

Dr. M. Owrang

CSC256: Discrete Structures Fall 2020

Homework 3 (5 Points)

Due: Midnight, Friday Oct. 9, 2020

Counting: Run Permutation, Combination Programming

Permutation Programming, Without Duplication of digits.

Write a program (in the language of your choice) to enable us to perform the Permutation of numbers in a list of numbers:

Part 1) What is the total number of possibilities of group of SomeNoOf (an integer) from the SetOfdigits (an integer)

Run your program with 3 different input examples.

Part 2) Print the first 20 of those possibilities.

For example:

If the list is {4, 5, 6, 7, 8}, SetOfDigits=5

What are the possibilities for numbers with 3 digits, SomeNoOf=3?

$$P(5,3) = 5! / (5-3)! = 5*4*3*2*1 / 2*1 = 60$$

Some possibilities: 456, 457, 458, 467, 468,

Try Your programs with 3 different Inputs. (with different SomeNo Of, and Set Of digits)

Part 3) Create a complete program to generate the **Virginia's Car License Plates** using the following format: 3 characters followed by a — followed by 4 digits.

CharCharChar-DigitDigitDigitDigit

Show the first 30 of the possible License plates generated by the program.

EX: SON-2367; MON-2463