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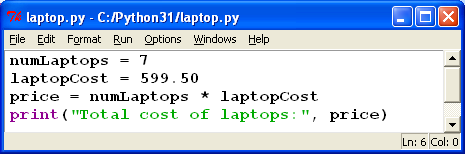
**Python Activity 4: Formatting Output**

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| **Learning Objectives**  Students will be able to:  *Content:*   * Incorporate numeric formatting into print statements   *Process:*   * Create *Python* code that formats numeric output   **Prior Knowledge**   * Material covered in Activity 3 |

**Critical Thinking Questions:**

1. So far you have not been concerned about formatting output on the screen. Now you will discover how Python allows a programmer to precisely format output. Some of the differences are very subtle, so take notice of the differences in outputs.

Start by entering and executing the following code.



a. What is the problem with the manner in which the output is displayed?

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b. Replace the last line of code with the following:

**print("Total cost of laptops:",** **format(price,'.2f'))**

How did the output change?

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c. Replace the last line of code with the following:

**print("Total cost of laptops:", ‘${:.2f}’.format(price))**

Discuss the change in the output.

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d. Experiment with the number “.2” in the print statement by substituting the following numbers and state the results.

.4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .0 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

.1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .8 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

e. Now substitute ‘,2’ with the following numbers in the same print statement. These numbers

contain a whole number and a decimal. State the output for each number.

2.5 \_\_\_\_\_\_\_\_\_\_\_\_\_ 12.2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3.1 \_\_\_\_\_\_\_\_\_\_\_\_\_\_

f. Explain what each part of the format function: **format(variable, “%n.nf”)** does in a print statement where n.n represents a number.

variable \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ First n \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Second n\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ f \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

g. Revise the print statement by changing the “f” to “d” and *laptopCost = 600*. Execute the statements and explain the output format.

**print("Total cost of laptops:", format(price,'2d'))**

**print("Total cost of laptops:", format(price,'10d'))**

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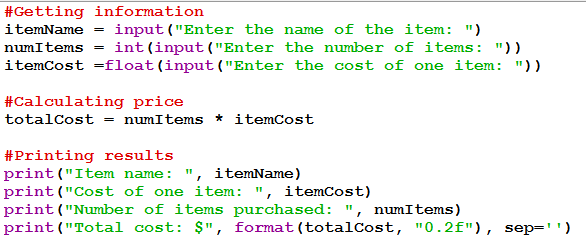
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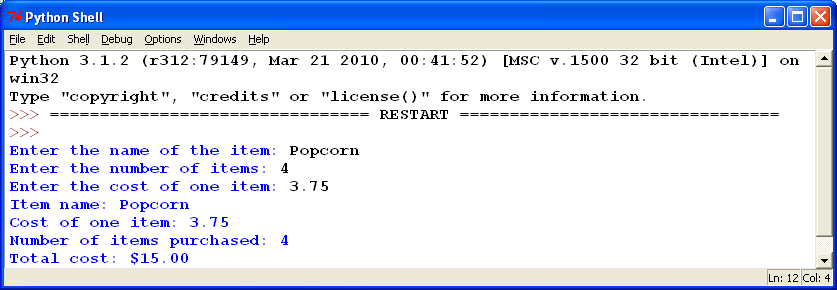
h. Explain how the function **format(var,'10d')** formats numeric data. **var** represents a whole number.

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| **FYI:** Computers perform four main operations on data:   * **Input** data into a computer * **Output** data to a screen or file * **Process** data using arithmetic, logical, searching or sorting operations * **Store** data |

2. Use the following program to answer the questions below.





a. In the program listed above, label the code that executes any of the four main operations: *Input, Output, Processing, Storage*

b. Examine the last line of code and its corresponding output. Explain what **sep= ‘ ‘** does. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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3. Enter and execute the following code: **print(“Hello” \* 10).** What does it do? **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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4. Enter and execute the following code:

**print('{:<15}{:>15}'.format('Alice','Computer Science'))**

**print('{:<15}{:>15}'.format('John','Math'))**

What does it do? **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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

1. Write one line of Python code that will print the word “Happy!” one hundred times.

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2. Assume: itemCost = input(“Enter cost of item: “)

a. Write one line of code that calculates the cost of 15 items and stores the result in the variable *totalCost*

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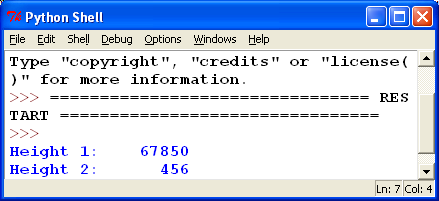
b. Write one line of code that prints the total cost with a label, a dollar sign, and exactly two decimal places. Sample output: **Total cost: $22.50**

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3. Assume: height1 = 67850

height2 = 456

Use Python formatting to write two print statements that will produce the following output exactly at it appears below:



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4. Create a program the outputs the total cost of a lunch order. Users should be prompted to input the number of hamburgers, fries, and drinks they want and the program should print the total cost of the order. The price of hamburgers is 2.00. The price of fries is 1.50, and the price of drinks is 1.00. Be creative and professional in prompting the user for the information and in displaying the output.

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