Honework #5:
"Closest pair" String > (#a,#b)
311119 - 3 (110, 110)
abaab+ (3, 2)
Every String -> A 2-dim point
d(a,b) > distance between two points
1 Rue decet sois so it so it for the monday
I. Run Closest poir on all parts from the mapping.
n ports
2. Target: O(nm)
Case 1: log(n) = m then I works.
Cose 2: log(n) 2 m then it doesn't
Topological Sort on a DAG directed acyclic graph
directed a cyclic graph
Example: ABCD
LA TO
Not Example: ABOC
Given a DAG G, we can find a list of all nodes V, V, Vn S.t. each edge u+V in G, the node u appears before node V in the list.
each edge u+V in 6, the node u appears before node V in the list.
Such a list is called a Topological Sort of G.
Algrothim
1:47 0 1:45 1:46
A > C > 1:30 1. Start at a rade with in-degree = 0
A.F.
1:41 1:33 1:40 1 2 Run depth-first search.
B. 3. Output Resultant in order.
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Result: ACBEDGHFI

Applications of Topological Sort (on final exam)
Graph = a high dimesion object
<u> </u>
When you need an algrothim that runs in one direction, First run Topological Sort For a linear Structure.
(Un Topological Sort for a Tructure.
Example:
motive.
A B In = E M
A D G
Question: How many paths from A to 6?
2 possible paths. So, cannot enumerate all paths.
T- Tandaira C-+
Try Topological Sort.
ABCDEFG
1 HI 1 2th 2 Torward Propogation
ABODEFGE 1 1+1 1 2+2 2 Forward Propagation
So 4 total paths.