

THE UNIVERSITY OF HONG KONG
COMP1117 Computer Programming I

Assignment 4

Deadline: 5:00pm, Nov 20, 2017

You can assume that the input of your program is valid; there is no need to check the validity of the input.

Students of an English class are asked to write a one-paragraph self-introduction as their homework (less than 200 words). Students' works are stored separately in text files named after the students' own names, such as *Rafa.txt*, *Roger.txt*, etc. The teacher has another text file called *table_of_content.txt*. It stores the names of each student's text file.

Roger.txt
Rafa.txt
Andy.txt
Novak.txt

Write a program `text.cpp` to help the teacher to perform the following tasks.

Sample *table_of_content.txt*

- a) (20%) Read the all the students' text files.

First, read the text file *table_of_content.txt*, which consists of multiple lines (no larger than 20) of file names. Then read every text file listed in *table_of_content.txt* and stores the content of the files to an array of strings. Output the number of students in the following format:

`n students' text files are read.`

You can maintain an array of filenames, an integer that stores the number of students and an array that stores students' writings.

- b) (5%) Next, your program should repeatedly process user's command. For each iteration

- Print an instruction menu:

Options:

1. Keyword search.

2. Exit.

Your choice:

- User is expected to input 1, or 2. Get the input command, and process the command according to the specifications:

- c) (70%) Keyword search

Keyword search aims to count the number of occurrences of a keyword in each text file.

First, ask the user to input the keyword. You should output `The keyword is:` . Then in the screen list the all the filenames and the number of occurrences of the keyword in each file.

The filenames should be listed in ascending order.

```
The keyword is:
is
Andy.txt 6
Novak.txt 5
Rafa.txt 8
Roger.txt 8
```

Sample output for
keyword search

d) (5%) Exit

Stop and exit the program.

Sample Run:

```
4 students' text files are read.
-----
Options:
1. Keyword search
2. Exit
Your choice:
1
The keyword is:
is
Andy.txt 6
Novak.txt 5
Rafa.txt 8
Roger.txt 8
-----
Options:
1. Keyword search
2. Exit
Your choice:
1
The keyword is:
he
Andy.txt 2
Novak.txt 16
Rafa.txt 5
Roger.txt 8
-----
Options:
1. Keyword search
2. Exit
Your choice:
2
```

Input/Output format:

<integer n><space><"students' text files are read."><newline>

<"----- "><newline>

<"Options:"><newline>

<"1. Keyword search."><newline>

<"2. Exit."><newline>

<"Your choice:"><newline>

<a number><newline>

If <a number> is 1:

<"The keyword is:"><newline>

<the keyword><newline>

<filename_1><space><integer no_keyword_1><newline>

<filename_2><space><integer no_keyword_2><newline>

...

If <a number> is 2: return