

Hints for Coupon

- How should we label/reference a specific item?
- How should we label/reference a specific promotional group?
- For each promotional group, how should we store its list of items ?
 - The items are guaranteed to distinct (per group). Do we care about the order of items in a group?
 - Given an group, how do we want to **use/consume** the associated items(s)?
(i.e. what kind of operations do I need, from each ‘promotional group’ data structure?)
 - * An item was initially bought, or redeemed for free. ‘Inform’ this group if needed. (What does ‘inform’ mean? ‘needed’?)
 - * Are all items (except 1) from this group purchased/redeemed? If so, what’s that item?
 - What are our ‘keys’ for this association?
How many actual keys do we have, compared to the number of possible keys? (Is the key space **dense** or **sparse**?)
- For each item, when Fluffy initially buys/redeems it, which promotion groups may be affected?
 - How should we store these associations?
 - * How many promotional groups is an item associated with? (One item - one group? One item - many groups?)
 - * Given an item, how do we want to **use/consume** the associated group(s)?
(i.e. what kind of operations do I need, from each ‘associated-with-item’ data structure?)
 - For each affected group...
 - What are our ‘keys’ for this association?
How many actual keys do we have, compared to the number of possible keys? (Is the key space **dense** or **sparse**?)
- What happens when two promotional groups are fulfilled at once, and we get 2 new items at once?
 - Which one should we handle first? Does the order matter?
 - What if instead of 2, we get 10 or even more at once?
 - How should we manage and track these newly-obtained items?

- If I recursively handle items, is there a possibility of stack overflow? How deep/long can a ‘chain’ of items be? (i.e. we are borrowing ideas from BFS/DFS.)
Function-call recursion may potentially stack-overflow, as we can trigger a long cascade of promo groups.
- Once an item is purchased/redeemed, do we need to worry about it being re-redeemed in the future?
 - An item is redeemed when it is the last item **not yet redeemed** in a promo group. Can it be the ‘last item’ of multiple promo groups?
 - Does it matter? Will the second and later re-redemptions add anything?
 - How should we prevent any re-redemption issues? Maybe we can track items somehow...