

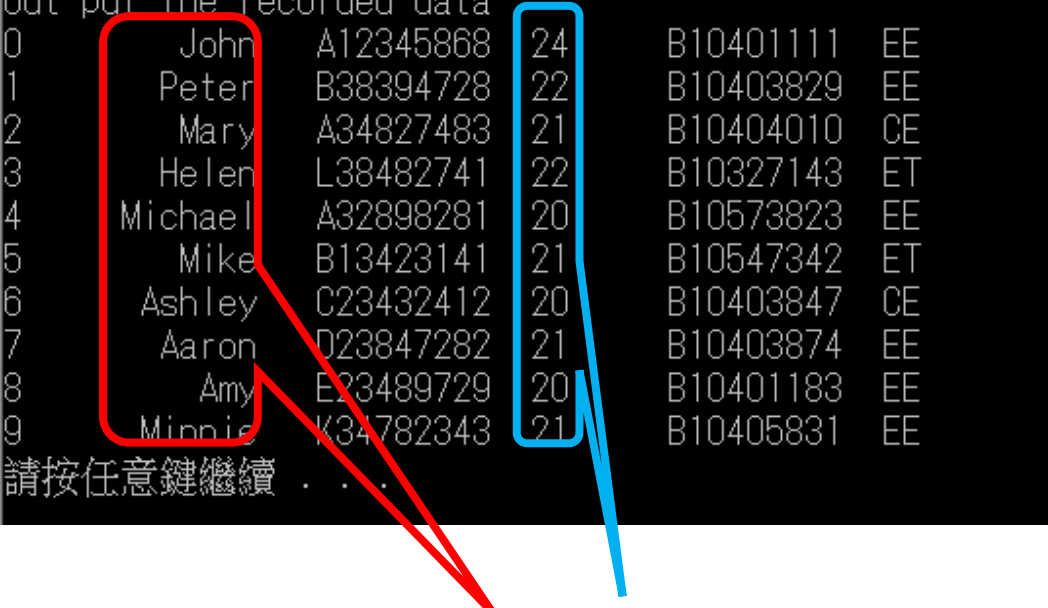
## Data Structure Program Homework #1

- In the class, we demonstrate a program which can read student data from one file, i.e.,

`student < list1.txt`

The execution result looks like

```
D:\BACKUP132\NTUST\EE-course\Data Structure\jjchen-hor
udent new\demo\Release>student < list1.txt
now reading the record from the input file.....
out put the recorded data
0      John   A12345868  24      B10401111  EE
1      Peter  B38394728  22      B10403829  EE
2      Mary   A34827483  21      B10404010  CE
3      Helen  L38482741  22      B10327143  ET
4      Michael A32898281  20      B10573823  EE
5      Mike   B13423141  21      B10547342  ET
6      Ashley C23432412  20      B10403847  CE
7      Aaron  D23847282  21      B10403874  EE
8      Amy    E23489729  20      B10401183  EE
9      Minnie K34782343  21      B10405831  EE
請按任意鍵繼續 . . .
```



where the student record comprises name and age.

- Please modify the program such that when the input file is changed to list2.txt whose contents are as follows.

```
10 // number of student record
John      A12345868 24 B10401111 EE 89 89 81
Peter     B38394728 22 B10403829 EE 90 80 70
Mary      A34827483 21 B10404010 CE 85 85 85
Helen     L38482741 22 B10327143 ET 85 88 90
Michael   A32898281 20 B10573823 EE 77 85 92
Mike      B13423141 21 B10547342 ET 85 84 85
Ashley    C23432412 20 B10403847 CE 85 85 83
Aaron     D23847282 21 B10403874 EE 90 90 90
Amy       E23489729 20 B10401183 EE 91 92 93
Minnie    K34782343 21 B10405831 EE 85 85 86
```

where the three numbers after each record are examination scores.

- After executing your program: **student < list2.txt**  
the output should look like:

```
C:\Windows\system32\cmd.exe
D:\BACKUP132\NTUST\EE-course\Data Structure\jjchen-horowitz\01 basic concepts\student new\solution\main\Release>main < list2.txt
now reading the record from the input file

out put the recorded data

index      NAME      P_ID AGE      S_ID Dept  S1  S2  S3      Ave
0          John    A12345868 24 B10401111 EE   89  89  81      86
1          Peter   B38394728 22 B10403829 EE   90  80  70      80
2          Mary    A34827483 21 B10404010 CE   85  85  85      85
3          Helen   L38482741 22 B10327143 ET   85  88  90      87
4         Michael A32898281 20 B10573823 EE   77  85  92      84
5           Mike  B13423141 21 B10547342 ET   85  84  85      84
6         Ashley C23432412 20 B10403847 CE   85  85  83      84
7          Aaron  D23847282 21 B10403874 EE   90  90  90      90
8           Amy   E23489729 20 B10401183 EE   91  92  93      92
9         Minnie K34782343 21 B10405831 EE   85  85  86      85

D:\BACKUP132\NTUST\EE-course\Data Structure\jjchen-horowitz\01 basic concepts\student new\solution\main\Release>
```

Note that the last column is the average score;

- For you to quickly start your programming, a reference program is provided for you. Please check the HW1 from the course website to download this program
  - (60%) Modify from the given program to read the scores from the file and print them out.
  - (10%) Compute the average and print it out at the last column.
  - (10%) Provide the function to find out the student names with the **highest** average score and the **lowest** average score.
  - (10%) print the name and score from the highest to the lowest.
  - (10%) Write a short report to describe what you have done for this homework.
- You have to
  - [1] Compress the whole project program you have finished.
  - [2] upload to the moodle website before the due date