CMPS 2010 Lab 5

Spring 2024

Program 1 - Files and Command Line Arguments (lab5-1.cpp)

Write a program that does the following:

1. Require the user to provide input and output file names as command line arguments.
2. Open an ifstream and ofstream using the file names provided in step 1.
3. Use a while loop with **get()** to read one character at a time from the input file and do the following:
    a. Convert all lowercase characters (a-z) to uppercase (hint: use **`islower()` and `toupper()`**)
    b. Replace all spaces with an underscore character
    c. Prevent vowels from being written to the output by doing the following:
        i. Check if the character is NOT a vowel
        ii. Use **put()** to write the modified character to the output file
4. Close the ifstream and ofstream.
5. Use the text from this file to test your program: https://cs.csub.edu/~paul/cs2010/labs/input.txt

The text in the output file should look something like this:

```
SCCSSFL_CMPL,_SCCSSFL_CMPL,
FTR_CDNG_FR_DYS__CN_FNLLY_SML!
_HV_FNLLY_WN!__HV_BTN_TH_DDS,
"BT_DSSTR_WTS",_WRN_TH_PRGRMMNG_GDS!
T_HS_LL_BN__RS,_JST_N_TRGC_DCPTN,
S_MY_PRGRM_CRS_T_WTH__FTLXCPTN!
```

Program 2 - Functions and For Loops (lab5-2.cpp)

Write a program that does the following:

1. Define and use the following three functions:
    a. **`void getWholeNumber(int &num)`**
    b. **`bool isPrime(int num)`**
    c. **`void printFactors(int num)`**
2. **`getWholeNumber(int &num)`** will request a whole number, validate the input, then store the value in **`num`**.
3. **`isPrime(int num)`** will use a for loop to check if **`num`** is prime. Return **`true`** if it is prime, and **`false`** if it is not.
4. **`printFactors(int num)`** will use a for loop to print out all of the factors of the provided **`num`**.
5. Use prototypes to DECLARE your functions before **`main()`**, then DEFINE the functions after **`main()`**.

The program output should look something like this:

```
Please enter a WHOLE NUMBER: 250

250 is NOT prime!
The factors of 250 are:
1 2 5 10 25 50 125 250
```

Run this command from your lab5 folder to submit your work.

```
/home/fac/paul/s/submit.sh
```