

YILDIZ TECHNICAL UNIVERSITY
COMPUTER ENGINEERING DEPARTMENT



Final Project

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Structured Programming BLM2031 Gr-3



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MENU

```
----- MENU -----  
1. Open a Course      2. Close a Course  
3. Add Student        4. Remove Student  
5. Add Course to Student's Program  
6. Drop Course from Student's Program  
7. Display Information of a Course  
8. Display All Courses  
9. Display Information of an Student  
10. Display All Students  
11. Display Program of an Student  
12. Display and Write Class List  
0. Exit  
-----
```

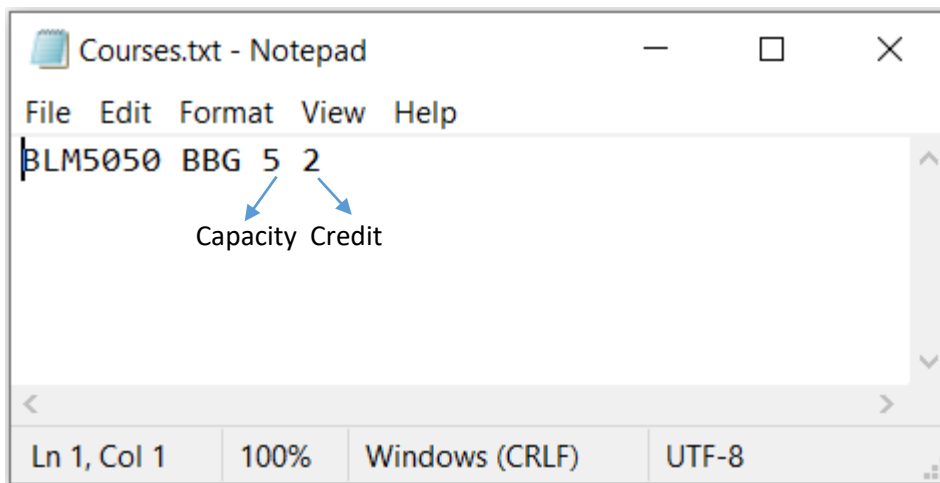
 proje_19011919tmp.c	1/5/2022 12:08 AM	C File	41 KB
 proje_19011919tmp.exe	1/5/2022 12:11 AM	Application	61 KB

1. Open a Course

```
-----  
1  
Enter course Code: BLM5050  
Enter course Name: BBG  
Enter course Capacity: 5  
Enter course Credit: 2  
  
Succesfull!  
----- MENU -----
```

 Courses.txt	1/4/2022 11:38 PM	Text Document	1 KB
 proje_19011919tmp.c	1/4/2022 11:38 PM	C File	41 KB
 proje_19011919tmp.exe	1/4/2022 11:38 PM	Application	61 KB

Course opened Courses.txt file created:



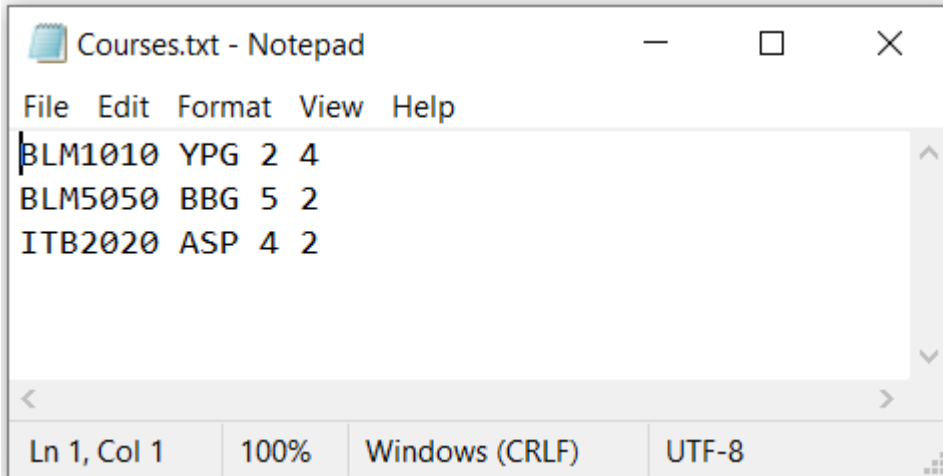
Duplicate course not allowed:

```
-----  
1  
Enter course Code: BLM5050  
There is a Duplicate Course. BLM5050 CAN NOT BE ADDED!
```

Lets add 2 more courses

```
-----  
1  
Enter course Code: ITB2020  
Enter course Name: ASP  
Enter course Capacity: 4  
Enter course Credit: 2  
  
Succesfull!  
  
-----  
1  
Enter course Code: BLM1010  
Enter course Name: YPG  
Enter course Capacity: 2  
Enter course Credit: 4  
  
Succesfull!
```

Courses file is updated and courses are sorted in ascending order:

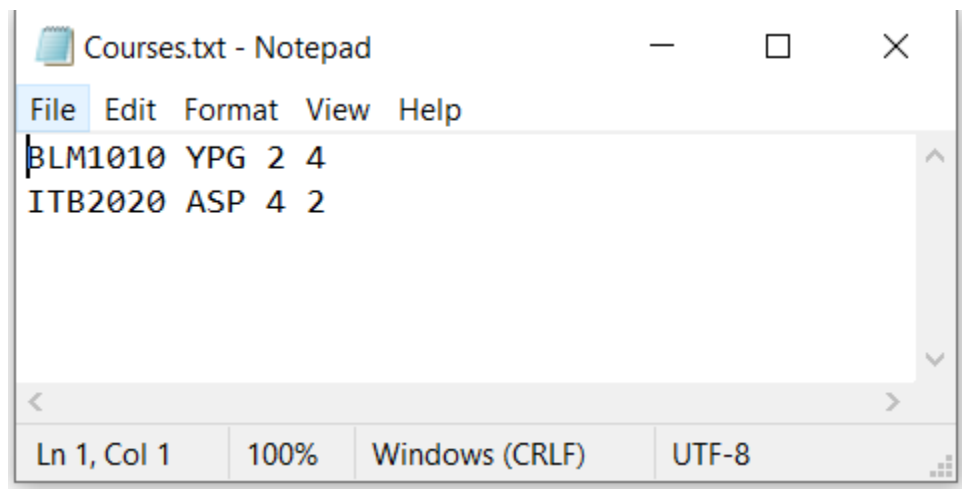


```
Courses.txt - Notepad  
File Edit Format View Help  
BLM1010 YPG 2 4  
BLM5050 BBG 5 2  
ITB2020 ASP 4 2  
Ln 1, Col 1 100% Windows (CRLF) UTF-8
```

2. Close a Course

```
-----  
2  
  
(code)(name)(capacity)(credit)(freeCapacity)  
BLM1010 YPG      2      4      2  
BLM5050 BBG      5      2      5  
ITB2020 ASP      4      2      4  
  
Enter Code: BLM5050  
BLM5050 has been Closed Successfully.
```

Course is closed and Courses file is updated:



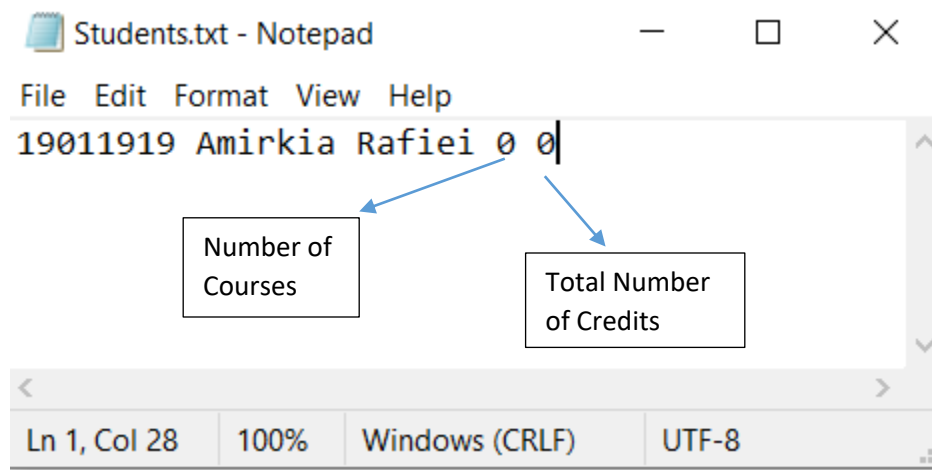
A course which is not on the list cannot be closed:

```
-----  
2  
  
(code)(name)(capacity)(credit)(freeCapacity)  
BLM1010 YPG      2      4      2  
ITB2020 ASP      4      2      4  
  
Enter Code: BLM5050  
There is no course with Code BLM5050.
```

3. Add Student

```
-----  
3  
Enter Student Number: 19011919  
Enter Name and Surname respectively: Amirkia Rafiei
```

Student added and Student.txt file is created :



Duplicate student is not allowed:

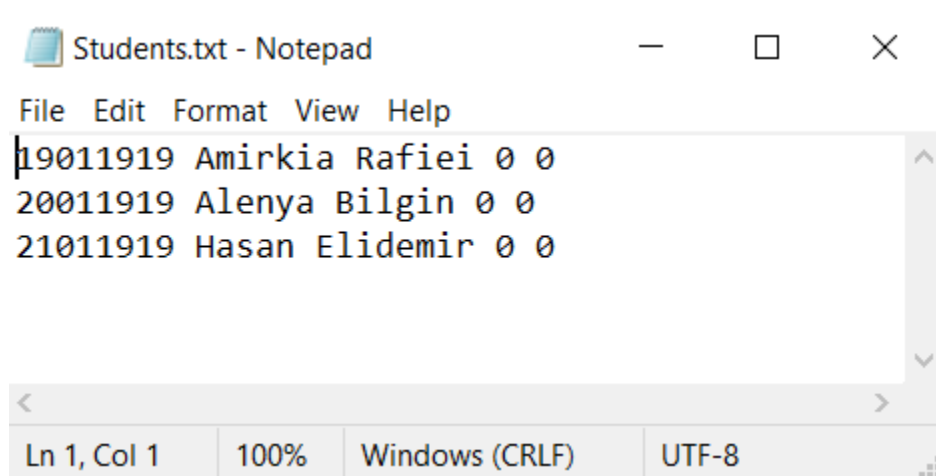
```
-----  
3  
Enter Student Number: 19011919  
There is a Duplicate Student Number! 19011919 CAN NOT BE ADDED!
```

Lets add 2 more students:

```
-----  
3  
Enter Student Number: 21011919  
Enter Name and Surname respectively: Hasan Elidemir
```

```
-----  
3  
Enter Student Number: 20011919  
Enter Name and Surname respectively: Alenya Bilgin
```

Students file is updated and students are sorted in ascending order:

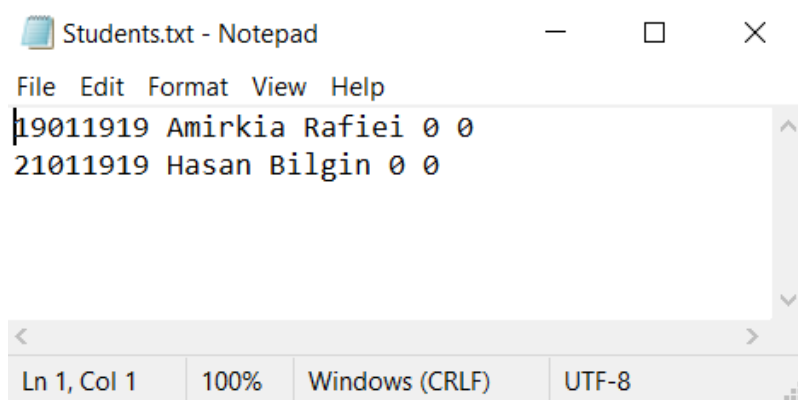


```
Students.txt - Notepad  
File Edit Format View Help  
19011919 Amirkia Rafiei 0 0  
20011919 Alenya Bilgin 0 0  
21011919 Hasan Elidemir 0 0  
Ln 1, Col 1 100% Windows (CRLF) UTF-8
```

4. Remove Student

```
-----  
4  
Enter Student Number: 20011919  
20011919 has been Removed Successfully.
```

Student removed and Students.txt is updated:



Error if the Students.txt is empty:

```
-----  
4  
There is No Student to be Removed!
```

A student which is not on the list cannot be removed:

```
-----  
4  
Enter Student Number: 40011919  
There is no Student with Number 40011919.
```

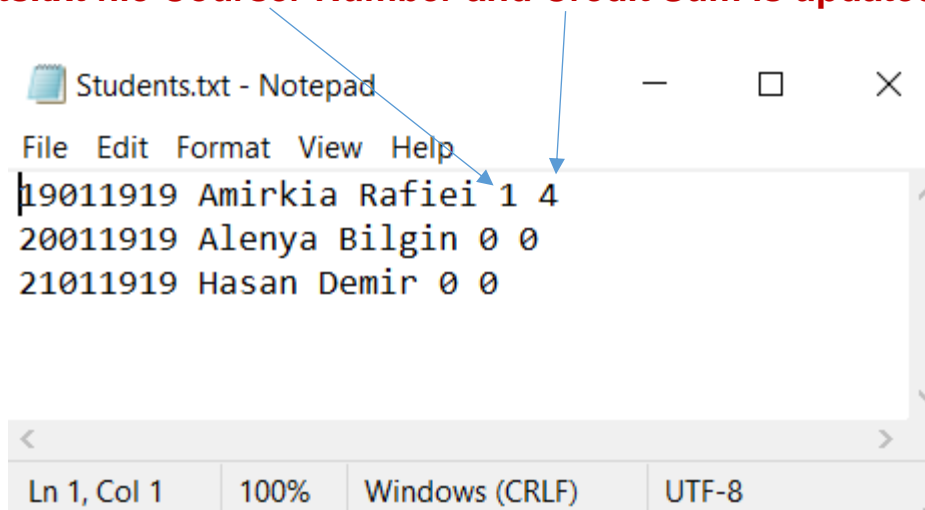

5. Add Course to Student's Program

```
5
Please Enter Your Student Number: 19011919

(code)(name)(capacity)(credit)(freeCapacity)
BLM1010 YPG      2      4      2
BLM5050 ASP      4      2      4
ITB2020 ASP      4      2      4

Choose one of the Courses by Code(First Column): BLM1010
```

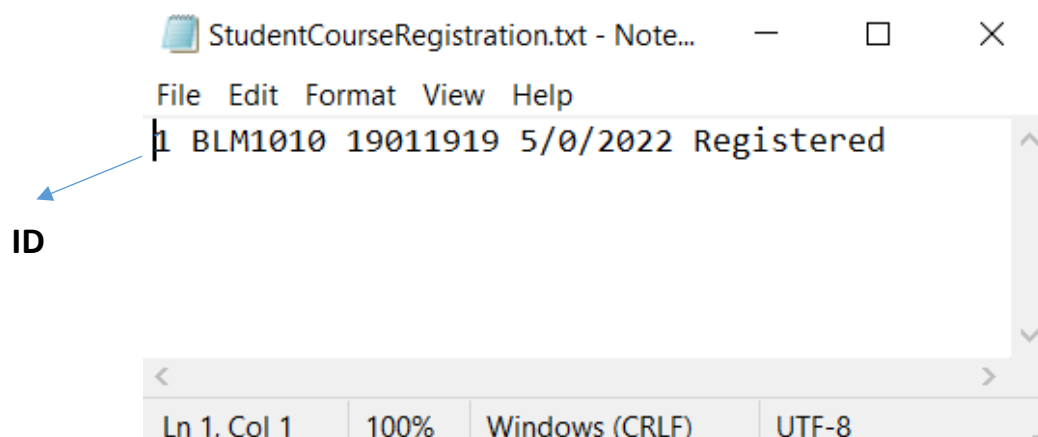
In the Students.txt file Courser Number and Credit Sum is updated:



A screenshot of a Notepad window titled "Students.txt - Notepad". The window shows a text file with three lines of student data. The first line is "19011919 Amirkia Rafiei 1 4", the second is "20011919 Alenya Bilgin 0 0", and the third is "21011919 Hasan Demir 0 0". The status bar at the bottom indicates "Ln 1, Col 1", "100%", "Windows (CRLF)", and "UTF-8". Two blue arrows point from the text above to the "1 4" in the first line of the file.

ID	Name	Courses	Credit Sum
19011919	Amirkia Rafiei	1	4
20011919	Alenya Bilgin	0	0
21011919	Hasan Demir	0	0

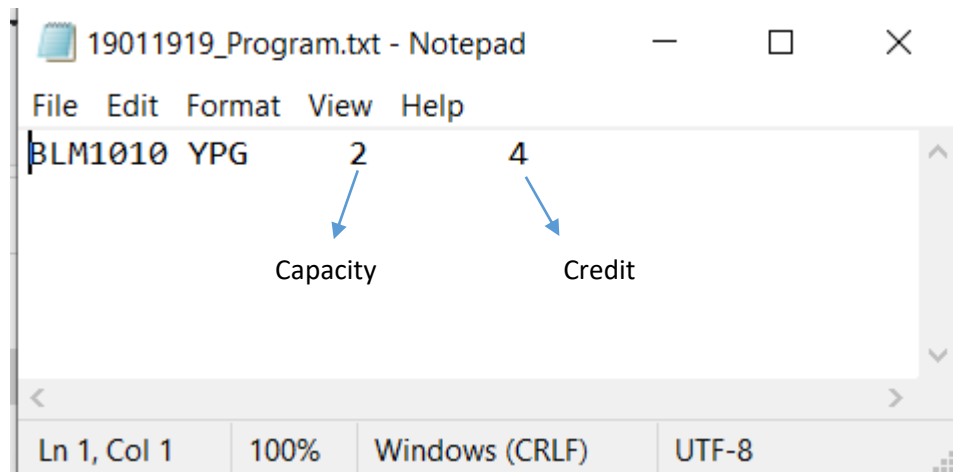
Registration info is stored in StudentCourseRegistration.txt:



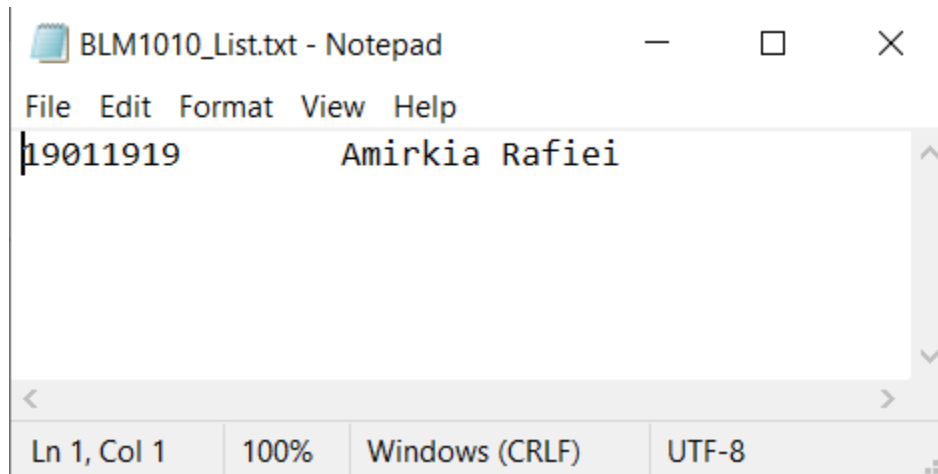
A screenshot of a Notepad window titled "StudentCourseRegistration.txt - Note...". The window shows a text file with one line of registration data: "1 BLM1010 19011919 5/0/2022 Registered". The status bar at the bottom indicates "Ln 1, Col 1", "100%", "Windows (CRLF)", and "UTF-8". A blue arrow points from the text "ID" to the "1" at the beginning of the line.

ID	Course	Student ID	Registration Date	Status
1	BLM1010	19011919	5/0/2022	Registered

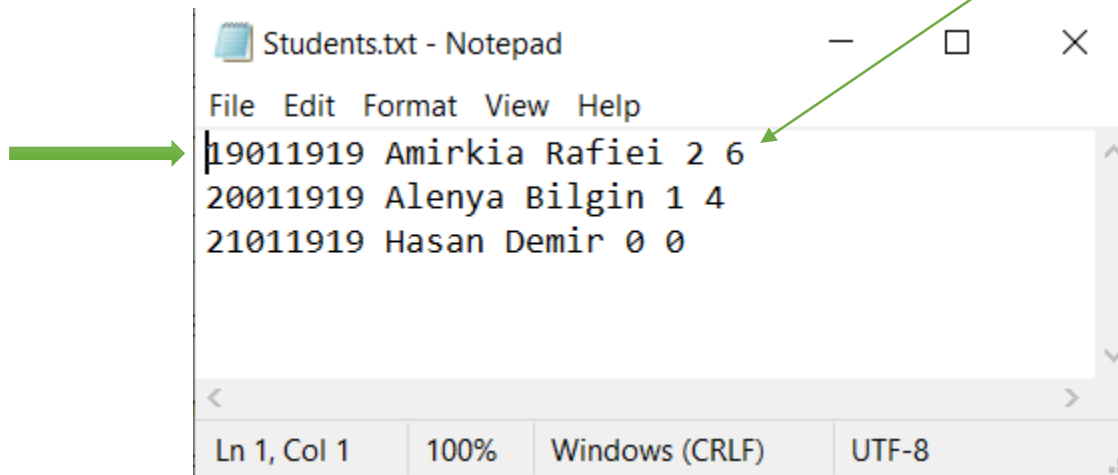
StudentNumber_Program.txt file is created. This file displays and student's Semester Program:



CourseCode_List.txt file is created. This file displays Class List:



Maximum Credit limit is set to 6. If the Student reaches maximum credit limit , they cannot add any courses to their program:



```
-----
5
Please Enter Your Student Number: 19011919

(code)(name)(capacity)(credit)(freeCapacity)
BLM1010 YPG      2      4      0
BLM5050 ASP      4      2      3
ITB2020 ASP      4      2      4

Choose one of the Courses by Code(First Column): ITB2020
You have Reached Maximum Credit! Course Can not be added.
```

If quota is full , student cannot add that course to their program:

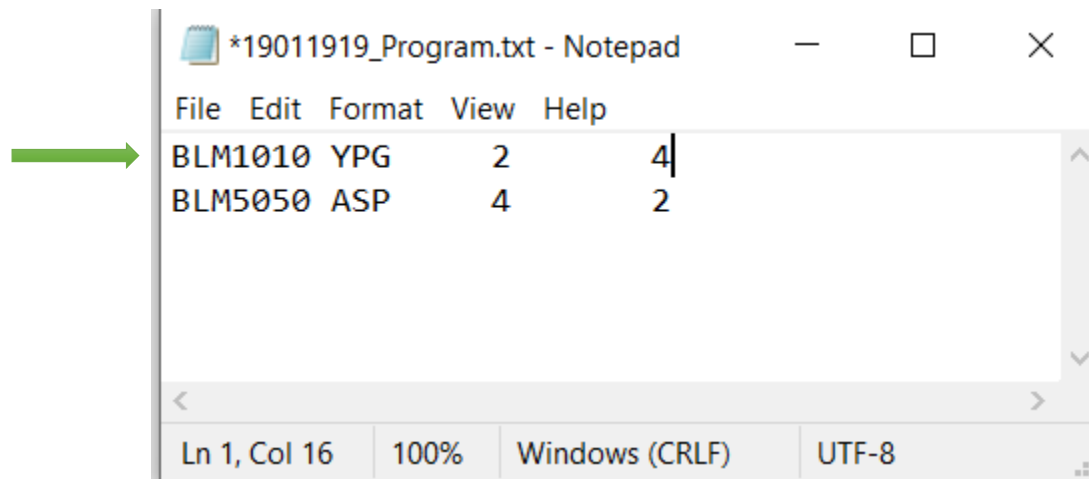
```
-----
5
Please Enter Your Student Number: 21011919

(code)(name)(capacity)(credit)(freeCapacity)
BLM1010 YPG      2      4      0
BLM5050 ASP      4      2      3
ITB2020 ASP      4      2      4

Choose one of the Courses by Code(First Column): BLM1010
There is no Capacity for this Course!
```

6. Drop Course from Student's Program

19011919 numbered Student has added 2 courses previously. She wants to remove course with BLM1010 code from her program:

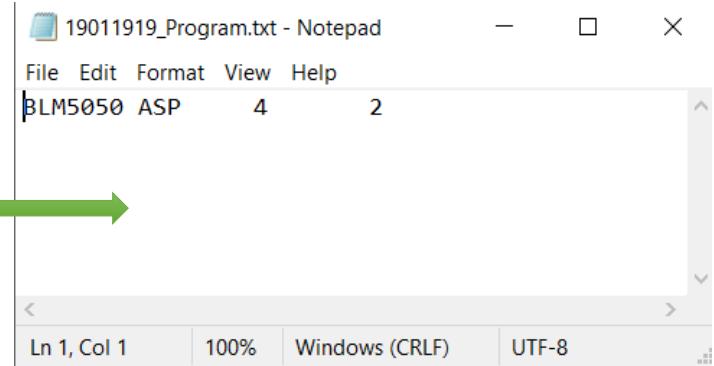
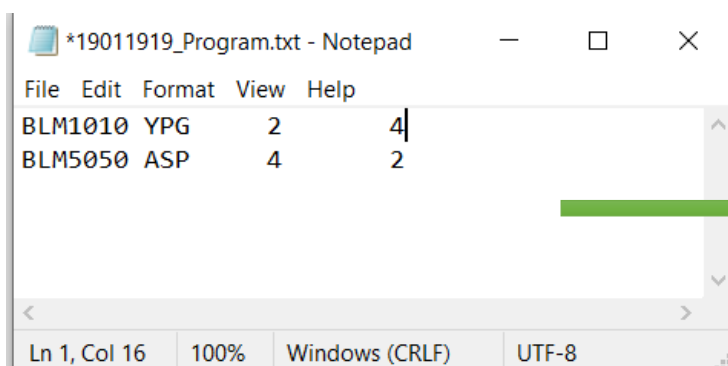


```
-----
6
Please Enter Your Student Number: 19011919

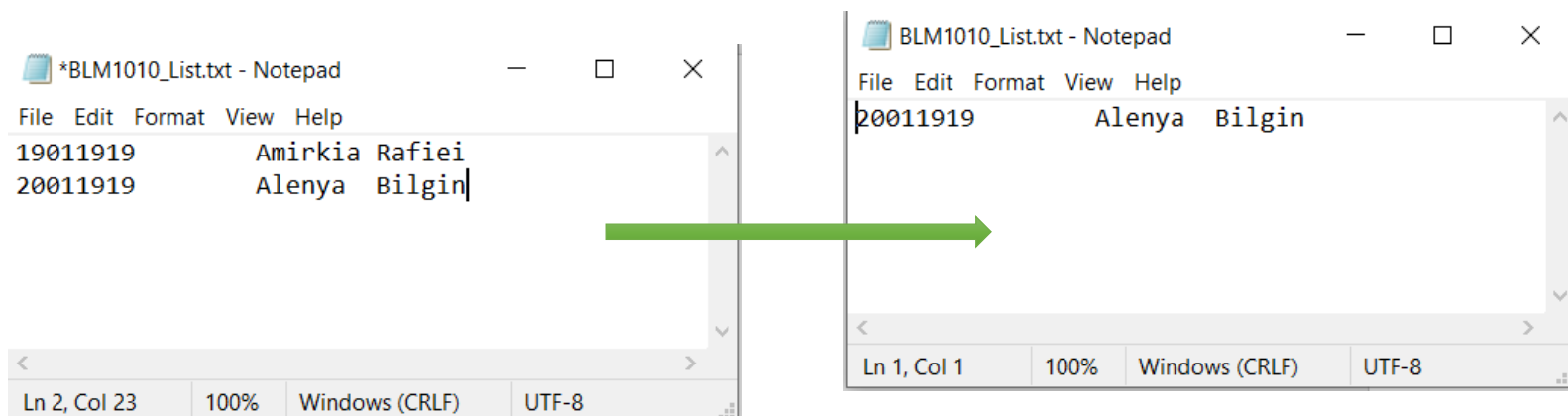
(code)(name)(capacity)(credit)
BLM1010 YPG      2      4
BLM5050 ASP      4      2

Please enter Course Code: BLM1010
Course Dropped Succesfully!
```

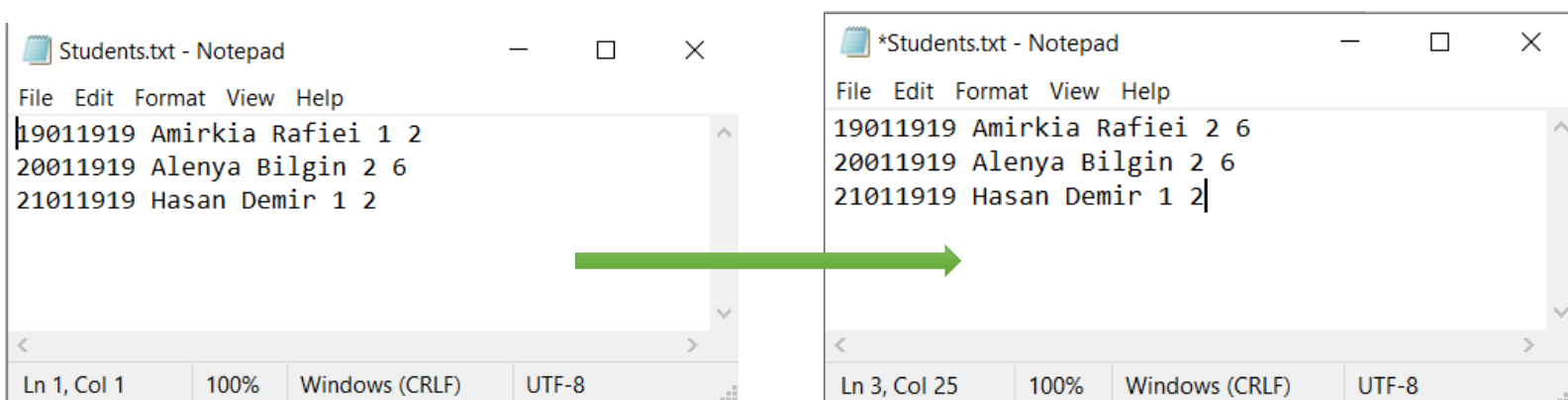
Student program updated:



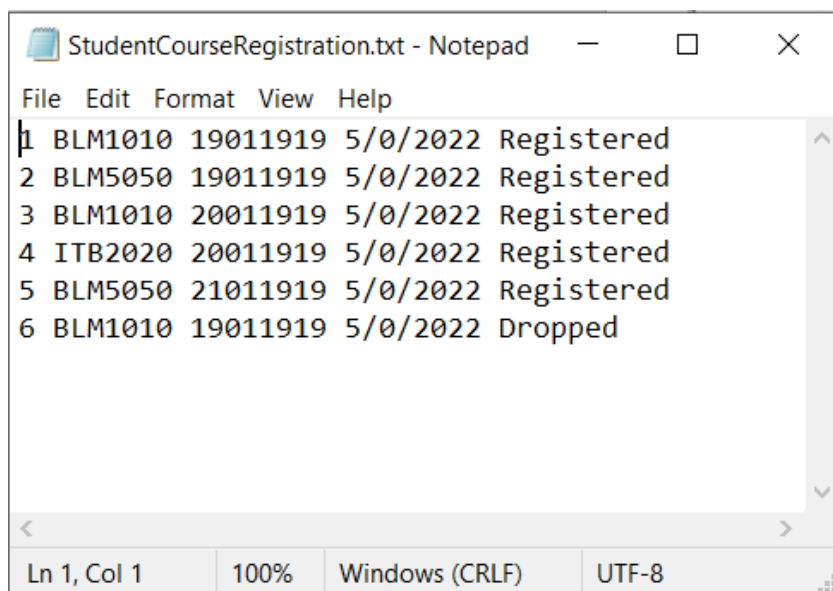
CourseCode_List.txt file updated:



Students.txt file updated:



StudentCourseRegistration.txt is updated:



When closing course, first the students which added that course should be removed from the class list, and then files must be updated. Finally remove course from linked list.

```
2

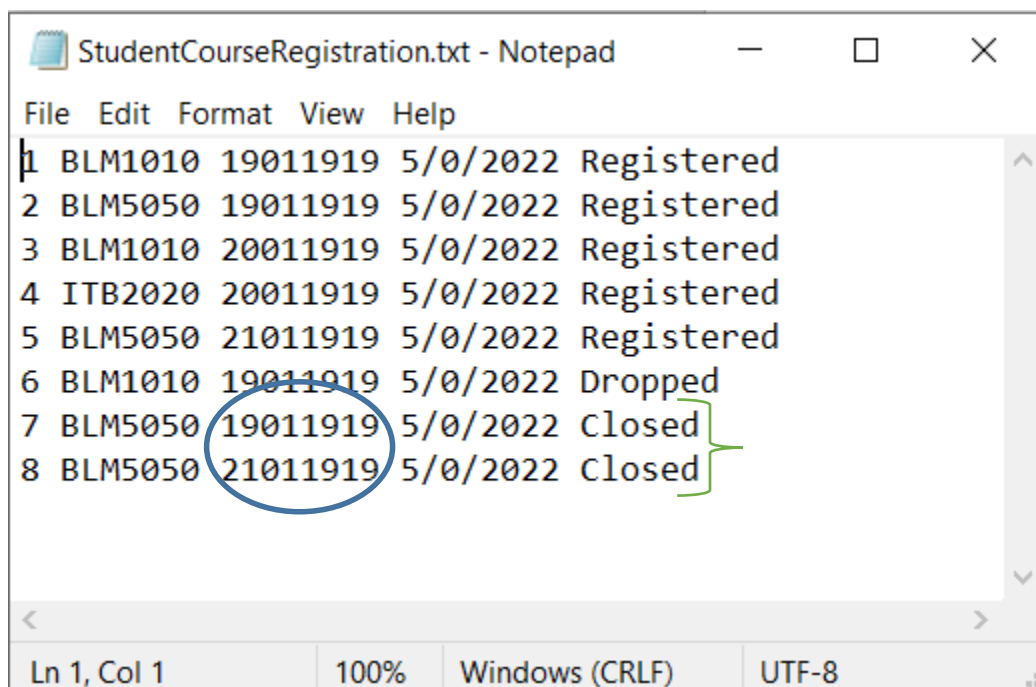
(code)(name)(capacity)(credit)(freeCapacity)
BLM1010 YPG      2      4      1
BLM5050 ASP      4      2      2
ITB2020 ASP      4      2      3

Enter Code: BLM5050

19011919
Course Dropped Successfully!
21011919
Course Dropped Successfully!
BLM5050 has been Closed Successfully. → Ders kapandı
```

öğrenciler
dersten çıkarıldı

StudentCourseRgistration.txt file is updated:



```
StudentCourseRegistration.txt - Notepad
File Edit Format View Help
1 BLM1010 19011919 5/0/2022 Registered
2 BLM5050 19011919 5/0/2022 Registered
3 BLM1010 20011919 5/0/2022 Registered
4 ITB2020 20011919 5/0/2022 Registered
5 BLM5050 21011919 5/0/2022 Registered
6 BLM1010 19011919 5/0/2022 Dropped
7 BLM5050 19011919 5/0/2022 Closed
8 BLM5050 21011919 5/0/2022 Closed
Ln 1, Col 1 100% Windows (CRLF) UTF-8
```

Choices 7, 8, 9, 10, 11, 12:

Although they were not necessary, I coded these parts so that they could help me when debugging my code.

```
----- MENU -----  
1. Open a Course          2. Close a Course  
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6. Drop Course from Student's Program  
7. Display Information of a Course  
8. Display All Courses  
9. Display Information of an Student  
10. Display All Students  
11. Display Program of an Student  
12. Display and Write Class List  
0. Exit
```

7. Display Course Info

```
-----  
7  
Enter course Code: BLM1010  
  
(code)(name)(capacity)(credit)(freeCapacity)  
BLM1010 YPG      2      4      1
```

8. Display All Courses

```
-----  
8  
  
(code)(name)(capacity)(credit)(freeCapacity)  
BLM1010 YPG      2      4      1  
ITB2020 ASP      4      2      3
```

9. Display Student Info

```
-----
9
Enter Student Number: 19011919

(number)(name)(surname)(courseSum)(creditSum)
19011919 Amirkia Rafiei 0 0
```

10. Display All Students

```
-----
10

(number)(name)(surname)(courseSum)(creditSum)
19011919 Amirkia Rafiei 0 0
20011919 Alenya Bilgin 2 6
21011919 Hasan Demir 0 0
```

11. Display Student's Program

```
-----
11
Please enter Student Number: 20011919

(code)(name)(capacity)(credit)
BLM1010 YPG 2 4
ITB2020 ASP 4 2
```

12. Display Class List

```
-----
12
Please enter Course Code: BLM1010
19011919 Amirkia Rafiei
20011919 Alenya Bilgin
```


What I learned from the Project:

After I finish this project, I'll be able to easily perform file operations. I now have a better understanding of the subject of Linked List than I did previously. Most importantly, because I spent half of my time debugging, I can debug my code faster than ever before. Such projects are more similar to those requested by the sector. Even though it took me about 20 hours to finish the code, I found it very useful.

Resources that I have used:

- <https://rosettacode.org/wiki/Deepcopy#C>
- <https://www.geeksforgeeks.org/basics-file-handling-c/>
- <https://www.javatpoint.com/>
- <https://www.programiz.com/>
- <https://qnaplus.com/c-program-to-print-current-date-and-time/>
- <https://www.tutorialspoint.com/index.htm>
- https://www.w3resource.com/c-programming-exercises/linked_list/c-linked_list-exercise-30.php
- <https://fresh2refresh.com/c-programming/c-file-handling/>
- https://www.techonthenet.com/c_language/standard_library_functions/stdlib_h/atoi.php
- <https://www.studytonight.com/c/programs/misc/display-current-date-and-time>
- <https://github.com/lbavsc/StudentCourseSelection/blob/master/main.c>
- https://github.com/zimo999mrxd/dev_studentCourseSelectionSystem
- <https://github.com/JerryChern/C-For-Student-Course-Select/commit/66b2f12a03cccb411260e17adb23a66632d03e4f>