

Movie(Encapsulation):

1. Using two enums: Status(including Valid, Invalid) and Formats(including MP4, MOV, WMV, AVI, FLV, MKV), since we only accept these six formats, otherwise a Movie object cannot be created. The status of a movie has only two values, valid or invalid. Using boolean value can also implement the field status, but according to the concept “Primitives Obsession” we talked in class, we should avoid using the primitive type, so personally I think using enum make more sense here.
2. Using the built-in HashMap to store the custom information, and the Client can only use the method offered to modify the custom information. They have no chance to access the reference of the HashMap directly.

WatchList(Encapsulation):

1. Using LinkedList to store the movies, since the LinkedList use constant time to addLast and removeFirst, which are the two main functions of the WatchList. The trade-off here is that I tried to use Queue instead of LinkedList (convert the LinkedList to Queue), since the requirement said that we only need to add the movie to the end of the list and remove the movie in the first place. But if we want to add some new feature of WatchList, say to top a movie in the list, Queue cannot be able to do so. As a consequence, I decided to use LinkedList.
2. For adding a movie to the list, I do not make a copy of Movie, since if we add a copy to the list, then if the client modifies the custom information, such Movie will not show any changes in the list, which contradicts with the real world. Consequently, I don't encapsulate the reference of added movies here intentionally, so that if the clients modify the custom information of Movie object, the changes will be shown in the WatchList as well.
3. Using an ArrayList to store the name has already used, to avoid the duplicates of a name, since a WatchList is identified by name, so the name should be unique for every WatchList.

Library:

1. The name should be unique as well, same reason for WatchList.
2. Adding WatchList and Movie directly to the Library, without coping them, same reason for adding Movie to the WatchList.

The objects diagram of Client code as following: (Next page)

