Lab 6

Task 23

Write two functions: *main* funtion and a sub-function *compare ASCIICode*.

- The *compareASCIICode* function will compare ASCII code o f any two characters and return 1, 0, or -1 accordingly.
  - For example, compareASCIICode(‘a’, ‘b’) returns -1; if compareASCI ICode(‘b’, ‘a’) returns 1; compareASCIICode(‘a’, ‘a’) returns 0.
- The *main* function will read two characters from keyboard and call the *compareASCIICode* function to compare the in putted two characters. The *main* function will also print ou t comparison results according to the return value from th e *compareASCIICode* function.
  - For example, if input is a b, then the output could be the character ‘a’ is smaller than character ‘b’.

Task 24

Write a program that includes two functions: *main* and *stringLength*.

- The prototype of *stringLength* is

  ```
  int stringLength(char s[])
  ```

  The return value of this function is the length of `s`.

- The *main* function is responsible for reading a string and calling *stringLength* to get the length of the inputted string. The *main* function will also print out the length of the string. Assume the length of the string is less than 50.

Requirements:

- The project should have three files:
  - one hpp file which is put under the "Header files" folder
  - two cpp files which are put in the "Source files" folder. One cpp file includes the function *stringLength;* another cpp file includes the function *main*.
- The hpp file contains the prototype of the function *stringLength.*
- Use *#include "###.hpp"* in the file where the *stringLength* function will be called (i.e., in this task, it is the file that has the *main* function).

Task 25

Change the following program such that it will find and print out the biggest value in the array *value*.

Requirements:

- The line in red cannot be changed; all others can be modified (including function name)
- After calling the sub-function, value of each element in array *value* should be SAME as before the call. The biggest value is returned by the sub function.

```
void exchange(float a[], int n); // function prototype
int main(){
    float value[4] = {2.5, 1, 1.2, 5.2};
    exchange(value, 4);
    printf("value[0] = %f", value[0]);
    return 0;
}
void exchange(float a[], int n){
    float temp;
    temp = a[0];
    a[0] = a[n - 1];
    a[n - 1] = temp;
}
```

Task 26

Write a program that includes two functions: *`main`* function and *`Fac(int n)`*. Function *`main`* reads a positive integer *n*, and ca lls the function *`Fac`* to compute the factorial number of *n*. Do no t refer to the function in the lecture 7 note.

Task 27

Write a program that includes two functions: *`main`* function and *`Power3(int n)`*. Function *`main`* reads a positive integer, and call the function *`Power3`* to compute 3^n and print out the resul t. *`Power3(int n)`* must be a recursive function.

Add info about a program

At the top of each program, add the information (comments in GREEN). It is also required for EACH lab program in this semeste r.

```
// Programmer: ……
// Student ID: ……
// Date:….
// Task no: Week_#_Task_#
// Requirements: ……
#include<stdio.h>
int main()
{
   …….
}
```

Submission

- Compressed *.cpp into one file with file name in the format *Lab6_######.zip* and submit it into iSpace.
- All .cpp files must be able to run under Visual 2010 C++ Express. The outputs will be checked against the outputs under Visual 2010 C++ Express