

Solution 1

```
1 // Copyright © 2020 AlgoExpert, LLC. All rights reserved.
2
3 // O(c1 + c2) time | O(c1 + c2) space - where c1 and c2 are the respective numbers of meetings in calendar1 and calendar2
4 function calendarMatching(calendar1, dailyBounds1, calendar2, dailyBounds2, meetingDuration) {
5   const updatedCalendar1 = updateCalendar(calendar1, dailyBounds1);
6   const updatedCalendar2 = updateCalendar(calendar2, dailyBounds2);
7   const mergedCalendar = mergeCalendars(updatedCalendar1, updatedCalendar2);
8   const flattenedCalendar = flattenCalendar(mergedCalendar);
9   return getMatchingAvailabilities(flattenedCalendar, meetingDuration);
10 }
11
12 function updateCalendar(calendar, dailyBounds) {
13   const updatedCalendar = [['0:00', dailyBounds[0]], ...calendar, [dailyBounds[1], '23:59']];
14   return updatedCalendar.map(meeting => meeting.map(timeToMinutes));
15 }
16
17 function mergeCalendars(calendar1, calendar2) {
18   const merged = [];
19   let i = 0,
20       j = 0;
21   while (i < calendar1.length && j < calendar2.length) {
22     const meeting1 = calendar1[i],
23         meeting2 = calendar2[j];
24     if (meeting1[0] < meeting2[0]) {
25       merged.push(meeting1);
26       i++;
27     } else {
28       merged.push(meeting2);
29       j++;
30     }
31   }
32   while (i < calendar1.length) merged.push(calendar1[i++]);
33   while (j < calendar2.length) merged.push(calendar2[j++]);
34   return merged;
35 }
36
37 function flattenCalendar(calendar) {
38   const flattened = [calendar[0].slice()];
39   for (let i = 1; i < calendar.length; i++) {
40     const currentMeeting = calendar[i];
41     const previousMeeting = flattened[flattened.length - 1];
42     const [currentStart, currentEnd] = currentMeeting;
43     const [previousStart, previousEnd] = previousMeeting;
44     if (previousEnd >= currentStart) {
45       const newPreviousMeeting = [previousStart, Math.max(previousEnd, currentEnd)];
46       flattened[flattened.length - 1] = newPreviousMeeting;
47     } else {
48       flattened.push(currentMeeting.slice());
49     }
50   }
51   return flattened;
52 }
53
54 function getMatchingAvailabilities(calendar, meetingDuration) {
55   const matchingAvailabilities = [];
56   for (let i = 1; i < calendar.length; i++) {
57     const start = calendar[i - 1][1];
58     const end = calendar[i][0];
59     const availabilityDuration = end - start;
60     if (availabilityDuration >= meetingDuration) {
61       matchingAvailabilities.push([start, end]);
62     }
63   }
64   return matchingAvailabilities.map(meeting => meeting.map(minutesToTime));
65 }
66
67 function timeToMinutes(time) {
68   const [hours, minutes] = time.split(':').map(str => parseInt(str));
69   return hours * 60 + minutes;
70 }
71
72 function minutesToTime(minutes) {
73   const hours = Math.floor(minutes / 60);
74   const mins = minutes % 60;
75   const hoursString = hours.toString();
76   const minutesString = mins < 10 ? '0' + mins.toString() : mins.toString();
77   return hoursString + ':' + minutesString;
78 }
79
80 exports.calendarMatching = calendarMatching;
81
```

