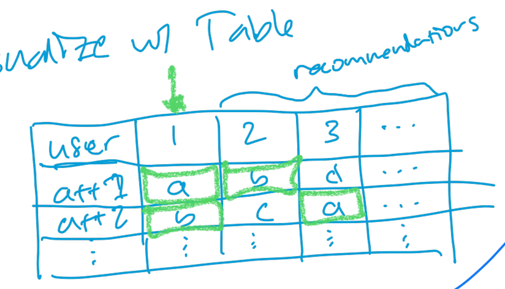
Social Media Network Storage & Recommendations

Friend Recomendations

- Social Network will be a set of USER objects
- loop over set and add obj. refrences to a dictionary w/ keys for hobbies/music/etc.
  - each user in dict for each key will be recommended to each other as friends
- can do something similar for mutual friends
- instead of dict idea, can use set intersections for faster algorithm

Visualize w/ Table



Space Complexity Ideas

- instead of storing usernames in each user's friend list, can store references to each friend's USER object

Data Structure Ideas

- Linked Lists
- User Class w/ attributes

USER
- attributes
- FRIENDS = [1] → [2] → etc.
  - Stored references to other user objects

Friends of Friends to Level

- can recurse up to a max depth of a friend's friends, etc. and store in a set
  - automatically will ignore duplicates
- can implement a print() method in USER class to return set usernames
- or can use a queue of sorts, but since the order of checking friends doesn't matter, can use a set for better performance

Speed Optimization Ideas

- hash tables
  - sets?
  - dictionaries?
- maybe can make the friends list a set
  - would protect against duplicate friends
- store each interest attribute as a set so can use intersection operations in recommendation algo when comparing shared interests
  - has better time complexity than comparing matches between 2 lists