import java.util.ArrayList;

import java.util.HashMap;

import java.util.LinkedList;

import java.util.PriorityQueue;

import java.util.Queue;

import java.util.Scanner;

import java.util.Stack;

public class Collections {

    public static void main(String[] args) throws Exception

    {

        Scanner sc=new Scanner(System.in);

        int choice;

        PriorityQueue<Integer> q1=new PriorityQueue<>();

        Stack<Integer> s1=new Stack<>();

        LinkedList<Integer> l1=new LinkedList<>();

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

        HashMap<String, Integer> hs=new HashMap<>();

        do

        {

            System.out.println("\n1. Queue\n2.Stack\n3.Linked List\n4.ArraList\n5.Map\n0.Exit\nENter your choice:");

            choice=sc.nextInt();

            switch(choice)

            {

            case 1:

                System.out.println("1. Enqueue\n2.Dequeue\n0.Exit");

                choice=sc.nextInt();

                switch(choice)

                {

                case 1:

                    System.out.println("\nEnter Number: ");

                    q1.add(new Integer(sc.nextInt()));

                    System.out.println("Added :"+q1.peek());

                    break;

                case 2:

                    System.out.println("\nRemoved element:=>"+q1.remove());

                    break;

                case 0:

                    break;

                }

                break;

            case 2:

                System.out.println("\n1.Push\n2.Pop\n3.Top\n4.Exit;");

                choice=sc.nextInt();

                switch(choice)

                {

                case 1:

                    System.out.println("\nENter Number: ");

                    s1.push(new Integer(sc.nextInt()));

                    break;

                case 2:

                    System.out.println("\nPopped elemet:=> "+s1.pop());

                    break;

                case 3:

                    System.out.println("\nStack top: "+s1.peek());

                    break;

                case 4:

                    break;

                }

                break;

            case 3:

                System.out.println("\n====Linked LIST =====\n 1. ADD\n2.Remove\nFirst\n4.LAst");

                choice=sc.nextInt();

                switch(choice)

                {

                case 1:

                    System.out.println("\nENter Number: ");

                    l1.add(new Integer(sc.nextInt()));

                    break;

                case 2:

                    System.out.println("\nEnter element to remove: ");

                    System.out.println("]nRemoved element:"+l1.remove(sc.nextInt()));

                    break;

                case 3:

                    System.out.println("\nFirst Element: "+l1.getFirst());

                    break;

                case 4:

                    System.out.println("\nLast Element: "+l1.getLast());

                    break;

                case 5: break;

                }

                break;

            case 4:

                System.out.println("\n====ARRAY LIST ========");

                System.out.println("10 added\n20added");

                arrayList.add(new Integer(10));

                arrayList.add(new Integer(20));

                System.out.println("Removed element  at index 0 from arrayList: "+arrayList.remove(0));

                System.out.println("\nSize: "+arrayList.size());

                break;

            case 5:

                System.out.println("\n===== Hash Map=====");

                {

                    System.out.println("\nENter Key");

                    sc.next();

                    String key=sc.nextLine();

                    System.out.println("\nENter Value: ");

                    int value=sc.nextInt();

                    hs.put(key, value);

                    System.out.println("\nRecord Insserted");

                    hs.put("roll",2464);

                    hs.put("Div", 4);

                    System.out.println("\nRemoved element (roll):"+hs.remove("roll"));

                    System.out.println("\nSize: "+hs.size());

                    System.out.println("\nHashcode Value for this map: "+hs.hashCode());

                }

                break;

            default:

                System.out.println("\nWrong Choice");

            }

        }while(choice!=0);

    }

}