CSE4510: Operating Systems Laboratory (Fall'23)
Offline-2 sec: C Total-20 marks

Please do not copy codes from others/the internet. Each of the offline assignments will be evaluated with a viva. You must be able to explain your code. Any plagiarism will be severely penalized.

Replace 01119xxxx with your student ID

Question-1(8 marks)

Create a bash file and rename it as 01119xxxx_1.sh.

1. Your shell program will take a filename as a command line argument.
   a. Check whether the file exist in the current directory.
   b. If the file doesn't exist in the current directory, then prompt user to enter filename again until the user enters valid filename.
2. The input file will contain file extensions (such as. txt, sh, c etc.)
3. Create a folder "output_dir" in current directory.
4. Inside the folder "output_dir" create folders separately for each extension. For example, create folders named "txt", "sh" etc.
5. Now, find all the files for each extension in the current directory and copy the files in corresponding directory. For example, find all files with ".txt" extension and copy them into "output_dir/txt" folder.
6. Also count total files with that particular extension and print the file count. For example, "extension: txt count: 3".

Expected output:

Suppose that, input filename is "input" which contains

```
c
java
sh
txt
```

```
seed@VM:~/.../offline_2$ ./01119xxx_1.sh myfile
input file doesn't exist .
Enter input file:
file1
input file doesn't exist .
input file doesn't exist .
Enter input file:
input
ext: c count: 1
ext: java count: 0
ext: sh count: 1
ext: txt count: 9
```

**after running the program, there will be created a folder “output_dir” in current directory. Inside current directory, there will be 4 folders named “c”, “java”, “sh” and “txt” for the above scenario. This will be changed according to the input file. Inside “c” folder, there will be all c files of current directory and so on.

Question-2(12 marks)

Create a bash file and rename it as 01119xxxx_2.sh.

1. There will be 2 functions in this shell file
    a. Func1
    b. Func2

This bash script will take a number as command line argument. If the argument is “1”, Func1 will be called and if argument is “2” Func2 will be called.

Func1

Inside Func1,

- Ask user to input a file name(which should be resided in current directory)
- Count the frequency of each word (number of occurrences of each word). Don’t count frequency of numbers/digits.
- Print the frequency of each word.

Func2

This function will take “**word list**” as input and count the files in a “**directory**” containing that word and then replace the words using a “**common replacing word**”

Inside Func2,

- Ask user to enter a list of words
- Ask user to enter a replacing word
- Ask user to enter an absolute path of a directory

Now, count the files containing the words. Then replace the word (in each case) with that particular replacing word.

Suppose that, test.txt contains the following content:

This is operating system class. This lab is very interesting. this is a number 1 class.

Expected output:

```
seed@VM:~/.../all_codes$ ./01119xxx_2.sh 1
enter filename:
test.txt
word: a count:1
word: class count:2
word: interesting count:1
word: is count:3
word: lab count:1
word: number count:1
word: operating count:1
word: system count:1
word: this count:1
word: This count:2
word: very count:1

seed@VM:~/.../all_codes$ ./01119xxx_2.sh 2
enter words
new bin file
enter replacing word
bash
enter absolute path of directory:
/home/seed/Documents/offline_2
word: new file_count:4
word: bin file_count:1
word: file file_count:1
```

After running the 2nd shell file, all the words “new” “bin” and “file” will be replaced by “bash”.

Submission Guideline:

- Create a folder and rename it with your student ID.
- Put all 2 files (01119xxxx_1.sh, 01119xxxx_2.sh) into the folder. Zip the folder and submit it.

Submission deadline: 24 october,2023 11 PM.