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Section #: ____19_____

Take Home: Quiz 3 (15 pts) - Modular Design & Functions in C

Using Canvas <https://canvas.wsu.edu/>, please submit your solution to the correct quiz folder. Your solution should be a .pdf file with the name <your last name>_quiz3.pdf and uploaded. To upload your solution, please navigate to your correct Canvas **lab** course space. Select the “Assignments” link in the main left menu bar. Navigate to the correct quiz submission folder. Click the “Start Assignment” button. Click the “Upload File” button. Choose the appropriate .pdf file with your solution. Finally, click the “Submit Assignment” button.

1. (3 pts) What is a function in computer programming? Please elaborate.

A function in computer programming is a self-contained block of code designed to perform a specific task. It allows for code reusability and abstraction by breaking down complex problems into smaller, manageable tasks. Functions take input (called parameters or arguments), perform operations, and return a result.

2. (4 pts - 2 pts/definition) In your own words define *actual argument* and *local variable*.

Actual Argument: An actual argument is the real value or variable passed to a function when it is called. It provides the input data the function needs to perform its task. For example, in `is_odd(5)`, 5 is the actual argument.

Local Variable: A local variable is a variable that is declared and used within a function or block of code. It is only accessible within that specific function and cannot be referenced outside of it. Local variables are temporary and cease to exist once the function completes its execution.

3. (2 pts) What is a structure chart? Explain.

A structure chart is a diagram used in software design to visually represent the organization of a program. It shows how the program is broken down into functions or modules and the relationships between them, including which functions call other functions. It helps in understanding the program's flow and how different components interact.

CptS 121 – Program Design and Development

Date Assigned: Fri, Sep 6, 2024 Due Date: Mon, Sep 9, 2024



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4. (2 pts) Provide the prototype for a function called `is_odd()` that accepts one integer parameter, called `num`, and returns the number `1` if the number is *odd* or `0` if it is *even*.

```
int is_odd(int num);
```

5. (4 pts - 1 pt for the header, 2 pts for determining if number is odd, 1 pt for return value) Provide the function definition for `is_odd()`. Also, be sure to provide the function header for `is_odd()`. **NOTE: for those of you that are more advanced, you should NOT use `if ()` statements.**

```
int is_odd(int num) {  
    return num % 2;  
}
```