Horrible Code Activity

3 Principles

- The 3 coding principles I chose for this assignment are KISS, Single Responsibility, and Clean Code.
- KISS (Keep It Simple, Stupid)
    - Keep code as simple as possible while also avoiding adding any complex logic if the problem can easily be solved in 3 lines of readable code.
- Single Responsibility
    - Classes or functions should have only one reason to change. For example, a function should only do one thing.
- Clean Code
    - Clean code focuses on readability by using meaningful names and small functions
    - It also uses comments to clarify and explain any complex function/methods in the program

Good Code Version

- In this version of the program, I implemented the KISS principle by separating functions into different categories: calculations and user interface. In the calculations section, I created functions for each mathematical operation that only returned the calculation and nothing else, which also applies to the Single Responsibility principle. In these functions, I also used descriptive comments and meaningful names for the functions and variables in the parameters.
- As for the user interface section, I also created functions that were responsible for different responsibilities such as receiving user input and displaying the math results, which follows the KISS and Single Responsibility principle. For both of these functions, they use meaningful function and variable names as well as descriptive comment explanations, following the clean code principle.

Bad Code Version

- In the bad version of the calculator program, unlike the first version, it violates all three principles. Instead of using multiple functions for each responsibility, it just uses one function to take care of everything (user input, calculations, and displaying results), thus violating the Single Responsibility principle.
- As for the KISS principle, this is violated by using recursion to find the result of a multiplication problem rather than just multiplying the variables and returning that result.
- This version also violates the clean code principle by using unhelpful function and variable names such as “a”, “b”, and “horrible()”.