COMP123 – Programming II
Test 1

Evaluation: 100 points (25%)

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Academic Integrity

What is allowed:

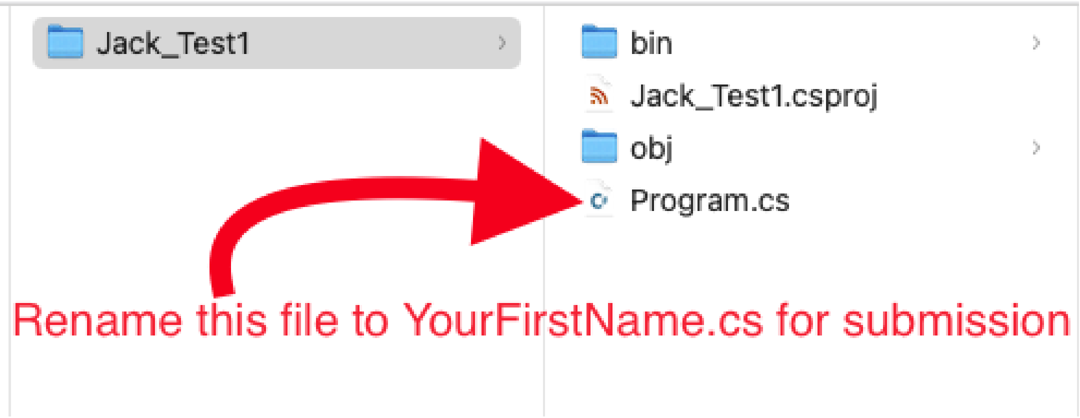
- Looking up **syntax** related to C#
- You can refer the code and classwork created in this course

What is **NOT** allowed:

- Searching for partial or full solutions of the main problem description
- Communication with others, either inside or outside the class
- Sharing of resources, including but not limited to links, computers, Orders, etc.

Submission Checklist:

- Once you are done, write your name and student ID number at the top of the **Program.cs** file.
- Locate your project folder, rename the Program.cs file to **YourFirstName_Test1.cs** such as John_Test1.cs.
- Upload**YourFirstName_Test1.cs file** in the submission folder.



Task:

In a Visual Studio, create a new project (C# Console Application (.Net Framework)) named **YourFirstName_Test1** (where YourFirstName is your first name, such as John_Test1) to accomplish the following task:

PassType Enumeration

This enumeration represents the possible types of pass user can reserve.

LifetimePass, DayPass, SeasonPass

Reservation Class (20 points)

This class consists of the following members. All the properties have public getters.

- **DriverID: int**
  - An integer property to store Reservation ID number
- **Name: string**
  - A string property to store name of person who booked the reservation
- **Type: PassType**
  - A property of PassType enumeration to indicate the type of reservation
- **PassStatus: bool**
  - A boolean property to indicate if reservation pass is activated (true) or not (false)
  - This property must have a setter
- **PassPrice: double**
  - A double property to find out and return the price of reservation based on the type of pass as per the following criteria. The getter of this property must return the price.

Pass Type	Price
Lifetime Pass	750
Day Pass	50
Season Pass	200

Define the following constructors for this class:

- **Reservation (int id, string name, PassType type)**
  - This constructor will assign received parameters to the respective class properties
  - It will also set the PassStatus to true by default.

Implement the following methods in the class:

- **Void UpdatePassStatus(bool activationStatus)**
  - this method must set the PassStatus property using the given parameter
  - It must also display the updated reservation information

- **override string ToString()**
  - this method should display all the Reservation details in appropriate format.

Manager_Reservation.txt file

You are provided with this text file. You are supposed to put this file in the project folder → bin → Debug folder to use it to read the data from.

This text file contains the Reservation information that each reservation manager looks after. The file records are structured using CSV (Comma Separated Values) format. The following is the sample record from file:

498,003,Andrew Kim,LifetimePass

In the record above, 498 indicates reservation manager ID who will be managing reservation for Andrew Kim who is have purchased LifetimePass.

ReservationManager class (50 points)

This class consists of the following members. All the properties have public getters and no setters.

- **ID : int**
  - An int property to store ID of each Manager

- **ReservationList : List<Reservation>**
  - This is property holds a list of Reservation objects that the Manager will help.

Define the following constructors for this class:

- **ReservationManager(int ID)**
  - This constructor will assign received ID parameters to the respective class property
  - It will initialize the ReservationList with empty List by default.

- It will then open and read file named “Manager_Reservation.txt” which is provided with this file.
- It will read one line at a time, and extract all the fields from the records.
- If the first field obtained from each file record matches Manager ID provided as parameter in constructor, create an object of Reservation class with the help of remaining fields obtained from file record.
- Add the created Reservation class object, to the ReservationList variable.

Implement the following methods in the class:

- **void AddReservation(int id, string name, PassType type)**
  - this method will create an object of the Reservation class with the help of provided parameters and add the object to ReservationList.
  - It should also print the newly created object values
- **void ShowAll()**
  - this method will display all the Reservation details for the current Manager.
- **void ShowAll(PassType type)**
  - this method will display all the Reservation details for the current Manager if Reservation’s pass type matches with the parameter provided to this function.

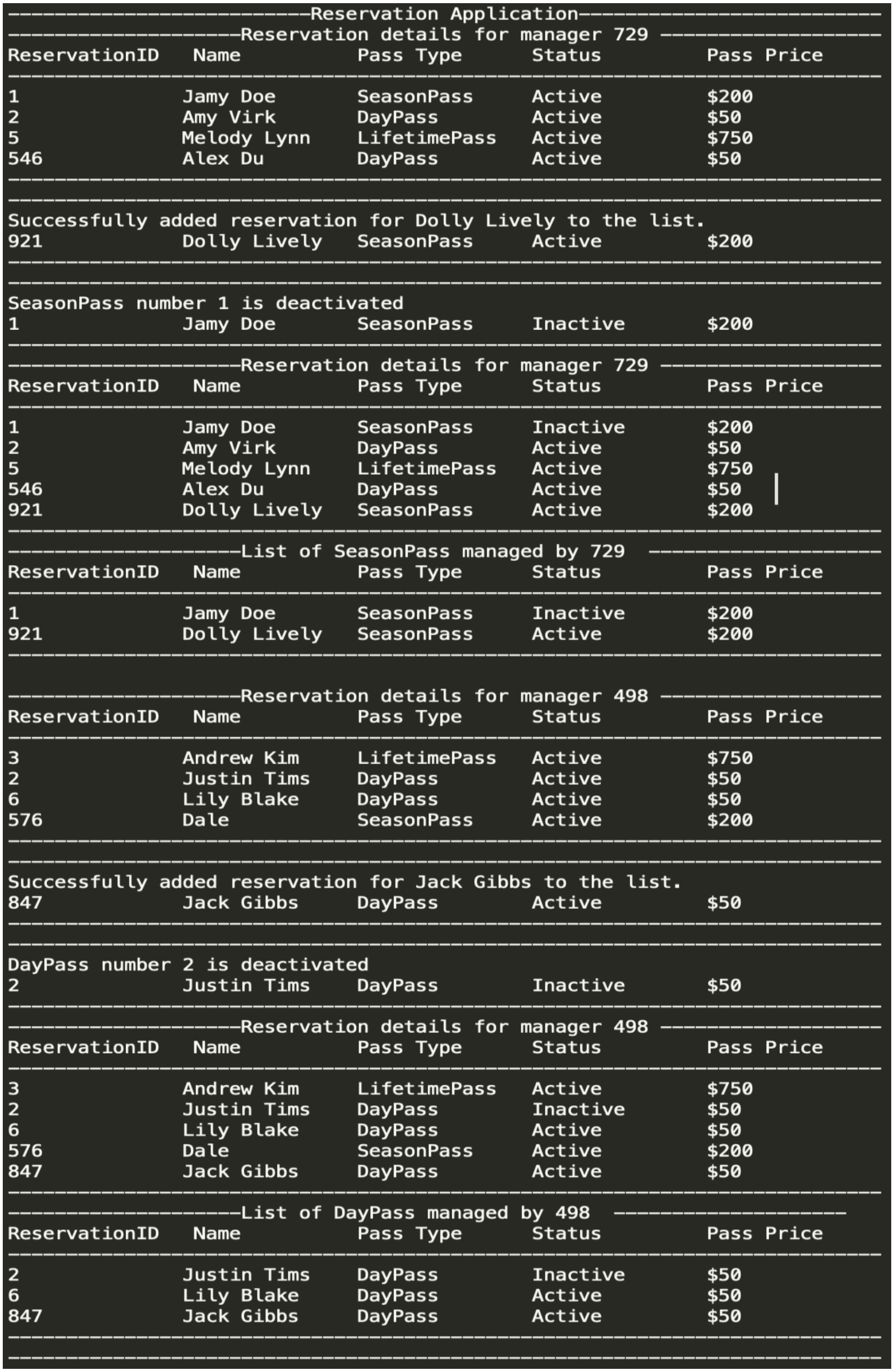
Testing **(30 points)**

To test your application, use the following test function. You may add more details to the function; but do not delete existing content.

```
static void TestReservation()
  {
    Console.WriteLine($"{new string('-', 26)}Reservation Application{new string('-', 26)}");

    ReservationManager branch1 = new ReservationManager(729);
        branch1.ReservationList.Add(new Reservation(546, "Alex Du", PassType.DayPass));

         branch1.ShowAll();
    branch1.AddReservation(921, "Dolly Lively", PassType.SeasonPass);
    branch1.ReservationList[0].UpdatePassStatus(false);
    branch1.ShowAll();
    branch1.ShowAll(PassType.SeasonPass);
```

```
        ReservationManager branch2 = new ReservationManager(498);
        branch2.ReservationList.Add(new Reservation(576, "Dale", PassType.SeasonPass));

        Console.WriteLine();
        branch2.ShowAll();
        branch2.AddReservation(847, "Jack Gibbs", PassType.DayPass);
        branch2.ReservationList[1].UpdatePassStatus(false);
        branch2.ShowAll();
        branch2.ShowAll(PassType.DayPass);
        Console.WriteLine($"{new string('-', 75)}");
        Console.ReadKey();
    }
```

Sample output on the next page



```
--------------------------Reservation Application--------------------------
--------------------Reservation details for manager 729 -------------------
ReservationID   Name          Pass Type      Status         Pass Price
---------------------------------------------------------------------------
1              Jamy Doe       SeasonPass     Active         $200
2              Amy Virk       DayPass        Active         $50
5              Melody Lynn    LifetimePass   Active         $750
546            Alex Du        DayPass        Active         $50
---------------------------------------------------------------------------
---------------------------------------------------------------------------
Successfully added reservation for Dolly Lively to the list.
921            Dolly Lively   SeasonPass     Active         $200
---------------------------------------------------------------------------
---------------------------------------------------------------------------
SeasonPass number 1 is deactivated
1              Jamy Doe       SeasonPass     Inactive       $200
---------------------------------------------------------------------------
--------------------Reservation details for manager 729 -------------------
ReservationID   Name          Pass Type      Status         Pass Price
---------------------------------------------------------------------------
1              Jamy Doe       SeasonPass     Inactive       $200
2              Amy Virk       DayPass        Active         $50
5              Melody Lynn    LifetimePass   Active         $750
546            Alex Du        DayPass        Active         $50
921            Dolly Lively   SeasonPass     Active         $200
---------------------------------------------------------------------------
--------------------List of SeasonPass managed by 729  --------------------
ReservationID   Name          Pass Type      Status         Pass Price
---------------------------------------------------------------------------
1              Jamy Doe       SeasonPass     Inactive       $200
921            Dolly Lively   SeasonPass     Active         $200
---------------------------------------------------------------------------

--------------------Reservation details for manager 498 -------------------
ReservationID   Name          Pass Type      Status         Pass Price
---------------------------------------------------------------------------
3              Andrew Kim     LifetimePass   Active         $750
2              Justin Tims    DayPass        Active         $50
6              Lily Blake     DayPass        Active         $50
576            Dale           SeasonPass     Active         $200
---------------------------------------------------------------------------
---------------------------------------------------------------------------
Successfully added reservation for Jack Gibbs to the list.
847            Jack Gibbs     DayPass        Active         $50
---------------------------------------------------------------------------
---------------------------------------------------------------------------
DayPass number 2 is deactivated
2              Justin Tims    DayPass        Inactive       $50
---------------------------------------------------------------------------
--------------------Reservation details for manager 498 -------------------
ReservationID   Name          Pass Type      Status         Pass Price
---------------------------------------------------------------------------
3              Andrew Kim     LifetimePass   Active         $750
2              Justin Tims    DayPass        Inactive       $50
6              Lily Blake     DayPass        Active         $50
576            Dale           SeasonPass     Active         $200
847            Jack Gibbs     DayPass        Active         $50
---------------------------------------------------------------------------
--------------------List of DayPass managed by 498  --------------------
ReservationID   Name          Pass Type      Status         Pass Price
---------------------------------------------------------------------------
2              Justin Tims    DayPass        Inactive       $50
6              Lily Blake     DayPass        Active         $50
847            Jack Gibbs     DayPass        Active         $50
---------------------------------------------------------------------------
---------------------------------------------------------------------------
```