A2 Assumption:

1. The "userName" of the user is unique because it could be used to log in.

2. The information about "hasOnSiteBooking", "hasOnSiteTest", "waitingTimes(min)", "facilityType" are in the additionalInfo field of Testing Site.

```
"additionalInfo": {
  "hasOnSiteBooking": true,
  "hasOnSiteTest": true,
  "waitingTimes(min)": "25",
  "facilityType": "Walk-in Hospitals"
}
```

3. Users can pass the PIN Code to the on-site staff(receptionist) to check their booking, then the system displays the status the booking. The status includes customer info, testing info, created time and testing site info etc.

4. Every user is a customer (isCustomer: true), but whether he/she is a receptionist(isReceptionist) or healthcare worker(isHealthcareWorker) can only be set and updated within the system (Security Issue).

5. Assuming Home Booking won't consume the waiting time.

6. Assuming there are fields called "isHomeBooking" and "isOnsiteBooking" in Booking's additionalInfo field, we can use it to distinguish between homeBooking and some else type.

7. We assume that the unique QR code will be generated by the third party system. And we just use UUID in Java to emulate the QR code. And the unique url is generate by "https://Dummy URL /… - " + uuid. Please refer to the following

code:

```
protected String generateQRCode() {
    //Unique QR Code ( We assume that the QR code will be generated by the third party system)
    // here we just use UUID in java to emulate the QR code
    String uuid = UUID.randomUUID().toString();

    return uuid;
}

protected String generateURL() {
    // Unique url ( We assume that the QR code will be generated by the third party system)
    //  here we just use UUID in java to emulate the QR code
    String uuid = UUID.randomUUID().toString();
    String url = "https://Dummy URL/... - " + uuid;
    return url;
}
```

8. For "an interface for the facility staff can be developed to scan the QR code and update the system that the users have received the RAT kit from the facility"
   We assume that scanning QR code is a process/operation to get all necessary information and set "hasRATKit" to true. As we use UUID to emulate the QR code, so scanning QR code is the same as the process/operation of inputting UUID to the system.

```
System.out.print("PLease input the QRCode(field name) value:");
```

9. For the HomeBooking, we assume only administrators are able to QR code actions and receptionists are administrators.

A3 Assumption:

For 1.1:

1. We assuming the startTime field in booking is the time that users want to set/choose when they book for CovidTest. And we also use this field to judge if the booking is expired or not.

```
"startTime": "2022-04-24T21:14:15.000Z",
```

2. We assuming there is a field in booking to help us to judge the booking's type(on site or home) , and every booking should have this field.

```
"additionalInfo": {
  "QRCode": "ccf017c7-4ca3-4c04-8716-ff177ccd51e5",
  "url": "https://Dummy URL/... - 160e40ee-b379-4744-9794-9b9c28eea40c",
  "hasRATKit": false,
  "bookingType": "home"
}
```
(home booking)

```
"additionalInfo": {
  "bookingType": "onsite"
}
```
(on site booking)

3. We assuming if there is no CovidTest for a customer, then the booking is not used(customer haven't done a CovidTest).

4. We assume the booking is not canceled if the state field of booking is not "canceled"

For 1.2:

1. We assume the process of providing booking ID or PIN code will be done outside of our system.

For 2:

1. We assume each administrator's information about where the admin works at is in additionalInfo field. Adn each administrator has this field("workAt(siteId)")

```
{
  "id": "2919e042-d7ec-468a-9f58-30c5250d411b",
  "givenName": "Kevin",
  "familyName": "Kim",
  "userName": "kevink",
  "isCustomer": false,
  "isReceptionist": true,
  "isHealthcareWorker": false,
  "additionalInfo": {
    "workAt(siteId)": "7fbd25ee-5b64-4720-b1f6-4f6d4731260e"
  }
}
```

2. We assume if the values of "createAt" and "updateAt" are same, we consider this booking as a new booking. And if the values are different, we consider it as modified booking.

```
"createdAt": "2022-05-18T10:14:21.132Z",
"updatedAt": "2022-05-19T06:00:56.853Z",
```