Data Structure and Algorithms

(HackerEarth solved Quiz) 2022

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**Arrays & Strings**

**Q 1) Monk and Rotation**

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

Java solution code:

import java.util.Arrays;  
import java.util.Scanner;  
  
public class Test {  
 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();  
 int r=K%n;  
 sc.nextLine();  
 String[] s = sc.nextLine().split(" ");  
 StringBuffer output = new StringBuffer();  
 for (int i = 0; i < n; i++) {  
  
 output.append(s[(n + i - r) % n] + " ");  
  
 }  
 System.*out*.print(output);  
 System.*out*.println("");  
  
 T--;  
 }  
 }  
}

**Q 2) Monk and Inversions**

[**https://www.hackerearth.com/practice/codemonk/**](https://www.hackerearth.com/practice/codemonk/)

Java solution code:

import java.util.\*;

class Test{

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

Scanner sc = new Scanner(System.in);

int T = sc.nextInt();

while(T>0) {

T--;

int N = sc.nextInt();

int[][] arr = new int[N][N];

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

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

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

}

}

int counter =0;

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

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

for(int x=i;x<N;x++) {

for(int y=j;y<N;y++) {

if(arr[i][j] > arr[x][y]) {

counter++;

}

}

}

}

}

System.out.println(counter);

}

sc.close();

}

}

**Q 3) Monk and Inversions**

[**https://www.hackerearth.com/practice/codemonk/**](https://www.hackerearth.com/practice/codemonk/)

Python solution code:

T = int (raw\_input())

while T!=0:

N,K = map(int, raw\_input().split())

s = raw\_input()

max = ""

p = -1

for i in range(N):

if max < s:

max = s

d = i

elif max == s:

p = i-d

break

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

if p == -1:

print (d + (K-1)\*N)

else:

print (d + (K-1)\*p)

print ""

T -= 1

**Q 3) Minimum AND xor OR**

[**https://www.hackerearth.com/practice/codemonk/**](https://www.hackerearth.com/practice/codemonk/)

Java solution code:

import java.util.\*;

class Test {

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

Scanner s = new Scanner(System.in);

int T = s.nextInt();

while(T != 0){

int N = s.nextInt();

int arr[] = new int[N];

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

arr[i] = s.nextInt();

}

Arrays.sort(arr);

int M = arr[0]^arr[1];

for(int i=1; i<N-1; i++){

M = Math.min(M,arr[i] ^ arr[i + 1]);

}

System.out.println(M);

T--;

}

s.close();

}

}

**Sorting**

**Q 1) Monk and Nice Strings**

[**https://www.hackerearth.com/practice/codemonk/**](https://www.hackerearth.com/practice/codemonk/)

Java solution code:

import java.util.\*;

public class Test{

public static void main(String[] args){

Scanner sc = new Scanner(System.in);

int N = sc.nextInt();

String[] str = new String[N+1];

int X=0,K=0;

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

str[i] = sc.nextLine();

}

System.out.println("0");

for(int i=2;i<=N;i++){

int f=0;

for(int j=i-1;j>=1;j--){

if(str[i].length() > str[j].length()){

X = str[j].length();

K=0;

}else{

X = str[i].length();

K=0;

}

while(K<X){

int l = str[i].charAt(K);

int m = str[j].charAt(K);

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

break;

}else{

if((K==(X-1)) && (str[i].charAt(K)==str[j].charAt(K)) && (str[i].length()>str[j].length())){

f++;

break;

}

if(l > m){

f++;

break;

}else if(m > l){

break;

}else{

K++;

}

}

}

}

System.out.println(f);

}

sc.close();

}

}

**Q 2) Monk and Suffix Sort**

[**https://www.hackerearth.com/practice/codemonk/**](https://www.hackerearth.com/practice/codemonk/)

Python solution code:

s,n = map(str, raw\_input().split())

n = int(n)

arr = []

for i in range(len(s)):

arr.append(s)

s = s[1:]

arr.sort()

print arr[n-1]