

## CS1020E | Lab 8 | Exercise 2

### $N$ Choose $K$

#### Objectives

The objective of this exercise is to practice using **recursion** to solve problem.

#### Problem Description

Find out all possible combinations of choosing  $K$  letters out of an input string of  $N$  **distinct** letters. The input consists of an integer,  $K$  and a string of  $N$  distinct lowercase letters listed **in alphabetical order**.

Assume that  $1 \leq N \leq 26$  and  $1 \leq K \leq N$ . Print out all distinct letter combinations in alphabetical order. Each combination can be represented as a string consisting of  $K$  letters listed in alphabetical order.

You would only **get at most 50% of the marks** if **recursion** is not used, in a **correct** and **meaningful** way, in your solution.

**Add your code only to the parts of the file indicated. Do not modify any other part of the given code, and do not add new files.**

#### Inputs

The input consists of an integer  $K$  and  $N$  distinct letters listed in alphabetical order.

#### Outputs

Output all distinct letter combinations in alphabetical order.

#### Sample Input 1

```
2 abcd
```

#### Sample Output 1

```
ab
ac
ad
bc
bd
cd
```

### Sample Input 2

4 abcd

### Sample Output 2

abcd

### Sample Input 3

1 abcd

### Sample Output 3

a  
b  
c  
d

### Submission

You need to submit your completed **NchooseK.cpp** to CodeCrunch (<https://codecrunch.comp.nus.edu.sg/>) before the specified deadline. We will take only your latest submission.

Late submissions will not be accepted. The submission system in CodeCrunch will automatically close at the deadline.