Muc tieu khoa hoc:

+ thao tac/ practice tot cac ngon ngu C, C++, Python, Java (o cac IDE khac nhau: browser, eclipse, visio code, netbean, code:block ...)

+ Array, Two Pointer, Sort,

BIG 0 Blue 12:

## BTVN Buoi 2: Two Pointer

Buoi 3: thu 7: 11/08/2018

Bai toan: George and Round

Bai toan: 279/B

10^5 thi do phuctap nlogn

+ http://codeforces.com/problemset/problem/279/B

sum(i,,j)> T

sum(i,,j)<=T

sum: tong so cac so trong doan (l..i)

l=1,sum = 0, ans = 0

for i:1 .. N

sum += T[i]

while(sum>T)

sum -= T[l]

l++

truong hop worst

100000 1

2 2 2 ...2

+ http://codeforces.com/problemset/problem/161/A

input:

n m x y

ai

bj

analysis : ai -x <= bj<ai+y

ghep ng linh nho voi bo vest nho,

ghep ng linh lon voi bo vest lon

i =0, j=0

while i<n and j<m

if ai -x < bj and bj <ai+y

result.push(i+1,j+1)

else if ai -x>bj

j++

else // ai+y<bj

i++

output: result

complexity : O(N +M)

## LThuyet Buoi 3 11/08: Sorting

Xem nhu da biet va ranh ve sort,

xem xet dang sau cua cac thuat toan Sorting

truoc tien: hoac cac thu vien dung cho Sort

viet tieu chi de Sort theo y muon

BTTL :

+ http://codeforces.com/problemset/problem/169/A

Petya (older brother)

Vasya (younger brother)

n, a, b

h1, h2 ... hn

+ Anh lam viec kho hon nguoi em

+ Chon x (so cach) sao cho congviec cua nguoi anh luon luon lon hon x, congviec cua nguoi em luon luon nho hon hoac bang xem

Anlysis:

100, 6 >x

1, 2, 3 <=x

x= 5, x =4, x =3 (result =3 cach : 6-3)

result = h[b] - h[b-1]

+ http://codeforces.com/problemset/problem/451/B

yeu cau: dao nguoc 1 doan trong mang sao cho mang do sap xep co thu tu

myself : co 2 mang lui tro len thi NO,

sua:

+ sort lai mang

tim vitri sai khac dau tien, tim vi tri sai khac cuoi cung

(\*Day la cach lam dua theo ket qua co san\*)

for(i=lelf, j= right;i<j;i++,j--)

swap(a[i],a[j])

phan tich:

array b;

result = 0

a(0) = 0;

for a: 0..n

if a(i) > a(i+1)

i += 1

else //a(i) <= a(i+1)

b.push(a(i+1))

i++;

0 1 5 4 3 2 6 7 8 9

BTVN :

<https://www.spoj.com/problems/MAKEMAZE/>

Validate the maze:

B1L doc du lieu vao

B2: ktra dk so 1

Di qua 4 bien matran:m dong, n cot

* Dong m =0
* Dong m -1
* Cot n =0
* Cot -1

Neu dem dau “.”

Bang 2 => qua buoc 3

Nguoc lai => invalid

Buoc 3; BFS

Bat dau (3,1)

Dx = { 0, 1, 0, -1}

Dy = { 1, 0, -1, 0}

|  |  |
| --- | --- |
|  |  |
|  |  |

Tren, duoi , trai , phai

4 huong di cua 1 diem tren truc toa do,

\*\*\*\*Note

* duong di con ma
  + Dx{1, ..
  + Dy{2, …
* Duong di con si
  + Dx = {
  + Dy= {
* Duong di con xe

Code ma gia:

B1: m, n , a[m][m]

B2: Voi j:0->n-1

Duyet 2 dong

Neu a[0][j] = “.”

Dua (0, j) vao V

Va duyet 2 cot: // tru di 2 diem da visit

B3:

BFS(S,E)

q= Queue(coordinates)

push(s)

Trong luc q!= rong

Dat k = Front(q)

For Voi i:0->3

x = Kx +Dx[i]

Y = Ky + Dy[i]

Neu x>=0 va x<m va y >=0 va y <n va a[x][y] ///va visited[x][y] = false

Return visited[E.x][E.y]

Do phuc tap: 0(n\*m)

O(V+V)

V=n\*m

**Thuat toan BFS: quan tam cuoi cung la visited**

Bai 2

<http://algote.com/team/problem_v1.php?id=196>

Bai 3:

Buoi thu 7:

Sua 3 bai tap ve nha:

<http://codeforces.com/problemset/problem/723/D>

<https://www.urionlinejudge.com.br/judge/en/problems/view/1610>

<https://www.spoj.com/problems/CAM5/>

HEAP

<https://www.hackerearth.com/practice/data-structures/trees/heapspriority-queues/practice-problems/algorithm/monk-and-multiplication/>

Dung MaxHeap