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For the third greedy algorithm it basically chooses the items with highest value/weight ratio. This is kind of a mixture of the first two because it weeds out some values that are really valuable but very heavy and some things that are very weighty but not very valuable.

For the last greedy algorithm it chooses the most valuable items until the sack is 70%. Then it fills it with the lightest items. This is a “hybrid” algorithm to try to combine the two, as both versions are pretty solid and legit greedy strategies.

For runtime, we create lists and a dictionary in the beginning by going through every item once. This is O(items) for initialization. Then for each constraint the runtime for creating the sets of conflicting categories is O(constraints). Then for each of the greedy algorithms they all have similar runtimes. They too go through all the items. So it is O(items) again. So basically our runtime in total is linear: it is O(items) + O(constraints).