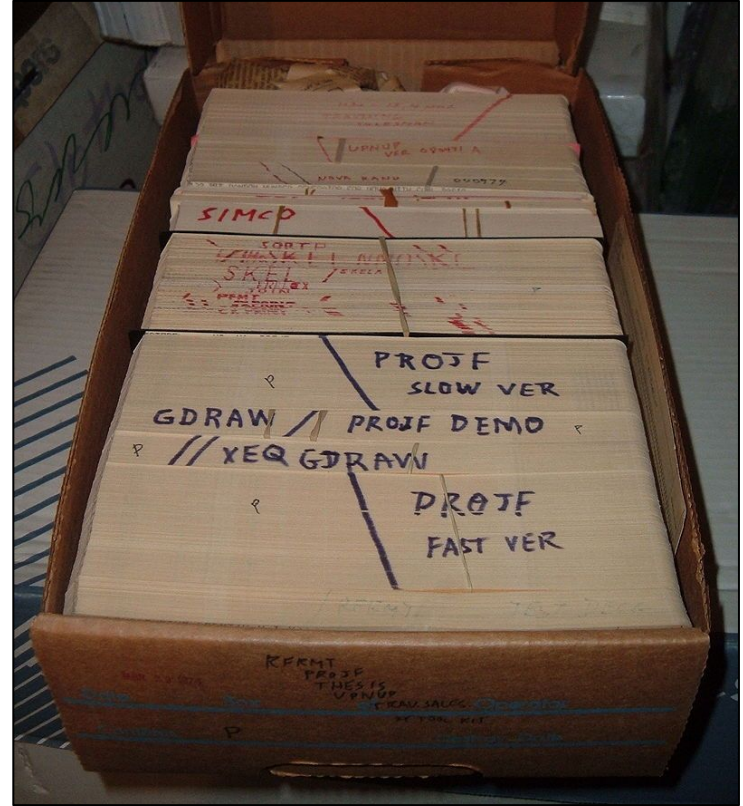
Lesson 2: Strings and Lists

Strings are "text"

Strings are sequences of characters

e.g., "Kitten" => |K|i|t|t|e|n|

We can store strings in variables

We can use functions on strings

String basics

We create strings by surrounding text with quotes

The quotes tell the program that the text is not code

We can store strings in variables and use their methods

```
// Basic string stuff
my_string = "I am a string"

// use .toUpperCase method
my_string.toUpperCase()
>> "I AM A STRING"

my_string.replace("str","k")
>> "I am a king"
```

Counting with strings

We can select each letter in a string by pointing to its position

In computer programming, we start counting at 0

```
0 1 2 3 4 5 6 7 8 9 0 1 2

I   a m   a   s t r i n g
```

```
//Counting with strings
my_string = "I am a string"

// select s
my_string[7]
>> "s"
// select string
my_string.slice(7,13)
>> "string"
```

Working with words

Sometimes we don't want to work with letters, we want words...

We have to turn each into its own string

We usually use String.split() for this

```
// Strings to words
my_sentence = "This is a big
sentence, blah blah blah"
my_words = my_sentence.split(" ")

my_words[0]
>> "This"


my_words[3]
>> "big"


my_words.slice(5,8)
>> ["blah","blah","blah"]
```
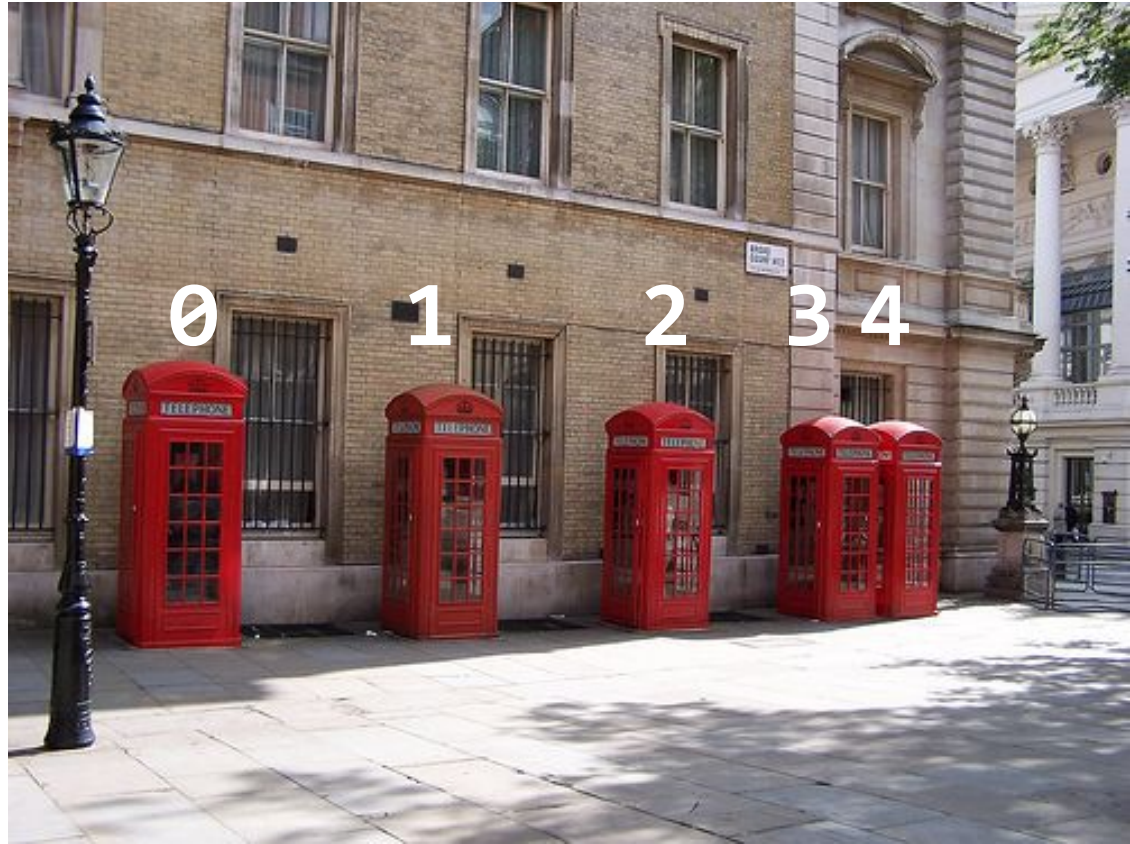
Words in arrays

Words are stored in arrays

Arrays are lists of stuff

We use them as containers

We can pull stuff out of them

We can put stuff in them

Arrays next class…

Pairs Programming

Complete the functions

Work in pairs.

Take turns writing (typing) the code.

Get through as many problems as you can.

~20-30 minutes.