1. Write a program in java to implement queue using array

import java.util.\*;

class queue

{

    ArrayList<Integer> arr = new ArrayList<Integer>();

    queue() {}

    void enqueue(int ele) {

        arr.add(ele);

        System.out.println(ele + " is pushed in the queue.");

    }

    int dequeue() {

        if(arr.isEmpty()) {

            System.out.println("Queue underflowed.");

            return -1;

        }

        int ele = arr.get(0);

        arr.remove(0);

        System.out.println(ele + " is removed from the queue.");

        return ele;

    }

    int top() {

        return arr.get(0);

    }

    int size()

    {

        return arr.size();

    }

    boolean empty()

    {

        return arr.isEmpty();

    }

    void display() {

        System.out.print("Queue contains - ");

        for(int i = 0; i < arr.size(); i++) {

            System.out.print(arr.get(i) + " ");

        }

        System.out.println();

    }

}

class testQueue

{

    public static void main(String[] args)

    {

        queue q = new queue();

        q.enqueue(20);

        q.enqueue(10);

        q.enqueue(30);

        System.out.println("Size of the queue is " + q.size());

        q.display();

        System.out.println("Element at the top of the queue is " + q.top());

        while(!q.empty()) {

            q.dequeue();

            q.dequeue();

            q.dequeue();

        }

        q.dequeue();

    }

}

OUTPUT:

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C:\Users\Anurag Singh>d:

D:\>cd desktop

D:\Desktop>cd java

D:\Desktop\Java>javac twelve.java

D:\Desktop\Java>java testQueue

20 is pushed in the queue.

10 is pushed in the queue.

30 is pushed in the queue.

Size of the queue is 3

Queue contains - 20 10 30

Element at the top of the queue is 20

20 is removed from the queue.

10 is removed from the queue.

30 is removed from the queue.

Queue underflowed.

1. Write a program in java to implement a database of students storing their name, roll number and marks. Show the data of 10 students.

class student

{

    int i;

    String name[];

    int roll[];

    int marks[];

    student() {

        i = 0;

        name = new String[10];

        roll = new int[10];

        marks = new int[10];

    }

    void input(String tName, int tRoll, int tMarks) {

        name[i] = tName;

        roll[i] = tRoll;

        marks[i] = tMarks;

        i++;

    }

void output() {

System.out.println();

        System.out.println("Roll" + "\tName" + "\tMarks");

        for(int i = 0; i < 10; i++) {

            System.out.println(roll[i] + "\t" + name[i] + "\t" + marks[i]);

        }

    }

}

class testDb

{

    public static void main(String[] args)

    {

        student database = new student();

        int j = 0;

        for(int i = 0; i < 10; i++) {

            database.input(args[i + j], Integer.parseInt(args[i + j + 1]), Integer.parseInt(args[i + j + 2]));

            j += 2;

        }

        database.output();

    }

}

OUTPUT:

Microsoft Windows [Version 10.0.19045.3324]

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C:\Users\Anurag Singh>d:

D:\>cd desktop

D:\Desktop>cd java

D:\Desktop\Java>javac thirteen.java

D:\Desktop\Java>java testDb Aryan 1 50 Priya 2 63 Akshay 3 65 Ishita 4 55 Rajat 5 73 Nisha 6 82 Vikram 7 89 Neha 8 54 Rohit 9 48 Pooja 10 35

Roll Name Marks

1 Aryan 50

2 Priya 63

3 Akshay 65

4 Ishita 55

5 Rajat 73

6 Nisha 82

7 Vikram 89

8 Neha 54

9 Rohit 48

10 Pooja 35