**Chapter 01 Worksheet**

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When writing answers to questions, please use proper grammar, capitalization, and punctuation. Please limit the length of each line to 80 characters.

1. Write a line of code that will print your name.
   1. print(“Michael Corbett Chapman”)
2. How do you enter a comment in a program?
   1. Put a “#” before the line, or use triple single-quotes to have a multi-line comment
3. What do the following lines of code output? ALSO: Why do they give a different answer?

|  |
| --- |
| print(2 / 3)  print(2 // 3) |
| 0.66666666  0  They give a different answer because the first is true division, and the second is floor division. Rounding down to the lowest integer is 0 in this instance. |

1. Write a line of code that creates a variable called pi and sets it to an appropriate value.
   1. pi = 3.14
2. Why does this code not work?

|  |
| --- |
| A = 22  print(a) |
| This code doesn’t work because the saved variable is a capital A, and variables are case-sensitive. Lowercase a has not been assigned a value. |

1. All of the variable names below can be used. But which ONE of these is the *better* variable name to use?

|  |
| --- |
| a  A  Area  AREA  area  area\_of\_rectangle  Area\_Of\_Rectangle  The best to use is “area\_of\_rectangle” because it is lowercase (starts with lowercase) and it is the most descriptive of the variable it represents. |

1. Which of these variables names are not allowed in Python? (More than one might be wrong. Also, this question is not asking about improper names, just names that aren't allowed. Test them if you aren't sure.)

|  |
| --- |
| apple  Apple  APPLE  Apple2  **1Apple – can’t have a number to begin a variable**  **account number – can’t have a space in a variable**  account\_number  **account.number – can’t have a period in a variable(used elsewhere)**  accountNumber  **account# - can’t have a symbol in a variable**  pi  PI  fred  Fred  GreatBigVariable  greatBigVariable  great\_big\_variable  **great.big.variable – can’t have periods in a variable**  **2x – can’t start a variable with a number**  x2x  **total% - can’t have % in a variable**  **#left – this acts like a comment** |

1. Why does this code not work?

|  |
| --- |
| print(a)  a = 45  This code does not work because the variable is not assigned before the print function is called. We need to assign a the value before we print it. |

1. Explain the mistake in this code:

|  |
| --- |
| pi = float(3.14) |
| The mistake is that 3.14 as a number is already a float, therefore using the float function to convert is redundant. |

1. This program runs, but the code still could be better. Explain what is wrong with the code.

|  |
| --- |
| radius = float(input("Radius:"))  x = 3.14  pi = x  area = pi \* radius \*\* 2  print(area)  This code doesn’t explain what it’s doing very well. We would need comments to introduce the function, prompt the user with what they’re going to calculate (area of a circle). There is redundant lines changing x to pi, and then not printing out any text for what the resulting value means. |

1. Explain the mistake in the following code:

|  |
| --- |
| x = 4  y = 5  a = ((x) \* (y))  print(a)  The mistake here is the style. There are overly-redundant parentheses that make this difficult to read |

1. Explain the mistake in the following code:

|  |
| --- |
| x = 4  y = 5  a = 3(x + y)  print(a)  We cannot do implied multiplication with Python’s syntax. We need to explicitly place “\*” where we need multiplication. |

1. Explain the mistake in the following code:

|  |
| --- |
| radius = input(float("Enter the radius:")) |
| In this case, input and float are switched. We need to wrap our input in a float, not the other way around. |

1. Do all these print the same value? Which one is better to use and why?

|  |
| --- |
| print(2/3+4)  print(2 / 3 + 4)  print( 2 / 3+ 4 )  Yes they all print the same value, but the second one is best to use because it matches the style guide for Python and is most clearly spaced out. |

1. What is a *constant*?
   1. A constant is a variable that never changes
2. How are variable names for constants different than other variable names?
   1. Constants are written in all capital letters, where other variables are not.
3. What is a single quote and what is a double quote? Give and label an example of both.
   1. A single quote is ‘
   2. A double quote is “
4. Write a Python program that will use escape codes to print a double-quote and a new line using the Window's standard. (Note: I'm asking for the Window's standard here. Look it up out of Chapter 1.)
5. Can a Python program print text to the screen using single quotes instead of double quotes?
   1. Yes
6. Why does this code not calculate the average?

|  |
| --- |
| print(3 + 4 + 5 / 3) |
| Because of order of operations, the computer will calculate this as written. We would need to wrap our addition in parentheses to calculate the average. |

1. What is an ``operator'' in Python?
   1. An operator performs an action on a variable or value.
2. What does the following program print out?

|  |
| --- |
| x = 3  x + 1  print(x) |
| This will print out “3” |

1. Correct the following code:

|  |
| --- |
| user\_name = input("Enter your name: )" |
| user\_name = input("Enter your name: ") |

1. Correct the following code:

|  |
| --- |
| value = int(input(print("Enter your age"))) |
| value = int(input("Enter your age")) print(value) |

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