Q1 [ Marks : 15 ]

Design a class **Book** containing following members: bookID text

title text

author text

category text

price float

Define Parameterized constructor to initialize Book object. Perform the below validations

* Category must be “Science”, “Fiction”, “Technology” or “Others”
* Price cannot be negative
* bookID must start with ‘B’ and must be of length 4 characters

If any of the validations fail, throw an user defined exception **InvalidBookException**.

Design a class called **BookStore** which contains an appropriate collection object to store Book instances.

Implement the below operations.

1. addBook(Book b)

To add a new Book object into the collection and return a book object

1. searchByTitle(String title)

Search a book based on title and if found, display the details and return book object

1. searchByAuthor(String author)

Search a book based on author and if found, display the details and return book object

1. displayAll()

Print the details of all the books

Store both classes in a package **com.book**.

Create a class **BookUtil** in package **com.bookutil** which has the main method.

* Instantiate the BookStore class
* Read data from user for 3 Book objects.
* Call the addBook method to add the book objects into the collection
* Search the books by title and author
* Display all the book details

|  |  |  |
| --- | --- | --- |
| **Q 1** | **Steps** | **Marks** |
| a) | Designing Book class properly | 2 |
| b) | Proper validation of Book data | 3 |
| c) | Reading input from user and adding Book objects to Collection | 2 |
| d) | Proper implementation of search operations | 2 |
| e) | Creating and using package | 1 |
| f) | Proper Exception handling | 2 |
| g) | Testing all operations from BookUtil class properly | 2 |
| h) | Proper comments, coding conventions & indentation | 1 |