

# Assignment 3

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## Background:

You are creating application that is going to track the swim clubs, their swimmers, swim meets and results.

**References:** Please refer to “General Assignment Requirements” document posted on eCentennial.

## Part 3:

Now that you have the test project that test your methods in the library you can change the code in library to make it better. After the changes are made, all your test should be still passing for the methods that did not change the signature.

Here what changes you should make to the class library that you created in Assignment 2.

1. Create two new classes:
  1. Swimmer - *Swimmer* is a *Registrant* who have additional class members:
    - i. List of the best times for each event and course (SCY, SCM, LCM) (This may require changes to *EnterSwimmerTime()* method and *Event* class.
    - ii. Coach that is being coached by.
    - iii. Method *GetBestTime* that has 3 parameters: course, distance, and stroke. This method returns *TimeSpan* type that represents the best time for the swimmer.
    - iv. Method *AddAsBestTime* that has 4 parameters: course, distance, stroke, and time. This method check if the given time (*TimeSpan*) is the best time and if it is it will save it as the best time for the course, the distance and the stroke specified.
  2. Coach – *Coach* is a *Registrant* who has additional class members:
    - i. Coaching credentials (string)
    - ii. List of swimmers that are being coached by this coach
2. Add appropriate methods and/or properties that will allow swimmers to be assigned to a coach and vice versa.
3. Modify and add necessary class members to the class *Club* to keep track of swimmers and coaches in the club. Make sure that swimmer can only be assigned to a coach that is already assigned to the same club.

4. So far, we have used arrays when we needed a collection. Replace arrays with more appropriate collection and remove any number restrictions.
5. So far, we used *GetInfo()* method to display the information about the object. All of them should be changed to more appropriate *ToString()* method. Add additional *ToString()* methods to two new classes.
6. As you can see from the class diagram both of our managers have methods to add, save, get, load, and save the corresponding elements. To streamline the implementation of the managers, you need to change the name of these members. This may require change to some tests in the test project.

In both classes change the names as follows:

1. *AddXxxxx()* to *Add()*
  2. *GetXxxxx()* to *GetByRegNum()*
  3. *LoadXxxxx()* to *Load()*
  4. *SaveXxxxx()* to *Save()*
  5. *NumberXxxx* to *Number*
7. Extract the interface from the manager classes and call them *IClubsRepository* and *ISwimmersRepository*. Interfaces should contain the methods from point 6.

Additional requirements:

1. Make sure that all classes except Program class are in a class library.
2. The test harness is provided in attached program.txt file. You must not modify the content of the class. You can change namespace names only.
3. Modify your code from assignment 2 to provide the similar output as in the text file output.rtf
4. The two text files (Clubs.txt and Swimmers.txt) that are provided contain the clubs and swimmers that need to be loaded.
5. The two files that are generated by the application are also provided for the reference.
6. You can add any additional code that may be needed.

**Submission:** Submit the solution to Assignment3 drop box by drop box deadline.