

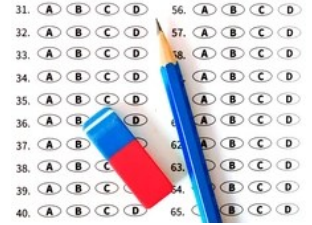
## Homework 2

Upload your source code file from *DEUZEM SAKAI* until **December 4, 2022, 23:55**.

Upload only a single \*.cs file.

The name of the file : **number\_name\_surname.cs**

For example : 2022510028\_mehmet\_ali\_yildirim.cs



### HEI Exam

*Higher Education Institutions* (HEI) (Yükseköğretim Kurumları Sınavı - YKS) exam is a standardized test for admission to higher education in Turkey administered by ÖSYM.

Write a program for a simple student selection and placement system with candidates, exam answer sheets, department preferences, and the assignments of the candidates to the departments.

### Candidates

The candidate information is stored in a text file, named *candidates.txt*, in the following format:

no, name surname, diploma-grade, dept-choice1, dept-choice2, dept-choice3, answer1, answer2, answer3, ..., answer25
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- The first three elements are the candidate's personal information
- After that, three elements are the candidate's department choices to where she/he wishes to enroll
- The last twenty-five elements are the exam answers of the candidate.

The number of candidates is dynamic (maximum 40).

### Departments

The quota information related to the departments is read from a text file, named *departments.txt*, in the following format:

dept-no, dept-name, quota
---------------------------

The number of departments is dynamic (maximum 10).

The maximum quota for any department is 8.

### Answer Sheet

The correct answers for the exam are stored in the array, named *key*, as follows:

```
char[] key = {'A','B','D','C','C','C','A','D','B','C','D','B','A','C','B','A','C','D','C','D','A','D','B','C','D'};
```

### Grades

The answers of the candidates will be graded by the system. The program must print the scores of all candidates on the screen.

There are 25 questions in the exam. Each question has four options (A, B, C, and D). Every correct answer will be graded as 4 points, therefore, the maximum grade is 100. Empty answers will not affect the grading. The candidate will lose 3 points for each wrong answer.

### Assignment

Candidates are required to get a minimum score of 40 on the exam for enrolling in an undergraduate program.

The candidates can be placed in a department list according to their choices and the available quotas. Each candidate specifies at most three department choices to where she/he wishes to enroll.

If the grades of two or more candidates are equal, the candidate with a higher “school diploma grade” will be chosen as the first. If they are equal again, the program can assign any of them to the department.

The program should print the final results of assignments on the screen.

### Notes:

1- Don't use automatic array-related commands such as Array.Sort()

2- Don't change the file names and array name (*key*).

candidates.txt

departments.txt

3- If any error exists in the files, the program must print an error message.

For example,

```
D1,Computer Engineering,15
...
```

(because the maximum quota for any department is 8)

For example,

```
100,Esra Tarak,90,D4,D2,D1,A,B,D,C, ,C,A,D,B,C,D,B,A, ,B,A,C,D,C,D,A,D,B,C,D,A,B,C
...
```

(because there are 25 questions)

### Example files:

candidates.txt

```
100,Esra Tarak,90,D1,D4,D2,A,B,D,C, ,C,A,D,B,C,D,B,A, ,B,A,C,D,C,D,A,D,B,C,D
101,Cem Ak,84,D1,D5, ,A,C,D,C,C,C,A,C,B,C,D,B,A,C,B,A,C,D,C,C,A,D,B,C,D
102,Sibel Tan,55,D3, , ,A,B,D,A,C,C,A,D, ,C,D,B,A,C,B,A, ,D,C,D,A,D,B,C,D
103,Memmet Yaman,76,D4,D3,D1,A,B, ,C,D, ,A,D,A,B,A, ,A,C, ,A, ,D,C,D,A, ,A,B,A
...
```

departments.txt

```
D1,Computer Engineering,5
D2,Electronics Engineering,4
D3,Mathematics,3
D4,Physics,2
D5,Medicine,6
...
```

### Sample Output:

The grades of all candidates

Number	Name & Surname	Grade
...	...	...
104	Ali Terim	94
105	Ece Yilmaz	15
106	Ege Tan	55
...	...	...

The results of department assignments

No	Department	Students
D1	Computer Engineering	108 110 100 114 101
D2	Electronics Engineering	104 109 107 111
D3	Mathematics	102 115 124
D4	Physics	118 112
D5	Medicine	113 120 122 117 121 125
...	...	... ..

This homework will be graded by Res.Asst. Özlem ŞEKER.

You can ask your questions to her from the “**FORUM → Homework 2 - Questions**” part of the *DEUZEM SAKAI* software.

**Notes:**

1. Your program must work correctly under all conditions. Try to control all possible errors.
2. You should use meaningful variable names, appropriate comments, and good prompting messages.
3. If you are late, your grade will be decreased 10 points for each day.  
After five days, your assignment will not be accepted.
4. If you want, you may write your own “*procedures / functions*”.
5. Assignment must be your individual work.  
**Cheating** is strictly prohibited.  
If any cheating occurs, your assignment will be graded with **zero (0)**.  
A software will be used to automatically detect the similarities between students' source-codes.