

GTU Department of Computer Engineering CSE 222/505 – Spring 2021

GROUP 6 PROJECT REPORT 2

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1. PROBLEM DEFINITION

Covid-19 has emerged and has spread over a wide area in more than one country or continent in the world and has caused epidemic diseases. This fully meets the concept called pandemic.

Considering the spread rate of the Covid-19 and its effect on human health, it has been declared as a pandemic in order to increase protective measures in general. Since this pandemic is difficult to manage only by the Ministry of Health, we decided to write a patient follow-up program to help the country. In this patient monitoring system, we aimed to make the process more effective and more sustainable by addressing the basic problems such as how sick and to whom the drugs should be given in hospitals, from which age group the vaccination should start and the communication between doctors and patients.

2. USERS OF THE SYSTEM

2.1 The Minister of Health

The minister's job is to manage hospitals, supply vaccines to these hospitals on demand and announce the daily statistics about covid-19.

2.2 Chief Physician

Chief physicians can add or remove hospital personnel, inquire hospital data such as personnel information, occupancy of rooms, bed counts, vaccine supply etc.

2.3 Doctor

Doctors can add/remove a patient to/from the system and vaccinate the patients

2.4 Nurse

Nurses can vaccinate, give drugs, and test to patient

2.5 Patient

The patients can sign up to the system for the vaccination. According to their test results, infected patients are given drugs and required to be quarantined in the hospital or in their houses depending on their ages. If the patients are not infected and they have no condition that can prevent them from getting vaccinated, they are put into the vaccination queue. Patients can track their information through the system.

3. SYSTEM REQUIREMENTS

3.1 Non-functional Requirements

- 1. Back-end software: Java 11
- 2. Hardware Interfaces: Mac, Linux and Windows operating systems
- **3.** The system has an internal bug reporting system that keeps track of what types errors happened and when.
- **4.** The system holds all the data to keep track of everything available in itself.
- **5.** The system follows an TCKNO policy.
- **6.** The system follows a password policy.
- 7. The program should be maintainable.
- **8.** The program should be usable. It should be safe and effective for the users to perform the desired tasks.
- **9.** The program should be extensible. It should be able to receive new features and customizations for the upcoming versions.

3.2 Functional Requirements

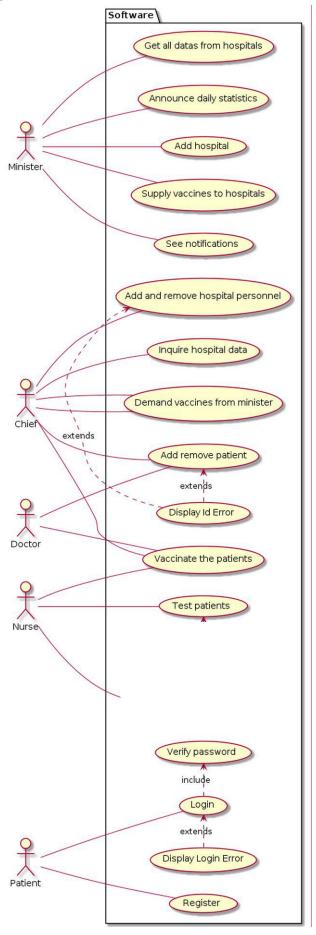
- **1.** The system allows minister of health, chief physicians and doctors to login with their unique passwords.
- **2.** The system allows minister of health to to manage hospitals supply vaccines to these hospitals on demand and announce the daily statistics about Covid-19.
- **3.** The system allows chief physician to add or remove hospital personnel, inquire hospital data such as personnel information, occupancy of rooms, bed counts, vaccine supply etc.
- **4.** The system allows doctors to add/remove a patient to/from the system and vaccinate the patients.
- **5.** The system allows nurses to vaccinate, give drugs, and test to patient.
- **6.** The system allows to sign up to the system for the vaccination. According to their test results, infected patients are given drugs and required to be quarantined in the hospital or in their houses depending on their ages. If the patients are not infected and they have no condition that can prevent them from getting vaccinated, they are put into the vaccination queue. Patients can track their information through the system.
- 7. The system allows users to look at the current statistics of Covid-19.

3.3 User Requirements

- **1.** The Minister of Health supply vaccines when requested and announce daily statistics about Covid-19.
- **2.** The chief physician can change hospital personnel by adding or removing, inquire hospital features and supply vaccine and drugs.
- **3.** The doctors can control the system by adding or removing patients, and vaccinate patients.
- **4.** The nurses can test and vaccinate the patients and give medicine to them.
- **5.** The patients can log into the system and view their own information on the system.

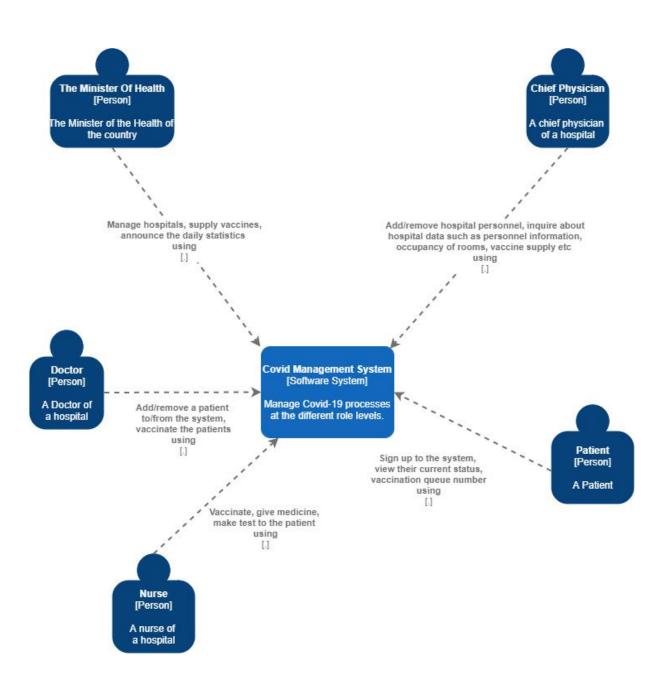
4. DIAGRAMS AND MODELS

4.1 Use Case Diagram

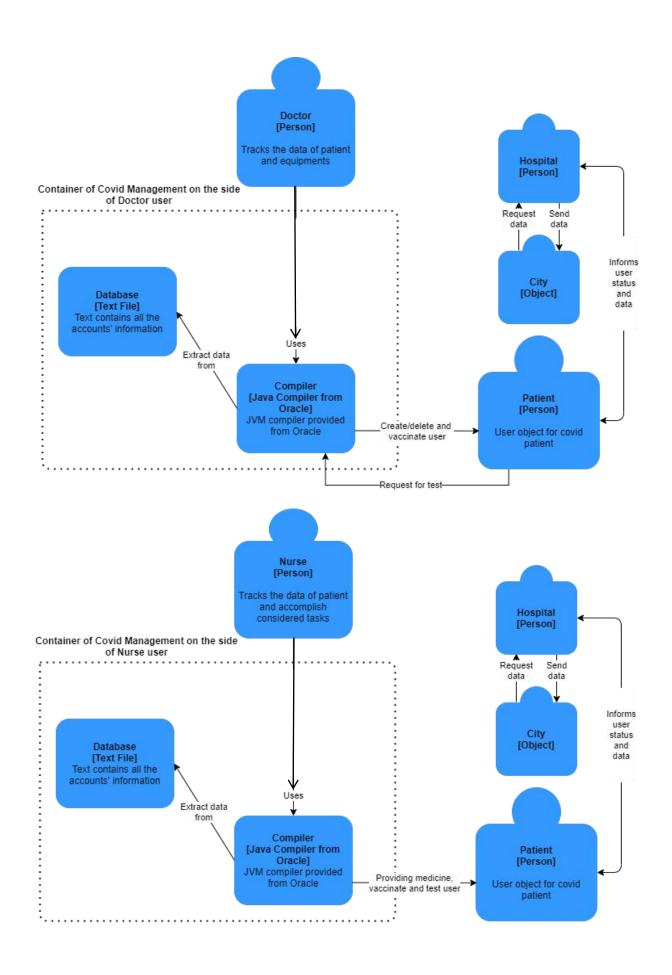


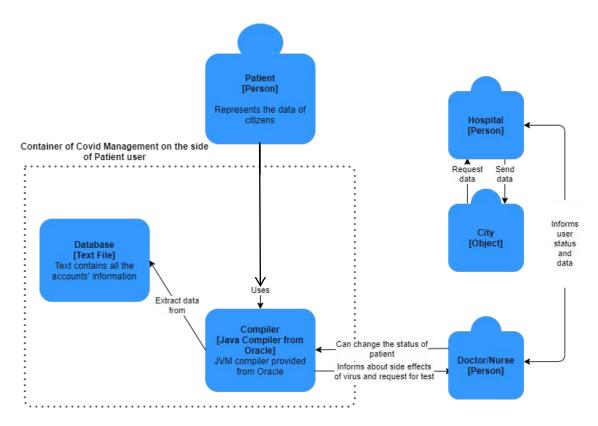
4.2 C4 Model

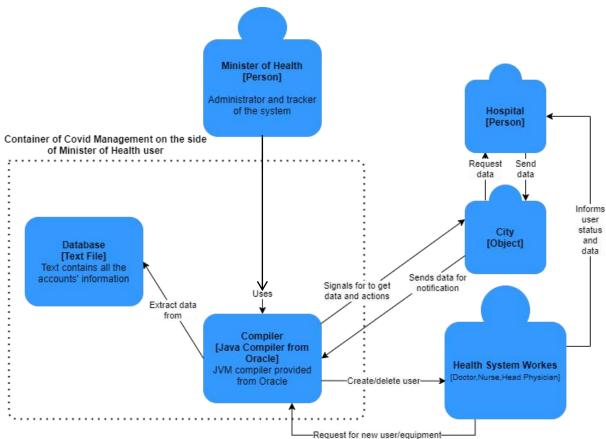
4.2.1 Level 1

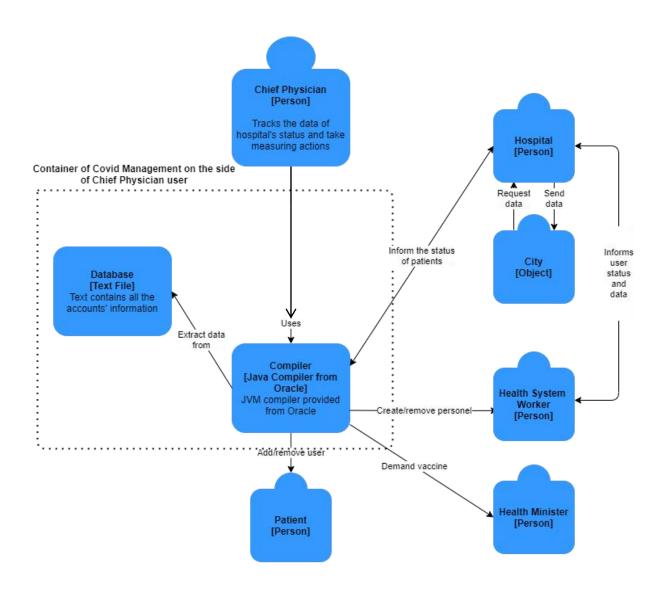


4.2.2 Level 2

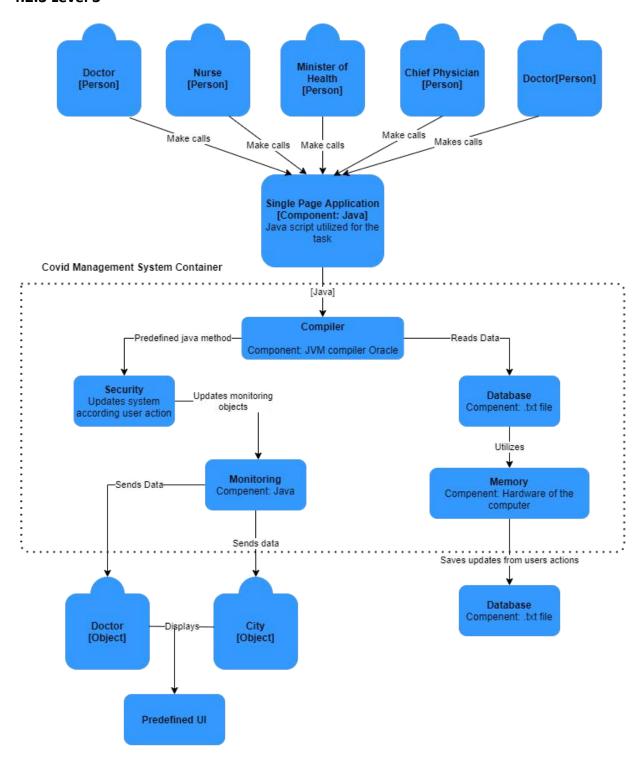






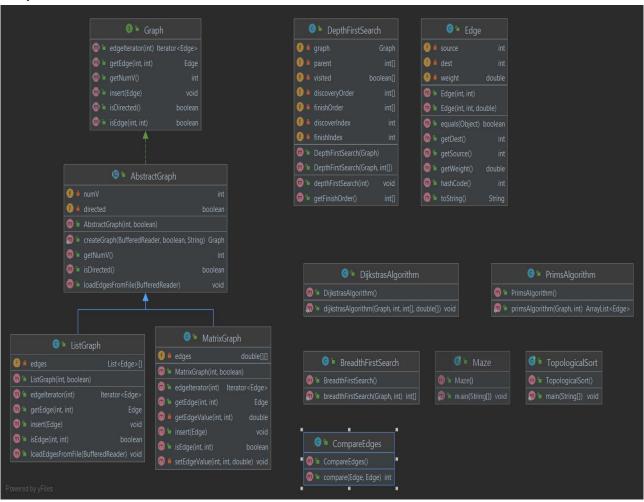


4.2.3 Level 3

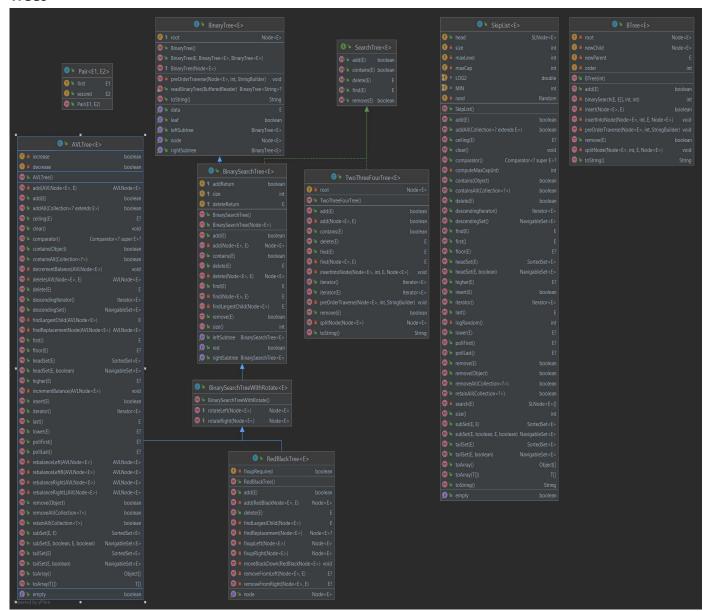


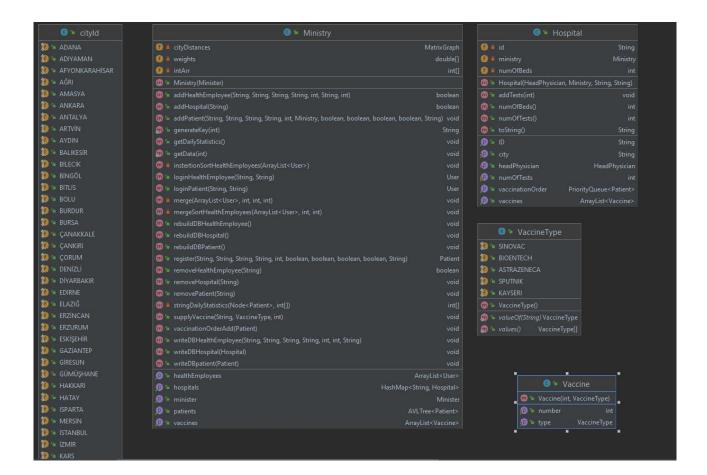
4.3 Class Diagram

Graphs

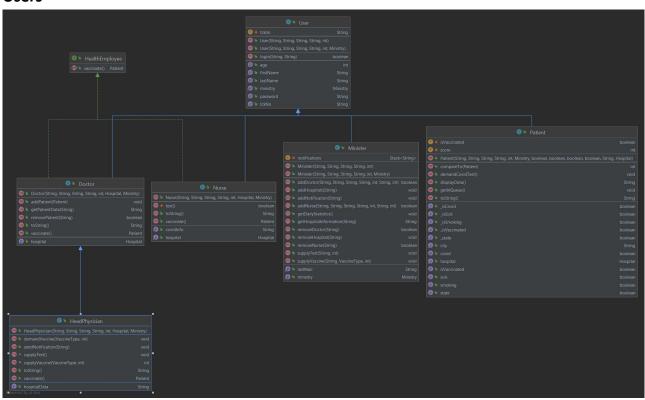


Trees

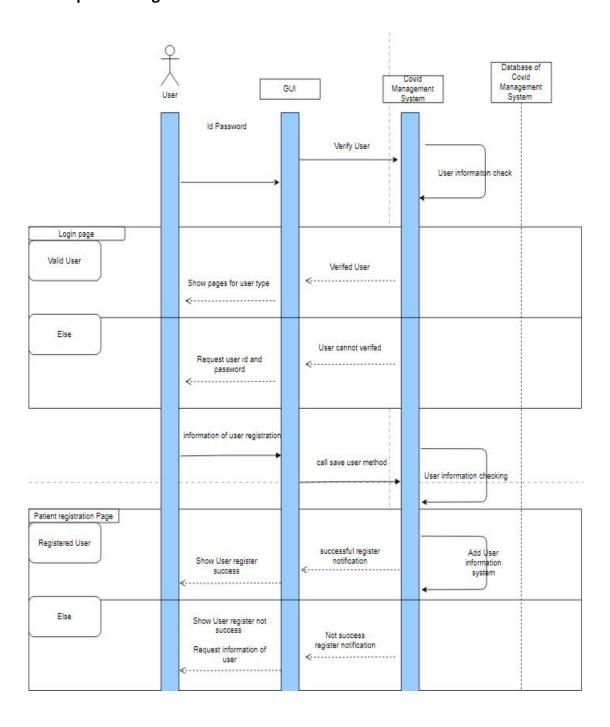


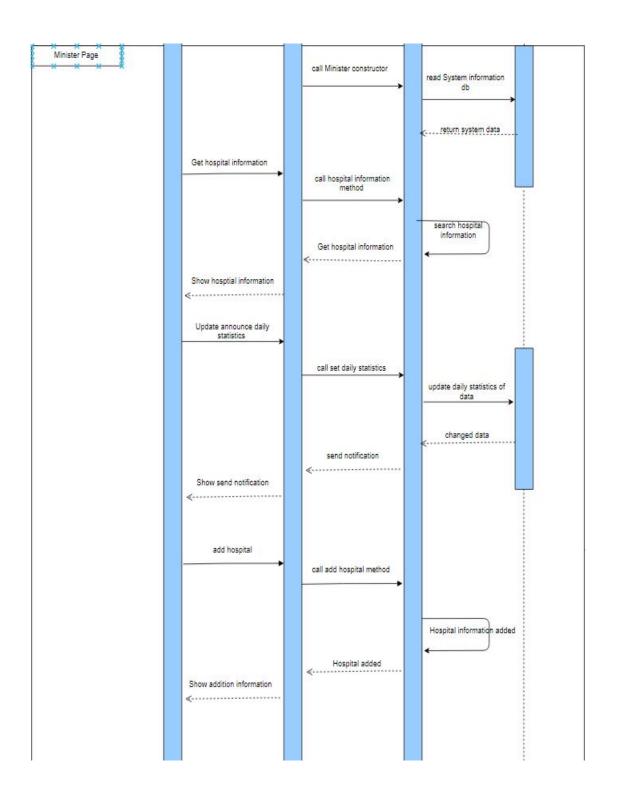


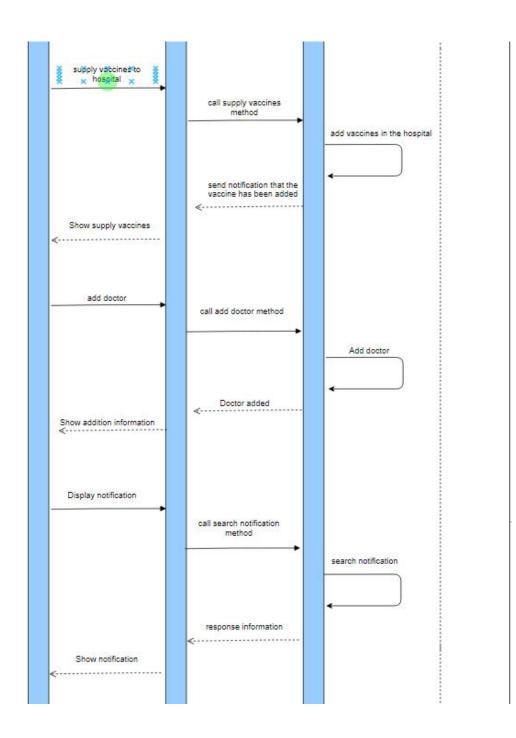
Users

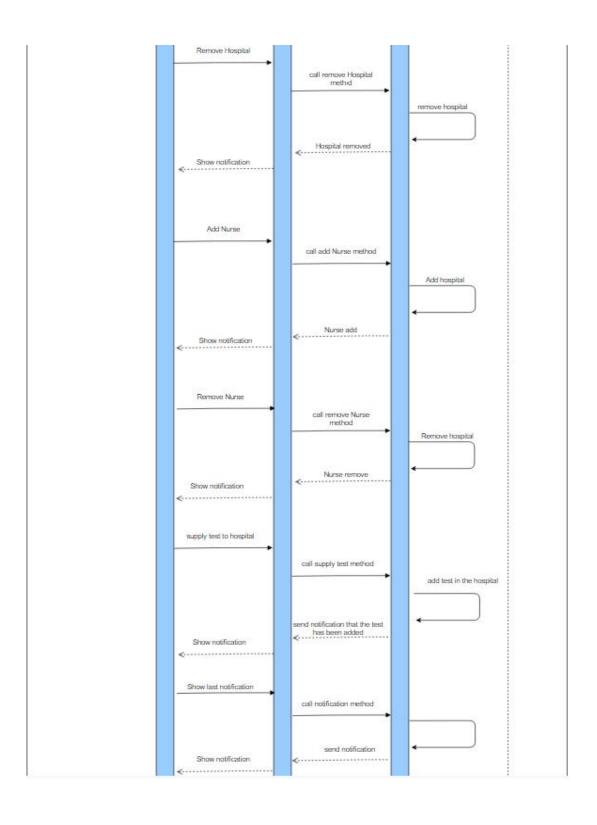


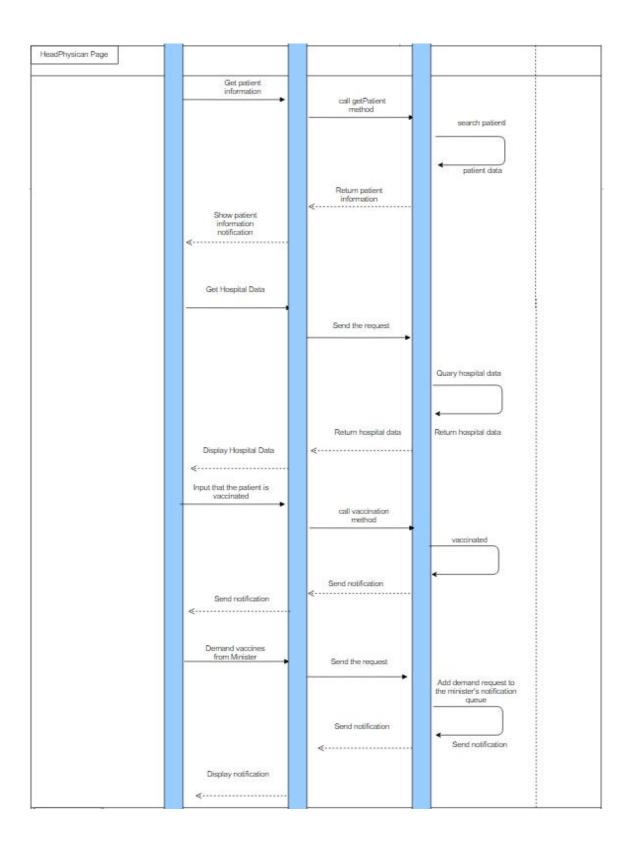
4.4 Sequence Diagram



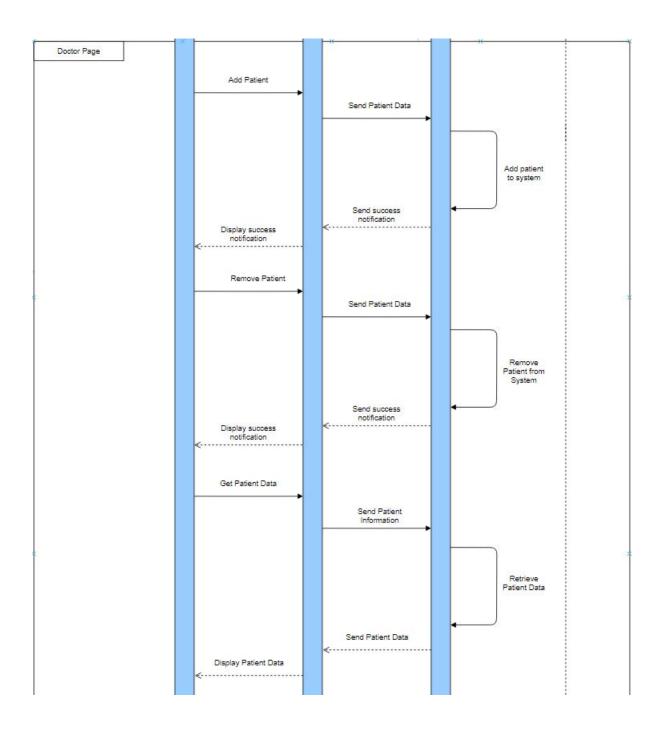


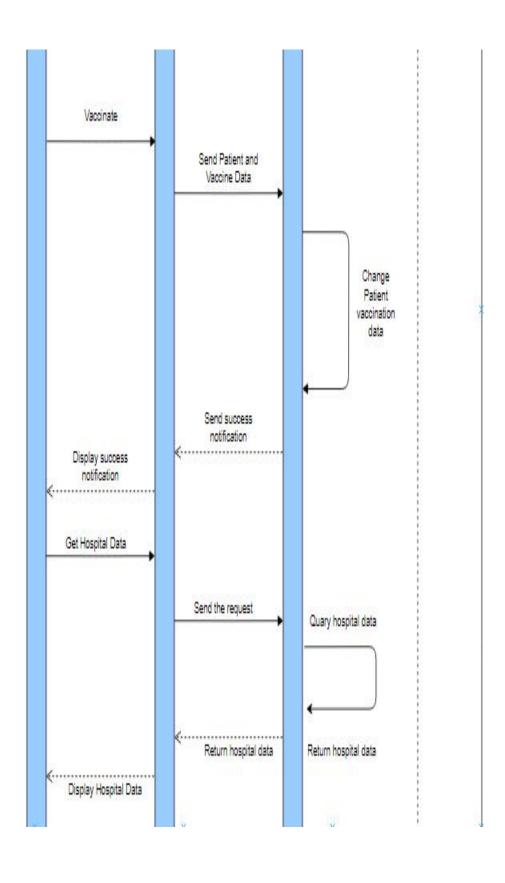


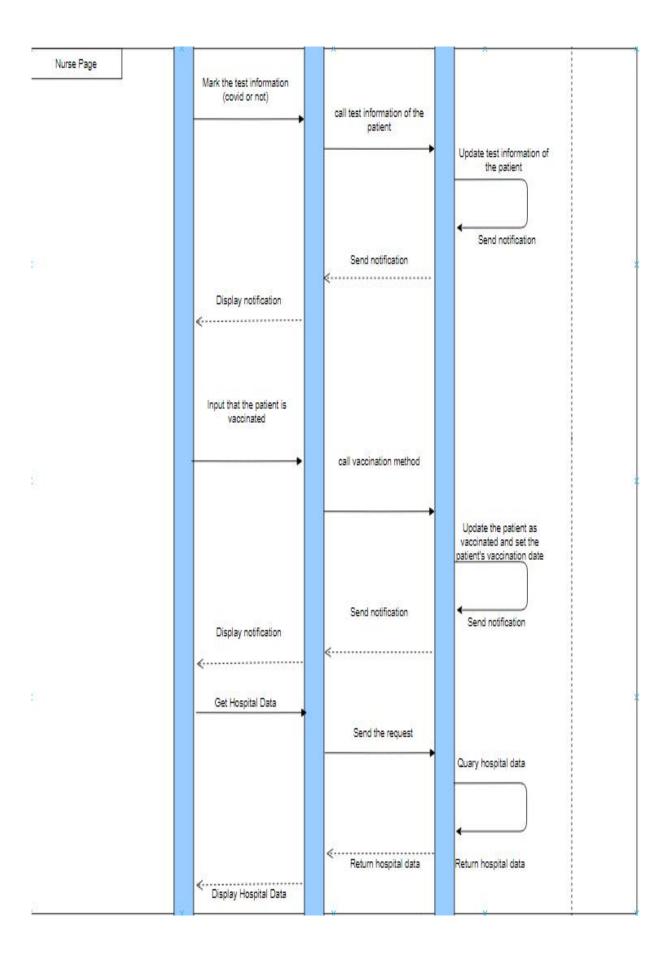


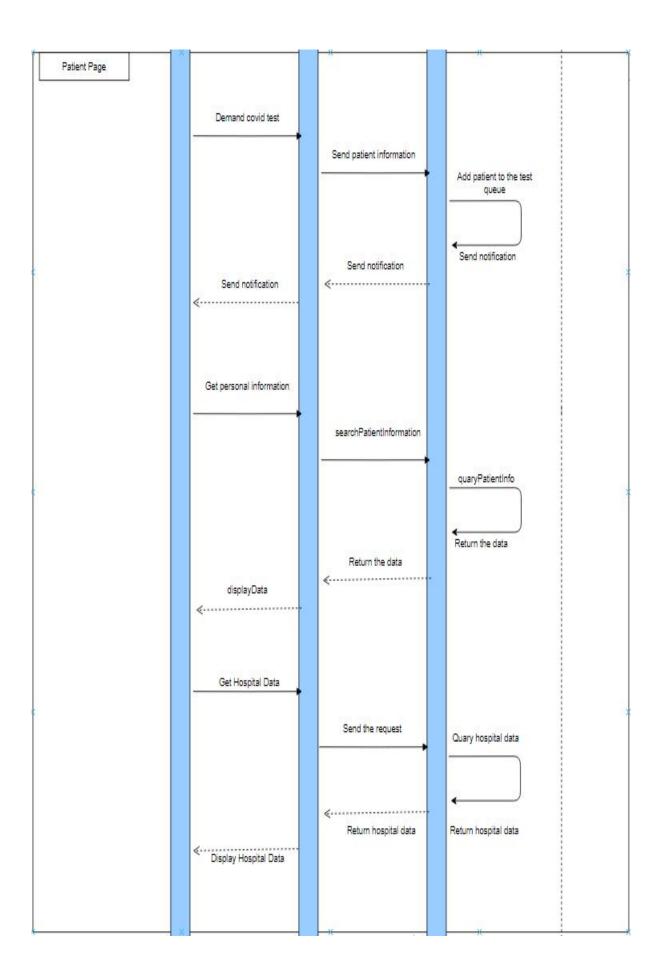


Patient Registration Successful	Register Patient	checkRegisterInfo	searchPatient
	Display success notification	Send success notification ≪	Patient doesnt exist addPatient Send success notfication
Patient Registration Failure	Display failure notification	Send failure notification	Send faillure notification ≪









5. NON-TRIVIAL IMPLEMENTATION DETAILS

Class Name	Declaration	Description of Declaration
	Hospital(HeadPhysician headPhysician, Ministry ministry)	Initializes data fields (Hospital id, number of beds, number of tests, ministry, and headPhysician).
Hospital	int numOfBeds()	It returns number of beds.
	int numOfTests()	It returns number of tests.
	ArrayList <hospital> hospitals</hospital>	Hospital objects are stored.
	ArrayList <healthemployee> healthEmployees</healthemployee>	Health Employees objects are stored.
	ArrayList <vaccine> vaccines</vaccine>	Vaccine objects are stored.
	PriorityQueue <integer> vaccinationOrder</integer>	People to be vaccinated are stored.
Ministry	TreeSet <patient> patients</patient>	Patients are stored.
	Ministry(Minister minister)	 The constructor initializes all of data fields by creating all of them. The Ministry consturctor reads patient datas to TreeSet<patient> patients data structure.</patient> The constructor reads healthEmployee datas to ArrayList<healthemployee> healthEmployees data structure.</healthemployee>
	static void getData(int hospitalId)	It prints number of beds, tests, patients in given hospital according to hospitalld.
	static Patient register()	Register method registers new patient to system according to parameters and returns it.

Vaccine Setter,getter		Vaccine class is the root of all information for vaccine.
VaccineType (enum)	is the class of vaccine types	
HealthEmployee (Interface)	boolean vaccinate(String tckno)	Vaccination method
	boolean vaccinate(String tckno)	The next patient is vaccinated according to the patient vaccination order kept in the PriorityQueue data structure.
Doctor	void addPatient(Patient patientObj)	patientObj is added to TreeSet data structure in Ministry class .
	Patient removePatient(Patient patientObj)	patientObj is removed from TreeSet data structure. If there is no such patient then throws exception.
Doctor	String getPatientData(String tckno)	It returns as string patient information according to
	, , ,	tckno.
	void demandVaccine()	Vaccine is demanded from minister class.
	void sendNotification()	
	String getHospitalData()	It returns as string the data of the hospital the head physician is in.
HeadPhysician	void sendNotification(String str)	
	boolean vaccinate(String tckno)	-The vaccinate method is overriddenThe next patient is vaccinated according to the patient vaccination order kept in the PriorityQueue data structure.
	Stack <string> notifications</string>	It is the data structure where incoming notifications are stored.
	void addHospitals()	The given hospital object is added to the ArrayList <hospital> data structure</hospital>
	void removeHospital(int hospitalId)	With the hospital id entered, the hospital is deleted from the ArrayList.
	void supplyVaccine(VaccineType type, int num)	With the entered values, the amount of the matching vaccine type in the ArrayList data structure is increased.
	void supplyTest()	The amount of test kit is increased.
Minister	void getDailyStatistics()	Daily data realized in the hospital will be written to the data structure.

	boolean addDoctor(String,String,String,String,int)	Doctor object is added to ArrayList <healthemployee> data structure.</healthemployee>
	boolean removeDoctor(String)	The doctor matching the ID number is removed from the ArrayList .
	boolean addNurse(String,String,String,int)	Nurse object is added to ArrayList <healthemployee> data structure.</healthemployee>
	boolean removeNurse(String)	The nurse matching the ID number is removed from the ArrayList .
	void test()	Test the person who needs to be tested.
Nurse	boolean vaccinate(String tckno)	The next patient is vaccinated according to the patient vaccination order kept in the PriorityQueue data structure.
	void setCovidInfo(String tckno, boolean isCovid)	The patient's test result is saved to the system with the identification number. If the isCovid parameter is true, the patient is added to the TreeSet<patient></patient> .
	void getInQueue()	Returns the next patient in the PriorityQueue data structure.
Patient	void demandCovidTest()	The patient gets tested and the test result returns
	void setCovidInfo(boolean isCovid)	The patient's test result is saved.
User	User is the root of the every role for a human.	

6. TEST CASES

Test ID	Test Scenario	Test Steps	Test Data	Expected Results	Pass /Fail
T1	Check Minister Login with valid data.	1.Go to app. 2.Enter Tckn. 3.Enter password. 4.Choose Login as Health Employee	Tckn = 88888888 Password= admin	User should login into application	Pass
T2	Check Minister Login with not valid data.	1.Go to app. 2.Enter Tckn. 3.Enter password. 4.Choose Login as Health Employee	Tckn = 321 Password = wqeqw	User not valid and again login	Pass
ТЗ	Check Patient Login with valid data.	1.Go to app. 2.Enter Tckn. 3.Enter password. 4.Choose Login as Patient	Tckn=21059983784 Password= XdGzKS	User should login into application	Pass
T4	Check Patient Login with not valid data.	1.Go to app. 2.Enter Tckn. 3.Enter password. 4.Choose Login as Patient	Tckn = 321 Password = wqeqw	User not valid and again login	Pass
T5	Check Head Physician Login with valid data.	1.Go to app. 2.Enter Tckn. 3.Enter password. 4. Choose Login as Head Physician	Tckn = 10876976400 Password= dW05snYrd	User should login into application	Pass
Т6	Check Head Physician Login with not valid data.	1.Go to app.2.Enter Tckn.3.Enter password.4. Choose Login as Head Physician	Tckn = 321 Password = wqeqw	User not valid and again login	Pass
Т7	Check Doctor Login with valid data.	1.Go to app. 2.Enter Tckn. 3.Enter password. 4.Choose Login as Doctor	Tckn = 16480539567 Password= Q7jbPGZhrJa	User should login into application	Pass
Т8	Check Doctor Login with not valid data.	1.Go to app. 2.Enter Tckn. 3.Enter password. 4.Choose Login as Doctor	Tckn = 321 Password = wqeqw	User not valid and again login	Pass
Т9	Check Nurse Login with valid data.	1.Go to app. 2.Enter Tckn. 3.Enter password. 4.Choose Login as Nurse	Tckn = 40335362003 Password= k0ix5lG2	User should login into application	Pass
T10	Check Nurse Login with not valid data.	1.Go to app.2.Enter Tckn.3.Enter password.4.Choose Login as	Tckn = 321 Password = wqeqw	User not valid and again login	Pass

		Nurse				
T11	Getting hospital information	1.Go to app. 2.Login Minister. 3.Hospital info. 4.Select Get Hospital Information.	Pas Sel	kn = 88888888 ssword=admin ect Hospital = ywmdmn	Show hospital information.	Pass
T12	Minister displays the daily statistics	 Launch the app Enter tckno Enter password Minister Page operup Choose Display Da Statistics option 		Tckn=88888888 Password: admin Choose Display Daily Statistics	The daily statistics of the pandemic shows up	Pass
T13	Add hospital	1.Go to app. 2.Login Minister. 3.Choose Add hospit	al	Tckn = 88888888 Password= admin City name= SAMSUN	Add hospital.	Pass
T14	Remove hospital	1.Go to app. 2.Login Minister. 3. Choose Remove hospital		Tckn = 88888888 Password= admin Hospital ID: adkotfue	Remove hospital	Pass
T15	Add Doctor	1.Go to app. 2.Login Minister. 3.Choose Add Doctor		Tckn = 88888888 Password= admin Firstname:Test LastName:Test Tckn =5555555 Password=test Age: 24 Hospital ID: 550131557	Add Doctor	Pass
T15	Add Nurse	1.Go to app. 2.Login Minister. 3.Choose Add Nurse		Tckn = 88888888 Password= admin Firstname: testNurse LastName: testNurse Tckn = 123456789 Password= testNurse Age: 25 Hospital ID: uifstwqy	Add Nurse	Pass
T16	Remove Doctor	1 .Go to app.2.Login as Minister.3.Choose Remove Doctor.		Tckn = 88888888 Password= admin Doctor Tckn = 55555555	Remove Doctor	Pass
T16	Remove Nurse	1 .Go to app. 2.Login as Minister. 3.Choose Remove Nurse.		Tckn = 88888888 Password= admin Tckn = 61351537164	Remove Nurse	Pass
T19	Remove Patient	1.Go to app. 2.Login Doctor.		Tckn = 37947858673	Remove Patient	Pass

	3. Choose Remove Patient	Password= g0uWic Patient Tckn=	
		12312312312	

T20	Get patient data	1.Go to app. 2.Login Doctor. 3.Choose Get Patient Data.	Tckn = 37947858673 Password= g0uWic Patient Tckn= 62304957060	Show patient information	Pass
T21	Vaccinate	1.Go to app. 2.Login Doctor/ Nurse. 3.Choose Vaccinate a Patient	Doctor Tckn=55468138407 Password= 12OCqu / Nurse Tckn=42991812846 Password= PkcuvWU	Patient is vaccinated.	Pass
T22	Patient registers to the app	1. Launch app 2. Choose the register option 3. Enter tckno 4. Enter firstname 5. Enter lastname 6. Enter password 7. Enter age 8. Choose smoking or not 9. Choose vaccinated or not 10. Choose covid or not 11. Choose has a different sickness or not 12. Write the city	Firstname: test Lastname: test Tckn: 12312312 Password: test Age: 22 Select smoking Select vaccinated Select covid Select sickness Select city	Patient successfully registers to the system	Pass
T23	Patient demands covid test	1. Launch the app 2. Choose Login as Patient 3. Enter tckno 4. Enter password 5. Patient Page opens up 6. Choose Demand Covid Test option	Tckn = 12312312 Password = test	Patient is put in to be tested	Pass

T24	Patient displays personal information	 Launch the app Choose Login as Patient Enter tckno Enter password Patient Page opens 	Tckn = 12312312 Password = test Select Personal Information	Personal infomation of the patient shows up	Pass
		up 6. Choose Get			

T25	Nurse enters test result of the patient	Personel Information option 1. Launch the app 2. Select 1.Login HealthEmployee 3.Enter Tckno 4.Enter password 5.Select 1. Mark the test information	Tckno = 83343861575 Password: cXeB0qhHOlo Select 1.	Test result information is added to the patient's personal information	Pass
T26	Head Physician Hospital Information	1.Launch the app 2.Select 1.Login 3.Enter tckno 4.Enter password 5.Select 2.	Tckno = 94454856493 Password= ZfGB1MNu30 Select get hospital data information 2.	Show hospital information	Pass
T27	Head Physician demands vaccines from the minister	1.Launch the app 2.Select 1.Login HealthEmployee 3.Enter tckno 4.Enter password 5.Select 4 6.Select Vaccine Type 7.Vaccines number	Tckno = 94454856493 Password: ZfGB1MNu30 Select Demand Vaccines 4 Vaccines Type: KAYSERI Vacciness number: 99999	A notification is sent to the minister	Pass

Test ID	Test Scenario	Test Steps	Test Data	Expected Results	Pass/Fail
T28	Head Physician enters the information that the patient	1.Launch the app 2.Select 1.Login HealthEmployee 3.Enter tckno 4.Enter password 5.Select 1 6.Patient tckno	Tckno = 94454856493 Password: ZfGB1MNu30 Select Patient 1 Patient tckno: 53769809260	Return patient information	Pass
T29	Minister supplies test to a hospital	1.Launch the app 2.Select 1.Login HealthEmployee 3.Enter tckno 4.Enter password 5.Select 10 6.Choose Hospital 7.Number of test	Tckno = 8888888 Password = admin Choose hospital = uifstwqy Number of test = 850	Adding test to Hospital	Pass
T30	Minister supplies vaccines to a hospital	1.Launch the app 2.Select 1.Login HealthEmploee 3.Enter tckno 4.Enter password 5.Select 4.	Tckno = 88888888 Password: admin Select Supply Vaccine type: Hospital ID: 550131557 Select vaccine type: BIONTECH Quantity: 100	The vaccines are supplied to the chosen hospital	Pass
T31	Patient can add himself/herself to the vaccination queue	1.Launch the app 2.Select 2.Login patient 3.Enter Tckno 4.Enter Password 5.Selet 3	Tckno=2105998 3784 Password = xdGzKS	Patient adding to queue	Pass

7.RUNNING RESULT

Test Case Id	Test Result
1 - 2 - 3 - 0 - 1 TCKN Pass Welc 1 - 2 - 3 - 5 - 6 - 7 - 8 - 9 - 10 -	se user type : Login As Health Employee Login As Patient Sign Up As Patient Exit 0 : 8888888 word : admin ome to Minister Page Get hospital information Update announce daily statistics Add hospital Supply vaccines hospital Add doctor Remove doctor Remove doctor Remove hospital Add nurse Remove nurse Supply test to hospital Show last notification Exit
1 - 2 - 3 - 0 - 1 TCKN Pass user Choo 1 - 2 - 3 -	Login As Health Employee Login As Patient Sign Up As Patient Exit O : 321 Word : wqeqw not found See user type : Login As Health Employee Login As Patient Sign Up As Patient Exit

```
Choose user type :
T3
   1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
   0 - Exit
   2
   TCKNO: 21059983784
   Password : XdGzKS
   You are a patient
   Welcome to Patient Page
   1 - Demand covid test
   2 - Get personal information
   3 - Get in vaccination queue
   0 - EXIT
T4
   Choose user type :
   1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
   0 - Exit
   2
   TCKNO : 321
   Password : wqeqw
   Patient not found
   Choose user type :
   1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
   0 - Exit
```

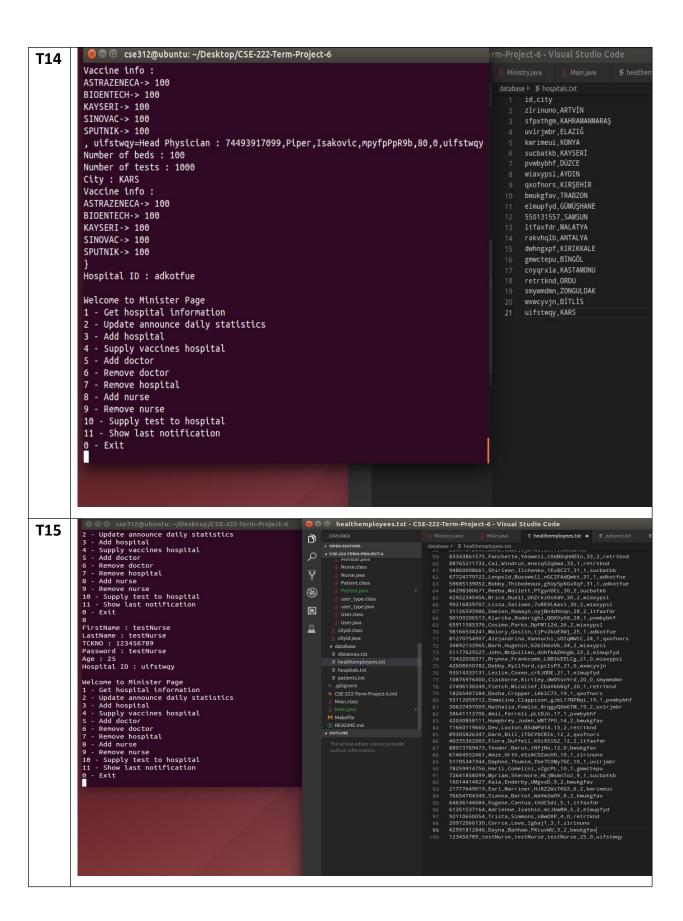
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T5
   Choose user type :
    1 - Login As Health Employee
    2 - Login As Patient
    3 - Sign Up As Patient
    0 - Exit
    1
    TCKNO: 10876976400
    Password : dW05snYrd
   Welcome to HeadPhysican Page
    1 - Get patient information
    2 - Get hospital data
    3 - Vaccinate a patinet
    4 - Demand vaccines form Minister
    0 - Exit
T6
   Choose user type :
   1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
   0 - Exit
   TCKNO : 321
   Password : wqeqw
user not found...
   Choose user type :
   1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
   0 - Exit
```

```
Choose user type :
T7
    1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
    0 - Exit
    1
   TCKNO: 16480539567
   Password: 07jbPGZhrJa
   Welcome to Doctor Page
   1 - Add patient
    2 - Remove patient
    3 - Get patient Data
    4 - Vaccinate a patinet
   0 - Exit
    Choose user type :
T8
    1 - Login As Health Employee
    2 - Login As Patient
    3 - Sign Up As Patient
    0 - Exit
    1
    TCKNO : 321
    Password : wqeqw
    user not found...
    Choose user type :
    1 - Login As Health Employee
    2 - Login As Patient
    3 - Sign Up As Patient
    0 - Exit
```

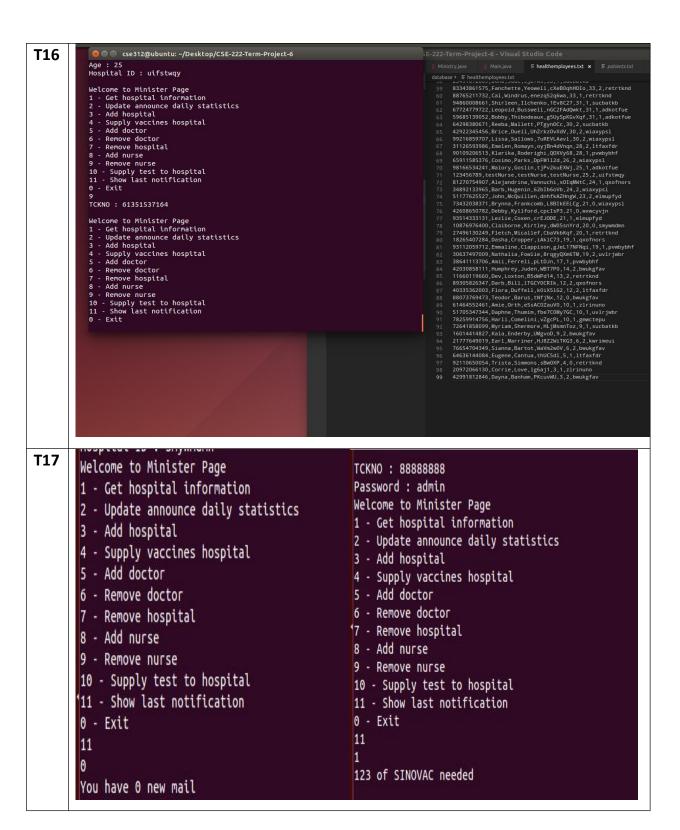
```
Choose user type :
T9
   1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
   0 - Exit
   1
   TCKNO: 40335362003
   Password : k0iX5lG2
   Welcome to Nurse Page
   1 - Mark the test information
   2 - Vaccinate a patinet
   0 - Exit
T10 Choose user type :
   1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
   0 - Exit
   1
   TCKNO : 321
   Password : wqeqw
   user not found...
   Choose user type :
   1 - Login As Health Employee
   2 - Login As Patient
   3 - Sign Up As Patient
     - Exit
```

```
Choose user type :
T11
   1 - Login As Health Employee
    2 - Login As Patient
    3 - Sign Up As Patient
    0 - Exit
    1
    TCKNO: 88888888
    Password : admin
   Welcome to Minister Page
    1 - Get hospital information
    2 - Update announce daily statistics
    3 - Add hospital
    4 - Supply vaccines hospital
    5 - Add doctor
    6 - Remove doctor
    7 - Remove hospital
    8 - Add nurse
    9 - Remove nurse
    10 - Supply test to hospital
    11 - Show last notification
    0 - Exit
    Hospital ID : smywmdmn
    Head Physician : Claiborne Kirtley
    Number of beds : 100
    Number of tests : 1000
    City : ZONGULDAK
    Vaccine info :
    ASTRAZENECA-> 100
    BIOENTECH-> 100
    KAYSERI-> 100
    SINOVAC-> 100
    SPUTNIK-> 100
    Welcome to Minister Page
    1 - Get hospital information
    2 - Update announce daily statistics
    3 - Add hospital
    4 - Supply vaccines hospital
    5 - Add doctor
    6 - Remove doctor
    7 - Remove hospital
    8 - Add nurse
    9 - Remove nurse
    10 - Supply test to hospital
    11 - Show last notification
    0 - Exit
```

```
T12
          Welcome to Minister Page
          1 - Get hospital information
          2 - Update announce daily statistics
          3 - Add hospital
          4 - Supply vaccines hospital
          5 - Add doctor
          6 - Remove doctor
          7 - Remove hospital
          8 - Add nurse
          9 - Remove nurse
          10 - Supply test to hospital
          11 - Show last notification
          0 - Exit
          2
          Covid Patients:
                                                  33
          Vaccinated Patients: 33
T13
        🔞 🖨 🗈 cse312@ubuntu: ~/Desktop/CSE-222-Term-Project-6
        Hospital ID : 431745153
                                                                                🛔 Ministry.java 💢 Main.java 🌘
                                                                                database > ≣ hospitals.txt
        Welcome to Minister Page
        1 - Get hospital information
                                                                                 2 adkotfue, ADANA
        2 - Update announce daily statistics
                                                                                 3 zlrinuno,ARTVİN
                                                                                 4 sfpxthgm,KAHRAMANMARAS
        3 - Add hospital
                                                                                 5 uvlrjwbr,ELAZIĞ
6 kwrimeui,KONYA
7 sucbatkb,KAYSERİ
        4 - Supply vaccines hospital
        5 - Add doctor
        6 - Remove doctor
                                                                                 8 pvwbybhf,DÜZCE
        7 - Remove hospital
                                                                                 9 wiaxypsl,AYDIN
        8 - Add nurse
                                                                                 10 qxofnors, KIRŞEHİR
        9 - Remove nurse
                                                                                 11 bwukgfav,TRABZON
                                                                                 elmupfyd,GÜMÜŞHANE
13 ltfaxfdr,MALATYA
14 rakvhqlb,ANTALYA
15 dwhngxpf,KIRIKKALE
        10 - Supply test to hospital
        11 - Show last notification
        0 - Exit
                                                                                 16 gmwctepu,BİNGÖL
        Enter City Name :
                                                                                 17 cnyqrxla,KASTAMONU
        SAMSUN
                                                                                 18 retrtknd, ORDU
                                                                                 19 smywmdmn, ZONGULDAK
        Welcome to Minister Page
                                                                                 20 wxwcyvjn,BİTLİS
                                                                                 21 uifstwqy,KARS
22 550131557,SAMSUN
        1 - Get hospital information
        2 - Update announce daily statistics
        3 - Add hospital
        4 - Supply vaccines hospital
        5 - Add doctor
        6 - Remove doctor
        7 - Remove hospital
        8 - Add nurse
        9 - Remove nurse
        10 - Supply test to hospital
        11 - Show last notification
        0 - Exit
```







```
TCKNO : ^Cmake: *** [run] Error 130
T18
                                                                              87004335933,Francklyn,Ridhole,9jxkvaJgmg8Q,90,false,true,false,false,ZONGULDA
                                                                           480935935, rialek, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak, riak,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cse312@ubuntu:~/Desktop/CSE-222-Term-Project-6$ make
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              javac Main.java
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              iava Main
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Welcome to the COVID Management System
                                                                           313601103-9; valte, lits (u. t. 531 x.a.); (1, 1 alse, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little, little,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Choose user type :
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 - Login As Health Employee
2 - Login As Patient
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sign Up As Patient
                                                                             63356941787,Sile,Golding,NXuJ7ILx,61,true,true,false,true,DİYARBAKIR
71243678326,Eula,Whitnell,Th3jVaOYU,61,false,false,true,true,NEVŞEHİR
                                                                           7/23-30/83/2, cut, amittleil, injyadvio, i, false, false, true, true, httystim 575323817335, Jocelyne, Evangelinos, tqQBkDWu9652, 49, false, true, true, true, BATMAN 57197215182, Catharina, Macak, dR248Dgal, 61, false, true, true, false, ARDAHAN 43787520664, Brittaney, Rockhill, HXM2WjJb, 56, true, true, true, true, BATMAN 54016412802, Ernesto, Mordaunt, YbnCq4, 47, false, false, false, true, HATAY 96974563443, Ferrel, White, q4Cd1QySeG, 21, false, false, false, true, AYDIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TCKNO: 37947858673
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Password : g0uWiC
Welcome to Doctor Page
1 - Add patient
                                                                             25186976835, Wye, Forrestill, JnigR43, 50, true, true, false, false, BATMAN 61424325846, Keen, Vasilkov, 9KsdrU, 12, true, false, false, false, ANTALYA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Remove patient
Get patient Data
                                                                             49209706499, Anderea, Biesterfeld, n05jUNXVN1uI, 72, true, true, false, true, AKSARAY
93322546855, Kev, Auchterlony, vw23aUn, 84, true, true, false, false, BALIKESİR
                                                                           93322546855, Kev, Auchterlony, vw23aUn, 84, true, true, false, false, BALIKESIR 85094251122, Banky, Morkham, pgvhjV9CQRQ, 91, false, true, true, true, CANKIRI 96254074990, Greer, Simmen, XPM9H2, 35, false, true, true, true, TOKAT 18173958106, Dale, Lethabridge, OIu3wNY, 73, false, false, true, true, KARAMAN 12987850084, Fellpe, Ikringill, JAMOpn, 12, false, false, false, true, KIRKLARELİ 48805595764, Dannie, Lamcken, D8K2GLZeUZ9e, 92, false, false, false, false, MARDİN 84641930304, Barbra, Barlow, 600GWKS, 22, true, false, true, true, BİTLİS 51172390792, Cordie, Artharg, QtjfVLci, 73, false, false, false, false, ANKARA 63034774055, Wendall, Keddey HiszályvGWB, 3 false, true, true, true, FlaZTĞ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vaccinate a patinet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       - Exit
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FirstName : test
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LastName : test
TCKNO : 12312312312
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Password : test
                                                                             63034774055, Wendall, Keddey, Hjrg34jxy6jW, 23, false, true, true, true, ELAZIĞ
82560672940, Nina, Artis, nnysm1Clid, 80, true, false, false, false, SAMSUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Age : 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             IsCovid : false
IsSick : false
                                                                          82506/2940, Nina, Artis, nnysmitlin, 80, true, false, false, false, sAMSUN 99261225721, Babbie, Greyes, sxX55KTU, 68, false, true, false, true, TEKIROAG 56430318945, Nataniel, Le Surf, DjHCcwR, 96, true, true, true, true, KONYA 32074865860, Christian, Guerrin, gq281d02Jf, 15, false, true, false, true, BITLIS 92559557918, Frederick, Netting, UtZRpUW, 26, false, false, true, true, KOCAELĪ 37924182110, Quill, Scroggs, NGMIyOXdk, 1, true, true, false, true, DUZCE 62304957060, Lanie, Coveley, yeWQeJ, 65, false, true, false, true, BALIKESIR 10362437770, Jenn, Foggo, NTSC9KB92, 14, false, false, true, true, KAYSERĪ 8533063444 Courtree, Bayton, po@KIGO, So false, true, false, true, TUMCĒT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           IsSmoking : false
IsVaccinated : false
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             City : SAMSUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Welcome to Doctor Page
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 - Add patient
                                                                             95453063444, Courtney, Buxton, noBI4rQ, 59, false, true, false, true, TUNCELİ
26507544357, Percival, Kings, vzsFE93R, 79, true, false, false, true, BATMAN
12312312312, test, test, test, 24, false, false, false, false, SAMSUN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 - Remove patient
3 - Get patient Data
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Vaccinate a patinet
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Exit
                                                                                                                                                                                                                                                                                                                                                                                                          رده الماره الماره الماره الماره الماره الماره الماره الماره الماره الماره الماره الماره الماره الماره الماره ا
BinaryTree.Node<Patient> node = ((BinaryTree) patients).getNode(
                                                                           37004335933, Francklyn, Ridhole, 9jxkwalgngBQ, 90, false, true, false, false, ZONGULDAY
14901555885, Georgeanna, Prinne, 1v65165s6DxD, 5, false, false, true, false, VAN
12150684507, Nathalia, Dmitrovic, 4kHRWNQ, 54, false, false, frue, Edise, true, GAZIANTEP
77564733654, Balie, Dubique, wmuEOchud, 57, false, true, false, true, TREE, TREE,
3756473564, Salie, Dubique, wmuEOchud, 57, false, true, false, true, TREE, TREE,
3756473654, Vallie, Instock, ts1rx2NJ, 17, false, false, true, false, BATMAN
48005539032, MAN, Cash, Invilla, 38, false, false, strue, false, BATMAN
                                                                                                                                                                                                                                                                                                                                                                                                      1 error
                                                                                                                                                                                                                                                                                                                                                                                                      make: *** [run] Error 1
                                                                      // John School Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the Comments of the
                                                                                                                                                                                                                                                                                                                                                                                                      cse312@ubuntu:~/Desktop/CSE-222-Term-Project-6$ make
javac Main.java
                                                                                                                                                                                                                                                                                                                                                                                                         iava Main
                                                                                                                                                                                                                                                                                                                                                                                                       Welcome to the COVID Management System
                                                                                                                                                                                                                                                                                                                                                                                                      Choose user type
                                                                                                                                                                                                                                                                                                                                                                                                      1 - Login As Health Employee
2 - Login As Patient
                                                                                                                                                                                                                                                                                                                                                                                                      3 - Sign Up As Patient
                                                                                                                                                                                                                                                                                                                                                                                                      0 - Exit
                                                                                                                                                                                                                                                                                                                                                                                                       TCKNO : ^Cmake: *** [run] Error 130
                                                                                                                                                                                                                                                                                                                                                                                                      cse312@ubuntu:~/Desktop/CSE-222-Term-Project-6$ make
                                                                                                                                                                                                                                                                                                                                                                                                      javac Main.java
java Main
                                                                                                                                                                                                                                                                                                                                                                                                      Welcome to the COVID Management System
                                                                                                                                                                                                                                                                                                                                                                                                      Choose user type :
1 - Login As Health Employee
2 - Login As Patient
                                                                                                                                                                                                                                                                                                                                                                                                               - Sign Up As Patient
- Exit
                                                                                                                                                                                                                                                                                                                                                                                                     TCKNO: 37947858673
Password: g0uWiC
Welcome to Doctor Page
1 - Add patient
2 - Remove patient
3 - Get patient Pata
                                                                                                                                                                                                                                                                                                                                                                                                         3 - Get patient Data
                                                                                                                                                                                                                                                                                                                                                                                                                 - Vaccinate a patinet
                                                                                                                                                                                                                                                                                                                                                                                                     0 - Exit
```

T20 Welcome to Doctor Page 1 - Add patient 2 - Remove patient 3 - Get patient Data 4 - Vaccinate a patinet 0 - Exit 3 Patient TCKNO: 62304957060 ****PERSONAL INFORMATION**** Name= Lanie Surname= Coveley TCKNO= 62304957060 SMOKE= false VACCINATE= false SICK= false COVID= false

```
cse312@ubuntu:~/Desktop/CSE-222-Term-Project-6$ make
T21
       javac Main.java
       java Main
       Welcome to the COVID Management System
       Choose user type :
       1 - Login As Health Employee
       2 - Login As Patient
       3 - Sign Up As Patient
       0 - Exit
       TCKNO: 21059983784
       Password : XdGzKS
       You are a patient
       Welcome to Patient Page
       1 - Demand covid test
       2 - Get personal information
       3 - Get in vaccination queue
       0 - EXIT
       Welcome to Patient Page
       1 - Demand covid test
       2 - Get personal information
       3 - Get in vaccination queue
       0 - EXIT
       EXIT...
       Choose user type :
       1 - Login As Health Employee
       2 - Login As Patient
       3 - Sign Up As Patient
       0 - Exit
       TCKNO: 42991812846
       Password : PKcuvWU
       Welcome to Nurse Page
       1 - Mark the test information
       2 - Vaccinate a patinet
       0 - Exit
       Patient with the TCKNO : 21059983784 has vaccinated
       Choose user type
      1 - Login As Health Employee
2 - Login As Patient
3 - Sign Up As Patient
         - Exit
       0
       TCKNO: 55468138407
      Password : 120Cqu
Welcome to Doctor Page
1 - Add patient
         - Remove patient
         Get patient DataVaccinate a patinet
       3
       0 - Exit
      No patient in the vaccination order...
Welcome to Doctor Page
1 - Add patient
       2
         Remove patientGet patient Data
       3
       4
         - Vaccinate a patinet
       0
            Exit
```

Get pattent Data 85094251122,Banky,Morkham,pgvhjV9CQRQ,91,false,true,true,CANKIRI T22 4 - Vaccinate a patinet 96254074990, Greer, Simmen, XPW9H2, 35, false, true, true, true, TOKAT 0 - Exit 18173958106, Dale, Lethabridge, Olu3wNY, 73, false, false, true, true, KARAMAN 0 12987850084, Felipe, Ikringill, jAMOpn, 12, false, false, false, true, KIRKLARELİ EXIT... 48805595764, Dannie, Lamcken, D8k26LZeUZ9e, 92, false, false, false, false, MARDÎN 84641930304, Barbra, Barlow, 600GWkS, 22, true, false, true, true, BİTLİS Choose user type : 51172390792, Cordie, Artharg, QtjfvLci, 73, false, false, false, false, ANKARA 1 - Login As Health Employee 63034774055, Wendall, Keddey, Hjrg34jxyGjW, 23, false, true, true, true, ELAZIĞ 2 - Login As Patient 82560672940, Nina, Artis, nnysm1Clid, 80, true, false, false, false, SAMSUN 3 - Sign Up As Patient 99261225721,Babbie,Greyes,svxS5kfU,68,false,true,false,true,TEKİRDAĞ 0 - Exit 56430318945, Nataniel, Le Surf, DjHCcwR, 96, true, true, true, true, KONYA 32074865860, Christian, Guerrin, gqZ8ldDZJf, 15, false, true, false, true, BİTLİS FirstName : test 92559557918, Frederick, Netting, UtZRpUW, 26, false, false, true, true, KOCAELİ LastName : test 37924182110,Quill,Scroggs,NGN1y0Xdk,1,true,true,false,true,DÜZCE 62304957060, Lanie, Coveley, yeWQeJ, 65, false, true, false, true, BALIKESİR 10362437770, Jenn, Foggo, NTSc9KB92, 14, false, false, true, true, KAYSERİ TCKNO: 12312312 Password : test 95453063444,Courtney,Buxton,noBI4rQ,59,false,true,false,true,TUNCELİ 26507544357,Percival,Kings,vzsFE93R,79,true,false,false,true,BATMAN Age : 22 IsCovid : true 12312312, test, test, test, 22, true, true, true, true, SİVAS IsSick : false IsSmoking : true IsVaccinated : false City : SİVAS Choose user type : 1 - Login As Health Employee 2 - Login As Patient 3 - Sign Up As Patient 0 - Exit **T23** Choose user type : 1 - Login As Health Employee 2 - Login As Patient 3 - Sign Up As Patient 0 - Exit 2 TCKNO: 12312312 Password : test You are a patient Welcome to Patient Page 1 - Demand covid test 2 - Get personal information 3 - Get in vaccination queue 0 - EXIT covid test result -> positive

```
Welcome to Patient Page
     1 - Demand covid test
     2 - Get personal information
     3 - Get in vaccination queue
     0 - EXIT
     ****PERSONAL INFORMATION****
    Name= test
    Surname= test
     TCKN0= 12312312
    SMOKE= true
    VACCINATE= true
    SICK= true
     COVID= true
                                   Welcome to Patient Page
    Choose user type :
T25
    1 - Login As Health Employee
                                   1 - Demand covid test
    2 - Login As Patient
                                   2 - Get personal information
    3 - Sign Up As Patient
                                   3 - Get in vaccination queue
    0 - Exit
                                   0 - EXIT
    TCKNO: 83343861575
                                    ****PERSONAL INFORMATION****
    Password : cXeB0qhH0Io
    Welcome to Nurse Page
                                   Name= Christi
    1 - Mark the test information
                                    Surname= Kibbee
    2 - Vaccinate a patinet
                                   TCKN0= 61775977104
    0 - Exit
                                    SMOKE= false
    Patient TCKNO : 61775977104
                                   VACCINATE= false
    Welcome to Nurse Page
                                   SICK= false
    1 - Mark the test information
                                    COVID= false
    2 - Vaccinate a patinet
    0 - Exit
```

T26

Welcome to HeadPhysican Page

1 - Get patient information

2 - Get hospital data

3 - Vaccinate a patinet

4 - Demand vaccines form Minister

0 - Exit

2

Head Physician : Benyamin Aubri

Number of beds : 100 Number of tests : 1000

City : KIRŞEHİR Vaccine info : ASTRAZENECA-> 100 BIOENTECH-> 100 KAYSERI-> 100 SINOVAC-> 100

SPUTNIK-> 100

```
T27
     TCKNO: 94454856493
     Password : ZfGB1MNu30
     Welcome to HeadPhysican Page
     1 - Get patient information
     2 - Get hospital data
     3 - Vaccinate a patinet
     4 - Demand vaccines form Minister
     0 - Exit
     Please select vaccine type
      * - SINOVAC,
      * - BIOENTECH

    ASTRAZENECA

      * - SPUTNIK
      * - KAYSERI
     KAYSERO
     Wrong Vaccine Name Please Try Again
     KAYSERI
     Please Enter Vaccine number: 99999
     Welcome to HeadPhysican Page
     1 - Get patient information
     2 - Get hospital data
     3 - Vaccinate a patinet
     4 - Demand vaccines form Minister
     0 - Exit
     0
     EXIT...
     Choose user type :
     1 - Login As Health Employee
     2 - Login As Patient
     3 - Sign Up As Patient
     0 - Exit
     TCKNO: 88888888
     Password : admin
     Welcome to Minister Page
     1 - Get hospital information
     2 - Update announce daily statistics
     3 - Add hospital
     4 - Supply vaccines hospital
     5 - Add doctor
     6 - Remove doctor
     7 - Remove hospital
     8 - Add nurse
     9 - Remove nurse
     10 - Supply test to hospital
     11 - Show last notification
     0 - Exit
     11
     99999 of KAYSERI needed
```

```
Choose user type
T28
      1 - Login As Health Employee
      2 - Login As Patient
      3 - Sign Up As Patient
      0 - Exit
      TCKNO: 94454856493
      Password : ZfGB1MNu30
      Welcome to HeadPhysican Page
      1 - Get patient information
      2 - Get hospital data
      3 - Vaccinate a patinet
4 - Demand vaccines form Minister
      0
        - Exit
      Patient TCKNO : 53769809260
       ****PERSONAL INFORMATION****
      Name= Quintina
      Surname= Lithgow
      TCKNO= 53769809260
SMOKE= true
      VACCINATE= true
      SICK= true
      COVID= true
          uifstwqy=Head Physician : Piper Isakovic
T29
      Number of beds : 100
Number of tests : 1000
City : KARS
       Vaccine info :
       ASTRAZENECA-> 100
       BIOENTECH-> 100
       KAYSERI-> 100
SINOVAC-> 100
SPUTNIK-> 100
       Choose Hospital : uifstwqy
Number of tests : 850
       Welcome to Minister Page
1 - Get hospital information
       2 - Update announce daily statistics
3 - Add hospital
4 - Supply vaccines hospital
5 - Add doctor
       6 - Remove doctor
7 - Remove hospital
8 - Add nurse
9 - Remove nurse
       10 - Supply test to hospital
11 - Show last notification
0 - Exit
       , uifstwqy=Head Physician : Piper Isakovic
       Number of beds : 100
       Number of tests : 1850
       City: KARS
       Vaccine info :
       ASTRAZENECA-> 100
       BIOENTECH-> 100
       KAYSERI-> 100
       SINOVAC-> 100
       SPUTNIK-> 100
```

```
T30
       Welcome to Minister Page
1 - Get hospital information
       2 - Update announce daily statistics
       3 - Add hospital
       4 - Supply vaccines hospital
       5 - Add doctor
       6 - Remove doctor
         - Remove hospital
       8 - Add nurse
9 - Remove nurse
       10 - Supply test to hospital
11 - Show last notification
       0 - Exit
       PLEASE SELECT VACCINE TYPE
       SINOVAC.
       BIOENTECH
       ASTRAZENECA
       SPUTNIK
       KAYSERI
       SINOVAC
       Amount : 1000000
       Enter hospital id : 550131557
      Hospital ID: 550131557
      Head Physician: 10876976400, Claiborne, Kirtley, dW05snYrd, 20,0, smywmdmn
      Number of beds: 100
      Number of tests: 1000
      City : SAMSUN
      Vaccine info :
      ASTRAZENECA-> 100
      BIOENTECH-> 100
      KAYSERI-> 100
      SINOVAC-> 1000100
      SPUTNIK-> 100
T31
     Choose user type :
      1 - Login As Health Employee
      2 - Login As Patient
      3 - Sign Up As Patient
      0 - Exit
      2
     TCKNO: 21059983784
      Password : XdGzKS
      You are a patient
     Welcome to Patient Page
     1 - Demand covid test
      2 - Get personal information
      3 - Get in vaccination queue
      0 - EXIT
      3
```