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A brief explanation of how I developed counting.c

- There are four parameters to be entered by the user: min_range, max_range, digit and repetition.
- I use "printf" to print some commands that tell the user to enter the desired number. Use "scanf" to read the formatted input.
- I define a function called "Counting" to count the number of integers in the range that meet the requirements.
- In "Counting" function:
 - I use an if statement to check for some special cases where the count must be 0 and no integer arithmetic needs to be run
 - When running integer arithmetic, I also use an if statement to check that once the actual number of repetitions is greater than input_repetition, the loop of integer arithmetic will end and the program will check for the next number in the range.
- I use a helper function "max" to return the larger of the two values. This function is used in the "Counting" function, which will compare the min_range given by the user with 0. We will loop through the integers starting with the larger one.

Why I believe counting.c works correctly

I verified this program with some test cases, from simple to complicated. I listed two of them below

Test case 1:

Enter the minimum of considered range: 1

Enter the maximum of considered range: 20

Enter the digit of interest: 2

Enter the number of repetitions: 1

The number of integers from 1 to 20 that include exactly 2 1's is 3.

Test case 2:

Enter the minimum of considered range: 123

Enter the maximum of considered range: 765

Enter the digit of interest: 7

Enter the number of repetitions: 2

The number of integers from 123 to 765 that include exactly 7 2's is 12.

Test case 3:

Enter the minimum of considered range: 70

Enter the maximum of considered range: 1000

Enter the digit of interest: 7

Enter the number of repetitions: 2

The number of integers from 70 to 1000 that include exactly 7 2's is 27.

What I felt were the most challenging one or two aspects of this assignment

It took me some time to figure out what integer arithmetic means.

How your final submission improves upon your initial submission

- I add more comments to help others understand my program
- I have formatted my code and tried to make it more concise.
- Rewrote the integer arithmetic section using fewer lines of code
- Delete the part for checking if the inputs were valid