

Answers to Questions from TT1.2

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1. Desk Check Task: Calculate Bill Total

Required Variables:

Real (floating point):

appetizer_price, main_price, dessert_price

total_price

Pseudocode:

Read the value of appetizer_price

Read the value of main_price

Read the value of dessert_price

total_price = appetizer_price + main_price + dessert_price

Print '\$' then the value of total_price to the terminal showing two decimal places.

Test Data:

	First data set	Second data set
<i>appetizer_price</i>	10.30	12.40
<i>main_price</i>	34.00	41.00
<i>dessert_price</i>	8.50	9.80

Expected Result:

	First data set	Second data set
<i>Output:</i>	\$52.80	\$63.20

Desk check - fill this in by hand-tracing/hand-executing the pseudocode provided with the test data above:

	Statement	<i>appetizer _price</i>	<i>main _price</i>	<i>dessert _price</i>	<i>total _price</i>	<i>output</i>
<i>First Pass</i>	<i>Read the value of appetizer_price</i>	<i>10.30</i>				
	<i>Read the value of main_price</i>		<i>34.00</i>			
	<i>Read the value of dessert_price</i>			<i>8.50</i>		
	<i>Calculate the total_price</i>				<i>52.80</i>	
	<i>Convert to dollars</i>				<i>\$52.80</i>	
	<i>Output the total_price</i>					<i>\$52.80</i>
<i>Second Pass</i>	<i>Read the value of appetizer_price</i>	<i>12.40</i>				
	<i>Read the value of main_price</i>		<i>41.00</i>			
	<i>Read the value of dessert_price</i>			<i>9.80</i>		
	<i>Calculate the total_price</i>				<i>63.20</i>	
	<i>Convert to dollars</i>				<i>\$63.20</i>	
	<i>Output the total_price</i>					<i>\$63.20</i>

2. Complete Program Calculate Bill Total

Now check the actual code produces the output you expected

Do this by completing the missing code in **bill_total.rb** in **Task 1.3** then running the program.

3. Short Answer Questions:

Focus in the following on using the correct computing terminology.

Here are some terms that may help you: Assignment, evaluate, increment,

1. Using a few sentences explain why it may be important to execute statements in the correct sequence. (eg: what might happen if the last statement in Program 2 was executed earlier)

The program may assign different values and produce a wrong output

- 2: The code `main_price = 10` is an example of which kind of programming statement?

This is an *assignment* statement.

- 3: What **actions** does the computer perform when it executes `a = a + b`?

The computer first *increment a and b*

Then it *assign the value of a increment b to a*

- 4: How would the value of variable `i` change in the statement `i = i + 1`?

The value of `i` will be *increment by 1*

- 5: *What sort of types will Ruby use to store the following variables (given the associated variable values)?*

Data	Type
A person's name e.g: "Fred Smith"	<i>string</i>
Number of students in a class e.g: 23	<i>integer</i>
Average age of a group of people e.g: 23.5	<i>float</i>
A temperature in Celsius e.g: 45.7	<i>float</i>
True or false e.g: <code>1 == 2</code>	<i>boolean</i>

Note: possible types include: Integer, String, Float, Boolean

- 6: *Variables have a scope – what are two different scopes variables can have in Ruby?*
Global variables scope and Local variables scope.

See the lesson materials for help with Question 6. You could also see:

https://www.tutorialspoint.com/ruby/ruby_variables.htm