

OBJECTIVE : General review of CENG103 subjects

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Q1.

In the **input.txt** file, you can find records about annual weather: temperature averages of some provinces in Turkey acquired during the years 2012 – 2013 – 2014 – 2015 – 2016 respectively.

Each line's very first two digits are denoting the location (province code number), e.g. 06 denotes the capital ANKARA, 07 denotes the vocational province ANTALYA, 34 denotes the wonderful ISTANBUL, and 35 denotes the city of IZMIR (a.k.a the pearl of Aegean).

NOTE THAT: The province code numbers are always two digits. If the code number is lower than 10, then it must be shown with a leading 0 (zero). For instance; the city of ANKARA's code number is 06, not 6!

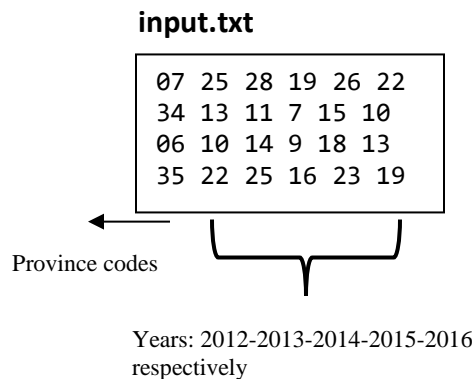
Write a program that should store these code numbers in a one-dimensional array and the averages into a two-dimensional array, which should be parallel to the code numbers array. From these two arrays, to find;

- The average highest degree therewithal its year, and the corresponding province code.
- The overall sums of every single province.

And store these provinces' result findings to a text file named **output.txt** as seen exactly in the below demonstration of the output.txt.

To do so, you will need below functions;

- **readFile** that takes a file pointer and two arrays (1D and 2D), then, reads the file contents to store them into the necessary arrays of id and results.
- **findHighestDegree** is supposed to take a two-dim array and pointers as references of some variables, then, it returns row and column subscript numbers of the highest integer value among the array elements.
- **findTotals** takes two arrays (1D and 2D) and the sum of two-dim array's each row is supposed to be stored into a one-dim array in order.
- **printToFile** that helps us to write down City and Total average degrees during the following 5 years as it is seen below. Thus, it takes two parallel one-dim arrays, and a file pointer to write their content to a file.



output.txt

```
Average highest degree is: 28
Year: 2013
City: 07

City    Total
07      120
34       56
06       64
35      105
```

Q2. (USE ONLY POINTER NOTATION)

Write a C program that will initialize an one-dimensional integer array (size 10) with the numbers like 10, 20, 30,... The program should also give an output to the text file <result.txt> as given below.

Example Run:

Please see the <result.txt> file for the output

Content of the result.txt file

Element Name	Value	Address
-----	-----	-----
*(nums + 0)	10	00B8FAEC
*(nums + 1)	20	00B8FAF0
*(nums + 2)	30	00B8FAF4
*(nums + 3)	40	00B8FAF8
*(nums + 4)	50	00B8FAFC
*(nums + 5)	60	00B8FB00
*(nums + 6)	70	00B8FB04
*(nums + 7)	80	00B8FB08
*(nums + 8)	90	00B8FB0C
*(nums + 9)	100	00B8FB10

Project Name: LabGuide1_2

File Name: Question_2.cpp