



Object-Oriented Programming

ASSIGNMENT 2

박태성/2015722031/2019 년 5 월 3 일

1. Read informations from a file and write a program that calculates the expected arrival time. You should enter the departure date, departure time, and the destination. This program should print the result to a file.

C:\Users\박태성\Desktop\Assignment2_2015722031_박태성\Assignment2-1\Assignment2-1\Debug\ConsoleApplication2.exe

```
flight_time.txt
Sapporo: [180]
Tokyo: [150]
Boracay: [210]
DaNang: [160]

-----

Input from users
Departure date:2019/04/05
Departure time:23:59
Destination: Tokyo

-----

Departure date : 2019/04/05
Departure time : 23:59
Destination : Tokyo
Arrival date : 2019/04/06
Arrival time : 02:29
계속하려면 아무 키나 누르십시오 . . .
```

I focused on separating the information of the destination and the flight time form given file. Then, I took much time to convert input string to integer type to allow data to calculate.

2. Write a function CMPandCAT. The program has three functions. First, comparing src1 and src2. You could compare strings by ASCII code. Second, copying src1 and src2 to copy_result. Third, returning an integer value that is result of comparing.

C:\Users\박태성\Desktop\Assignment2_2015722031_박태성\Assignment2-2\Debug\Assignment2-2.exe

```
Input string :
src1 : Hello
src2 : How
Output string :
return_value : -1
copy_result : HowHello
계속하려면 아무 키나 누르십시오 . . .
```

Since I was not allowed to use any string functions, I used character type array and pointer. Also, I compared, copied, and combined characters by loops. Be careful that pointer just stored the address of first character of string.

3. Write three functions which calculates area of rectangle, triangle, and diamond shape. You should enter width and height. You should write a program through function pointer array.

C:\Users\박태성\Desktop\Assignment2_2015722031_박태성\Assignment2-3\Debug\Assignment2-3.exe

```
Width: 3
Height: 5
```

```
Area of the rectangular : 15
```


```
Area of the triangle : 7.5
```

```
Area of the diamond : 7.5
```

```
계속하려면 아무 키나 누르십시오 . . .
```

Function pointer array takes address of function as parameter. By using function pointer array I could simply make the code..

4. Write a Namecard class that saves personal informations. Implement member functions that retrieve and modify member variables.

 Microsoft Visual Studio 디버그 콘솔

```
Student_A Name: Son
Student_A Phonenumner : 01012341512
Student_A Address: seoul
Student_A Age: 24
```

```
-----
Student_B Name: Hazard
Student_B Phonenumner : 01012417135
Student_B Address: America
Student_B Age: 2
```

```
-----
Student_C Name: Messi
Student_C Phonenumner : 0161239135
Student_C Address: Japan
Student_C Age: 29
```

```
-----
Student_D Name: Drogba
Student_D Phonenumner : 021239135
Student_D Address: Hongdae
Student_D Age: 40
```

```
-----
Student_E Name: Kane
Student_E Phonenumner : 031231135
Student_E Address: Songpa
Student_E Age: 72
```

Since I didn't allocate any array, I had no necessary to deallocate or used destructor. Therefore, I initialized variables at destructor. I learned that 'm_' is used at MFC.

5. Write a calculator program. It should keep the arithmetic order and support parentheses. Print the result of calculation.

 선택 Microsoft Visual Studio 디버그 콘솔

```
Input: 1 + 2 * 3 / ( 5 - 3 ) + 4 * 3
Output: 16
```

There are difference compared vector with stack. Vector stored data sequentially. However stack is called "Last in First out". Stack is useful than vector to solve the assignment2-5. I was confused because of experience of using calculation function at Python. Python prints the results directly without any special process.

6. Write a program that counts the number of words in a string. You should keep in mind a word is case-insensitive.

```

C:\Users\박태성\Desktop\Assignment2_2015722031_박태성\Assignment2-6\Debug\Assignment2-6.exe
Rainbow is made up of red color orange Color yellow color green coLor blue color indigo co
lor purple CoLOR
Output: 13
계속하려면 아무 키나 누르십시오 . . .

```

The number of words in a sentence can be found by subtracting the number of times the same word overlaps the number of words in the input file.

7. Read a text file and then print all the words in the text file in ascending order. Sorting is case-intensive.

```

words.txt - 메모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
acid
Apple
bed
bridge
Chair
computer

```

I recommend to write a program by using file pointer since char array is hard to combine and compare characters. I could easily set and get position through file pointer.

8. Define Elevator class for the elevator function. It is implemented with a single button. You could create one instance and display the function.

```

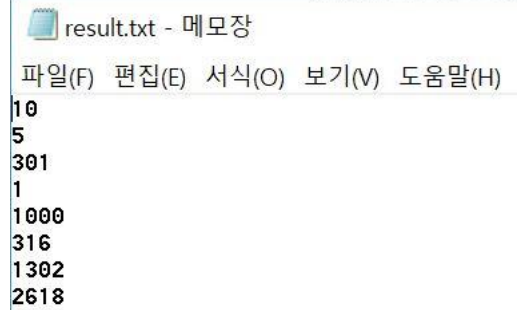
Microsoft Visual Studio 디버그 콘솔
It is on the 7 floor.
It is on the 3 floor.
You can't go down to 5 floor.
It is on the 1 floor.
Total up: 6
Total down: 6
Total time: 6s

```

I could make more instances through inheritance. If I append more function such as, making the nearest elevator move first, I could apply it to make actual elevator.

9. First, Read the three number of the file from the bottom. and write the result to the end. Second, perform the addition from the last number that was read

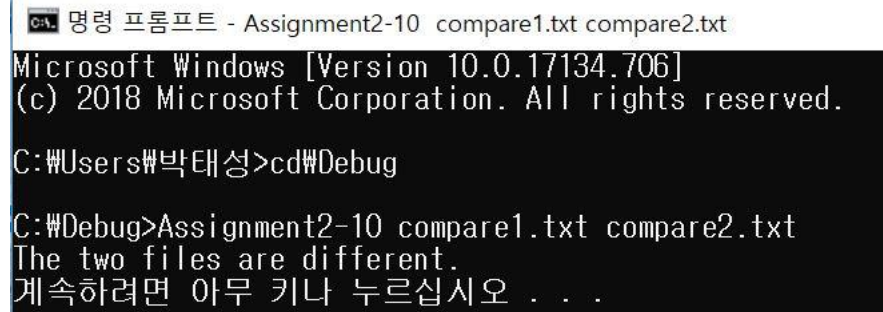
previously. Continue this process until you cannot read the three numbers.



```
result.txt - 메모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)
10
5
301
1
1000
316
1302
2618
```

It could easily solved by using file pointer such as `ios::beg`, `ios::end`. I could get length of string or get position of the current character.

10. Write a program that checks whether two text files are the same or not. Get the text file name as a parameter of the main function.



```
명령 프롬프트 - Assignment2-10 compare1.txt compare2.txt
Microsoft Windows [Version 10.0.17134.706]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\박태성>cd\Debug

C:\Debug>Assignment2-10 compare1.txt compare2.txt
The two files are different.
계속하려면 아무 키나 누르십시오 . . .
```

Note that `argv[0]` contains the name of executable name. Note that two text files are located in the same folder with execute file.