Lab Five

1. Write a program to accept a string and print the number of occurrences of each vowel in the string, as well as the length of the string. For example, if the input string is PROGRAMMING, the output is: A:1, E:0, I:1, O:1, U:0. String Length: 11.

2. Write a program to accept n integers in an array, and find the smallest and largest of the numbers.

3. Write a program that accepts a string and a number k and prints the string left-rotated k times.

   Example runs:

   Enter the string: APPLE

   Enter the number of left-rotations: 1

   The rotated string is: PPLEA

   Enter the string: CHROME

   Enter the number of left-rotations: 4

   The rotated string is: MECHRO

4. Write a program to accept two integers m and n and display the perimeter of a $m \times n$ rectangle.

   Example run:

   Enter the value of m: 4

   Enter the value of n: 7

   ```
   * * * * * * *
   *           *
   *           *
   * * * * * * *
   ```

5. (*Optional*) Accept a string as input and print all subsets of the string (in any order). Hint: Let the length of the string be n. Map the subsets to numbers in $\{0, 1, \ldots, 2^n - 1\}$ and for each of these numbers, print the appropriate characters, using the 3rd exercise from Lab 4.

   Example run:

   Enter the string: CAT

T

A

TA

C

TC

AC

TAC