```
package testInterface;


import java.util.*;


class queue_data{
	public int front;
	public int rear;
	public int count;
	public int capacity;
	public int arr[];

	queue_data(int n){
		front =0;
		rear = -1;
		count =0;
		capacity = n;
		arr = new int[n+1];
	}
}


interface queue_methods{
	int curr_size();
	void enqueue(int num);
	void dequeue();
```

```
        void display();
        boolean is_full();
        boolean is_empty();
}

class queue extends queue_data implements queue_methods{
        Scanner obj1 = new Scanner(System.in);
        queue(int m){
                super(m);
        }

        public int curr_size() {
                return count;
        }

        public boolean is_empty() {
                return (curr_size()== 0);
        }

        public boolean is_full() {
                return (curr_size()== capacity);
        }

        public void enqueue(int num) {
```

```
            while(num>0) {
            if(is_full()) {
                    System.out.print("\nError! The queue is full.\n");
                    display();
                    break;
            }else {
                    System.out.print("Enter the number to be enqueued: ");
                    int en = obj1.nextInt();
                    rear++;
                    arr[rear] = en;
                    count++;

            }
            num--;
            }
}

public void dequeue() {
            if(is_empty()) {
                    System.out.print("\nError! The queue is empty.");
            }else {
                    System.out.print("\nThe dequeued element is "+ arr[front]+".\n");
                    front++;
                    count--;
```

```
		}
	}

	public void display() {
		System.out.print("\nThe elements of queue are: ");
		for(int i = front;i<=rear;i++) {
			System.out.print(arr[i]+" ");
		}
		System.out.print('\n');
	}

}



public class Expt8_queue {

	public static void main(String[] args) {
		// TODO Auto-generated method stub

		Scanner obj2 = new Scanner(System.in);
		System.out.print("Enter the size of queue: ");
		int n = obj2.nextInt();
		queue q1 = new queue(n);
```

```
int choice =0;

int num;

do {

        System.out.print("\nChoose from given
options:\n1)Enqueue\n2)Dequeue\n3)Display Queue");

        System.out.print("\nEnter your choice: ");

        choice = obj2.nextInt();

switch(choice) {

case 1:

        System.out.print("\nEnter total number of enqueues: ");

        num = obj2.nextInt();

        q1.enqueue(num);

        break;


case 2:

        q1.dequeue();

        break;


case 3:

        q1.display();

        break;


case 4:

        System.out.print("\n$----------Thank You!---------$\n");
```

```
                    break;


                default:
                    System.out.print("\nPlease enter correct choice!\n");
                    break;
                }
                }
                while(choice != 4);
        }


}
```

Ouput:

```
Expt8_queue [Java Application] C:\Program Files\Java\jdk-20\bin\javaw.exe  (Oct 12, 2023, 11:13:09 AM) [pid: 13700]
Enter the size of queue: 5

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 1

Enter total number of enqueues: 1
Enter the number to be enqueued: 6

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 2

The dequeued element is 6.

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 3

The elements of queue are:

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 1

Enter total number of enqueues: 3
Enter the number to be enqueued: 2
Enter the number to be enqueued: 4
Enter the number to be enqueued: 5

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 2
```

```
:xpt8_queue [Java Application] C:\Program Files\Java\jdk-20\bin\javaw.exe  (Oct 12, 2023, 11:13:09 AM) [pid: 13700]
2)Dequeue
3)Display Queue
Enter your choice: 2

The dequeued element is 6.

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 3

The elements of queue are:

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 1

Enter total number of enqueues: 3
Enter the number to be enqueued: 2
Enter the number to be enqueued: 4
Enter the number to be enqueued: 5

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 2

The dequeued element is 2.

Choose from given options:
1)Enqueue
2)Dequeue
3)Display Queue
Enter your choice: 3

The elements of queue are: 4 5

Choose from given options:
1)Enqueue
2)Dequeue
```