Movie LINQs

Collections are great for storing multiple instances of a data type, but it’s often the case that we need to filter, manipulate, or analyze this data in bulk. C# includes LINQ (language integrated query) which allows us to query our data much like a database.

For this assignment, you will be supplied with a DLL containing movie data to be analyzed. Using this provided DLL, you will write LINQ statements to answer a series of questions.

# Requirements:

* Create a new project (I recommend a console project, but you may use Win Forms or WPF as you wish).
* Download and integrate the provided DLL.
* Using the classes and built-in data from the DLL, write LINQ statements to answer the queries listed below.
  + For each query, copy/paste your full LINQ statement(s) (and any associated code as needed) as well as the answer result for the query into this document. Paste your answer beneath the appropriate query, please.

# Queries

1. What are the years of the oldest and newest movies in the list?
2. Split the total year range in half. Movies on the lower half are considered “classic” while those on the upper half are considered “new”. How many classic movies are there? How many new movies?
3. Are there more odd years or even years in the list? Show the quantities of both, please.
4. Which year contains the most titles? What is the quantity?
5. Which rating shows up the most? What is the quantity?
6. Which title is the shortest (in character length)? Which is the longest? Your answer should be the titles themselves (but no other data).
7. Which rating has the widest range in years?
8. How many films are in each decade of the total year range?
9. Which ratings in the MPAARating enum are never used?
10. Display all films, first by rating (lowest to highest enum value), then by title (alphabetically ascending).
11. Group the movies by number of words in the title. List the results by group (meaning the number of words in the title) and the number of films in that group. Clearly label your results, please.
12. My teenager is 15 and may watch any film that is rated G, PG, or PG-13. How many films from the master list could they watch? Which films are they?

# What you’ll need

* LINQ
* Referencing external DLLs

# You should check out

* MSDN documentation on the Enumerable class

# Rubric

**Automatic 0** – You fail to use LINQ in each query, your answers are not readable, or your doc is not able to be graded for any reason.

You will be awarded 8.33 points per query you answer correctly.