

Problem 1

1. Rational numbers are the numbers that are represented as the ratio of two integers. For example, a number m/n is a rational number where m and n are integers. Define the user defined data type Rational that has the functionality to perform arithmetic operation of addition with another Rational number. Write a client program that uses this object to do addition of two Rational numbers.
2. In a shop number of customers visit in a day. Every customer's shopping details are maintained. At the end of the day, the shop keeper wants to know how many customers have purchased the products from the brand "Samsung" and he wants to view the details of the product purchased.
3. Write a program to find the frequency of a given character appearing in the string.
4. WAP that simulates the event calendar for the operations
 1. Add event with budget
 2. Remove event
 3. Display the total budget for all events and
 4. Exit.It allows the customer to add/remove the events in the calendar. Finally displays the total budget for the events entered by the customer
4. Numbers of students appear in a KT Exam. There are five distinct papers such as Maths, OOPM, CO, DLDA and ECCF. Every student has different number of papers to appear. At the end of the examination, the Exam cell incharge wants to know how many students have appeared for the subject "maths" and he wants to view the marks obtained in maths.
[hint: Use the data structure uneven array to write the program.]

Problem 2

1. In an application, the data entry operator has to enter a Even number as an input. If the number is not even then, user defined exception InvalidNumException is thrown out and handled with the message "InValid Number".
2. Simulate a Counter that starts from 1 to 50 using multithreading concept.
3. Producer and Consumer working in synchronization with the help of multithreading.
4. In a bank the customer can give the standing instruction about doing ECSPayment from his account to another account. Source account type and Destination account types can be any type. Simulate the scenario.