

# Python Chapter 1

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# Table of contents

Before getting started

Basic Expectations

Environment setup

Variables

- Variables and Concatenation

- Variables Exercise

Operators and If Statements

- Operands

- If statement

- Operators and If Statements Exercise

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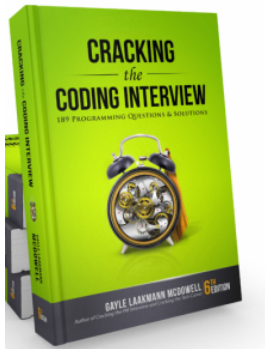
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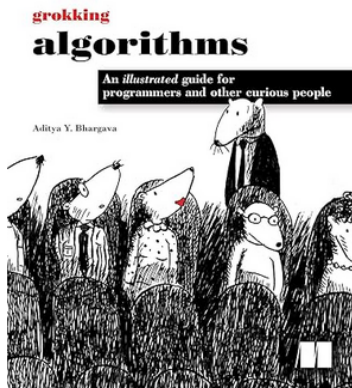
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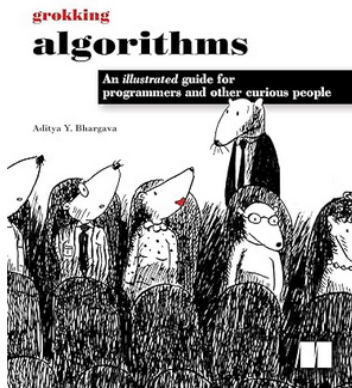
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- ▶ <https://github.com/zeaktorres/WSU-Python-Workshop-2024/>
  - ▶ Where the notes will be stored

# Basic Expectations

There are a few things this course considers you have a basic understanding of.

1. The terminal
2. Basic programming in C or C++
3. Some understanding of data structures (however we will cover this too)

It is perfectly fine if you do not feel like an expert in any of these fields, please feel free to raise your hand if you have any questions about any of these.

# Environment setup

Here are the basic steps to running python.

On a Windows PC, you will download the exe:  
<https://www.python.org/downloads/>.

On Linux, use the appropriate package manager. The schools Linux lab uses X so you will use "sudo ....", however they should have python already installed.

On Mac, idk. If you have a Mac and are having trouble running python let me know, I will be able to help you

# IDE?

Well this is the more... unique part? Essentially you can choose whatever editor you want. You don't even have to use an IDE, you can edit python in notepad++! Then, when you want to run the SCRIPT, simply run "python SCRIPT" in the terminal.

1. Python's own IDE, yeah probably don't use this one
2. VSCode, a very popular text editor in electron. Great for industry practice
3. Pycharm, I don't have much experience with pycharm but I've heard great things if you want to give it a shot
4. Neovim/Vim, I personally use Neovim because I hate myself

# Variables

Here we will go into some basic examples of variables in python.  
First, variables should be lowercase

Also, variables are not typed like in C or C++ since python is a dynamically typed language. Meaning the variables are determined at runtime

1. `x = 5`
2. `y = 10`
3. `print(x + y)`

15

# Variables and Concatenation

"In formal language theory and computer programming, string concatenation is the operation of joining character strings end-to-end" - Wikipedia

IE: `print("Hello" + "World")`

## Variables Exercise

Write a python program which prints a users mpg. You can take in input in python like the following:

```
miles_driven = input("Enter the number of gallons")
```

Note: These exercises are purposely vague as are interview questions to get you to ask important questions

Note: Sometimes interviewers will give you hints if you are struggling but some interviewers will take taking a hint as a negative



# Operands

Here we will get into the basic applications of operands in python.

operator	operation	example
+	addition	$a = 3 + 2$
-	subtraction	$a = 3 - 2$
*	multiplication	$a = 3 * 2$
/	division	$a = 10 / 2$
%	modulus	$a = 8 \% 3$ (remainder of $8 / 3$ is 2)

## If Statement example

```
x = 5
y = 6

if x > y:
    print("x is greater than y")
else:
    print("y is greater than or equal to x")
```

# Operators and If Statements Exercise

Fizz Buzz Simple: Take in an integer  $n$ , return Fizz if the number is even, and Buzz if the number is odd