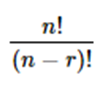
**PROGRAMMING EXERCISES**

1. The formula for permutation with no repetition is given as follows:



where n is the number of things to choose from, and we choose r from n. Develop a C program source code to compute the given formula using recursion. Prompts the user to enter an integer for both n and r, respectively. Make sure that r <= n, n >= 0 and r >=0.

1. Construct a C program source code to read N number of integers and compute the answer for the given problem below, where -1< x < 1



Apply the idea of **recursion** in your program.

3. The following series summation are an approximation for computing the sine and cosine

functions of a floating point

Diagram

Description automatically generated with low confidence

where x must be the angle in radian and n is a positive integer. Design and implement

an interactive program that does the following:

1. Prompts the user to choose sine or cosine function.
2. Prompts the user to enter an integer for n and reads it.
3. Prompts the user to enter a floating-point value for x and reads it.
4. You should construct your program by using **recursion** and work out the recursive functions for sine and cosine(x), respectively.

4. Write a program in C to find the greatest common divisor (GCD) of two numbers using ‘ recursion.

Text

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