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**Java**

Assignment - Day 2

Concept: Encapsulation & Inheritance

Objective: At the end of the assignment, participants will be able to:

* Implement classes & objects
* Make use of static members
* Use constructors for initializing an object
* Derive a class from an existing class

Problems:

1. Create a class **Book** which has following members:

private int bookNo

private String title

private String author

private float price

Provide getter and setter methods for all the instance variables.

Create a class **BookDetails** which has the main method. Create an object of the **Book** class. Initialize the object by reading inputs for the fields from the user.

1. Mod ify the Book class to include a **constructor** for initializing the instance variables. Perform the below validations in the constructor and print appropriate error message if the validation fails.
   1. Title of the book must have atleast 4 characters
   2. price must be in the range 1 to 5000

Also override the **toString()** method to print the details of the book.

1. Modify the class to include the below static members

private static int bookCount;

public int static getBookCount( )

Also write a Static block to initialize bookCount to zero.

Increase the bookCount by 1 when a new Book object is created.

1. Modify the main method to create an array of 3 Book objects. Ask user to enter the details and initialize them.
2. Finally allow user to search for a book by entering a book number. Print the details of the book if the number exists and an error message, otherwise.
3. Extend the Book class to create a class **EngineeringBook** derived from **Book** with an additional attribute

private String category

Provide setter and getter methods for type instance variable.

Create an object of the EngineeringBook class and test.