

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 completing the missing code in **bill_total.rb** (in the tasks Resources folder) then running it 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>10.3</i>				
	<i>Read the value of main_price</i>		<i>34</i>			
	<i>Read the value of dessert_price</i>			<i>8.5</i>		
	<i>Calculate the total_price</i>				<i>52.8</i>	
	<i>Convert to dollars</i>					<i>52.8</i>
	<i>Output the total_price</i>					<i>\$52.80</i>
<i>Second Pass</i>	<i>Read the value of appetizer_price</i>	<i>12.4</i>				
	<i>Read the value of main_price</i>		<i>41</i>			
	<i>Read the value of dessert_price</i>			<i>9.8</i>		
	<i>Calculate the total_price</i>				<i>63.2</i>	
	<i>Convert to dollars</i>					<i>63.2</i>
	<i>Output the total_price</i>					<i>\$63.20</i>

2. 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)

Statements need to be executed in correct sequence because the program cannot perform calculations on variables without declaring and initializing values for them first. Executing program in a random sequence would lead to compilation error or wrong answer.

- 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 **calculates sum of a and b**
Then it **assigns the sum to variable a**

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

The value of `i` will be **increased 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"	String
Number of students in a class e.g: 23	Integer
Average age of a group of people e.g: 23.5	Float
A temperature in Celsius e.g: 45.7	Float
True or false e.g: 1 == 2	Boolean

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

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

- Local scope: it is visible only to the code block where it was declared
- Global scope: it is visible everywhere in the program

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

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