Library Management System

1. **Book ID**
   - Cannot be null.
   - Length must be more than 2 characters.

2. **Title**
   - Cannot be null.
   - Length must be more than 4 characters.
   - Must contain only characters (no numbers).

3. **Author**
   - Cannot be null.
   - Length must be more than 2 characters.
   - Must contain only characters (no numbers).

4. **ISBN**
   - Cannot be null.
   - Must be a valid ISBN number.

5. **Publication Year**
   - Cannot be null.
   - Should be a date in the past or the present.

6. **Genre**
   - Cannot be null.
   - Must be one of the predefined options (e.g., "Fiction", "Non-fiction", "Science", "Art", "Biography").

7. **On Loan**
   - Must be a boolean value.

Model Class with annotations will be like this:

```
public class Book {


    @NotEmpty
    @Size(min = 3)
    private String bookID;
```

```java
    @NotEmpty
    @Size(min = 5)
    @Pattern(regexp = "^[a-zA-Z]*$")
    private String title;

    @NotEmpty
    @Size(min = 3)
    @Pattern(regexp = "^[a-zA-Z]*$")
    private String author;

    @NotEmpty
    @ISBN
    private String isbn;

    @NotNull
    @PastOrPresent
    private Year publicationYear;

    @NotEmpty
    @Pattern(regexp = "^(Fiction|Non-fiction|Science|Art|Biography)$")
    private String genre;

    private boolean onLoan;
}
```

Endpoints:

1. **Get All Books**
   - Retrieves a list of all books in the system.
2. **Add a New Book**
   - Adds a new book to the system. The system should verify that the book does not already exist.
3. **Update a Book**

o Updates an existing book's information. The system should verify that the book exists before attempting to update.

4. **Delete a Book**

    o Deletes a book from the system. The system should verify that the book exists before attempting to delete it.

5. **Search Books by Title**

    o Retrieves a list of books based on their title. The system should return all books that match the search query.

6. **Search Books by Author**

    o Retrieves a list of books written by a specific author. The system should return all books that match the search query.

7. **Get Books by Genre**

    o Retrieves a list of books within a specified genre. The system should return all books that match the genre.

8. **Get Books on Loan**

    o Retrieves a list of books that are currently on loan. The system should return all books where the onLoan flag is set to true.

9. **Return a Book**

    o Allows a book to be returned. The system should verify that the book exists and is currently on loan before allowing it to be returned. The onLoan flag should be set to false.