Programming languages for Bioinformatics
Spring 2019

Homework 6, week 10

Chapter 6 Structures

1. Write a program to print all the distinct words in the input. The output should contain 3 columns: the first column is for the words; the second is for the total number of occurrence of the word; and the last column is for the list of line numbers on which they occur. Your program should be able to print the output according to the dictionary order of the words (with an option "–a"), or in increasing order of the frequency of occurrence (with an option –f). For example, if the input is

> *"A friend in need is a friend in deed.*
> *I have a friend.*
> *His name is Tom.*
> *Tom also has a friend. "*

Then your output will be something like the following if option "-a" is used.

> *also 1   4*
> *deed1   1*
> *friend   3   1,2,4*
> *has   1   4*
> *have 1   2*
> *his   1   3*
> *is   2   1,4*
> *I   1   2*
> *name 1   3*
> *need1   1*
> *Tom 1   4*

The output can also be like the following if you specify option "-f" to enforce the output results in decreasing order of the frequency of occurrence.

> *friend   3   1,2,4*
> *is   2   1,4*
> *also 1   4*
> *have 1   2*
> *has   1   4*
> *deed1   1*
> *his   1   3*
> *I   1   2*
> *name 1   3*
> *need1   1*
> *Tom 1   4*

You can use the *qsort* program we used in the class as your reference. You are expected to

use the structure data type.

Please include the source code together with the test examples and results of your test examples in your report.

Turning in your homework

Please hand in a hard copy and an electric copy of your homework report, which includes the source code, how you compile it, how you test your program and the result of the test run of you program. Please check the course website to decide how to submit your electric copy. The homework report should be handed in before the class start on May 9th, 2019.

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独立作业承诺：（请选择一个， 并签名）
  1. 本人，_____，保证本次作业由自己独立完成。

     签名

     时间　　年　月　日

  或者
  2. 本人，_____，保证本次作为和_____同学讨论后，由自己独立完成。
     讨论内容包括_____

     签名　　　　　　，

     时间　　年　月　日