Q.1 Write a program to find maximum occurring character from given string.

Q.2 Write a program to print duplicate characters with number of occurrence in given string.

Q.3 Write a program to reverse the words of given string.

Q.4 Write a java program to print from 1-15 and 15-1 using multithreading in java.

Q.5 Create two thread, first thread will print prime number and second thread will print perfect number between 1-100.

Q.6 Write program to accept rollno, marks of four subjects in an array from user and throw MarksOutOfBoundsException if marks are < 0 or marks > 100. Also check ArrayIndexOutofBoundsException.

Q.7 Write a class Driver with attributes vehicle no, name & age. Initialize values through parameterized constructor. If age of driver is less than 18 then generate user-defined exception "AgeNotWithinTheRange".

Q.8

Code a java program in such a way that cover all the transition of library for issuing and submitting books for student as well as staff. For that follow this description.

1. There is one Abstract class named **Lib** that contains 3 subjects in library like JAVA 100 books, SQL 150 books and CG 50 books. There are also two methods **submit** and **issue**.
2. There are two interfaces named **Student** and **Staff** contains one method Info. (Note: both interfaces has same name method Info)
3. There is one class named **LibTransitions** that calculate (for issue and submit), extends and implements appropriate classes and interfaces.
4. There is main class named **Library** that calls all methods according user selection for staff or Student.
5. Whenever transition occurs stock must be update for books.

Q.9 Write a program that will define a superclass Shape that defines dim1 and dim2 and a method Area() for 2 dimensional shapes. Define rectangle, circle and triangle subclasses with overridden method Area() to calculate area of itself.

Q.10 Write a program that defines a class Student with name, rollno, marks1, marks2, marks3, total and percentage variables. Define constructor to initialize variables and a method to calculate total as well as percentage. Define a separate method displayData() to display all values.

Q.11 Define a class series with overloaded methods to print Fibonacci series. This class must contain the following type of method:

a. void fibo() : It will print 10 terms of series
b. void fibo(int terms): It will print total N terms specified by terms parameter.

void fibo(int start, int end) : It will print all the terms between starting and ending numbers.

Q.12

Code a java program for the Oil and Refinery Compnay which receives transporting of raw materials. Consider there is one abstract class named **RowMatirial** having some instance variables like Goods-value(in Rs.), Service Tax and Surcharge. There are two other subclasses like **ByRoad** and **ByShip**. There are two classes named **Railway** and **Transport** which follow the **ByRaod** class. Both this class have **calculate() and Disp()** methods. There is one class named **Ship** which follow **ByShip** and it also has **calculate() and Disp()** methods. There is a main class named **OilRef** where all these method are called according to user choice. Now you have to calculate Service Tax and surcharges according to Goods Value. For this apply following conditions :

1. **ByRoad :**
    - There is 12% Service Tax and 3% surcharge(on Service tax) on goods value for both railway and transport.
2. **By Ship:**
    - If transporting is out of country than service tax is 20% on goods value and 2% sercharges(on Service tax).
    - If transporting is within country than service tax is 10% on goods value and 2% surcharge(on Service tax).

3 If user enter goods value less than 1 than generate custom exception for it.

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