LAB-4 session-4

Pre Lab

1- Package prob1;

```
import java.util.*;
Public class Demo{
    Public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        int i,j,k;
        int [] A = new int[n];
        for(i=0 ; i<n; i++)
            A[i] = sc.nextInt();
        for(i=0; i<n; i++) {
            for(j=i+1; j<n ; j++) {
                if(A[i]<A[j])
            }       break;
        if(j!=n) {
            for(k=j+1; k<n; k++) {
                if(A[j]>A[k])
            }       break;
        if(k!=n)
            System.out.println(A[k] + " ");
        else
            System.out.println(-1+" ");
```

```
    }
    else
        System.out.println(-1+" ");
    }
  }
}
```

OUTPUT:

1 4 4 4 -1 2 -1 -1

2.
```
package prelab2;
public class solution {
    public static void main(String args[]){
        int n=3;
        Tower(n,'A','C','B');
    }
    static void Tower(int n, char n1, char n2,
                      char n3) {
        if(n==0)
            return;
        Tower(n-1, n1, n3, n2);
        System.out.println("Disk "+n+" moved from "+n1+
                           "to"+n2);
        Tower(n-1, n3, n2, n1);
    }
}
```

OUTPUT

Disk 1 moved from A to C
Disk 2 moved from A to B
Disk 1 moved from C to B

disk 3 moved from A to C.
disk 1 moved from B to A
disk 2 moved from B to C.
disk 1 moved from A to C.

INLAB

```
1. Package inlab;
   import java.util.stack;
   public class infix to postfix {
       public void convert (String exp) {
           stack <characters> st = new stack <>();
           int i;
           for (i=0; i< exp.length(); i++) {
               char c = exp.charAt(i);
           if (Character.isAlphabetic(c) || character.isDigit
                                            (c)) {
               System.out.println(c);
           else if ( c == '(')
               st.add(c);
           else if ( c == ')') {
               while(st.peek() != '(')
                       s.o.p ( st.pop());
               st.pop();
           }
       else {
           st.add(c);
           }
   }
```

```
        while (st.size()>0)
            System.out.println(st.pop());
    }
}
```

```
package inlab1;
import java.util.Scanner;
public class Demo {
    public static void main(String args[]) {
        Scanner sc=new Scanner(System.in);
        infixtopostfix itop= new infixTOpostfix();
        String expression = sc.next();
        itop.convert(expression);
    }
}
```

INPUT: `5+((1+2)*4)-3`

OUTPUT: `512+4*+3-`

2.
```
package inlab2;
import java.util.*;
public class operations {
    public void performoperations(String s) {
        Stack<Character> st=new Stack<>();
        int i=0;
        char c=s.charAt(i);
```

```
while ( c != '\0' ) {
if (Character.isAlphabetic (c))
        st.add(c);
else if (c == '*')
        st.pop();
i++;
if(i < s.length())
    c = s.charAt(i);
else
    break;
}
StringBuffer sb = new StringBuffer();
while(st.size() > 0)
        sb.append (st.pop());
System.out.println(sb.reverse());
}
}
```

```
Package inlab2;
import java.util.*;
PUBLIC class operationsDemo {
    PUBLIC static void main (String args[]) {
        Operations op = new Operations();
        Scanner sc = new Scanner( System.in);
        String s = sc.nextLine();
        op.performOperation(s);
    }
}
```

output:

Hi

3.
```
package inlab3;
public class solution{
    public int canCompleteCircuit(int[] gas, int[] cost){
        long gasSum=0, costSum=0;
        for(int i=0; i<gas.length; i++){
            gasSum+=gas[i];
            costSum+=cost[i];
        }
        if(gasSum<costSum)
            return -1;
        int start=0, diff=0;
        for(int i=0; i<gas.length; i++){
            diff=diff+gas[i]-cost[i];
            if(diff<0){
                diff=0;
                start=i+1;
            }
        }
        return start;
    }
}
package inlab3;
import java.util.*;
public class Demo{
    public static void main(String args[]){
```

```
Scanner sc = new Scanner(System.in);
Solution s = new Solution();
int [] gas = {1,2,3,4,5}, cost = {3,4,5,1,2};
System.out.println(s.canCompleteCircuit(gas, cost));
}
}
```

OUTPUT : 3

POST LAB

```
1. Package postLab1;
import java.util.*;
Public class Solution {
    Public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        int n = sc.nextInt();
        Queue<Integer> q = new LinkedList<>();
        int [] arr = new int[n];
        for(int i=0; i<n; i++) {
            int u = sc.nextInt();
            q.add(u);
        }
        for(int i=0; i<n; i++) {
            arr[i] = sc.nextInt();
        }
        int result=0;
```

```
int j=0;
while(!q.isEmpty()){
        int front = q.peek();
        if(front==arr[j]){
            q.remove();
            result++;
            j++;
        }
        else{
            q.remove();
            q.add(front);
            result++;
        }
    }
    System.out.println(result);
  }
}
```

INPUT: 3
1 3 2
2 3 1

OUTPUT: 6

2.
```
package postlab2;
public class solution{
    static int minParenthesis(String p){
        int bal=0;
        int ans=0;
        for(int i=0; i<p.length(); i++){
            bal += p.charAt(i)=='(' ? 1 : -1;
```

```
        if (bal == -1) {
            ans += 1;
            bal += 1;
        }
    }
    return bal + ans;
}
public static void main(String args[]) {
        String P = "())";
    S.o.p(minParanthesses(P));
    }
}
```

output;