SIT102 – Introduction to Programming

Answers for 3.1P Hello User 2

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Question 1: What is the key difference between a **function** and a **procedure**? Why are **functions** called as part of an expression? Why is a function call assigned to a variable but not for a procedure call? Elaborate your opinions with a code example from your own Hello User 2 program.

The function is used to calculate result using given inputs. A procedure is used to perform certain task in order. A function call is an expression that includes the name of the function being called or the value of a function pointer, as well as being available to participate in the function being passed to it. Example: write("what is the radius: "); radius= read_line(); The function in this code would be "read_line();"

Question 2: Elaborate your **design** and **implementation** of ***read_double(…) function*** in terms of programming artefacts, e.g. parameters, return data, variables, etc.

In designing the read_double(...) function, use read_interger and read_string to design and implement the read_double function. **The first function is set to double, which is called read_double because it is a text input for the user, and then it needs to be written as a string, which is a prompt for the user, which is why the parameter is set to read_string. The string line is because line is declared as a variable. line = read_string(prompt) means that line is equal to whatever information the procedure reads in from the user. Finally I need to return line and convert_to_double.**

Question 3: Elaborate how did you **design your own function** as a requirement of the task? Elaborate your **design** and **implementation** in terms of programming artefacts, e.g. parameters, return data, variables, etc.

A function is designed to input the distance and time spent by the car, and then output the resulting speed of the car. Similar to the air_speed function, the double output_circle_area(double radius),function is created immediately after. function, which contains the speed formula PI*radius*radius, so it can calculate the output result. And then create a void output_circle(double radius),that yields the car speed, sets the double distance, and double time as parameters, and here is where the user input is made, so it needs to be stored in the function for easy reference.

Question 4: What is/are the advantage(s) of developing a piece of software "block by block"? How do **functions** help to construct a program by **parts**?

A block by block in software code for a section or an algorithm in software programming. A block can consist of one or more statements or declarations. It is possible for a block to contain one or more blocks nested within it. Such a feature will break the program into smaller blocks, making it easier for the developer to handle and manage the contents of each block, increasing the speed of fixing bugs. **Functions enable programmers to break down or decompose a problem into smaller chunks, each of which performs a particular task.**

End of questions (4)