Yousif Aqrawe

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Tutorial Time & day: Fridays 1:00 – 3:00 pm

CAB301 Report

This report requires us to :1. Writing the Algorithm style code for our Display the top 10 most frequently borrowed movie DVD's 2. 3. make testing for our work showing screenshots on our console program

1. **Algorihthm:**

ALGORITHMS: DisplayT10 (DisplayT10 [0 – 10-1]), MaxValue, Min Value
// using the array we say that the maximum value is going to be equal to array 10 of DisplayT10 as
// we as the minimum value is equal to array 10 of DisplayT10 and we use for loop to say that **if**
//DisplayT10 [**10**] **>** MaxValue then we return MaxValue to be the array 10 of the DisplayT10
//otherwise if it is less that MinValue the return also MinValue is equal to DisplayT10 [**10**]

MaxVlaue ← DisplayT10 [**10**]
MinValue ← DisplayT10 [10]
for i← 1 to 10 -1
      if DisplayT10 [**10**] **>** MaxValue
           MaxValue **←** DisplayT10 [**10**]
      else
           if DisplayT10 [**10**] **<** MinValue
           MinValue **←** DisplayT10 [**10**]



2. analysis of the time complexity of the algorithm

The analysing of the algorithm is by using the TreeNode and from tree node class I created 3 nodes (LeftNodeTree , RightNodeTree. TreeDatastructure)

So the value of the left tree comes first because it smaller then data structure then right comes after
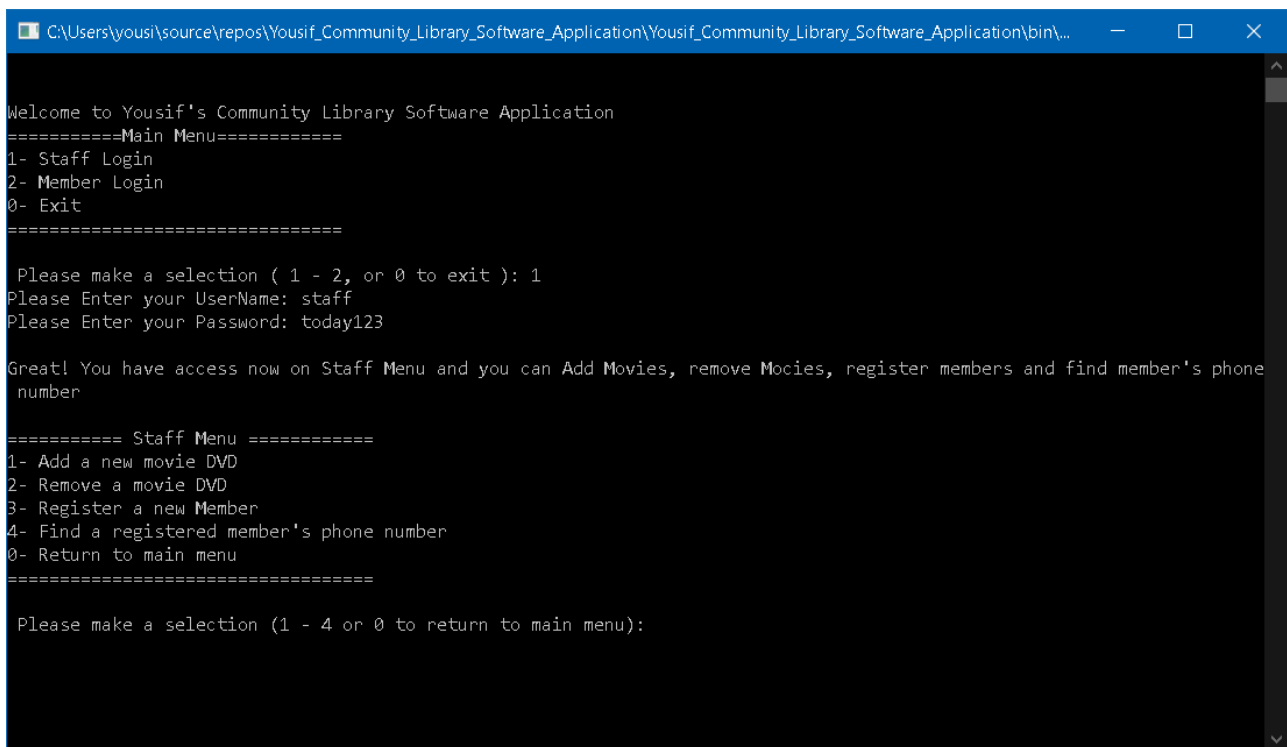
With the algorithm we used the array and got the same thing for the algorithm to get the treeNode working

                                      Main Node
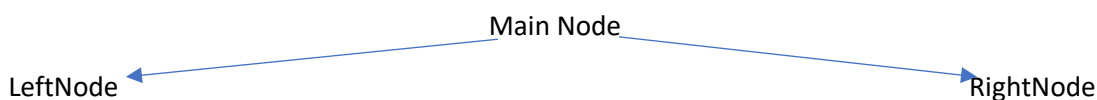
LeftNode   RightNode

3. Testing: for testing part I have added the screenshots with the steps of what should we do to get the information we want for our assignment

1. When we run our program, the window shows us to make selection and we first select number **1** and make the login for staff as **"staff"** for username and **"today123"** as password as we can see and after we login to the staff, we get confirmation message then we move on staff menu **(PIC-1)**


```
Welcome to Yousif's Community Library Software Application
===========Main Menu============
1- Staff Login
2- Member Login
0- Exit
================================
 Please make a selection ( 1 - 2, or 0 to exit ): 1
Please Enter your UserName: staff
Please Enter your Password: today123

Great! You have access now on Staff Menu and you can Add Movies, remove Mocies, register members and find member's phone
 number

=========== Staff Menu ============
1- Add a new movie DVD
2- Remove a movie DVD
3- Register a new Member
4- Find a registered member's phone number
0- Return to main menu
==================================
 Please make a selection (1 - 4 or 0 to return to main menu):
```

PIC-1

2. From **Staff menu** we can **add** Movie by clicking on **1** then we add the details of film as we can see in the pic below **(PIC-2)**

(**PIC-2)**

3. Then we return back to Staff Menu and we can add as much as we want for movies (basically I have added 5 movies) as we can see in the **3** pictures below **(PIC-3, PIC-4, PIC5)**

PIC-3

PIC-4

PIC-5

4. To **delete a movie,** we just select on **2** then we delete one of the movies that we want by writing the Movie title: in the picture I have deleted **movie 4 (PIC-6)**

(PIC-6)

5. To **register new member**, we click on **3** the we type the **first name** and **last name** (I have actually added my name in the picture below as an example) **PIC-7**

```
0- Return to main menu
==================================

 Please make a selection (1 - 4 or 0 to return to main menu): 2
Please Enter the movie title to delete it movie 4
Great! the Movie 'movie 4'  has been Successfully deleted.

=========== Staff Menu ============
1- Add a new movie DVD
2- Remove a movie DVD
3- Register a new Member
4- Find a registered member's phone number
0- Return to main menu
==================================

 Please make a selection (1 - 4 or 0 to return to main menu): 3
Please enter your first name: Yousif
Please enter your last name: Aqrawe
Please enter your Address: 2 George Street, Brisbane City QLD 4000
Please enter Phone Number: 0411111111
Please Enter your 4 digit for password(4 digits): 1234
Great! You have Successfully been adding Yousif Aqrawe

===========Main Menu============
1- Staff Login
2- Member Login
0- Exit
==================================

 Please make a selection ( 1 - 2, or 0 to exit ):
```
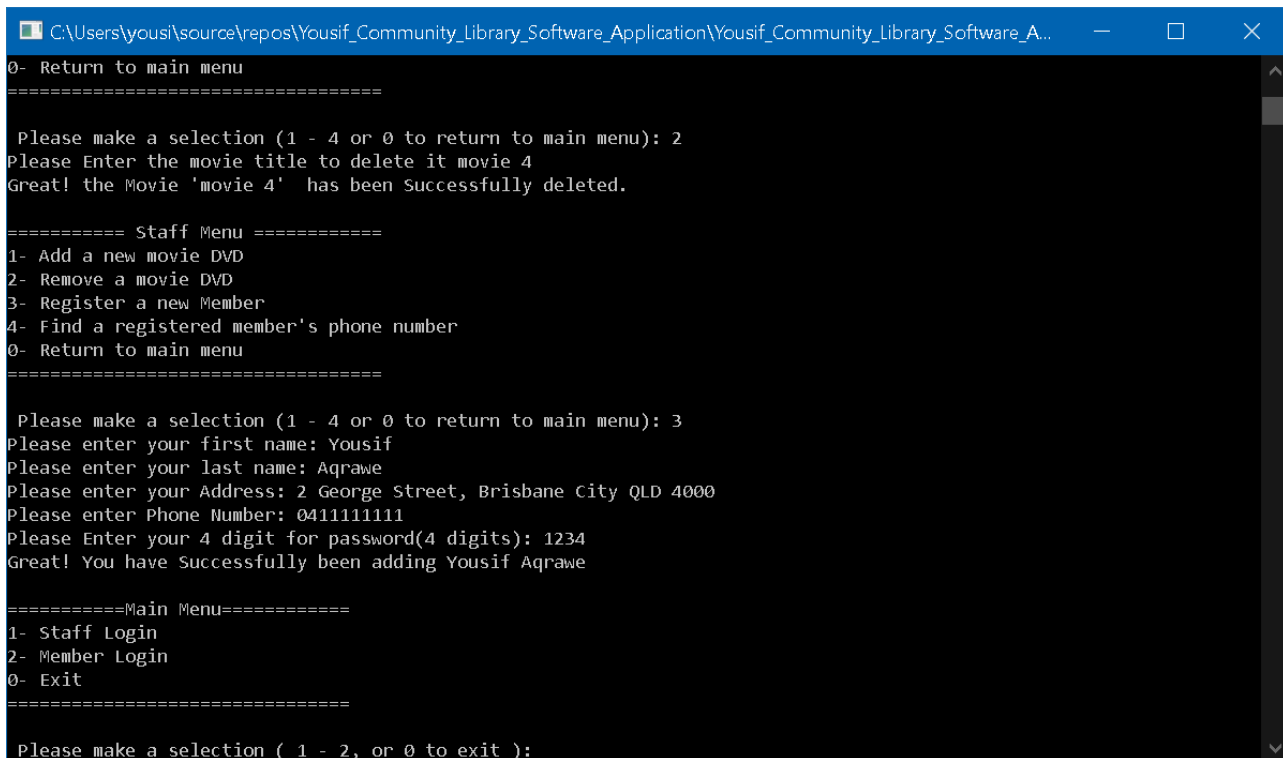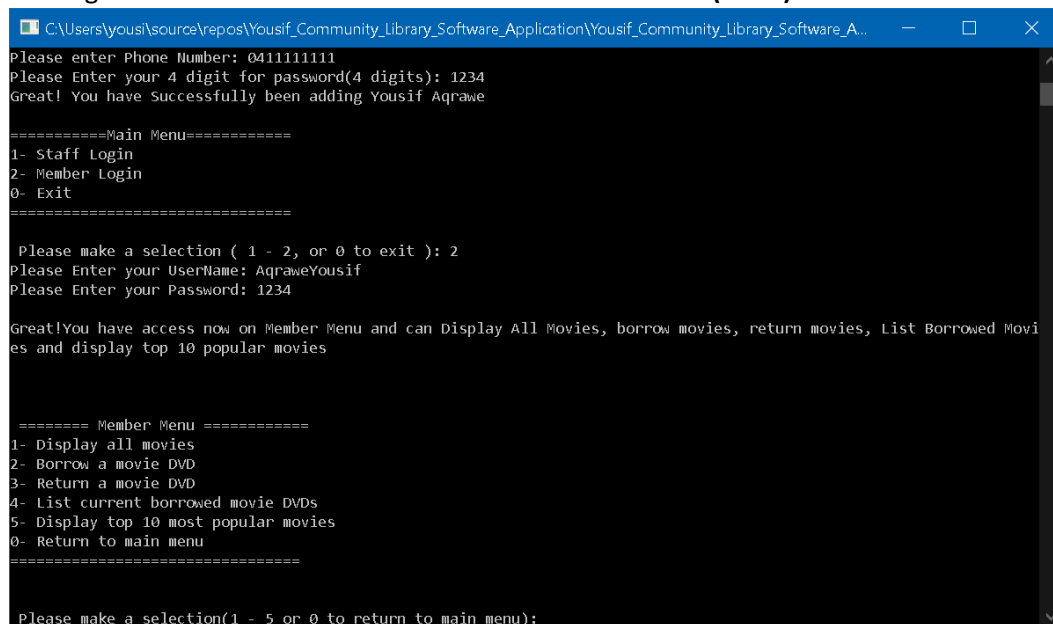
PIC-7

6. Then after we register, I made it automatically to go to the **main menu** to login to Member menu: using **last name + first name** to be as **username** and also add the **4 digit number** that I created to be a **password** for my member password, and after we get that correctly, we get a confirmation message and then we have access on our **Member Menu** **(PIC-8)**

```
Please enter Phone Number: 0411111111
Please Enter your 4 digit for password(4 digits): 1234
Great! You have Successfully been adding Yousif Aqrawe

===========Main Menu============
1- Staff Login
2- Member Login
0- Exit
==================================

 Please make a selection ( 1 - 2, or 0 to exit ): 2
Please Enter your UserName: AqraweYousif
Please Enter your Password: 1234

Great!You have access now on Member Menu and can Display All Movies, borrow movies, return movies, List Borrowed Movi
es and display top 10 popular movies


  ======= Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
==================================

 Please make a selection(1 - 5 or 0 to return to main menu):
```

PIC-8

7. After we get access on our **Member Menu**, we click on number **1** to **Display all movies** . so, it will show me the **added movies** and that means it **will not show me the movie that are not deleted** . that means the **Movie 4** is not in the list because, I deleted it which is great. **(PIC-9, PIC-10)**

Yousif Aqrawe


```
======== Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
==================================

Please make a selection(1 - 5 or 0 to return to main menu): 1

| The Title of Movie is : Movie01
| The Starring Of Movie are : Actor01, Actress01
| The Director of the Movie: Directors01
| genre of the Movie:  Drama Movie
| classification of the Movie: Parental Guidance (PG)
| The Duration of the Movie : 300
| The Release Date of the Movie: 2014
| The Number of Availablity of the Movie : 7
| How many Times the member Rented : 0


| The Title of Movie is : Movie02
| The Starring Of Movie are : Actor02, Actress02
| The Director of the Movie: Director02
| genre of the Movie:  SciFi movie
| classification of the Movie: Parental Guidance (PG)
| The Duration of the Movie : 300
| The Release Date of the Movie: 2015
| The Number of Availablity of the Movie : 4
| How many Times the member Rented : 0


| The Title of Movie is : movie05
| The Starring Of Movie are : actor05, actress05
| The Director of the Movie: director05
| genre of the Movie:  Comedy Movie
```

PIC-9


```
| How many Times the member Rented : 0


| The Title of Movie is : movie05
| The Starring Of Movie are : actor05, actress05
| The Director of the Movie: director05
| genre of the Movie:  Comedy Movie
| classification of the Movie: General (G)
| The Duration of the Movie : 230
| The Release Date of the Movie: 2011
| The Number of Availablity of the Movie : 2
| How many Times the member Rented : 0


| The Title of Movie is : Movie03
| The Starring Of Movie are : actress03 actor03
| The Director of the Movie: direvtors03
| genre of the Movie:  Other Movies
| classification of the Movie: Mature Accompanied (MA15+)
| The Duration of the Movie : 100
| The Release Date of the Movie: 2019
| The Number of Availablity of the Movie : 9
| How many Times the member Rented : 0



 ======== Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
==================================

Please make a selection(1 - 5 or 0 to return to main menu):
```

PIC-10

8. To **borrow Movie**, we select **2** and then we borrow the movie by writing the **Movie Title** . I have borrowed **Movie01 (PIC-11)**

```
C:\Users\yousi\source\repos\Yousif_Community_Library_Software_Application\Yousif_Community_Library_Software_A...    —    □    ×
======= Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
================================


 Please make a selection(1 - 5 or 0 to return to main menu): Movie2

 Please make a selection(1 - 5 or 0 to return to main menu): 2
Please enter the movie title: Movie01
Great! You have borrowed the (Movie01)



======= Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
================================


 Please make a selection(1 - 5 or 0 to return to main menu):
```

(PIC-11)

9. By the way, I have borrowed **Movie02** . so, if we want to List the borrowed Movies, I'll select the 4 then it will show me the movies that is Borrowed so far (**PIC-12**) :
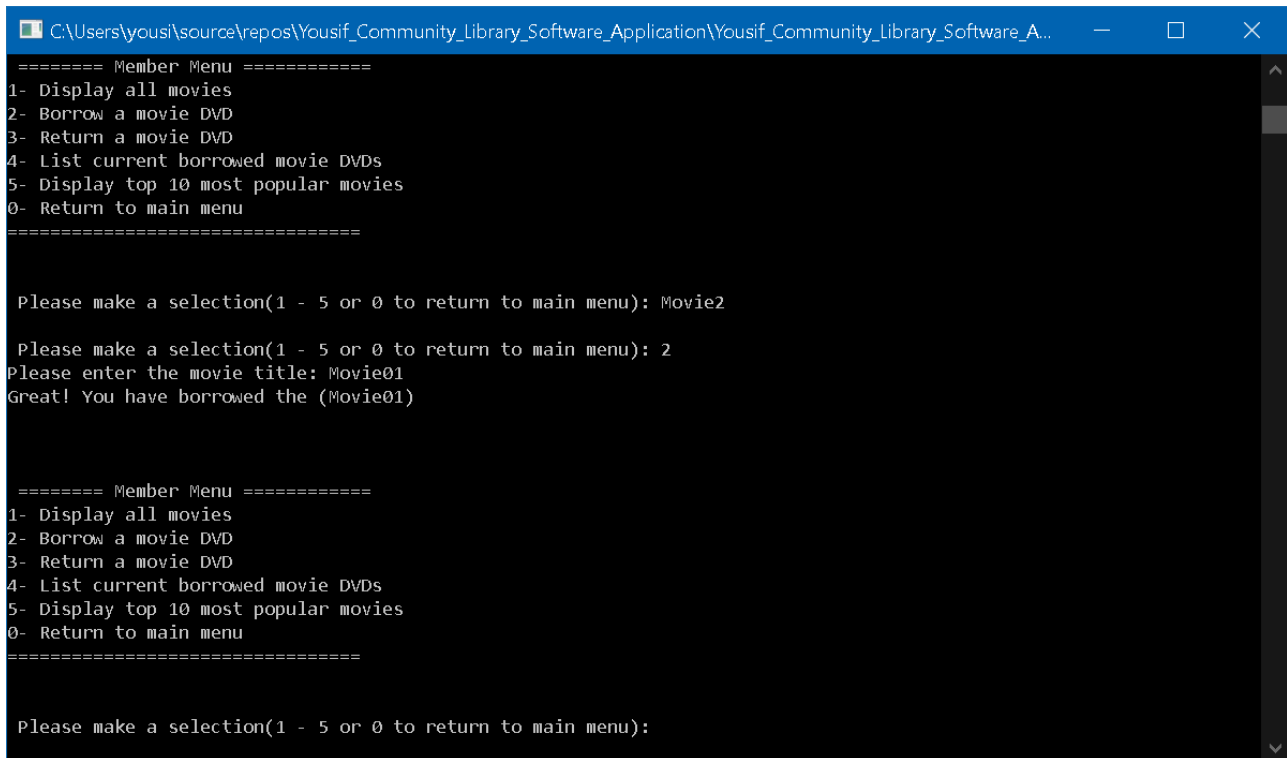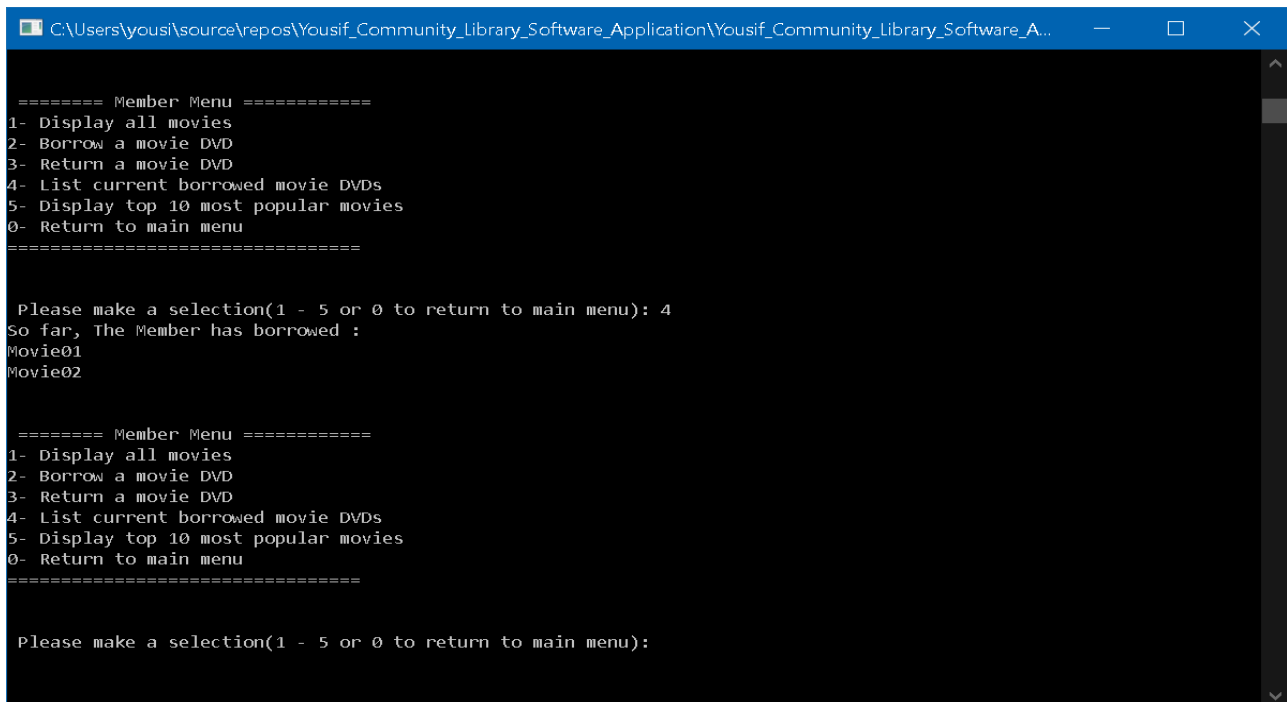
```
C:\Users\yousi\source\repos\Yousif_Community_Library_Software_Application\Yousif_Community_Library_Software_A...    —    □    ×

 ======= Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
================================


 Please make a selection(1 - 5 or 0 to return to main menu): 4
So far, The Member has borrowed :
Movie01
Movie02


 ======= Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
================================


 Please make a selection(1 - 5 or 0 to return to main menu):
```

PIC-12

10. To display the most 10 Popular Movies we select 5 : **(PIC-13)**

```
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
================================


 Please make a selection(1 - 5 or 0 to return to main menu): 5

================================
Movie02 has been successfully borrowed 1 times.

Movie01 has been successfully borrowed 1 times.

Movie02 has been successfully borrowed 1 times.

Movie03 has been successfully borrowed 0 times.

Movie03 has been successfully borrowed 0 times.

movie05 has been successfully borrowed 0 times.

Movie03 has been successfully borrowed 0 times.

Movie03 has been successfully borrowed 0 times.

movie05 has been successfully borrowed 0 times.

Movie03 has been successfully borrowed 0 times.

====================================


 ======== Member Menu ============
1- Display all movies
2- Borrow a movie DVD
```

PIC-13

11. To **return Move01**, we click on **3** then **Movie01** . It will show me the confirmation message that this movie has returned then going to **member menu** again **(PIC-14)**

```
 ======== Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
================================


 Please make a selection(1 - 5 or 0 to return to main menu): 3

Please Enter the movie title that you want to return: Movie01
The Movie (Movie01) has been successfully returned



 ======== Member Menu ============
1- Display all movies
2- Borrow a movie DVD
3- Return a movie DVD
4- List current borrowed movie DVDs
5- Display top 10 most popular movies
0- Return to main menu
================================


 Please make a selection(1 - 5 or 0 to return to main menu):
```
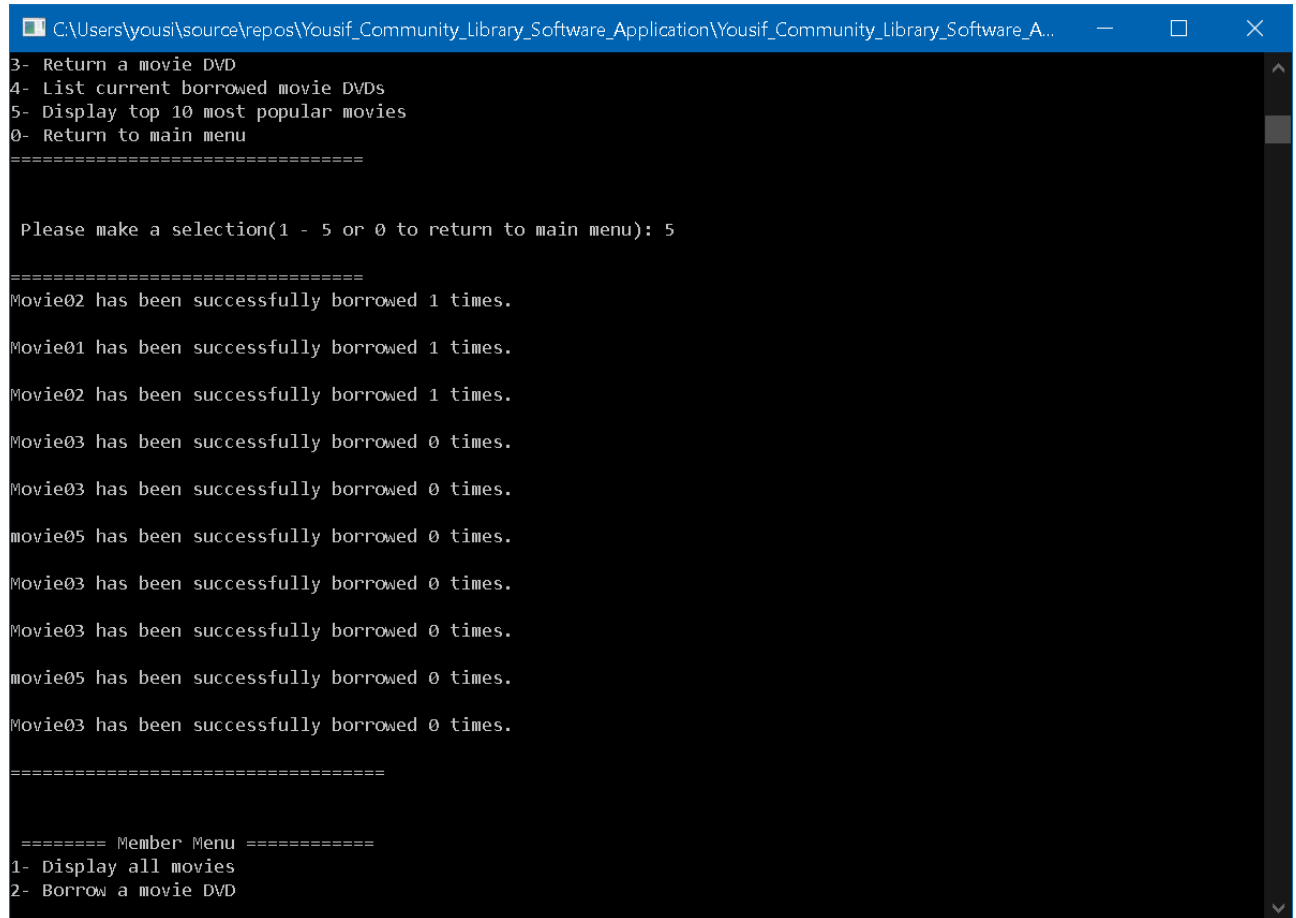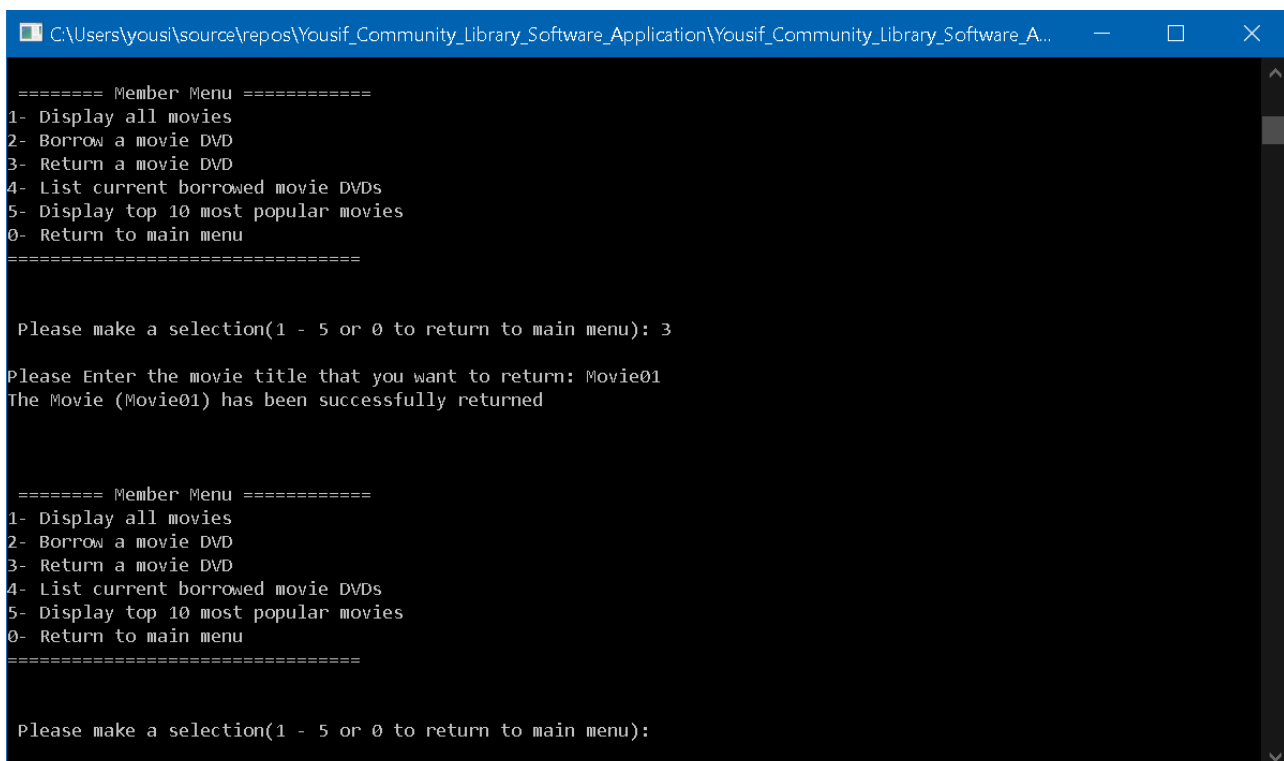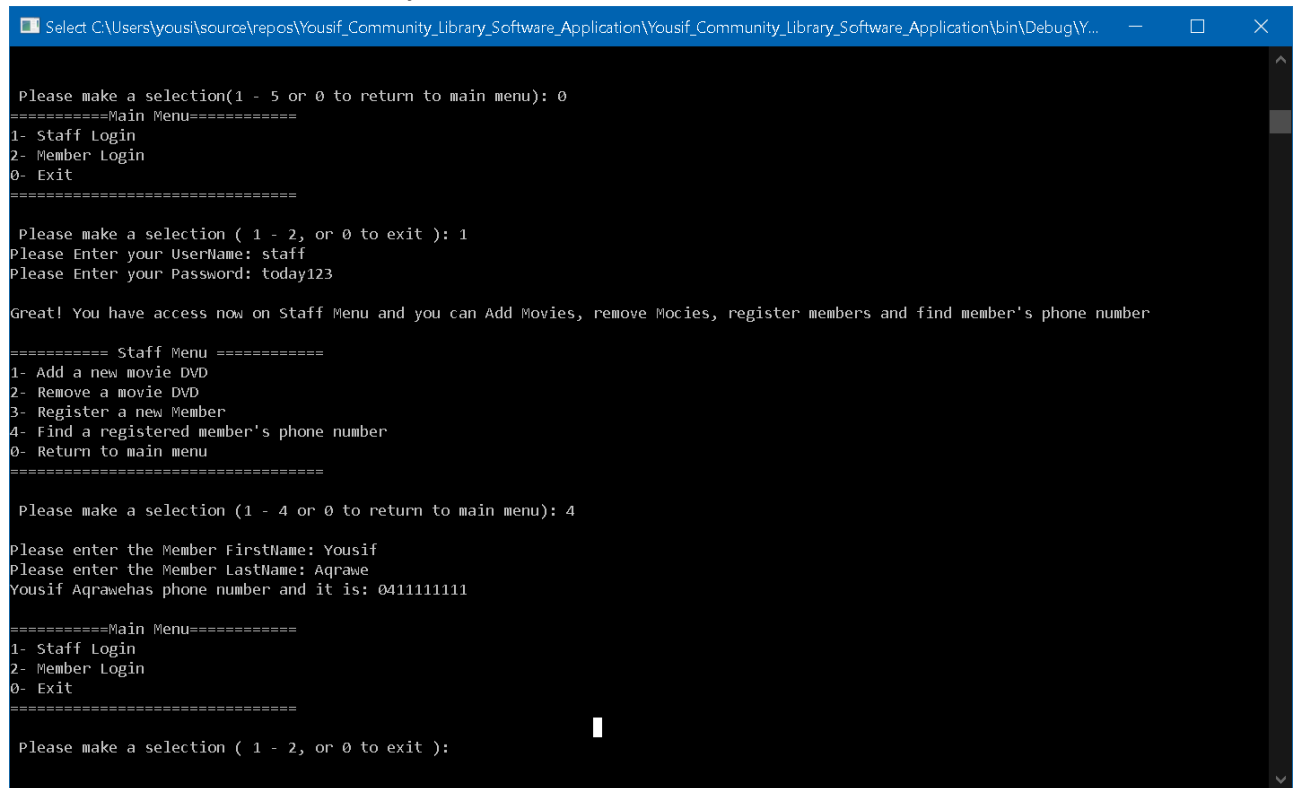
12. We click on **0** to go to the **Main Menu**, then I login to the **staff Menu** to click on **4** to **find the phone number of the Member** so we follow the steps in the pic bellow and then we get the phone number of the Member **Yousif Aqrawe**:

```
Select C:\Users\yousi\source\repos\Yousif_Community_Library_Software_Application\Yousif_Community_Library_Software_Application\bin\Debug\Y...    —    □    ×

 Please make a selection(1 - 5 or 0 to return to main menu): 0
==========Main Menu============
1- Staff Login
2- Member Login
0- Exit
===============================

 Please make a selection ( 1 - 2, or 0 to exit ): 1
Please Enter your UserName: staff
Please Enter your Password: today123

Great! You have access now on Staff Menu and you can Add Movies, remove Mocies, register members and find member's phone number

========== Staff Menu ============
1- Add a new movie DVD
2- Remove a movie DVD
3- Register a new Member
4- Find a registered member's phone number
0- Return to main menu
===============================

 Please make a selection (1 - 4 or 0 to return to main menu): 4

Please enter the Member FirstName: Yousif
Please enter the Member LastName: Aqrawe
Yousif Aqrawehas phone number and it is: 0411111111

==========Main Menu============
1- Staff Login
2- Member Login
0- Exit
===============================

 Please make a selection ( 1 - 2, or 0 to exit ):
```

13. We click on 0 to exit the program