1. *A shopkeeper sells three products whose retail prices are as follows:*

*Write an application that reads a series of pairs of numbers as follows:*

*a) Product number or code (Code is not case sensitive)*

*b) Quantity sold*

*The application should use a switch statement to determine the retail price for each product. It should calculate and display the total retail value of all products sold. (20 Mins)*

|  |  |  |
| --- | --- | --- |
| **Product No** | **Product Code** | **Retail Price** |
| 1 | A | 22.50 |
| 2 | B | 44.50 |
| 3 | C | 9.98 |

1. *Consider user has N eggs. Then display the no of eggs in gross (144 eggs*

*make one gross) and no of eggs in dozen (12 eggs make one dozen) and*

*the no of eggs that is left out remaining. The total no of eggs can be got as*

*input through console. The program should display how many gross,*

*how many dozen, and how many left over eggs the user has. (20 Mins)*

*For example, if the input is 1342 eggs, then the program should respond*

*with*

*Your number of eggs is 9 gross, 3 dozen, and 10*

*(20 mins)*

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

privateintbookNo

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. Modify 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.

Title of the book must haveatleast 4 characters

price must be in the range 1 to 5000

1. Modify the class to include the below static members

private static intbookCount;

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 3Book objects. Ask user to enter the details and initialize them.

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.

1. *Overriding hashcode() and equals() method for Student such that all the ids that are prime and even are goes in one bucket, all the ids that are prime and odd are in another and rest in yet another.*

*Make sure that hashcode() and equals() method follow the contract specified in the documentation*

1. Use Interface for the following:

