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SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

Java Session 9 Exercise

1. How will you handle exceptions for the code given below? Demonstrate the handling of exceptions by rewriting the code. Create an object for calculator and invoke all the three methods for the object.

```
class calculator
{
        String name;
        int num1;
        int num2;
        public calculator(String name, int num1, int num2) {
                this.name = name;
                this.num1 = num1;
                this.num2 = num2;
        }

        public void add() {
                System.out.println(num1+num2);
        }

        public void divide() {
                System.out.println(num1/num2);
        }

        public void display_namelength() {
                System.out.println(name.length());
        }
}
```

2. a) Four files contain numbers in them. Each file has some 50 numbers each number separated by a space. Sample data in each file is 101 302 405 5298…etc
   Write a java program that reads the four files using separate Threads and performs the following
   I. Find the sum (sum1) of all numbers that contains 7 or 9 from File 1
   II. Find the sum (sum2) of square of all numbers that are divisible by 9 or 11 in File 2
   III. Find the sum (sum3) of only four digit numbers that end with 8 from File 3
   IV. Displays the sum of all numbers from all the files.

   b) Create a linked list containing four car objects (car id, car name,car_brand). Traverse

the linked list and display only details of the cars that belong to the brand “Ford”

3. a) Implement a Java program for the scenario given below

   A thread by name thr1 reads in an array of 5 faculty objects (faculty object data members – faculty id, faculty designation, faculty gender) and writes all the objects to a file by name faculty.txt.
   Another thread by name thr2 reads all the faculty objects written by thr1 and displays the following to the user

   - Displays only data about faculty members whose designation is Assistant Professor
   - Displays the name of all faculty members in sorted order of their name.

   If thr2 doesn’t have any data to read from the file then it should be in the wait state. thr1 after writing data should notify thr2 to start reading data.

4. Implement a Java program for the scenario given below
   A thread thr_read1 reads two integers at a time from a file input.txt and adds these numbers and displays the result to the user. Another thread thr_read2 reads the two integers from the same file input.txt and performs multiplication and displays the result to the user. Another thread thr_write writes two integers to the file input.txt. If thr_read1 or thr_read2 doesn’t have numbers to read from the file then it should enter the wait state. thr_write after writing the numbers should notify any thread that’s waiting to perform the write operation on the file.

5. Read the data for 5 customer objects (customer id and customer name) from the user and add them to a linkedlist. Display the customer objects in the linked list data structure in the reverse order.