CS118 - Programming Fundamentals
Teacher - M. Shahzad

Assignment 03: Arrays and Strings

Note: The last date of submission is 21-December-2020

Problem 1:

Write a program which read a line from user until user press enter key ('\n'). Store all the words of a line into multidimensional dynamic array. Then pass this array to a function SortString(), which will sort all the words by word length i.e. longest word will be placed at a first index, then second longest word will be placed at a second index and so on. Finally return the sorted list of words back to main function, where all the words will be printed onto the screen as one word per line. Assume that the line contains all unique words.

Sample Input / Output:

Input:

I hope my Grade in PF will be A+.

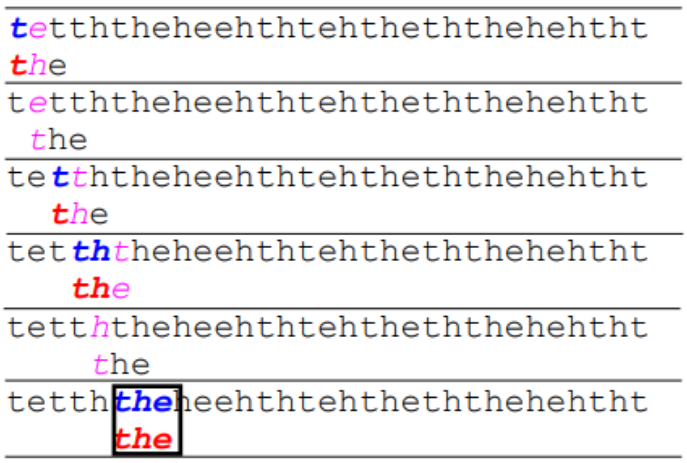
Output:

Grade
hope
will
A+
be
in
PF
my
I

Problem 2:

In ***string searching*** problem, we find the location of a specific text pattern within a larger body of text (e.g., a sentence, a paragraph, a book, etc.). There are a number of string searching algorithms in existence today, but **Brute Force** is one of the simplest algorithms that compares the pattern to the text, one character at a time, until unmatching characters are found. The algorithm can be designed to stop on either the first occurrence of the pattern, or upon reaching the end of the text. Here's the pseudo-code and visual representation of example:

```
do
  if (text letter == pattern letter)
    compare next letter of pattern to next
    letter of text
  else
    move pattern down text by one letter
while (entire pattern found or end of text)
```



Task: Read a large text of length ***N*** and pattern of length ***M*** such that ***M<N***. Compare pattern to each of substring of text of length M and find the no. of occurrence and the positions of pattern in a text.

SUBMISSION:
Submit the deliverables as a zip bundle or as a tarball using the SLATE system.

LATE SUBMISSION POLICY:
Your final assignment grade will be penalized 20 points per late day.

CHECK THE ANNOUNCEMENT IN SLATE REGULARLY FOR POSSIBLE UPDATES ON THE ASSIGNMENT.