Report 1: Hexadecimal Addition

Overview:

The provided C code implements a program for adding two hexadecimal numbers. It consists of three functions: printChar, hex2decimal, and main. The printChar function prints a character a specified number of times, while hex2decimal converts a hexadecimal string to its decimal equivalent. The main function reads two hexadecimal numbers, performs addition, and prints the result along with the decimal equivalents.

printChar Function:

Prints a character a specified number of times using a loop.
Suggested improvement: Simplification of the loop structure.
hex2decimal Function:

Converts a hexadecimal string to its decimal equivalent.
Uses a loop to iterate through each character of the hexadecimal string.
Handles the conversion and updates the result accordingly.

hex_addition Function:

Performs addition of two hexadecimal numbers digit by digit.
Handles cases where the lengths of the input numbers are different.
Ensures correct placement of the carry and adjusts the result accordingly.

Report 2: Hexadecimal Multiplication Program

Overview:

The second provided C code segment implements a program for multiplying two hexadecimal numbers. It includes functions for printing characters (printChar), converting hexadecimal to decimal (hex2decimal), adding hexadecimal numbers (hex_addition), computing a digit product with left shift (hex_digit_product), and the main multiplication algorithm in the main function.

hex_digit_product Function:

Computes the product of a hexadecimal number and a single digit, left-shifting the result by a specified number of positions.
Handles cases where the digit is zero to optimize the multiplication.

main Function:

Reads two hexadecimal numbers and calculates their product using a multiplication algorithm.
Prints the input numbers, their product, and the decimal equivalents.