SIT102 – Introduction to Programming

Answers for 8.1P Reading Other Languages

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Program 1:

1. What output **data type** will this function return? How do you reveal the data type from the given function's declaration and definition? Elaborate your answer.

As an example, the function will return a Boolean data type, as shown by the code "as Boolean" in the function declaration
A function declaration tells the compiler about a function's name, return type, and parameters

2. What **data types** have been respectively declared for variables, ***data*** and ***val***? In terms of the programming scope, are variables, ***data*** and ***val*** used locally or globally?

Data and Val are declared in the function itself, the declared data type is integer, and the two variables data and val are used locally

3. Variables, ***data*** and ***val*** are both used to store data but they store different numbers of data value. How many data value(s) have variables ***data*** and ***val*** stored respectively? Which of them is an array? Why? Elaborate your answer.

The data variable is the variable that is an array, if datas index number equal(=) value, when the index is = to the data. Length -1 then the function = true, therefore data is the array that holds a integer value that is used. Data holds 5 values where as val holds 1

4. What is the purpose of the variable, ***i*** in the function? Is it a local or global variable? What is the data type declared for it?

The variable "i" is used as the index of the array in the function and is a local variable. In the function, it is declared as an integer data type.

5. What would be returned **value** if the function is called with the data in **sample data 1**?

Returned value was false.

6. What would be returned **value** if the function is called with the data in **sample data 2**?

Return value was true

7. Deduce the purpose of this function after two sample datasets are executed through it. Provide **an appropriate name (meaningful name aligned with the purpose)** for this function. Hint: Recall the output data type in your provided answer for the question 1 in this section – Program 1, think about how it could provide the expected outcome.

Give a meaningful name "check if contains", because this function searches for a value in the function to determine whether it is true or false.

Program 2:

1. What will be output to the terminal when the program is run? Hint: make sure you have traced all **print** statements along the program flow. The first two print-out lines are given as below.

Starting…
ADDING 32 + 6
Subtracting 78-5 Total: 38 Difference:73 I like bananas I like oranges I like figs I like lemons My favourite fruit is oranges

1. What are the data types respectively of the following variables? Since data types are not declared in Python source code, how did you reveal their data types in a Python program?

Identifier	Data type	How did you reveal their data type in a Python program?
total	int	%d
difference	int	%d
fruit	array of string	%s

Program 3:

1. What will be output to the terminal when the program is run? Hint: make sure you have traced all **print** statements along the program flow. The first two print-out lines are given as below.

Checking scores: [55, 26, 103, 92, 14]

Checking score 55
Checking score 26 Checking score 103 Checking score 92 Checking score 14 **19**

2. How many iterations will be run by the **for loop** of the program? How did you figure this out? How does this **for loop in a Swift program work in the same mechanism of providing repetition dynamics compared to the one you learnt in a C++ program**?

The for loop performs 5 iterations because each score tests the condition for the score value in the variable. Therefore, since there are 5 scores, the loop checks 5 times. Equivalent to repeating based on the condition of a given set of values specified in the statement.

3. Regarding individualScores, bonusScore, baseScore, and teamScore, are they used as a variable or constant in the given Swift program? Give your answer in the following table.

Identifier	Is it used as a variable or constant?
individualScores	Constant
bonusScore	Constant
baseScore	Constant
teamScore	Variable

4. What do you think the difference is between the keywords ***let*** and ***var***? Hint: Deduce from how they are used in the program. Think about whose value will ever be adjusted throughout the program?

I think Let is the same as C++'s #define, which serves to determine a constant variable, while Var is similar to other programming languages in the way it determines a value as the data type of a variable.

- End of questions (for 3 programs) -