

2023

Student Database Using Queue

1ST TERM PROJECT 2
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Ahmed Osama Ahmed Soliman

1st Term Project 2

Add Student Manually

```
SECTION5 - C/C++ - Project_2/src/main.c - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help

Project Explorer C/C++ Projects
  ASSIGNMENT
  CA_unit4_lesson2_3_modules
  eldeb
  FIFO
  Lab_3_Linkedlist
  LIFO
  Linked_List
  Project_1
  Project_2
    Binaries
    Includes
    src
      main.c
      Project_2.c
      Project_2.h
    Debug
      Student_Data.txt
  tssssssssst
  U2L3
  unit4_lesson2_CA_v1

main.c
28 DPRINTF("\n\t2:==# Delete Student #==");
29 DPRINTF("\n\t3:==# Search With Roll Number #==");
30 DPRINTF("\n\t4:==# Search With First Name #==");
31 DPRINTF("\n\t5:==# Search With Courses #==");
32 DPRINTF("\n\t6:==# Count Students #==");
33 DPRINTF("\n\t7:==# Update Student #==");

Tasks Properties Problems Console Debugger Console Progress Problem Details
Project_2.exe [C/C++ Application] C:\Users\sam20\OneDrive\المكتبة\MESOC\SECTION5\Project_2\Debug\Project_2.exe (م ٨:٥٨ ٢٠٢٣/٩/١٤)
FIFO init -----> Done

*****
===# Choose from the following options #===
1:==# Add Student Manually ==
2:==# Delete Student ==
3:==# Search With Roll Number ==
4:==# Search With First Name ==
5:==# Search With Courses ==
6:==# Count Students ==
7:==# Update Student ==
8:==# Add From File ==
9:==# Show All Students #==
10:==# Exit #==
Enter an Option : 1

*****
----# Student information #----
Enter Student First name :
khaled
Enter Student Last name :
walid
Enter Student GPA :
3.5
Enter Student ID :
1
Enter Number of courses :2
Enter course ID 1 :
4
Enter course ID 2 :
5

*****
===# Choose from the following options #===
```

Delete Student

```
66 case 9:
67     Show_All_Students(&FIFO_UART);
68     break;
69 case 10:
70     DPRINTF("\n\t\t\t\t\t*****# Thank you for using my database *****#");
71     exit(0);
72 default:
73     DPRINTF("\n\n*****!!! wrong option !!!*****");
74     break;
```

Project_2.exe [C/C++ Application] C:\Users\sam20\OneDrive\المكتبة\MESRC\SECTIONS\Project_2\Debug\Project_2.exe (٤ ١١:٢٤:١٢-٢٢/٩/١٨)

Student ID Found Successfully

***** ID Deleted successfully *****

***** Choose from the following options *****

1:==# Add Student Manually #=
2:==# Delete Student #=
3:==# Search With Roll Number #=
4:==# Search With First Name #=
5:==# Search With Courses #=
6:==# Count Students #=
7:==# Update Student #=
8:==# Add From File #=
9:==# Show All Students #=
10:==# Exit #==

Enter an Option : 9

First Name : mohamed
Last Name : osama
ID Number : 3
GPA : 3.600000
Courses : 1 2 5

First Name : ahmed
Last Name : eldeeb
ID Number : 4
GPA : 4.000000
Courses : 4 5 5

Search By Roll Number

```
447 Student_data_t* Find_The_Roll(FIFO_Buf_t *fifo, int num_ID)
448 {
449     int i;
450     Student_data_t *CurrentStudent = fifo->tail;
451     for(i=0; i<fifo->count; i++)
452     {
453         if(CurrentStudent->ID == num_ID)
454         {
455             DPRINTF(" Student ID Found Successfully\n ");
456             return CurrentStudent;
457         }
458         if((CurrentStudent+1) == (fifo->base + fifo->length))
459         {
460             CurrentStudent = fifo->base;
461         }
462         else
463         {
464             CurrentStudent++;
465         }
466     }
467     CurrentStudent = NULL;
468     return CurrentStudent;
469 }
```

Project_2.exe [C/C++ Application] C:\Users\sam20\OneDrive\المكتبة\MESRC\SECTIONS\Project_2\Debug\Project_2.exe (٤ ١٠:٥٢:٢٢-٢٢/٩/١٨)

6:==# Count Students #=
7:==# Update Student #=
8:==# Add From File #=
9:==# Show All Students #=
10:==# Exit #==

Enter an Option : 3

Enter Student ID to search : 1

[Student ID Found Successfully
Student ID Found Successfully

First Name Of Roll Number 1 : khaled
Last Name Of Roll Number 1 : valid
GPA Of Roll Number 1 : 3.500000
Courses Of Roll Number 1 : 4 5

Search with First Name

The screenshot shows the Eclipse IDE with a C++ project. The main editor displays the `Find_The_Roll` function, which iterates through a linked list of students and returns the first student whose first name matches the input. The console output shows the program's menu, the user selecting option 4, entering the first name 'khaled', and the program displaying the details of the student with that name.

```
447=Student_data_t* Find_The_Roll(FIFO_Buf_t *fifo , int num_ID)
448 {
449     int i ;
450     Student_data_t *CurrentStudent = fifo->tail ;
451     for(i=0 ; i<fifo->count ; i++)
452     {
453         if(CurrentStudent->ID == num_ID)
454         {
455             DPRINTF(" Student ID Found Successfully\n ");
456             return CurrentStudent;
457         }
458         if((CurrentStudent+1) == (fifo->base + fifo->length))
459         {
460             CurrentStudent = fifo->base;
461         }
462         else
463         {
464             CurrentStudent++;
465         }
466     }
467     CurrentStudent = NULL ;
468     return CurrentStudent;
469 }
470
```

Project_2.exe (C/C++ Application) C:\Users\jam20\OneDrive\المكتب\MESOC\SECTIONS\Project_2\Debug\Project_2.exe (٤٠٠٠ ٢٠٢٣/٩/١٤)

```
5:== Search With Courses ==
6:== Count Students ==
7:== Update Student ==
8:== Add From File ==
9:== Show All Students ==
10:== Exit ==
Enter an Option : 4

*****
Enter Student First Name to find :khaled
Last Name Of First Name khaled : walid
Roll Number Of First Name khaled : 1
GPA Of First Name khaled : 3.500000
Courses of First Name khaled 45
*****
Please form the following options =====
```

Search with Courses

The screenshot shows the Eclipse IDE with the same C++ project. The main editor displays the `Find_The_Roll` function, which is identical to the one in the previous screenshot. The console output shows the program's menu, the user selecting option 5, entering the course ID '4', and the program displaying the details of all students in that course.

```
7:== Update Student ==
8:== Add From File ==
9:== Show All Students ==
10:== Exit ==
Enter an Option : 5

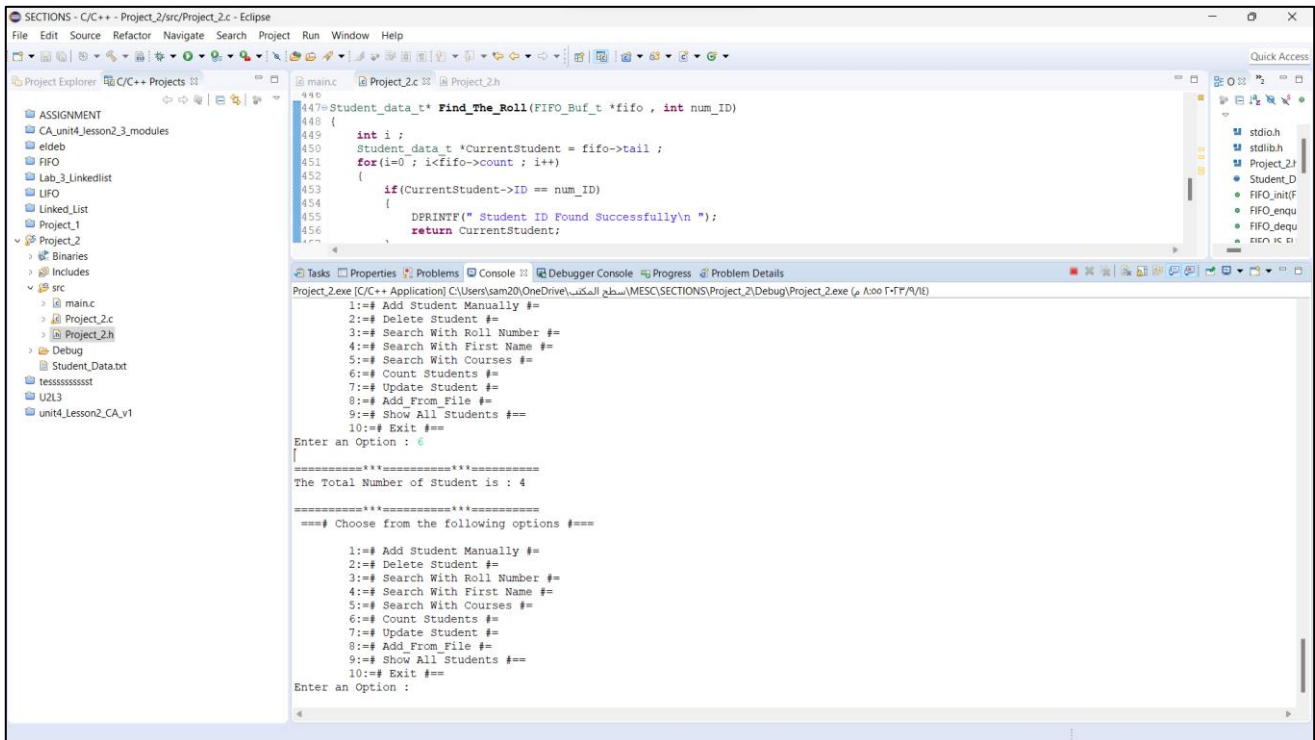
*****
Enter Course ID :4
===== Information about students in course number ( 4 ) =====

First Name: khaled
Last Name: walid
Roll Number: 1
GPA: 3.500000
*****

First Name: Ahmed
Last Name: Osama
Roll Number: 2
GPA: 3.800000
*****

First Name: ahmed
Last Name: eldeeb
Roll Number: 4
GPA: 4.000000
*****
=====
```

Count Students



```
447=Student_data_t* Find_The_Roll(FIFO_Buf_t *fifo , int num_ID)
448 {
449     int i ;
450     Student_data_t *CurrentStudent = fifo->tail ;
451     for(i=0 ; i<fifo->count ; i++)
452     {
453         if(CurrentStudent->ID == num_ID)
454         {
455             DPRINTF(" Student ID Found Successfully\n ");
456             return CurrentStudent;
457         }
458     }
459     return NULL;
460 }
```

```
Project_2.exe [C/C++ Application] C:\Users\sam20\OneDrive\المكتبة\MESOC\SECTIONS\Project_2\Debug\Project_2.exe (م ٨٠٠ ٢٠٢٣/٩/١٤)

1:==# Add Student Manually ==#
2:==# Delete Student ==#
3:==# Search With Roll Number ==#
4:==# Search With First Name ==#
5:==# Search With Courses ==#
6:==# Count Students ==#
7:==# Update Student ==#
8:==# Add From File ==#
9:==# Show All Students ==#
10:==# Exit ==#

Enter an Option : 6

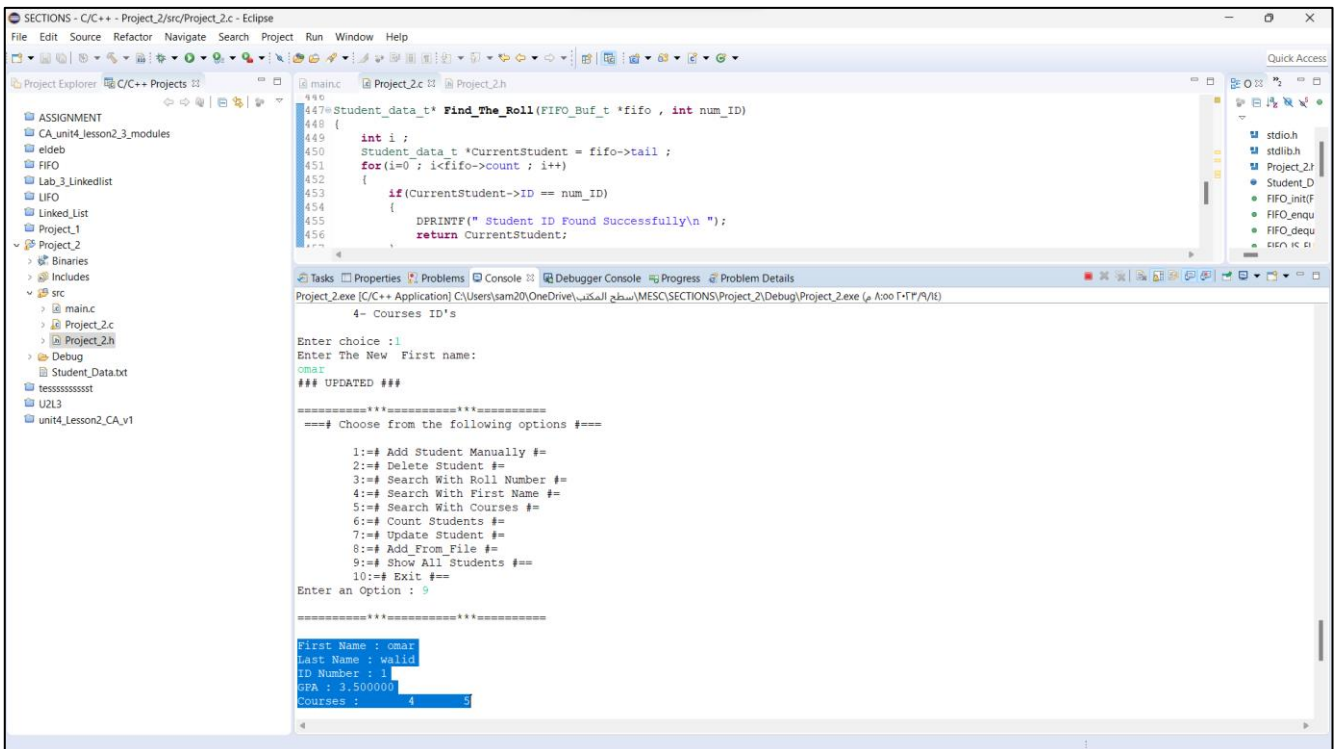
=====
The Total Number of Student is : 4

=====
===# Choose from the following options #===

1:==# Add Student Manually ==#
2:==# Delete Student ==#
3:==# Search With Roll Number ==#
4:==# Search With First Name ==#
5:==# Search With Courses ==#
6:==# Count Students ==#
7:==# Update Student ==#
8:==# Add From File ==#
9:==# Show All Students ==#
10:==# Exit ==#

Enter an Option :
```

Update Student



```
447=Student_data_t* Find_The_Roll(FIFO_Buf_t *fifo , int num_ID)
448 {
449     int i ;
450     Student_data_t *CurrentStudent = fifo->tail ;
451     for(i=0 ; i<fifo->count ; i++)
452     {
453         if(CurrentStudent->ID == num_ID)
454         {
455             DPRINTF(" Student ID Found Successfully\n ");
456             return CurrentStudent;
457         }
458     }
459     return NULL;
460 }
```

```
Project_2.exe [C/C++ Application] C:\Users\sam20\OneDrive\المكتبة\MESOC\SECTIONS\Project_2\Debug\Project_2.exe (م ٨٠٠ ٢٠٢٣/٩/١٤)

4- Courses ID's

Enter choice : 1
Enter The New First name:
Omar
=== UPDATED ===

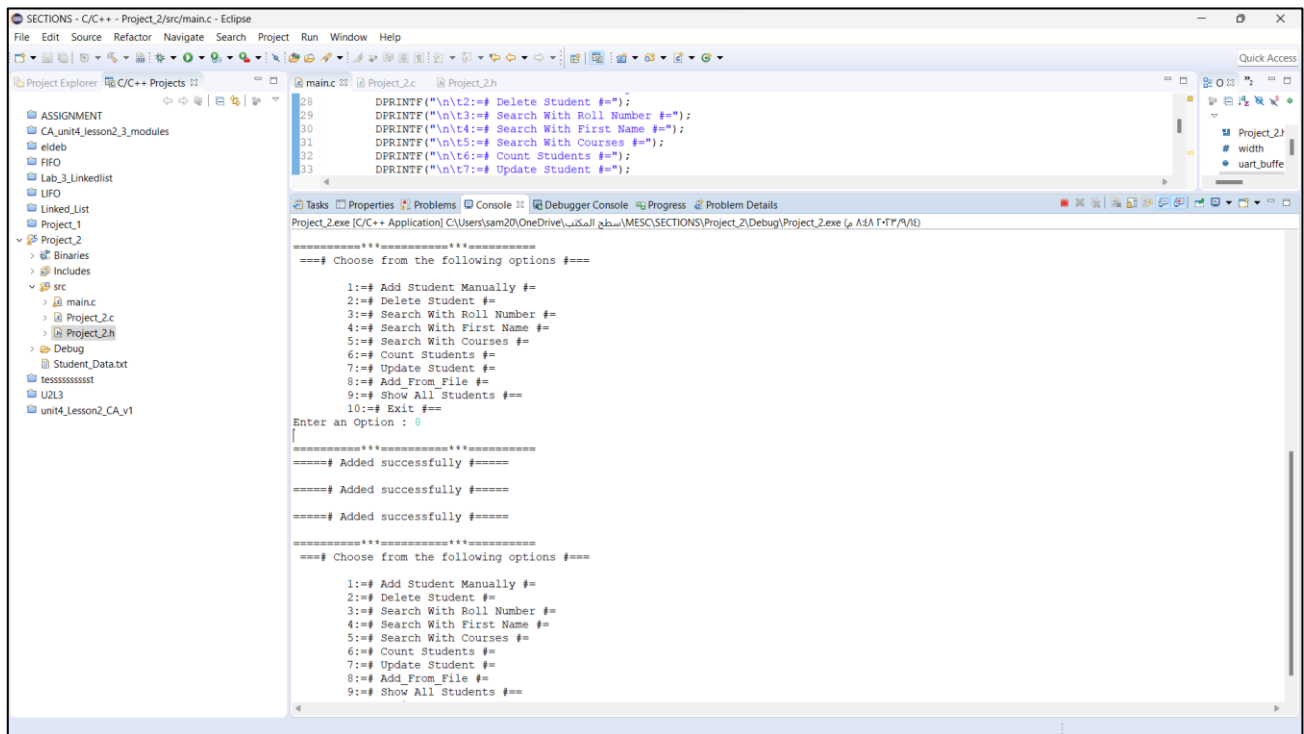
=====
===# Choose from the following options #===

1:==# Add Student Manually ==#
2:==# Delete Student ==#
3:==# Search With Roll Number ==#
4:==# Search With First Name ==#
5:==# Search With Courses ==#
6:==# Count Students ==#
7:==# Update Student ==#
8:==# Add From File ==#
9:==# Show All Students ==#
10:==# Exit ==#

Enter an Option : 9

=====
First Name : Omar
Last Name : Walid
ID Number : 1
GPA : 3.500000
Courses : 4
```

Add From File



The screenshot shows the Eclipse IDE with the 'Project_2' project selected. The 'src' folder is expanded, showing 'main.c', 'Project_2.c', and 'Project_2.h'. The 'main.c' file is open in the editor. The 'Console' view at the bottom shows the output of the program, which includes a menu with the option '8: Add From File'. The user has entered '8' as an option, and the program has successfully added the file.

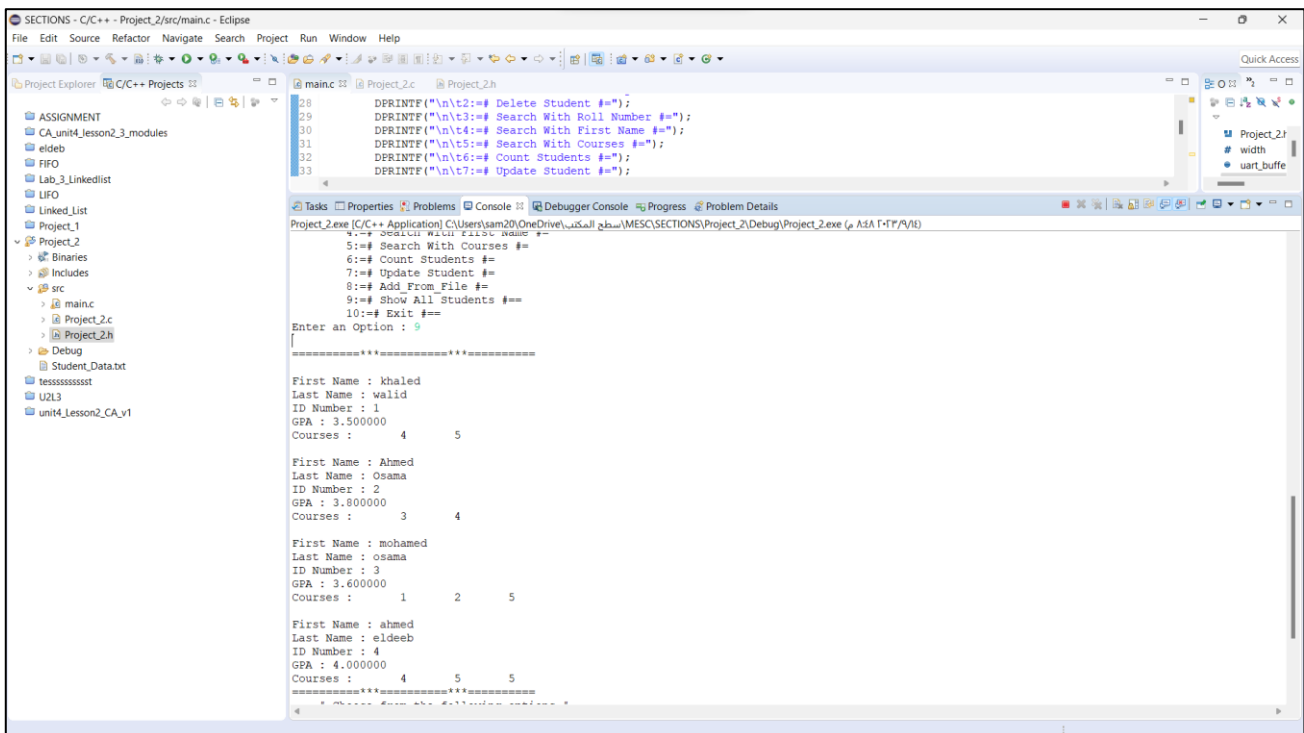
```
28 DPRINTF("\n\t2: Delete Student #=");
29 DPRINTF("\n\t3: Search With Roll Number #=");
30 DPRINTF("\n\t4: Search With First Name #=");
31 DPRINTF("\n\t5: Search With Courses #=");
32 DPRINTF("\n\t6: Count Students #=");
33 DPRINTF("\n\t7: Update Student #=");
```

```
==== Choose from the following options #====
1: Add Student Manually #=
2: Delete Student #=
3: Search With Roll Number #=
4: Search With First Name #=
5: Search With Courses #=
6: Count Students #=
7: Update Student #=
8: Add From File #=
9: Show All Students #=
10: Exit #=

Enter an Option : 8
=====
====# Added successfully #=====
====# Added successfully #=====
====# Added successfully #=====

==== Choose from the following options #====
1: Add Student Manually #=
2: Delete Student #=
3: Search With Roll Number #=
4: Search With First Name #=
5: Search With Courses #=
6: Count Students #=
7: Update Student #=
8: Add From File #=
9: Show All Students #=
```

Show All Students



The screenshot shows the Eclipse IDE with the 'Project_2' project selected. The 'src' folder is expanded, showing 'main.c', 'Project_2.c', and 'Project_2.h'. The 'main.c' file is open in the editor. The 'Console' view at the bottom shows the output of the program, which includes a menu with the option '9: Show All Students'. The user has entered '9' as an option, and the program has successfully displayed all students.

```
28 DPRINTF("\n\t2: Delete Student #=");
29 DPRINTF("\n\t3: Search With Roll Number #=");
30 DPRINTF("\n\t4: Search With First Name #=");
31 DPRINTF("\n\t5: Search With Courses #=");
32 DPRINTF("\n\t6: Count Students #=");
33 DPRINTF("\n\t7: Update Student #=");
```

```
==== Choose from the following options #====
1: Add Student Manually #=
2: Delete Student #=
3: Search With Roll Number #=
4: Search With First Name #=
5: Search With Courses #=
6: Count Students #=
7: Update Student #=
8: Add From File #=
9: Show All Students #=
10: Exit #=

Enter an Option : 9
=====
First Name : khaled
Last Name : walid
ID Number : 1
GPA : 3.500000
Courses : 4 5

First Name : Ahmed
Last Name : Osama
ID Number : 2
GPA : 3.800000
Courses : 3 4

First Name : mohamed
Last Name : osama
ID Number : 3
GPA : 3.600000
Courses : 1 2 5

First Name : ahmed
Last Name : eldeeb
ID Number : 4
GPA : 4.000000
Courses : 4 5 5
```

Exit

```
SECTION5 - C/C++ - Project_2/src/main.c - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer C/C++ Projects
  ASSIGNMENT
  CA_unit4_lesson2_3_modules
  eldeb
  FIFO
  Lab_3_Linkedlist
  LIFO
  Linked_List
  Project_1
  Project_2
    Binaries
    Includes
    src
      main.c
      Project_2.c
      Project_2.h
    Debug
      Student_Data.txt
      tesssssssssst
      U2L3
      unit4_lesson2_CA_v1
  Project_2.h
  Project_2.c
  Project_2.h

69      case 10:
70          DPRINTF("\n\t\t\t\t\t*****# Thank you for using my database *****\n");
71          exit(main);
72      default:
73          DPRINTF("\n*****!!! wrong option !!!*****\n");
74          break;
75      }
76  }
77  return 0;
78 }
79

Tasks Properties Problems Console Debugger Console Progress Problem Details
<terminated> (exit value: 1) Project_2.exe [C/C++ Application] C:\Users\sam20\OneDrive\المكتب\MESCO\SECTION5\Project_2\Debug\Project_2.exe (٤٩٠:٤٢٠٣/٩/١٤)
FIFO init -----> Done

*****# Choose from the following options #*****
1:## Add Student Manually ##
2:## Delete Student ##
3:## Search With Roll Number ##
4:## Search With First Name ##
5:## Search With Courses ##
6:## Count Students ##
7:## Update Student ##
8:## Add From File ##
9:## Show All Students ##
10:## Exit ##
Enter an Option : 10

*****# Thank you for using my database *****
```