

PROBLEM: Meeting Day planner Assistant

You are building a meeting recommendation system, where your very busy calendar could be rearranged and life could be made easier for you!

Requirements and constraints:

- You will have two calendars, one is corporate and the other is personal
- Each calendar day starts at 8AM, goes till 12PM for a lunch break, and then from 1PM till 5PM
- Lunch break cannot be moved.
- Calendars will have events, either personal or corporate.
- Each meeting event will have a type, subject, duration as well as a numeric priority attached to it.
- Personal events cannot be fit into a corporate calendar.
- Only 25% of personal calendar can be used for corporate events. I.e. If the corporate calendar cannot take on any event since it's full, personal calendar could be used for the same up to 25%.
- We need to maximize utilization of the calendar (e.g. if you have only 30 min available, then a priority 4 event of 30 min duration can fit there instead of a 60 min priority 1 event).
- In the event of two events which could fit in available time, the one with higher priority wins.
- In the event of two events with the same priority which could fit in available time, the one with longer duration wins.
- Events on the personal calendar cannot be moved.
- Input will be a mix of all the corporate and personal meeting events from your next day.
- Output will be the schedule on personal and corporate calendar, and also a list of events which could not be included on that given day, due to above constraints.

Note that depending on how you choose to complete this problem, your solution may give a different ordering or combination of events into calendars. This is acceptable; you don't need to exactly duplicate the sample output given here.

Test input:

(Event Subject, Type, DurationInMin, Priority)

Standup, Corporate, 60, 2

Sprint Planning, Corporate, 60, 1

Status Check, Corporate, 30, 3

LT meeting, Corporate, 120, 1

Design Solutioning, Corporate, 90, 1

Production Planning, Corporate, 120, 2

Breakfast with friends, Personal, 120, 1
Birthday Celebration, Personal, 240, 2
Product Demo, Corporate, 120, 4
1:1 with SLM, Corporate, 30, 4

Sample Output:

Corporate:

8 AM to 10 AM - LT meeting (Corporate)
10 AM to 1130 AM - Design Solutioning (Corporate)
1130 AM to 12 PM - Status Check (Corporate)
12 PM to 1 PM - Lunch
1 PM to 2 PM - Sprint Planning (Corporate)
2 PM to 4 PM - Production Planning (Corporate)
4 PM to 5 PM - Stand-up (Corporate)

Personal:

8 AM to 10 AM - Breakfast with friends (Personal)
10 AM to 12 PM - Product Demo (Corporate)
12 PM to 1 PM - Lunch
1 PM to 5 PM - Birthday Celebration (Personal)

Decline List (could not fit in):

1:1 with SLM (Corporate)

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Additional tips and requirements:

1. You have a magical ability to attend two events which are at the same time on both calendars!! So it's possible you have a corporate event at 10AM - 11AM and a personal event at the same time.
2. Time values shown are indicative. It's okay if you print in any format as long as it's a legible time format!
3. Your output can be different from others, but remember above output is a definitive possibility, so it should be the output (in above input's case your output should not have more declined events than the one listed)
4. We are looking for clean, concise code, which is extensible.
5. A few todo's are okay, but not a lot. Remember, write the least required code to provide the output.
6. Unit tests are a must to test critical core functionality.