EECS 2032

Lab 4
Fall 2019

In this lab, you will write a small C c ode using loops

Problem 1

Write a program to calculate nCr (Choose r out of n). The formula is

$$nCr = \frac{n!}{k!(n-k)!}$$

You can not do this by calculating the factorials for a very large number, so you
have to expand it and simplify it, for example

$$7C2 = \frac{7!}{2!(7-2)!} = \frac{7*6*5!}{2*1*5!} = \frac{7*6}{2*1}$$

Then you can calculat ethis value in two ways
1. You can calculate the numerator and denominator separately, and then
   dividing them (much smaller numbers compared with the factorials)
2. Or, you can even do it ins a simpler way. First calculate 7/2, then multiply it
   with 6/1 and so on.

Specifications

Read n and r from the standard input

display the as a number using the default floating point format (%f) followed by a
new line

Submit the file as submit 2032 LAB4 lab4_1.c

Problem 2

Write an ANSI C code to do the following
The code reads one integer (n) on a line by itself from the standard input. Then
the program proceeds to read n integers from the standard input. The program
checks the n integers read, if there is a number repeated any number of times, it
prints YES followed by a new line, else it prints NO followed by a new line.
Submit the files as submit 2032 LAB4 lab4_1.c