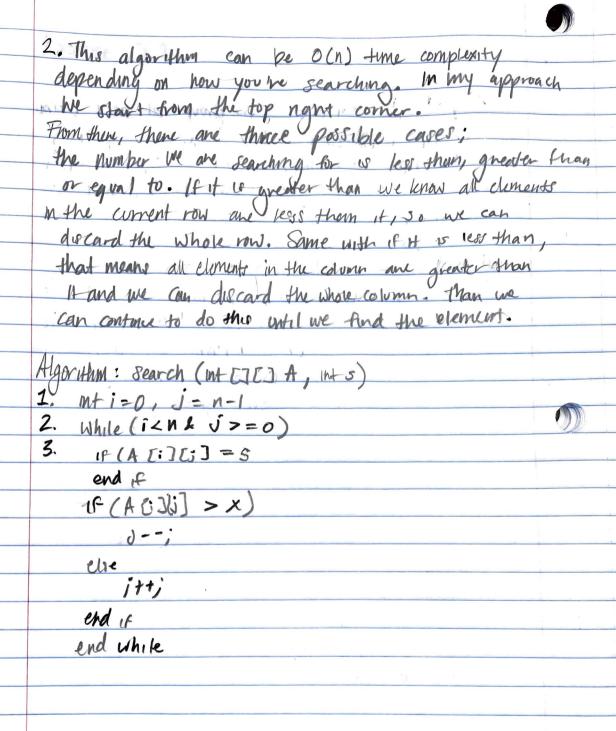
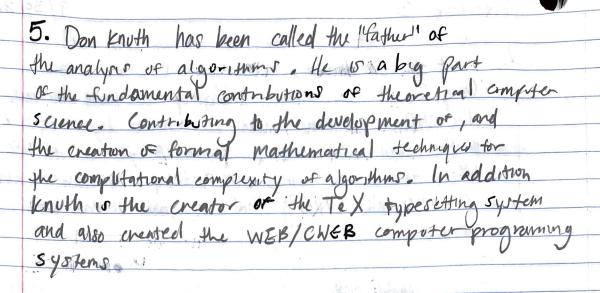
9/30/22 Exercise 3 9/30/2 4. It is a special whole where were an armine - Only 1 VIP can exist in the group at once because .

the VIP is someone who is known by everyone In the room but doesn't know anyone . If there were two or more that means they all wouldn't know eachether, also meaning that everyone in the room don't know them I was an a training the grander of - This could take o(n2) because we can iterate through overy individual and see who they know and who knows them. To go down and compare every relationship for one person would be n times and for n people in the room it sums up to O(n2). 2, for int 1=0 to n Z for int j = 0 to n IF (i knows i and I doesn't know j) count+t; of (count = n) return i end , f end for count-0; end for

This algorith can also take O(n) if we do it a more recurring way. If we recurringly go through with the distance we a stack comparing if, A know B, because If A know B then A cannot be the celebraty. But B card And Vice were if Bknows A. The Potential VIP is the last one standing. So this only regune on theration through n. Algorithm: Fast VIP Stack St = new Stack => (); 2. for loop to push everyone to stack ? 3. Int c=0; While (st. size () > 1) Int i = st. pop()
Int j = st. pop() If (I knows j) st, puh (i) st. push (j) end while C = St. Pop for loop through all elements

If (K!=c & c knows k | k doesn't know () return false, end for return true;





- 1. The Big-Oh astimate of this code is $O(n^2)$ this is because we are loping through the
 nested for loops n^2 amount of times then

 when j is reduced by 2 each time it adds $O(\log n)$ to the time complexity but since $O(n^2)$ is the dominant form we stick with $O(n^2)$
- 3. Lets suppose we have a person A. And suppose Set EB, C,D3 are all friends with A, if there are a pour of friends in the set then & A, B, C3 is a set of mutual friends. Otherwise &B, C,D3 are mutual strangers And this case holds in vice versa if A is a stranger to set &1B, c, D3

