

## ASSIGNMENT - 5

This assignment is based on the java collections, serialization and will also use previously studied concepts in java.

Create a Media library system:

1. Which can have both movies and songs.
2. A **Media** class which implements Comparable interface should have properties like title (unique), artist (for simplicity a single artist), year, size, rating (1-5), duration, genre.
3. In addition,
  - a. a **Movie** should have a director, producer, certification.
  - b. a **Song** should have movie (independent / movie name) label.
4. You should have a main class called **MediaSystem** with attributes as list of movies, songs, number of songs/movies and following functionalities:
  - a. Serialize and deserialize MediaSystem class.
  - b. View a list of all the songs/movies in the library and see information about each song/movie.
  - c. View a list of top "k" songs/movies by their rating.
  - d. Search and display songs based on genre.
  - e. Search and display movies based on director.
  - f. Edit the rating of a song/movie.
  - g. Display the count of number of songs/movies.
  - h. Search and display all the songs of a given movie.
5. **Bonus: Create your own stream class to encrypt and decrypt the MediaSystem. You should be able to use this stream as decorator in conjunction with Java SDK streams. The focus of the question is not how you encrypt/decrypt but the decorator pattern. You may use some naive encryption as translating characters.**

**Input:**

1. You will be given 2 database files (comma separated values), one for songs and other for movies.

Song.txt - <Song>,<Movie Name>,<Artist>,<Year of Release>,<Genre>,<Size>,<Rating>,<Duration>

Movie.txt -

<Movie>,<Artist>,<Year of Release>,<Genre>,<Size>,<Rating>,<Duration>,<Director>,<Producer>,<Certification>

**Expected Output:****Output of songs: (Only 1 here)**

Song Title: Song1  
Movie: Movie 71  
Artist: Artist3692  
Year of Release: 1997  
Genre: mashup  
Size: 4.19 MB  
Rating: 2  
Duration (mins): 2:87

**Output of Movies: (Only 1 here)**

Movie name: Movie1  
Artist: Artist460  
Year of Release: 2001  
Genre: Genre547  
Size: 2.33 GB  
Rating: 2  
Duration (hrs): 2:87  
Director: Director1  
Producer: Producer1  
Certification: C

**Top Songs/Movies: Only name of song and rating is enough.**

**Edit Rating of a song/movie:**

Rating of <song/movie> updated from <old\_rating> to <new\_rating>

**Display the count of number of songs/movies.**

Number of songs in the library: <no\_of\_songs>  
Number of movies in the library: <no\_of\_movies>