

College of Engineering and Information Technology
Department of Computer Science
Principles of Programming II
Homework – Structures + text files

This program creates a company that has a number of branches and each branch has a number of employees using the following structures:

```
struct Employee
{
    char Name[100];
    long ID;
};

struct Branch
{
    char Name[100];
    int NEmployees; //this variable contains the number of employees in a branch
    Employee *E;    //this will be used to create an array of Employees
};

struct company
{
    char Name[100];
    int NBranches; //this variable contains the number of branches
    Branch **B;    //this will be used to create an array of pointers to branches
};
```

a. Your program must read the information of the above company with all the details from an input text file organized as follows.

```
Company name
number of branches

First_branch_name  Number_of_Employess  name salary  name salary .....name salary
Second_branch_name  Number_of_Employess  name salary  name salary .....name salary
Third_branch_name  Number_of_Employess  name salary  name salary ... name salary
.
.
.
nth_branch_name  Number_of_Employess  name salary  name salary .....name salary
```

b. Your program must create an output text file that has the following information:

Company name

The total number of employees in the company

The names of employees whose salaries are above 2000

The average salary in each branch

The branch with the maximum average salary

The employee(s) with the maximum salary followed by their salary

The employee(s) with the minimum salary followed by their salary

The employees' info. in each branch sorted in ascending order of their names

c. Finally, your program must delete all the dynamically allocated memory.

Example:

Note that this is just an example, your program must be able to deal with any file with the same structure (order of information).

Input file:

```
ABC
4
EastBranch 3 Ahmad 1000 Leena 2000 Mahmoud 1500
WestBranch 4 Salam 3000 Lana 2000 Seema 4000 Hani 9000
NorthQ 2 Rama 1300 Reema 3200
CenterPoint 5 Hala 4000 Mona 4200 Salma 5000 Farah 3300 Adel 5000
```

Output file:

ABC

total number of employees is 14

Employees whose salaries are above 2000: Salam, Seema, Hani, Reema, Hala, Mona, Salma, Farah, Adel

The average salary: EastBranch 1500 WestBranch 4500 NorthQ 2250 CenterPoint 4300

The branch with the maximum average salary is WestBranch

The employee(s) with the maximum salary followed by their salary: Hani 9000

The employee(s) with the minimum salary followed by their salary: Ahmad 1000

The employees' info. in each branch sorted in ascending order of their names:

EastBranch Ahmad 1000 Leena 2000 Mahmoud 1500

WestBranch Hani 9000 Lana 2000 Salam 3000 Seema 4000

NorthQ Rama 1300 Reema 3200

CenterPoint Adel 5000 Farah 3300 Hala 4000 Mona 4200 Salma 5000
