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**R1000**

**Assignment 1**

1. **Understanding the Problem**
   1. The problem is asking for me to print out the sizes of all the primitive types in C++ (int, short, long, etc). It then asks to create variables for the largest and smallest short, int, and long in unsigned and signed. It then asks to print these variables. The problem then asks me to do this in a multitude of ways such as with the pow() function. Next the problem asks me to investigate floats and doubles through creating variables and user input.
2. **Devising a Plan/Design**
   1. Part 1 – Print sizes with sizeof()
   2. Part 2 – Create variables for largest and smallest short, int, and long in signed and unsigned
   3. Part 3 – Compute the largest and smallest short, int , and long (signed and unsigned) using pow() function and sizeof() function
   4. Part 4 – Print mantissa for both floats and doubles
   5. Part 5 – Ask user to input float and double and define variables to calculate user imputed numbers and return answer.
3. **Looking Back/Self-Reflection**
   1. Looking back, I find that I could have made the code much more readable for myself during my initial attempts on the assignment. Including a couple more comments would have been nice as well. From this assignment, I learned the basics of programming with PUTTY and C++. I learned how to define variables and use them in functions. I learned the basics of shorts, ints, and longs.
4. **Design for Assignment #2**
   1. We can determine the number of subtractions it takes for a float/double to lose precision when subtracting 0.1 through the process of trial and error. We know that inputting 0.01 will result in an incorrect float output. If we keep inputting numbers of differing levels of precision (such as 0.01 in comparison to 0.001) we can find the number of iterations it takes for the float/double to lose precision.
   2. We can determine if overflow has occurred by having the user input a value, and have the answer printed out as a string. We can count the number of values in the printed answer. And if the number exceeds the limit of the float/double, the program will display an error message stating overflow.