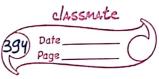
	24/06/2023
QI	Number of Brovinces (Leetcode 547)
	Here we need to retwo number of combonents
	Number of provinces (Leet code 547) Here we need to retwin number of components in a graph
= 1	



,	
	(1) (4)
	i/b→
	(3) (5)
	1st province and province
	Paranta situation of the situation of th
velor.	0/p + 1 2 max red + man + 1/10/100 -1
	Here we need to make a count variable and
	whenever the function call goes , simply do
Lynn	count ++
€ €	DY HEINER CONTRACTOR OF THE PROPERTY OF THE PR
	Code Day of Joseph Code
	Contract of the soul > 2 visited
	void dfs (unordered-map <int, bool=""> & visited,</int,>
	int src, vector (vector (int)) & is (onnected) {
212 VC 262 1	Visited [src] = true;
L - Y I	// YOW - Source & col - loop
	int size = is Connected [src] - size();
	for (int col = 0; col < Size; col++) {
	// edge present or not
<u> </u>	if (is Connected [src][col] = = 1) {
	//col is a neighbour
<u> </u>	if (I visited [col])
	dfs (visited, col, is (onnected))
	3
	3
	3 (1 pa June Lagi 1 12 and 10 portable 1)
dia.	is '
	int find Province (vector (vector (int)) & connected)
	int find Province (vector (vector (int)) & connected) 4 Adjacency matrix

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	() to 30 , 31 (
	unordered-map <int, bool)="" th="" visited;<=""></int,>
	int count = 0;
	int n = is Connected size ();
	for (int 1=0; 1 <n; 1++)="" th="" {<=""></n;>
	if (Visited [i]) {
	dfs (visited, i, is Connected)
	count++i//Discussed in approach
	terre de la Charle voersent de la
	mob & bown start, Laters book & & contect
	retwin count i la tal
200	5. O (Ctartedally Lings Survey)
	(from cost)
	Time complexity = O(n2) { Adjacency matrix }
09	mille () uddans empl) sticky
<u>Q2</u>	Number of islands
	1/b-> 1 11 1/0 0 0 Left \right
	2 0 0 (1) 0 _ 0 Bottom
	3 0 0 /0 IIIrd island
	Ind is land
	0/p-1/3+1) of selection and animal voit
	information at a second for
	queue - {<0,0>3 - mark visited
3115	Pop and insert neighbows
121, 13	queue - {<0,17,<1,0>} - mark visited
1000	Pop and insert neighbours
	queme - {<1,0>, <1,1>3
	mark visited
	Pop and insert nbr
	que - {<1,1>3
	Pop and insert nor

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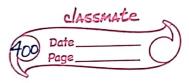
	que 7 { 3
	Now quie empty. Hence count ++.
	tanno dia
	We need to do this for all Components which
	will be handled via for loop
	Codo in the state of the state
1 1 1 1	Code
20 00 00 0	void bfs (vector <vector <chau="">>& grid,</vector>
	map < pair <int, int="">, bool > & visited, int</int,>
	row, int col) Land Company
	queue <pair <int,="" int="">> q;</pair>
	q. push ({row, col3);
	Visited [{row, col 3] = true;
	while (g. empty ()) {
	while (19. empty ()) { pair <int ();<="")="" ,="" f="" front="" int="" node="9." th=""></int>
7	9. POP ())
	$int x = fNode \cdot first i$
,	Int y = fNode second;
	int dx[]={-1,0,1,0}
	int dy $[] = \{0, 1, 0, -13\}$
	for (int i = 0 ; 1 < 4 ; 1 + +) {
	Int neur $X = X + A = F : 2$
	Int new Y = y + dy [i]; if (new X > = 0 && new X < grid size() le new Y > = 0 && new Y < grid [o] - size()&& [Visited [{new X, new Y 3}] && grid [new X] [new Y] = = (1) {
	if (new X7=0 && new X < axid size()
	la new Y >=0 la new Y < grid [0]-size() &l
	I Visited 1 3 new X, new Y 37 & & a grid (new x7
	(new Y) = = (1)
	q. push (InewX, new Y3);
	Visited [Inew X, new Y 3] = true;
	2
	ada desert Lar A

	3
	3
	int num Islands (vector (vector (char)) & grid) {
	map <pair (int)="" bool="" int),=""> visited;</pair>
	int counts = 0 is at line
	for (int row; row < grid size(); row++){
	int n = grid [row]. size (); for (int col = 0 ; col < n ; col ++){
	for (int col = 0 j col < n j col ++){
	if ([visited [{row,col3] &&
-	grid [row] [col] == (12) {
_	ini andoleta dini perini perini pela (clore, ini
· 	bfs (grid, Visited, row, col),
<u> </u>	2
	3 2. 2 1 1 2 4 = [2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	2 Laurat Elirex plant
	return count
,	3
	ENCHINEPEN ENGLISH
2	How dx [] and dy [] are created ? abottom dx[] = {-1,0,1,03 dy[] = {0,1,0,-13
ر زا	1 - 201 > (22) S of the tright > left
	$(x,y-1) \leftarrow (x,y) \rightarrow (x,y+1)$
	L2 I resided Briefs x J (ment 131 22 dr
	(x+1,5y)) 10-21 Y - 10 10 10 10 10 10 10 10 10 10 10 10 10
$\bigcirc 3$	Flood fill
1000	1 - 1 - 1 - 1 - 1 - 2 x - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	$1/p \rightarrow 0$ 1 $SY = 1$
	1 1 (1) 0 SC = 1
-	2 1 0 1 color = 2
- 18.4	-21/2 moduse) Dilbook & moles a mare serio.
I	Scarineu with car

1	
\parallel	12 12 0
\parallel	12 12 0
	12 0 1 Harrison 1
	We have changed I to 2, then only I
\parallel	will be changed to 2. We can go in 4
4	will be changed to 2. We can go in 4 direx and only to that node which is not visited.
4	not visited
1	
\parallel	Code Lander Laging
\parallel	
\parallel	void dfs (int oc, int y, int old Color, int
╢	new color, map <pair <int,="" int="">, bool > 2</pair>
\parallel	visited, vector < vector <int>> & ans) {</int>
\parallel	
\parallel	Visited [{x,y3] = true;
\parallel	ans [x][y] = new Color;
\parallel	int dx [] = {-1,0,1,03;
\parallel	int dy [] = {0,1,0,-13; for (int 1 = 0; 1<4; 1++){
\parallel	for (int 1 = 0) 1 < 4 ; 1++){
\parallel	$int \ new \ X = X + dx \ Eij;$
#	int newY= y + dy [i]; if (newX >= 0 & & newX < ans. size()
\parallel	It (new X >= 0 & & new X < ans. size ()
\parallel	LL new Y 7 =0 & & new Y < ans (0) Size()
╢	44 / Visited Thew X, new Y3] && ans
#	[new X][new Y] = = old(color){
╫	1 Co (po v. V po v. V v. 1 1 C)
╫	dfs (newx, new Y, old Color, new Color
╫	Visited, ans)
╫	2
#	9 5 7 3 7 3 7 3 7 3 7 3 7 3 7 3 7 3 7 3 7
115	G CI- I GIAN (
11.	vector (vector (int >> flood fill (vector (vector

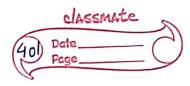
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	<pre><int>) & image, int sr, int sc, int color) {</int></pre>
	int old Color = image [sr][sc];
	map <pair <int="">, int>, bool>visited;</pair>
	vector (vector (int)) ons = image;
	dfs (sr, sc, old color, color, visited, ans);
	return ans i
	3
01	
<u> </u>	Rotten oranges
# ·	1 2
	ORFF
	1 F F 0
	2 O For For Formal Annual Annu
	A simple passage (and the same to
	A single orange (rotten) will rot oranges in 4 dirext in 1 min
	The state of the s
*	orange at [0] [0] will not [1][0] and [0][1]
171.0	in 1 min (ans=1)
	((s = 1. Alcandar an
2.4.9-	Rector Runner France
	R (F) 0
2 %	O Company Francisco Franci
*	Orange at [1][0] rots orange at [1][1] and
*	Orange at [1][0] rots orange at [1][1] and orange at [0][1] will rot orange at [0][2]. (ans = 2)
9	$\begin{array}{cccc} & & & & & & & & & & & & & & & & & $
	P. P.
	O F F
*	in 1 min. (ans = 3 min)
,	in 1 min · (ans = 3 min)
	Scarned With Car



).	Rea RedigiRe Land Language Caralle
	RILLREDOM
	Danzer & Rollin Form Larry Larry Larry
	capación de la companya de la compan
*	orange at [2][1] rots orange at [2][2]
	$I \cap I \cap M \cap I$
	(ans = 4 min)
	All oranges are not in 4 min.
	Code
	int oranges Rotting (vector (vector (int>) & gaid){
	que < pair < pair < int > int >> 9.
J %6	vector < vector < int >> ons = grid >
From F.	int ans Time = original
(h)	for (int row = 0) row < grid size() ; row++){
	for (int col = 0) col < grid (row) size(); col+1/2
-	if (grid [row](col] ==2){
1	pair (int, int) coordinate = make-pair
	(row, col);
	g. push ((coordinate, 03);
	(1) 34
	-4
	While (19. empty ())
	auto f Node = q. front ();
	9. pop();
	int x = fNode first first;
(1)	int y = f Node seconds
	(mmE - znp - nich L m
'	Scarnieu willi cant

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```
int time = f Node · second >
 int dx [] = {-1,0,1,03;
int dy [] = {0, 1, 0, -13;
for (int 1=0) 1<4)1++) {
     int new X = X + dx [i]
    int new Y= y + dy [i];
if (new X >=0 && new x < ans size() &&
    newY>=0 flnewY<ans [0]. size() &&
    ans [newX][newY] == 1) {
       pair (Int, int) new Coordinate = make-pair
      (newX, newY) j
       ans Time = max (ans Time, time +1)
      q. push ({new Coordinate, time+13)
     ans [newx] [newY] = 2 i //mark rotter
  3
for (int i = 0 ) i < ans size () ; i++) {
   for (int j=0 ) j < ans [i]·size() ; j++) {
        if (ans [i][j] = = 1)
             return - 1;
return anstimes
```

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