Report for Assignment 4: Hexadecimal adder

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This code generates a hexadecimal adder which the user input n1 and n2, then the computer will compute and output the value of n1+n2.

First, I first define 2 functions: printChar and hexadecimal, which printChar can print the desired content, hexadecimal can convert hexadecimal numbers to decimal numbers.

Next, I declare variables l1, l2, carry=0, lmax, lmin, i, a, b and s using the int data type, and then I declare variables n1[17], n2[17] and sum[18] using the char data type. Here, a, b and s are used to determine the decimal value of the corresponding digit respectively.

Then, I use " if(strcmp(n1,"0")==0 && strcmp(n2,"0")==0) break; " in a while loop to allow the user to repeatedly input values until both

n1 and n2 are 0. Following that, I use a for loop to compute the sum. Additionally, I use "if (carry==1)" and "else" to determine where to put \0.

Next, I call the function to convert from hexadecimal to decimal and perform the conversion.

Finally, I use " if (strlen(sum) > 16 || (strlen(sum) == 16 && strcmp(sum, "FFFFFFFFFFFFFFFF") > 0)) " to determine whether it is overflowed.

Report for Assignment 4:
Hexadecimal multiplier

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This code generates a hexadecimal multiplier which the user input n1 and n2, then the computer will compute and output the value of n1*n2.

First, I first define 4 functions: printChar, hexadecimal, hexadecimal_addition, hexadecimal_digit_product, which printChar can print the desired content, hexadecimal can convert hexadecimal numbers to decimal numbers, hexadecimal_addition can add two hexadecimal numbers, and hexadecimal_digit_product can multiply a series of numbers by a single digit and return the result."

Next, I declare variables l1, l2, leng, i and swap using the int data type, and then I declare variables n1[17], n2[17], product[34], partial_product[34] and digit_product[34] using the char data type.

Then, I use " if(strcmp(n1,"0")==0 && strcmp(n2,"0")==0) break; " in a while loop to allow the user to repeatedly input values until both n1 and n2 are 0. Following that, I use a for loop to compute the product.

Next, I use "if (swap)" and "else" to determine the format to be printed.

Finally, I call the function to convert from hexadecimal to decimal and perform the conversion.