

Machine Coding Round: FLIPMED

Description:

We are required to build an app that lets patients connect to doctors and book appointments. The day is divided into time slots of 30 mins each, starting from 9 am to 9 pm. Doctors can login to the portal and declare their availability for the given day in terms of slots. Patients can book appointments/ cancel existing appointments. For simplicity you can assume that the doctors' availability is declared for that particular day only.

Features:

- A new doctor should be able to register, and mention his/her speciality among (Cardiologist, Dermatologist, Orthopedic, General Physician)
- A doctor should be able to declare his/her availability in each slot for the day. For example, the slots will be of 30 mins like 9am-9:30am, 9:30am-10am.
- Patients should be able to register. Patients should be able to search available slots based on speciality.
 - The slots should be displayed in a ranked fashion. Default ranking strategy should be to rank by start time. But we should be able to plugin more strategies like Doctor's rating etc in future.
- Patients should be able to book appointments with a doctor for an available slot. A patient can book multiple appointments in a day. A patient cannot book two appointments with two different doctors in the same time slot.
- Patients can also cancel an appointment, in which case that slot becomes available for someone else to book.
- Build a waitlist feature:
 - If the patient wishes to book a slot for a particular doctor that is already booked, then add this patient to the waitlist.
 - If the patient with whom the appointment was booked originally cancels the appointment, then the first in the waitlist gets the appointment.
- A patient/doctor should be able to view his/her booked appointments for the day.

Bonus requirements:

- Trending Doctor: Maintain at any point of time which doctor has the most appointments.
- Different ranking strategy - use rating of doctor as a strategy to display a list of available doctors for a given specialization.

Date Time

Doctor name Spec.	Patient name age	Slot start End doctor
AL <slot+> slots;	AL <slot+> booked Slot	booked by waitlist

Specialization - Enum

Slot :-

8:30 - 9
9:01 - 9:31
9:45 - 10:15
10:20 - 10:50
10:55 - 11:25
1:00 - 1:30

new Slot => ns
11-11:30, 12:15-12:45

if (ns.start > slot.start
&& ns.start > slot.end)

if (ns.start < slot.start
&& ns.end < slot.start)

2:30
λ

$n + 30 \geq 60$
 $hours + t;$
 $45 + 60 = 105$
 $60 - 45 = 15$
 $60 - n = n'$

9:45 - 10:15

Current
9 - 9:30old
10 - 10:30

10:15 - 10:45

Current
10:45 - 11:15

! ((o.start - after(current.start) && (o.start after (current.end))
 ... & before (c.start) && (o.end . before (c.start))))

! ((o.start . after (c.unw.)))
 || (o.start : before (c.start) && (o.end : before (c.start)))

P

~~U~~

Dn.k

9

10

11

Dn.R

9

10

11