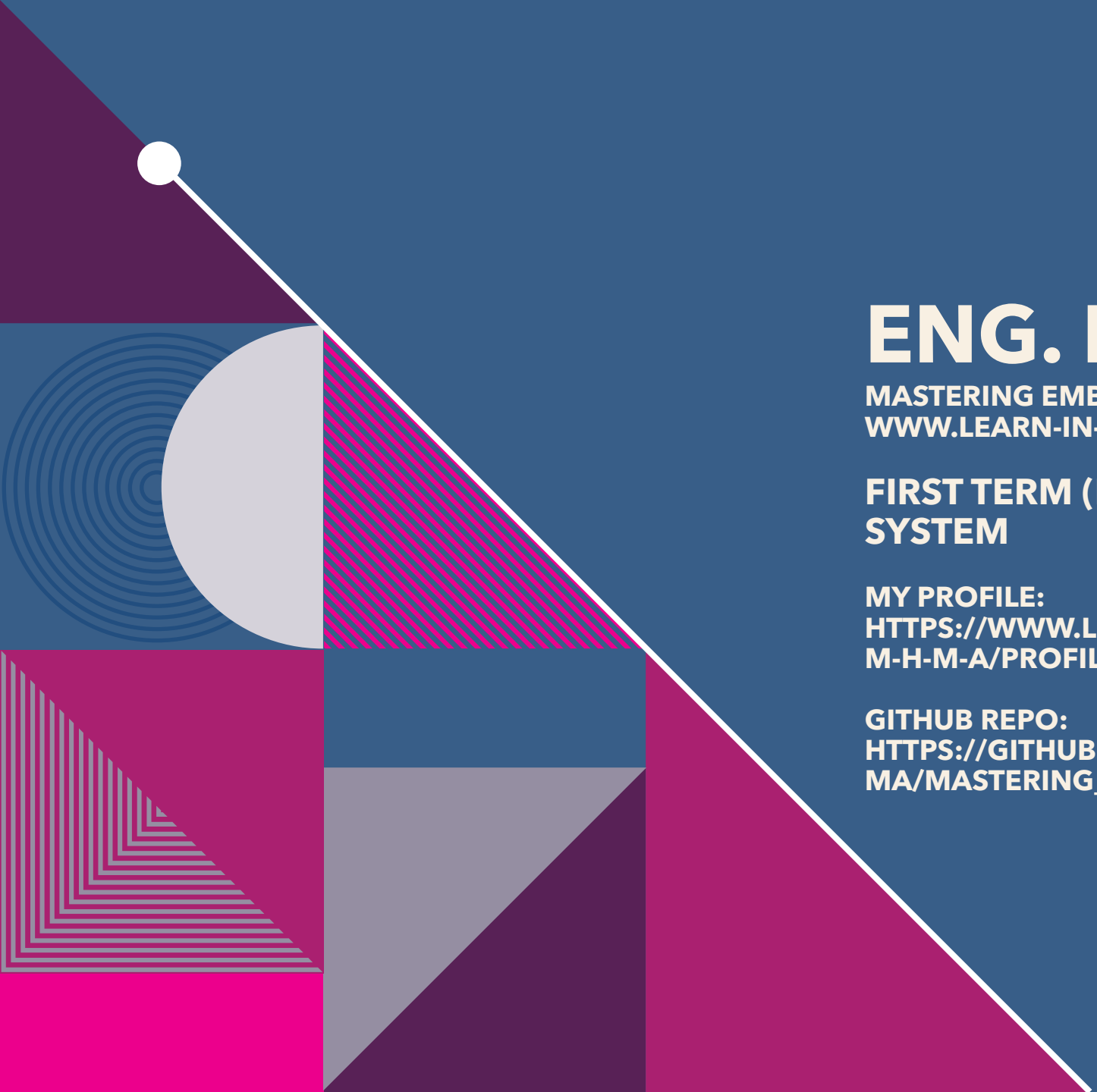


ENG. MOHAMED HAMDY

MASTERING EMBEDDED SYSTEM ONLINE DIPLOMA
WWW.LEARN-IN-DEPTH.COM

FIRST TERM (FINAL PROJECT 2) – STUDENTS MANAGEMENT SYSTEM

MY PROFILE:
HTTPS://WWW.LEARN-IN-DEPTH-STORE.COM/PROFILE/MOHAMEDHAMDY-M-H-M-A/PROFILE

GITHUB REPO:
HTTPS://GITHUB.COM/MOHAMED-HAMDY-MA/MASTERING_EMBEDDED_SYSTEM.GIT

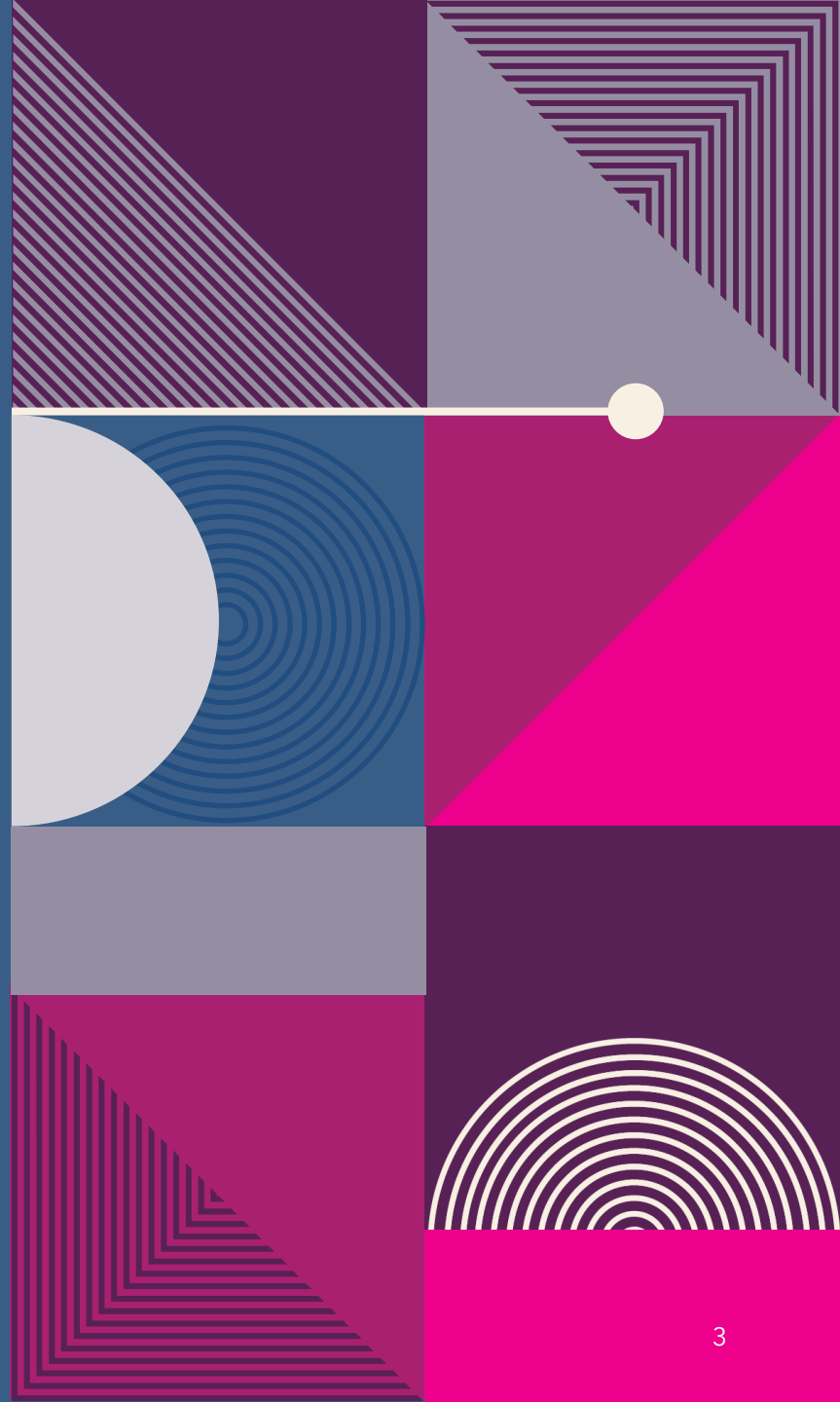
AGENDA

1. Project objective
2. Project idea
3. Implementation
4. Run-Time Screenshots

1.PROJECT OBJECTIVE

The project covers topics including:

- C Programming.
- Data structures.



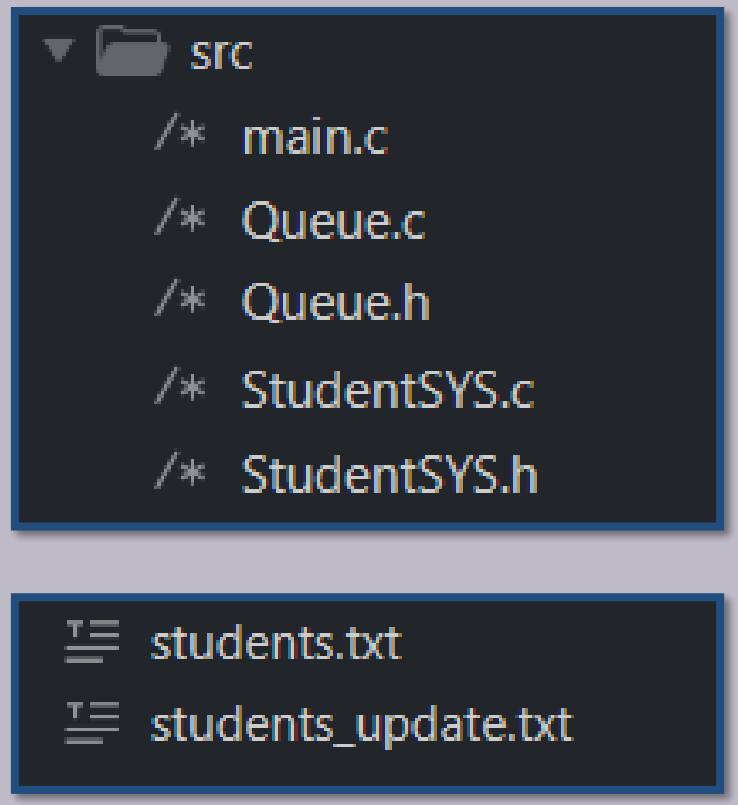
2.PROJECT IDEA

Expected to deliver software of the following system:

- A students management system is designed around queue data structure, ensuring orderly and efficient processing of student data.
- The system provides a range of operations including adding, deleting, searching, and viewing student records.
- The system includes functionality to save and load student data from a text file, ensuring that data is preserved between sessions.

3.IMPLEMENTATION

The code is available on GitHub Repo: https://github.com/Mohamed-Hamdy-MA/Mastering_Embedded_System.git



4. RUN-TIME SCREENSHOTS

```
==========Queue initialization Done successfully==========

**********Choose on of the following Options**********
        1: Add Student Manually
        2: Add Student From Text File
        3: Search Student By Roll Number
        4: Search Student By First Name
        5: Search Student By Course ID
        6: Delete Student By Roll Number
        7: Edit Student By Roll Number
        8: View All Students
        9: Delete All Students
        10: Save In Text File
        11: Exit
Enter Option Number:
```

```
1 1 Mohamed Hamdy 3.73 10 20 30 40 50
2 2 Ziad Gharib 2.41 20 30 40 50 60
3 3 Mazen Hamdy 1.93 30 40 50 60 70
4 4 Khaled Emad 3.54 40 50 60 70 80
5 5 Ahmed Mahmoud 3.27 50 60 70 80 90
```

```
Enter Option Number: 3
******************************
        Enter roll number: 5
==========Queue is Empty==========
```

```
Enter Option Number: 4
******************************
        Enter first name: Mohamed
==========Queue is Empty==========
```

```
Enter Option Number: 5
******************************
        Enter Course ID: 10
==========Queue is Empty==========
```

```
Enter Option Number: 6
******************************
        Enter roll number: 1
==========Queue is Empty==========
[Error] The roll number is not exist.
```

```
Enter Option Number: 7
******************************
        Enter roll number: 1
==========Queue is Empty==========
[Error] The roll number is not exist.
```

```
Enter Option Number: 8
******************************
==========Queue is Empty==========
```

```
Enter Option Number: 9
******************************
==========Queue is Empty==========
```

```
Enter Option Number: 10
******************************
----------Queue is Empty----------
```

```
Enter Option Number: 8
*****************************

==========Printing Queue==========
==========>> Index 0 in Queue.
        Roll number: 6
        First name: Alaa
        Second name: Hassan
        GPA: 2.65
        Courses:
        60      70      80      90      100
==========>> Index 1 in Queue.
        Roll number: 1
        First name: Mohamed
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50
==========>> Index 2 in Queue.
        Roll number: 2
        First name: Ziad
        Second name: Gharib
        GPA: 2.41
        Courses:
        20      30      40      50      60
```

```
==========>> Index 3 in Queue.
        Roll number: 3
        First name: Mazen
        Second name: Hamdy
        GPA: 1.93
        Courses:
        30      40      50      60      70
==========>> Index 4 in Queue.
        Roll number: 4
        First name: Khaled
        Second name: Emad
        GPA: 3.54
        Courses:
        40      50      60      70      80
==========>> Index 5 in Queue.
        Roll number: 5
        First name: Ahmed
        Second name: Mahmoud
        GPA: 3.27
        Courses:
        50      60      70      80      90
==========Done==========
```

```
Enter Option Number: 1
*****************************
        Enter roll number: 4
==========Found==========
[Error] The roll number is already taken. The roll number must be unique.
```

```
Enter Option Number: 3
*****************************
        Enter roll number: 10
==========No Match==========
```

```
Enter Option Number: 4
*****************************
        Enter first name: Hamada
==========No Match==========
```

```
Enter Option Number: 5
*****************************
        Enter Course ID: 300
==========No Match==========
```

```
Enter Option Number: 3
*****************************
        Enter roll number: 4

        Roll number: 4
        First name: Khaled
        Second name: Emad
        GPA: 3.54
        Courses:
        40      50      60      70      80

========== Frequency = 1 ==========
```

```
Enter Option Number: 4
*****************************
        Enter first name: Ziad

        Roll number: 2
        First name: Ziad
        Second name: Gharib
        GPA: 2.41
        Courses:
        20      30      40      50      60

========== Frequency = 1 ==========
```

```
Enter Option Number: 5
*****************************
        Enter Course ID: 20

        Roll number: 1
        First name: Mohamed
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50

        Roll number: 2
        First name: Ziad
        Second name: Gharib
        GPA: 2.41
        Courses:
        20      30      40      50      60

========== Frequency = 2 ==========
```

```
Enter Option Number: 6
*****************************
        Enter roll number: 10
==========No Match==========
[Error] The roll number is not exist.
```

```
Enter Option Number: 6
*****************************
        Enter roll number: 6
==========Found==========
==========Item with roll number 6 Deleted successfully==========
```

```
Enter Option Number: 8
*****************************

==========Printing Queue==========
==========>> Index 0 in Queue.
        Roll number: 1
        First name: Mohamed
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50
==========>> Index 1 in Queue.
        Roll number: 2
        First name: Ziad
        Second name: Gharib
        GPA: 2.41
        Courses:
        20      30      40      50      60
```

```
==========>> Index 2 in Queue.
        Roll number: 3
        First name: Mazen
        Second name: Hamdy
        GPA: 1.93
        Courses:
        30      40      50      60      70
==========>> Index 3 in Queue.
        Roll number: 4
        First name: Khaled
        Second name: Emad
        GPA: 3.54
        Courses:
        40      50      60      70      80
==========>> Index 4 in Queue.
        Roll number: 5
        First name: Ahmed
        Second name: Mahmoud
        GPA: 3.27
        Courses:
        50      60      70      80      90
==========Done==========
```

```
Enter Option Number: 7
******************************
        Enter roll number: 6
==========No Match==========
[Error] The roll number is not exist.
```

```
Enter Option Number: 7
******************************
        Enter roll number: 1
==========Found==========

        Roll number: 1
        First name: Mohamed
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50

----------Choose on of the following Options----------
        1: Edit Roll Number
        2: Edit First Name
        3: Edit Second Name
        4: Edit GPA
        5: Edit Courses
Enter Option Number: 1
--------------------
        Enter new roll number: 2
==========Found==========
[Error] The roll number 2 is already taken. The roll number must be unique.

        Roll number: 1
        First name: Mohamed
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50
```

```
Enter Option Number: 7
*****************************
        Enter roll number: 1
==========Found==========

        Roll number: 1
        First name: Mohamed
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50

----------Choose on of the following Options----------
        1: Edit Roll Number
        2: Edit First Name
        3: Edit Second Name
        4: Edit GPA
        5: Edit Courses
Enter Option Number: 1
--------------------
        Enter new roll number: 10
==========No Match==========

----------Edited successfully----------
        Roll number: 10
        First name: Mohamed
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50
```

```
Enter Option Number: 7
*****************************
        Enter roll number: 10
==========Found==========

        Roll number: 10
        First name: Mohamed
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50

----------Choose on of the following Options----------
        1: Edit Roll Number
        2: Edit First Name
        3: Edit Second Name
        4: Edit GPA
        5: Edit Courses
Enter Option Number: 2
--------------------
        Enter new first name:  Amir

----------Edited successfully----------
        Roll number: 10
        First name: Amir
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50
```

```
Enter Option Number: 7
*****************************
        Enter roll number: 10
==========Found==========

        Roll number: 10
        First name: Amir
        Second name: Hamdy
        GPA: 3.73
        Courses:
        10      20      30      40      50

----------Choose on of the following Options----------
        1: Edit Roll Number
        2: Edit First Name
        3: Edit Second Name
        4: Edit GPA
        5: Edit Courses
Enter Option Number: 3
--------------------
        Enter new second name:  Eid

----------Edited successfully----------
        Roll number: 10
        First name: Amir
        Second name: Eid
        GPA: 3.73
        Courses:
        10      20      30      40      50
```

```
Enter Option Number: 7
*****************************
        Enter roll number: 10
==========Found==========

        Roll number: 10
        First name: Amir
        Second name: Eid
        GPA: 3.73
        Courses:
        10      20      30      40      50

----------Choose on of the following Options----------
        1: Edit Roll Number
        2: Edit First Name
        3: Edit Second Name
        4: Edit GPA
        5: Edit Courses
Enter Option Number: 4
--------------------
        Enter new GPA:  2.98

----------Edited successfully----------
        Roll number: 10
        First name: Amir
        Second name: Eid
        GPA: 2.98
        Courses:
        10      20      30      40      50
```

```
Enter Option Number: 7
*****************************
        Enter roll number: 10
==========Found==========

        Roll number: 10
        First name: Amir
        Second name: Eid
        GPA: 2.98
        Courses:
        10      20      30      40      50

----------Choose on of the following Options----------
        1: Edit Roll Number
        2: Edit First Name
        3: Edit Second Name
        4: Edit GPA
        5: Edit Courses
Enter Option Number: 5
--------------------
        1: Edit Course no.1
        2: Edit Course no.2
        3: Edit Course no.3
        4: Edit Course no.4
        5: Edit Course no.5
Enter Option Number: 3
        Enter new course ID: 3000
----------Edited successfully----------
        Roll number: 10
        First name: Amir
        Second name: Eid
        GPA: 2.98
        Courses:
        10      20      3000    40      50
```

```
Enter Option Number: 8
*******************************

==========Printing Queue==========
==========>> Index 0 in Queue.
        Roll number: 10
        First name: Amir
        Second name: Eid
        GPA: 2.98
        Courses:
        10      20      3000    40      50
==========>> Index 1 in Queue.
        Roll number: 2
        First name: Ziad
        Second name: Gharib
        GPA: 2.41
        Courses:
        20      30      40      50      60
```

```
==========>> Index 2 in Queue.
        Roll number: 3
        First name: Mazen
        Second name: Hamdy
        GPA: 1.93
        Courses:
        30      40      50      60      70
==========>> Index 3 in Queue.
        Roll number: 4
        First name: Khaled
        Second name: Emad
        GPA: 3.54
        Courses:
        40      50      60      70      80
==========>> Index 4 in Queue.
        Roll number: 5
        First name: Ahmed
        Second name: Mahmoud
        GPA: 3.27
        Courses:
        50      60      70      80      90
==========Done==========
```

```
Enter Option Number: 10
*****************************

----------Update Students Info are saved in students_update.txt file successfully----------
```

```
1 10 Amir Eid 2.98 10 20 3000 40 50
2 2 Ziad Gharib 2.41 20 30 40 50 60
3 3 Mazen Hamdy 1.93 30 40 50 60 70
4 4 Khaled Emad 3.54 40 50 60 70 80
5 5 Ahmed Mahmoud 3.27 50 60 70 80 90
6
```

```
Enter Option Number: 9
*****************************

==========All Items in Queue are Deleted successfully, Queue is Empty Now.==========
```

```
Enter Option Number: 8
*****************************

==========Queue is Empty==========
```

```
Enter Option Number: 11
*****************************
```

THANK YOU

Mohamed Hamdy

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