# Answers to Questions from TT1.2

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1. **Desk Check Task: Calculate Bill Total**

## Required Variables:

## ***Integer: appetizer\_price, main\_price, dessert\_price***

## ***Real (floating point): total\_price***

## Pseudocode:

## ***Read the value of*** *appetizer\_price* ***(in cents)***

## ***Read the value of*** *main\_price* ***(in cents)***

## ***Read the value of*** *dessert\_price* ***(in cents)***

## *total\_price = appetizer\_price + main\_price + dessert\_price*

## *total\_price = total\_price / 100* **#Comment: convert to dollars**

## ***Print ‘$’ then the value of*** *total\_price* ***to the terminal showing two decimal places.***

## Test Data:

|  |  |  |
| --- | --- | --- |
|  | First data set | Second data set |
| *appetizer\_price* | 1030 | 1240 |
| *main\_price* | 3400 | 4100 |
| *dessert\_price* | 850 | 980 |

## Expected Result:

|  |  |  |
| --- | --- | --- |
|  | First data set | Second data set |
| *Output:* | $52.80 | $63.20 |

## Desk check:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Statement | *appetizer**\_price* | *main**\_price* | *dessert**\_price* | *total**\_price* | *output* |
| ***First Pass*** | ***Read the value of*** *appetizer\_price* | **1030** |  |  |  |  |
| ***Read the value of*** *main\_price* |  | **3400** |  |  |  |
| ***Read the value of*** *dessert\_price* |  |  | **850** |  |  |
| ***Calculate the*** *total\_price* |  |  |  | **5280** |  |
| ***Convert to dollars*** |  |  |  |  | **52.80** |
| ***Output the*** *total\_price* |  |  |  |  | **$52.80** |
| ***Second Pass*** | ***Read the value of*** *appetizer\_price* | **1240** |  |  |  |  |
| ***Read the value of*** *main\_price* |  | **4100** |  |  |  |
| ***Read the value of*** *dessert\_price* |  |  | **980** |  |  |
| ***Calculate the*** *total\_price* |  |  |  | **6320** |  |
| ***Convert to dollars*** |  |  |  |  | **63.20** |
| ***Output the*** *total\_price* |  |  |  |  | **$63.20** |

1. **Short Answer Questions:**

**Focus in the following on using the correct computing terminology.**

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

## 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)

If the last statement in program 2 (printf("$%.2f\n", total\_price)) was executed earlier then the total\_price would be incorrectly evaluated

## 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 reads the value for a and the value for b

Then it will calculate the sum of values a and b. It will then assign said sum to a

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

The value of i will be read by the computer then increased by a value of 1 and then assign the new value to i

## 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?***

Global Variables; Begin with a Dollar Sign ‘$’. Global Variables are accessible everywhere, regardless of where they are declared.

Local Variables; Begin with a lowercase letter or an underscore. Local Variables can only be accessed within the code construct which they have been declared in.

*For help with Question 6 you could also see:*

[*https://www.tutorialspoint.com/ruby/ruby\_variables.htm*](https://www.tutorialspoint.com/ruby/ruby_variables.htm)