Homework #10

Due date: 23:59, January 13th, Friday, 2017

Problem statement

1. PM2.5 is now a very serious issue. Attachment is a csv file named PM2.5.csv from open data. Please write a program to read the file and sort the ***site name*** from A to Z. We suggest you to access the data in ***struct*** format, and output the csv file named ***outcomeSingle.csv.*** (50%)

PM2.5.csv

	A	B	C	D	E	F
1	Site Name	MonitorMate	Concentration	Item Unit		
2	Makung	2015/12 / 5	15	μg / m3		
3	Kinmen	2015/12 / 5	29	μg / m3		
4	Matsu	2015/12 / 5	17	μg / m3		
5	Yilan	2015/12 / 5	11	μg / m3		
6	Yangming	2015/12 / 5	4	μg / m3		
7	Hualien	2015/12 / 5	11	μg / m3		
8	Taitung	2015/12 / 5	7	μg / m3		
9	Hengchun	2015/12/5	6	μg / m3		
10	Pingtung	2015/12 / 5	54	μg / m3		
11	Before gold	2015/12 / 5	45	μg / m3		
12	Mino	2015/12 / 5	47	μg / m3		
13	Tainan	2015/12 / 5	39	μg / m3		
14	New Camp	2015/12 / 5	43	μg / m3		
15	Chiayi	2015/12 / 5	51	μg / m3		
16	Putz	2015/12 / 5	37	μg / m3		

outcomeSingle.csv

H14 fx

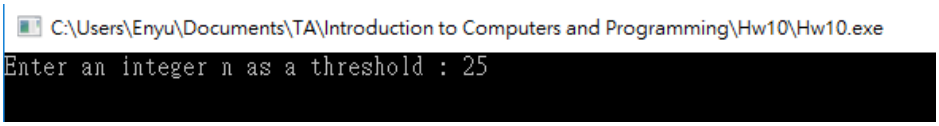
	A	B	C	D	E	F	G
1	Site Name	MonitorMate	Concentration	Item Unit			
2	Bamboo Dong	2015/12 / 5	16	μg / m3			
3	Bamboo Dong	2015/12 / 2	17	μg / m3			
4	Bamboo Dong	2015/11 / 29	19	μg / m3			
5	Bamboo Dong	2015/11 / 26	12	μg / m3			
6	Bamboo Dong	2015/11 / 23	10	μg / m3			
7	Bamboo Dong	2015/11 / 20	10	μg / m3			
8	Bamboo Dong	2015/11 / 17	27	μg / m3			

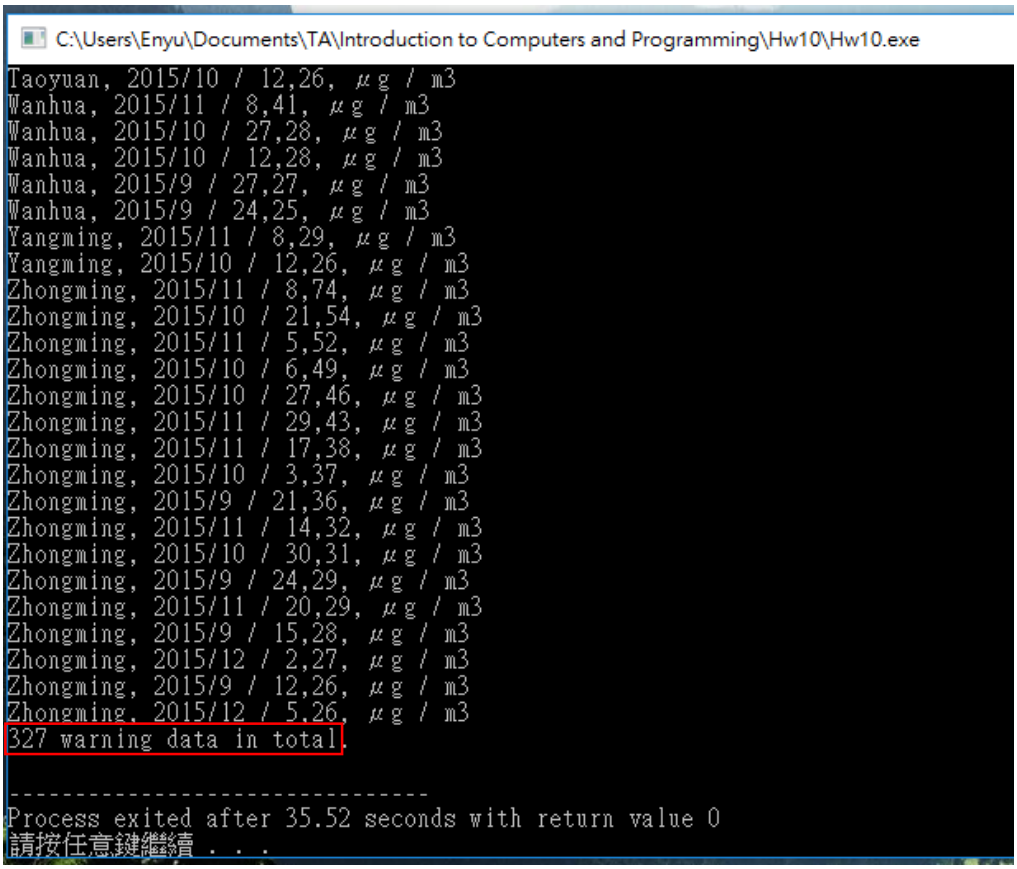
2. Sort ***Concentration*** from max to min under the condition of question 1. Output the file names ***outcomePair.csv***. (30%)

outcomePair.csv

	A	B	C	D	E	F
1	Site Name	MonitorMate	Concentration	Item Unit		
2	Bamboo Dong	2015/11 / 5	38	μg / m3		
3	Bamboo Dong	2015/9 / 21	38	μg / m3		
4	Bamboo Dong	2015/11 / 8	36	μg / m3		
5	Bamboo Dong	2015/10 / 27	34	μg / m3		
6	Bamboo Dong	2015/11 / 17	27	μg / m3		
7	Bamboo Dong	2015/10 / 3	23	μg / m3		
8	Bamboo Dong	2015/10 / 12	22	μg / m3		
9	Bamboo Dong	2015/10 / 30	21	μg / m3		
10	Bamboo Dong	2015/9 / 24	21	μg / m3		
11	Bamboo Dong	2015/11 / 29	19	μg / m3		
12	Bamboo Dong	2015/9 / 18	19	μg / m3		
13	Bamboo Dong	2015/11 / 14	18	μg / m3		

3. Let the user enter a ***concentration threshold***, and print out all records which their concentrations are ***greater than or equal to*** the threshold in the same order with question 2 and print the row count at the end. (20%)





Requirements

1. Properly comment your codes.
2. We suggest you to access the data in struct format.
   You have to output two files in total (***outcomeSingle.csv*** and ***outcomePair.csv***), and let the user enter a concentration threshold then display the results.
3. There will be no demo for this homework, and you score will be judged by the results of your program.

Submission

Be sure to upload your source code to E3 by the due date and name your file as "**Hw10_xxxxxxx.c**", where **xxxxxxx** is your student ID. You don't need to hand in the csv files.

Hint

You can use linked-list to implement the code.