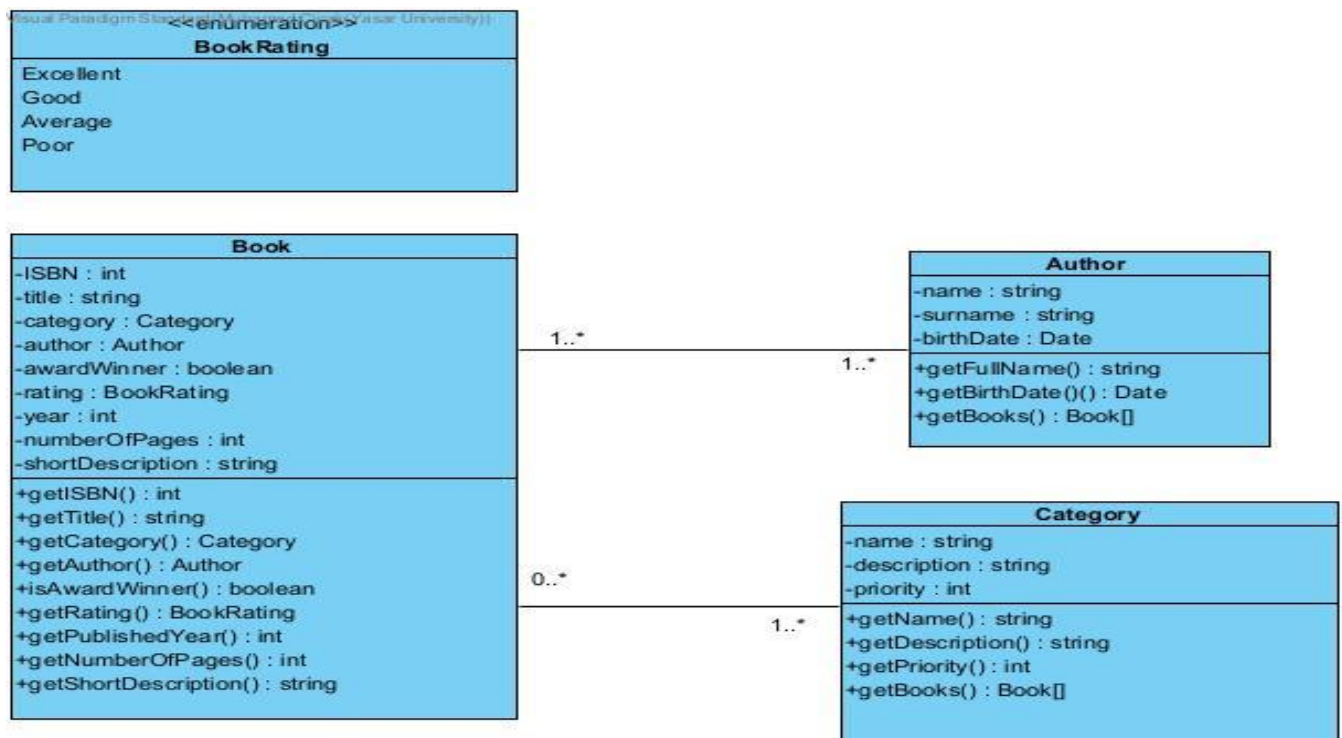Functional requirements of the "MyFavoriteBooks" application:

1. Book Listing and Filtering: The user should be able to list the books they have read and apply filters based on ISBN, title, category, author full name, rating, year, or number of pages.
2. Book Search: The system should provide search functionality, allowing the user to search for a book using keywords from its short description.
3. Book Rating: The system should enable the user to rate the books they have read using ratings such as Excellent, Good, Average, or Poor.
4. Author Information: The user should be able to view the author of any book and access information about other books written by that author.
5. Category Information: The user should be able to view the category of any book and access other books belonging to the same category.

Class diagram:



Explanation of the class diagram: Here we have 3 classes (Book, Author, Category) and an Enumeration (BookRating). Book class represents a book and holds basic information about the book, as well as its category (of type Category) and author (of type Author). There is a many-to-many relationship between Books and Authors. A book must have at least a single author but may have more. Likewise, an author must have at least a single book but may (and probably will) have more than that. A book has a similar relationship with Category, where a book must at least belong to a single category but may belong to more than one category, but the difference here is that a category may contain no books but also may contain more than that.

The operations of the classes are used throughout the requirements. For example, the getters inside of Book are used in the "Book Listing and Filtering" requirement. Similarly, the operations inside of Category are used in the "Category Information" requirement. The Enumeration BookRating represents the possible ratings a user may give to a book.