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**CIS 345 – Business Information Systems Development - II**

InClass 13: Manipulating Lists and Items

Due on Blackboard: **Wednesday, November 1, by 11:59 PM** Arizona Time

**Learning Outcomes**

* 1. Copy Items Across Lists/BindingLists
  2. Access and Utilize Specific Items in Lists
  3. Choose List Items Randomly

**Class Topic Chart**

**Program Overview**

This program focuses on using data stored in Lists, copying items from one list to another list and using specific items from a list. Generally, the purpose of this exercise is to gain some experience in manipulating Lists, BindingLists, items in those lists, etc.

The template provided is a basic skeletal application, which shows a ListBox on a Form. When the program is finished, the ListBox will display data from a BindingList of Movies. The user will be able to select a subset of items from the ListBox, and store that subset in a new List. That List will then be passed to a new form, which displays Movie Details, one movie at a time. A Button allows the user to select a new movie at random, and the movie details for the random movie will be displayed to the user.

**Sample Output**

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| --- | --- |
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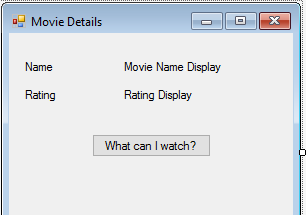
**Instructions & Requirements**

1. **Download the template project and extract the zip file.**

* Put all new code you write within this project
* Put your name in on Line 1 of main Movies form and any new classes
* Do not rename the project or any other files. **Do not rename the project.**

**GUI Setup**

1. On the **MoviesForm**, you will see a ListBox of movies. By default, it allows users to select just one item in the ListBox. **Change its SelectionMode to MultiExtended**. *When the program is running, you should experiment with each type of selection mode to see how each works. When the program runs, try clicking multiple items with and without the Control button pressed.*
2. **The following form, *DetailForm***, **has already been created for you. It will act as the entry form for Courses.**



The following controls have already been created for you.

* Labels for Movie Name, and Rating, e.g., movieLabel
* Label for displaying values of Movie Name, and Rating e.g. movieDisplayLabel. *This is the label on the right, which will show the actual data. Put in a placeholder text here such as “Movie Name Display”. This value will only be seen in the design view.*
* One Button, watchButton for showing movie details of a randomly selected movie.

**Programmatic C# Development**

**Movie.cs**

1. **Modify the Movie class.** 
   * Add a ToString method within the Movie class, which returns the name of the Movie.

**MoviesForm.cs [Partial Class]**

***Work on the MoviesForm’s partial class. This form maintains a ListBox of movies.***

1. Add an instance variable of typeDetailsForm called detailsForm

**Methods**

1. **Create a Load event handler for MoviesForm**

*Purpose:* The Load event handler will instantiate the BindingList and set it as the DataSource of the ListBox

* Instantiate the BindingList already declared in the class block.
* Set the BindingList you just instantiated as the DataSource of the ListBox on the form.

1. **Create a Click event handler for the Load Sample Data Button**

*Purpose:* The Load Sample Data button will add some sample movies to the BindingList.

* Declare a Movie object reference called tmpMovie
* Instantiate tmpMovie and using the Constructor specify a movie name and the rating.
* Add the movie to the BindingList you declared earlier.
* Copy and paste the previous two lines (instantiating & adding to BindingList) around 8-10 times. Hardcode some sample movie names and ratings.

1. **Create a Click event handler for the Open Details Button**

*Purpose:* The Open Details button will open the DetailsForm and pass to it a list of movies, which have been selected by the user. Since the ListBox allows selection of multiple items, all the items, which have been selected by the user will need to be added to a new List. Then, that List will be passed to a method in the DetailsForm.

* Declare and instantiate a new List of Movie objects called selectedMovies. *A List, not a BindingList!*
* Using a foreach loop, loop through all SelectedItems in the ListBox. Use **m** as your temporary object reference. *Be careful – all selected item****S.***
  + Add the movie, m, to the selectedMovies List.
* Instantiate the DetailsForm object you declared earlier
* Call the SetData Method of the DetailsForm object and pass it the selectedMovies List. ***You haven’t written the SetData method yet. You will write it in the next part. Write the method call and comment it out. Later come back and uncomment it.***
* Show the DetailsForm.

1. **DetailsForm.cs [Partial Class]**

***Work on the DetailsForm’s partial class.***

1. Declare a List of Movie objects named movieList as an instance variable.

**Methods**

1. **Declare a Method called SetData**

*Purpose:* This method should set up to display data in the form. It will receive a List of movies as a parameter and store it in the Form’s movieList variables.

*Parameters*: a List of Movie objects.

Within the body of the method,

* Store the list received as a parameter into the movieList variable you have as a field.

1. **Create a Click event handler for the What Button**

*Purpose:* The What Button will randomly select one movie from the List of movies. It will display its movie title and rating in the display labels on the form.

* Declare a randomGenerator of type Random
* Declare an integer called index
* Declare a movie called tmpMovie
* Instantiate the Random object
* Generate a Random number using the Random object. It requires lower bound and upper bound. Give it the Count from the List as the upper bound. Store the random number in your index variable.
* Lists have a method called ElementAt, which return the object at a specified index. **Call the ElementAt method** of your List. Supply it with the index number you generated randomly. It will return to you the Movie object at that index. Store it in the tmpMovie.
* Set the Movie title display label’s text to the title of the tmpMovie object
* Set the Movie rating display label’s text to the rating of the tmpMovie object.

1. **Test your program.** Start your program and load data using the sample data button. Then select multiple items from the ListBox and click the Details button. From the DetailsForm window, you should be able to click the What button and the program should display the details of a randomly selected movie from your selected movie list.