**CoFlip App**

#### Description

Flipkart is creating an app to allow people to register for vaccinations. In this app, centres can register themselves with the vaccine details. Users can register and make a booking for vaccination.

#### Features

1. Vaccinations take place in a centre
2. There can be multiple centres
3. Each vaccination center has some number of vaccines available

Of these two types:  
 COVAX

COVISHIELD

1. User cannot make more than one booking
2. With Every Successful booking reduce the inventory
3. Users need to be uniquely identified

#### Requirements

1. Register a User:
   1. register\_user(user\_details)
   2. user\_details: name, gender, preferred vaccineType
2. Register a centre:
3. register\_centre(centre\_details)
4. Centre\_details: centreId, vaccineInventory
5. vaccineInventory: vaccine\_type x quantity

3. getCentres(user)

* Display the centres that have the user’s preferred vaccine available. The ranking of the output of centres should be done considering the below parameters
  + Higher preference to centre with higher quantity of remaining vaccine
  + If Remaining vaccines are same, higher preference to centre with less number of bookings made so far
  + If this is also same, print the selections in any order

4.bookslot(user, centerId)

* Book a slot and return success if booking can be made
* If booking cannot be made return failure

5. getStats()

* Display names of people who have registered and number of available vaccines for each centre with Centre name

#### Bonus

1. Introduce 3 slots(morning, afternoon, evening), There is a max-capacity per slot for each center which will be followed while booking.

#### Other Details:

1. Do not use any database or NoSQL store, use in-memory store for now.
2. Do not create any UI for the application.
3. Write a driver class for demo purposes. Which will execute all the commands at one place in the code and test cases.
4. Please prioritize code compilation, execution and completion.
5. Please do not access the internet for anything EXCEPT syntax.
6. You are free to use the language of your choice.
7. All work should be your own. If found otherwise, you may be disqualified.

#### Expectations:

1. Code should be demoable (very important)
2. Complete coding within the duration of 90 minutes.
3. Code should handle edge cases properly and fail gracefully.
4. Code should be readable. Follow good coding practices:
5. Use intuitive variable names, function names, class names etc.
6. Indent code properly.

#### Sample Test Case:

User1 - Covax

User2 - Covishield

Center1 - Covishield - 5, Covax - 1

Center2 - Covax - 10

getCentres(User1)

Center2 Covax-10  
Center1 Covax - 1

bookslot(User2, Center2) : false

bookslot(User1, Center1) : true

getStats()

Center1:

Covax 0 Covishield 5

User1

Center2:

Covax 10

Bonus:

User 3 : covax

Center1 - Covishield - 5, Covax - 2, maxcapacityperslot -1

Center2 - Covax - 10, maxcapacityperslot - 4

bookSlot(User1, Center1, Morning) : true

bookslot(User3, Center1, Morning) : false

bookslot(User3, Center1, Evening) : true