Data Structure and Algorithms

(HackerEarth solved Quiz) 2022

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**Q 1) Monk and Rotation**

<https://www.hackerearth.com/practice/codemonk/>

java source code:

import java.util.\*;

class TestClass {

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

Scanner sc = new Scanner(System.in);

int t = sc.nextInt();

while(t!=0)

{

int n = sc.nextInt();

int k = sc.nextInt();

sc.nextLine();

String[] strArray = sc.nextLine().split(" ");

StringBuffer outputArray = new StringBuffer();

k = k % n;

for(int i = 0; i<n; i++)

{

if(i<k)

outputArray.append(strArray[n + i - k] + " ");

else

outputArray.append(strArray[i - k] + " ");

}

System.out.println(outputArray);

t--;

}

}

}

**Q 2) Monk and Inversions**

<https://www.hackerearth.com/practice/codemonk/>

java source code:

import java.util.\*;

class TestClass {

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

Scanner sc = new Scanner(System.in);

int t = sc.nextInt();

while(t>0) {

int n = sc.nextInt();

int[][] a = new int[n][n];

for(int i=0;i<n;i++) {

for(int j=0;j<n;j++) {

a[i][j] = sc.nextInt();

}

}

int counter =0;

for(int i=0;i<n;i++) {

for(int j=0;j<n;j++) {

for(int k=i;k<n;k++) {

for(int l=j;l<n;l++) {

if(a[i][j] > a[k][l]) {

counter++;

}

}

}

}

}

System.out.println(counter);

t--;

}

}

}

**Q 3) Cyclic shift**

<https://www.hackerearth.com/practice/codemonk/>

python source code:

t = int(input())

while t > 0:

n,k = map(int, input().split())

s = input()

max = ""

cycle = -1

for i in range(n):

if max < s:

max = s

position = i

elif max == s:

cycle = i - position

break

s = s[1:] + s[:1]

if cycle == -1:

print(position + (k-1)\*n)

else:

print(position + (k-1)\*cycle)

t -= 1

**Q 4) Minimum AND xor OR**

<https://www.hackerearth.com/practice/codemonk/>

java source code:

import java.util.\*;

class TestClass {

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

Scanner sc = new Scanner(System.in);

int t = sc.nextInt();

while(t>0) {

int n = sc.nextInt();

int a[] = new int[n];

for(int i=0;i<n;i++) {

a[i] = sc.nextInt();

}

Arrays.sort(a);

int min = a[n-1];

for(int i=n-1;i>0;i--) {

if(min > (a[i]^a[i-1])) {

min = a[i]^a[i-1];

}

}

System.out.println(min);

t--;

}

}

}

**Q 5) Monk and Nice Strings**

<https://www.hackerearth.com/practice/codemonk/>

java source code:

import java.util.\*;

class TestClass {

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

Scanner sc = new Scanner(System.in);

int n = sc.nextInt();

String str[] = new String[n];

for (int i = 0; i < str.length; i++) {

str[i] = sc.next();

int count = 0;

for (int j = 0; j < i; j++) {

if (str[i].compareTo(str[j]) > 0) {

count++;

}

}

System.out.println(count);

}

}

}

**Q 6) Monk and Suffix Sort**

<https://www.hackerearth.com/practice/codemonk/>

python source code:

line = input().split()

s = line[0]

k = int(line[1])

n = len(s)

arr = []

for i in range(n):

arr.append(s[i:])

arr.sort()

print(arr[k-1])

**Q 7) Monk and Sorting Algorithm**

<https://www.hackerearth.com/practice/codemonk/>

python source code:

n = int(input())

arr = list(map(int, input().strip().split(" ")))

max\_arr = max(arr)

mul = 1

r = 10\*\*5

while max\_arr:

arr.sort(key = lambda x: (x/mul)%r)

print(' '.join(map(str, arr)))

mul \*= r

max\_arr //= r