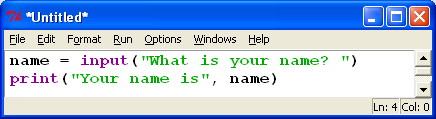
**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Partners: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Python Activity 2: Input and Variables**

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| **Learning Objectives**  Students will be able to:  *Content:*   * Explain how to input data using Python * Explain the meaning and purpose of a variable * Determine if a variable name is valid * Explain concatenation and the use of “+”   *Process:*   * Create **input** statements in Python * Create *Python* code that prompts the user for data and stores it in a variable * Create valid and good variable names   **Prior Knowledge**   * Material covered in Activity 1 |

**Critical Thinking Questions:**

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1. Enter and execute the Python program. What is printed on the screen when the Python program is executed?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_My Name is exclaimed as “Your name X” \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **FYI: input() and print()** are ***functions*** in Python. |

1. Examine the first line of Python program: **name = input(“What is your name? ”)**

a. What appears on the screen when this line of code is executed?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_What is your name? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **FYI:** The words that appear on the screen and tell the user what to enter are known as a ***prompt***. |

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| **FYI: name = input(“What is your name? ”)**  The word **name** in the Python code is a ***variable*** *– a name given to a memory location used to store data.* |

b. What happens to the data the user entered?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_What is your name? Stefano

Your name is Stefano \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Explain the errors that occur when you execute each of the following lines of Python code.

a. name? = input(“What is your name?”)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_invalid syntax \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b. your name = input(“What is your name?”)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_invalid syntax \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. 1st\_name = input(“What is your name?”)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_invalid syntax \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. from = input(“Where were you born?”)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_invalid syntax \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Examine the errors that occurred when executing the lines of code in question 3. Then examine the following lines of valid code.

name2 = input(“What is your name?”)

your\_name = input(“What is your name?”)

yourName = input(“What is your name?”)

List the rules that you need to follow to create a valid ***variable*** name.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_The following from question three do not work as they are do not create inputs with numerial value (unlike name2,your\_name, yourName) and you need to make sure that the variable name has the actual word name in it without ANY spaces. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

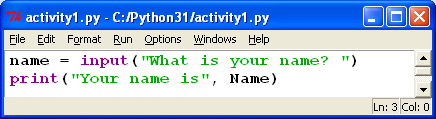
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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5. Are the following variable names **valid**? Are they **good** names? Why or why not?

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| --- | --- |
| **Variable name** | **Comments about variable name** |
| price | GOOD |
| costoffirstitem | Needs camelcases and/or underscores |
| Ic | Has Reverse camelCase and is bad. |
| firstName | GREAT! Has camelcase |

6. Execute the following lines of code. Is the output what you would expect? Why or why not?

 \_\_\_\_\_\_\_\_\_\_\_Yes! It goes through with

A string literal and allows itself to allow user input

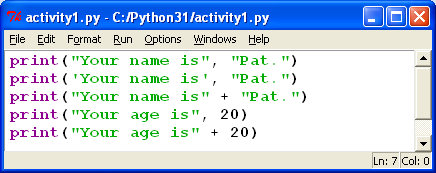
Then printing said output correctly when given input

From the user.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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7. Use the following set of Python statements to answer the questions below.

a. State the output for each of line of code.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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b. How are the first two print statements different? Does the difference affect the output?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. Notice that some statements include a comma (,) between the two literals being printed and some statements use a “+”. Do they produce the same output? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d. Explain the purpose of the comma. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

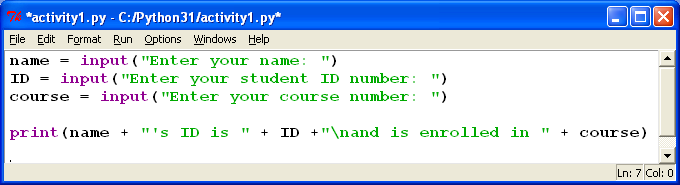
e. Why does the last print statement crash the program? What would you do to correct it?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **FYI:** “+” **concatenates** two strings. The strings can be string literals or a variable containing string literals. |

8. State what is displayed on the screen when the following program is executed:



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**9.** What caused the output in the print statement in question 8 to be printed on more than one line?

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**Application Questions: Use the Python Interpreter to input your code and check your work**

1. State a good variable name for an employee’s ID number. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Write a line of Python code that prompts the user for the name of their favorite ice cream and stores it in a valid variable name. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. **Crazy Sentence Program**. Create a program that prompts the user for the name of an animal, a color, the name of a vehicle, and the name of a city. Then print a sentence that contains the user input in the following order. Include the additional words in the sample output as part of your output. Example: Assume the user enters the words: tiger, green, motorcycle, and Wildwood. The output would be: ***The* green tiger *drove the* motorcycle *to* Wildwood.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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