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1. Provide us a list of some of the new (software related) words that you've learned so far and give their meaning in your own words. Please choose words, at least 10 of them, that you might have found confusing or challenging. Some words might be "interpreter", "compiler", "operating system", "Boolean", and so on.
   1. Value:
      1. A value is a very broad term used to describe information when coding. This can be a simple as just a number (1, 0, -6.4) as well as text such as “Colin” or “hello world”. Importantly, a value cannot be reduced. For example, 2+5 is not a value. These are really the most basic building blocks of code.
   2. Variable
      1. A variable in coding is used in the same way we would in basic math. We define how a variable is used and the variable can change over time. For example, we might have the Expression X+4. Then throughout our Script, we will have different values equal to the variable X (such as 5 or 6, which will make the expression equal 9 or 10). It’s very helpful to make names something obvious so if you go back, you can easily figure out what they are trying to say.
   3. Constants
      1. Variables that are built into the programming languages. For example, pi is a constant. Note that you may need to “import” a library, (detail on this will likely come later in the course) in order to call certain constants. Nice thing here is you only have to make the change once. Note that in python, a common rule is that if you are creating a new constant, use all caps (PI = 3.14)
   4. Terminal
      1. The terminal is the main way to communicate with a Mac computer. You can access files through the terminal by going from location to location before opening the file. You can also run code in the terminal
   5. Low level / high level languages
      1. High level languages are ones that are easier to understand (such as python). Since there is more done to let humans understand them, they run a bit less efficiently
      2. Low level languages are easy for a computer to understand and harder for humans. Since they work better for computers, they processes more efficiently. The syntax of these languages is typically more challenging for people to understand.
   6. Expressions
      1. An expression is a set of values that can be reduced. For example, you may have 5+5 which can be reduced to 10. This will also apply to variables, 5+x can be reduced once x is defied.
   7. Floating point numbers
      1. Basically, this is a number with a decimal point. The term float has to do with how the number is stored. Depending one where the dot falls (first digit, second digit), it “floats” to a different spot. A few things to remember include that floats may not be the exact number (has to round eventually)
   8. Boolean
      1. Like Binary, a Boolean is either true or false. Useful for creating logic in a code (ex. If something is false, do A. If true, do B)
   9. String
      1. A collection of text that are not treated as numbers or variables. Typically with quotes (“Hi”) around them. They are brought together by “concatenating” or combining them. In Python, if you are trying to make something with multiple lines, you need to use 3 quotes to start and end (“”””…”””)
   10. Integrated Development Environment
       1. A more advanced programing set up than the typical text editor. They are great for more experienced programmers but provide a little too much help for beginners.
2. Research several text-editors. Install one of them. Tell me about what editor you installed and why.
   1. The text editor I used was atom (I have some experience coding in python before and was recommended this language). The visual aspects of the language are awesome. In additional to the standard color schemes, I really like how you can customize using the different packages via installer. I also saw in my research that atom works really well with most programming languages. I liked how it is integrated with GitHub as well. I will hopefully be attending a data science/business analytics program next year and know that most of the work in the class is collaborative so I liked the idea of a text editor that works well with GitHub. Similar to python itself, atom has a large community I have already been able to reach out to for trouble shooting. Also, atom is free which is always a big plus!
3. Trying writing Code
   1. Code I wrote (see screenshot on next page for code in atom):

a=1

b=2

print("start a and b",a, b)

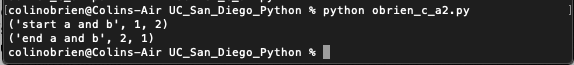
c=a

a=b

b=c

print("end a and b",a, b)

* 1. I chose this code because I think it is a really good simple example of how a variable name can be change throughout the program. While this is a simple idea, it will be a critical piece of programing to create logic in our code.
  2. The code will go in order from top to bottom logically. “a” and “b” will be 1 and 2. The Then “start a and b”, 1, 2, “ will be printed. “c” will equal “a” (so c set to 1), then “a” will equal “b” (so a set to 2) and finally “b” will equal “c” (so set b to 1). Finally, “end a and b” 2, 1) will be printed.
  3. (and 3.5) see screenshot below for output of program and proof that it “runs” as well as a screenshot of the code in atom.



Text

Description automatically generated