Assignment 2

(1) Formula

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Formula.c

- This implementation of formula was easily written by calling just calling the nCr function to do the work and put it into a format that the assignment wanted us to do. I checked for error: no inputs, not a number, input < 0. The program also included with –h flag so that input is in a right format. Also using gettimeofday(), the program calculates the running time in microseconds. For this implementation, it took around 21 to 33 micro seconds.

Aseembly(nCr.s)

Factorial

- Nothing really special about this assembly. Calculate the factorial by looping. I used jo(jump overflow) to check my overflow. And if there is an overflow, the function returns 0. And in the formula.c, it puts it into an error.

nCr

- This assembly function has a lot of computations to do: n!, r!, (n-r)!. It calls factorial function to compute this part. It divides n! and r! and store that into empty memory space. Next divide the previous calculation again with (n-r)!. The part that I was having trouble was that I was keep getting 0 in my edx register, which was very bizarre. I looked it up and the assembly stores the remainder of the division into edx register. After finding that out, it was very easy to compute this assembly.