PROBLEM 4
Active Directory

Algorithm:

1. if user is in current group then return true
2. else if current group have no subgroups return false
3. else if current group have subgroup then recursively iterate through each each subgroup to search for user.

Time Complexity Analysis:

- is_user_in_group: $O(B*D)$
    - where B=Max Number of Subgroups in a Group(Branching Factor)
    - where D=Max Depth of Subgroup(Depth)

Space Complexity Analysis:

- is_user_in_group: $O(B*D)$
    - where B=Max Number of Subgroups in a Group(Branching Factor)
    - where D=Max Depth of Subgroup(Depth)