Minor Project

Topic: Covid Vaccination(run-time allotment process)

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Content

- INTRODUCTION
  LITERATURE REVIEW
  PROBLEM ANALYSI
  FLOW CHART
  PROVOCATION
  OBJECTIVES
  METHODOLOGY
  Application of the Project
  PERT CHART
  REFERENCE
  TECHNOLOGY STACK

Introduction

As we have passed through a very rough phase of our life. Also came across to face many of the problems during this pandemic.

We all have waited a lot for the vaccination to be developed. As we all know that with new things, we always welcome new problems.

So, as we did this time too, it was a big issue vaccinating everyone with proper scheduling and assigning them the location of vaccination and maintaining proper records of them.

Introduction

- To overcome this problem, we build a program system which is responsible to maintain proper functioning of the procedure is this program.

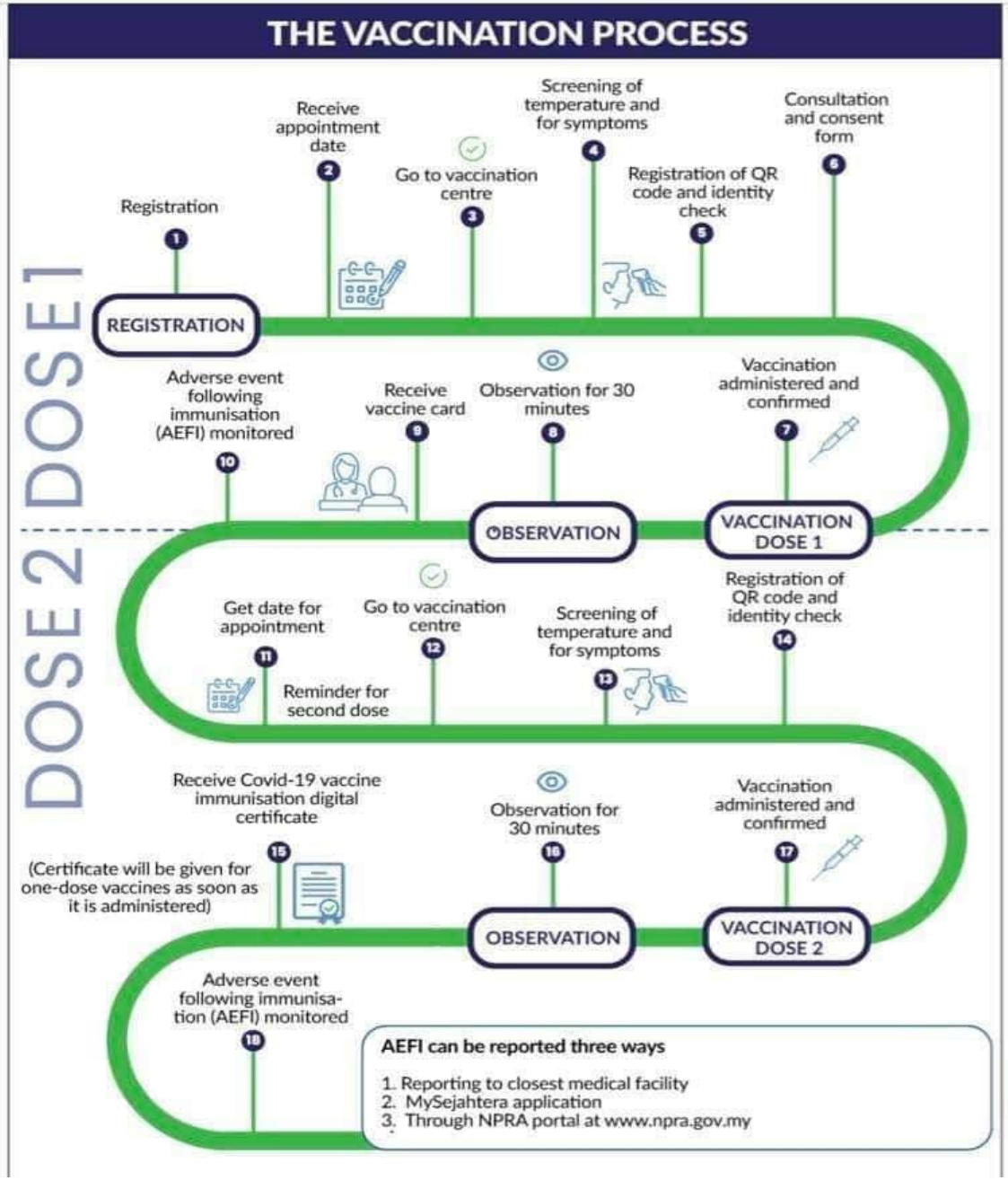
i)We have generated a program which takes the input from the user and collect all other information and verify them.

ii)Later according they are given a time slot and provide them the location of vaccination. This also help to maintain the count of vaccinated and non-vaccinated.

iii) There is a section of the program which will be responsible to sand alert message on the date of registration, this is all done as the information is stored on the server of every individual.

iv)The whole scheduling of the vaccination is cross updated and verified from the hospital.

Flow Chart


THE VACCINATION PROCESS
DOSE 1
Registration
1
Receive appointment date
2
Go to vaccination centre
3
Screening of temperature and for symptoms
4
Registration of QR code and identity check
5
Consultation and consent form
6
REGISTRATION
Adverse event following immunisation (AEFI) monitored
10
Receive vaccine card
9
Observation for 30 minutes
8
Vaccination administered and confirmed
7
OBSERVATION
VACCINATION DOSE 1
DOSE 2
Get date for appointment
11
Reminder for second dose
Go to vaccination centre
12
Screening of temperature and for symptoms
13
Registration of QR code and identity check
14
Receive Covid-19 vaccine immunisation digital certificate
15
(Certificate will be given for one-dose vaccines as soon as it is administered)
Observation for 30 minutes
16
Vaccination administered and confirmed
17
OBSERVATION
VACCINATION DOSE 2
Adverse event following immunisation (AEFI) monitored
18
AEFI can be reported three ways
1. Reporting to closest medical facility
2. MySejahtera application
3. Through NPRA portal at www.npra.gov.my

Literature Review

Since the outbreak of the COVID-19 pandemic, there has been a rapid expansion in vaccine research focusing on exploiting the novel discoveries.
Although the current preventive measures are primarily socially distancing by maintaining a 1 m distance, it is supplemented using facial masks and other personal hygiene measures.

Problem analysis

Problems(then)

- Registration login problems due to heavy server load
- Servel load as many users register simultaneously therefore increase in payload
- Not getting information on doze available in the region and also the self centred data too

Pro’s over previous cons

- Users get assigned or registered through priority
- Users get registered for their vaccination slot and then after the vaccination, it removes the data temporarily to decrease the payload on the server and thus helps the API to perform dynamically
- Now users can acess information on how many dozes are available in particular region and at which phase/slot

Vaccination are done on the following basis :

1. Registration of a new User : The user is prompted to enter his personal details. Here we check if the user is eligible for the vaccination depending upon his age.
2. Assign priority to the user upon registration and enqueue him : The user is enqueued according to his vaccination priority. get_priority() is a helper function which calculates the priority of the user.

3. Run time slot allotment process: Admin is prompted to enter his password and upon authentication has access to various functionalities of the Admin Class.

- 4. Login functionality for the User and Administrator: This function enables the user to login and check his allotted time slot.
  5. Get self data (for user) : In this the data of the user is collected like the personal id number , age of the person , place of vaccination .

  6. Get data of any citizen (for admin) : Admin is prompted to enter his password and upon authentication has access to various functionalities of the Admin Class.

Provocation:

This project spur to have this following key features:-

- You can check the status of your registered slot process and set your priority according to your occupation
- Get any information on covid status around your region.
- Can register very easily without any payload on the system
- If the registration is done by a big entity community like companies or school organisation, then there is login functionality for user and administrator.

Objectives

- The Citizen class which holds the data of the registered citizens and CitizenQueueList, the encompassing data structure which maintains priority and smoothens the allotment process.
- The Admin class provides the functionalities required by a system administrator, including running the allotment process, and changing certain parameters which influence the allotment.
- The main source file contains the user interface to the application and facilitates registration, and citizen and admin login.

Methodology

1. registration():

The user is prompted to enter his personal details. Here we check if the user is eligible for the vaccination depending upon his age. If he is eligible, the user is passed onto the enqueue function.

2 enqueue():

The user is enqueued according to his vaccination priority. get_priority() is a helper function which calculates the priority of the user depending upon his age and whether or not he has any comorbidities.

3. admin_login():

Admin is prompted to enter his password and upon authentication has access to various functionalities of the Admin Class. He can set an available_slots variable depending on the vaccines .

4. run_process():

Using the c-time library, we have calculated the date on which the process is being run. Citizens are allotted slots only for the next day.

5. user_login():

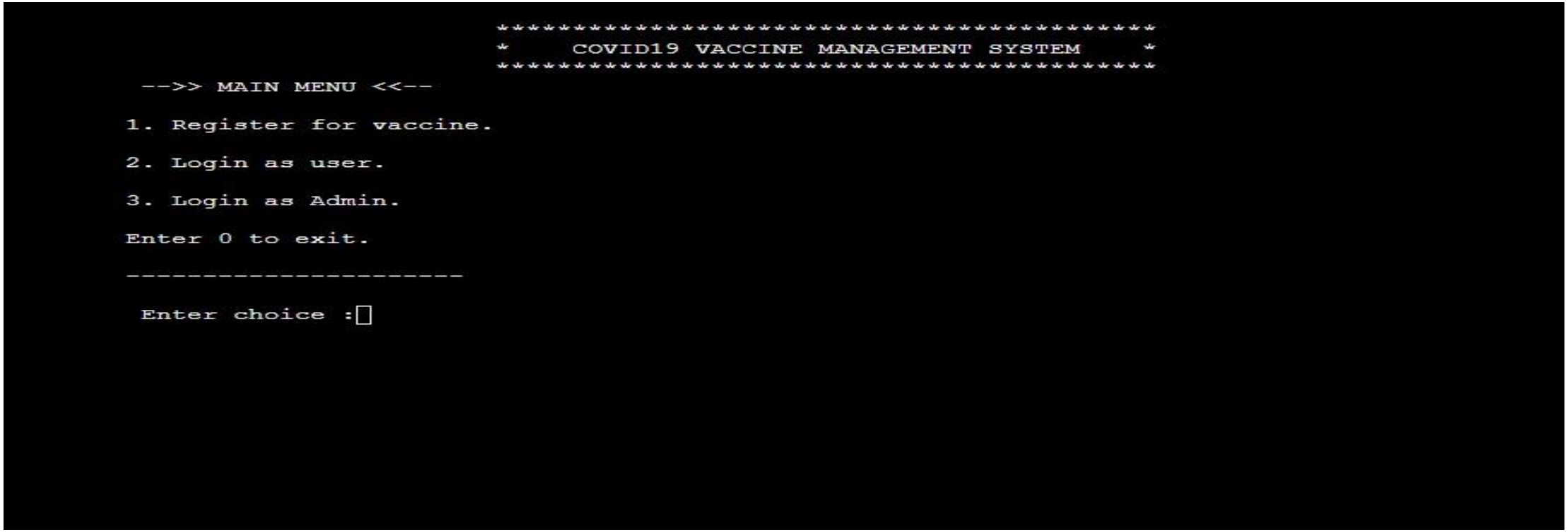
This function enables the user to login and check his allotted time slot. He is expected to log in on the day of his vaccination and confirm his vaccination .

Implementation

i)In this we are registering the citizen , from the register menu the citizen can register themselves .

ii)After registering themselves they can login and see the details .

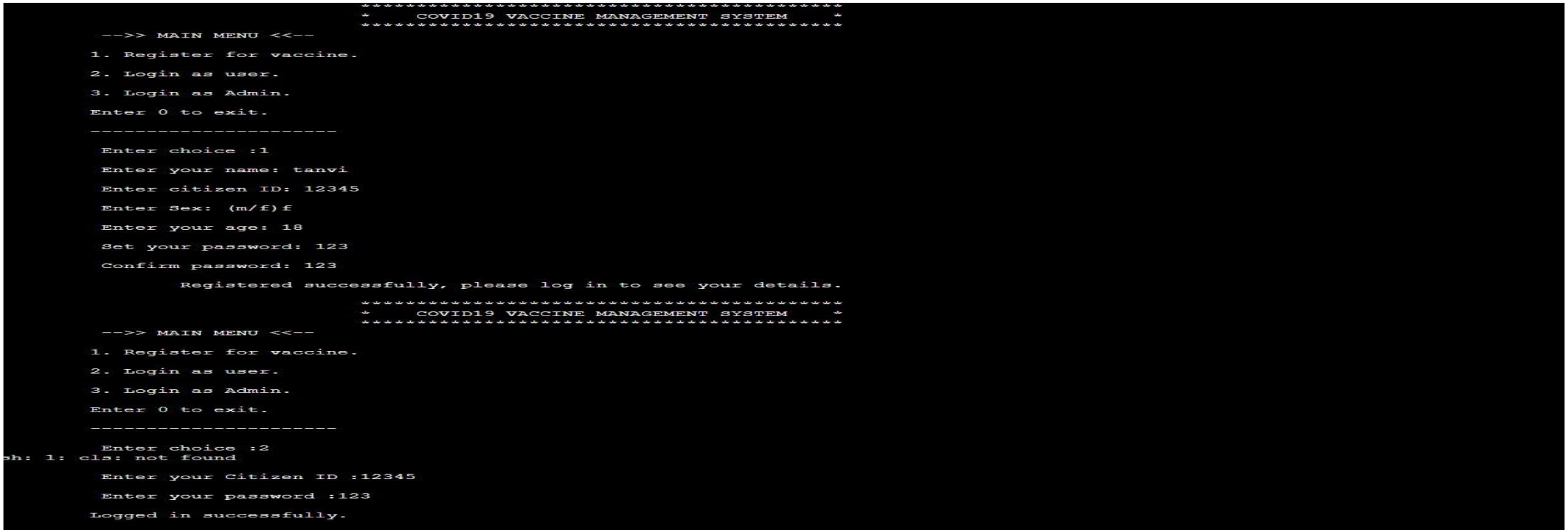
Iii)And the admin can then provide the slot for the vaccine .



Implementation

i) In this the user has register themselves from the user , there name has been asked , the citizen id has been asked , there gender has been asked , there age has been asked , and finally they have to put one password .

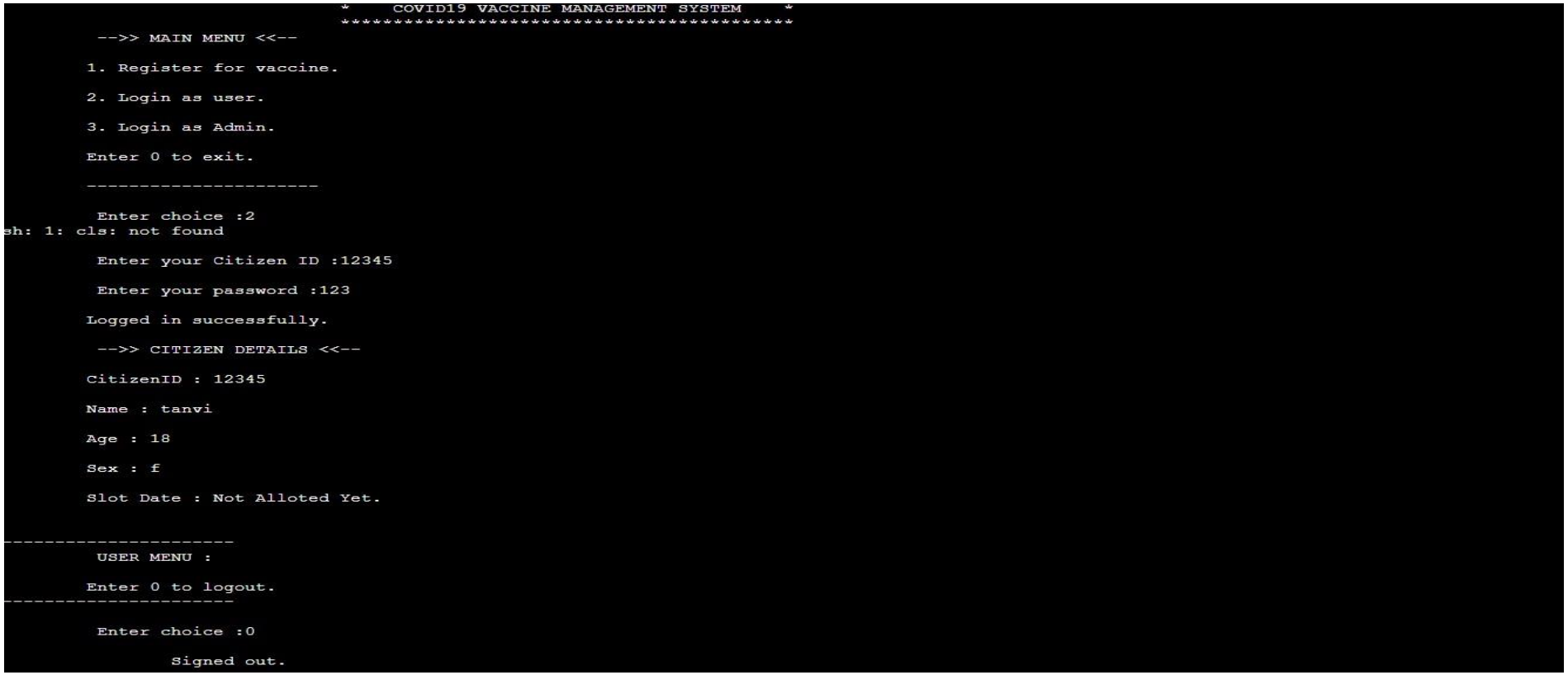
And by doing so they are registered successfully .



Implementation

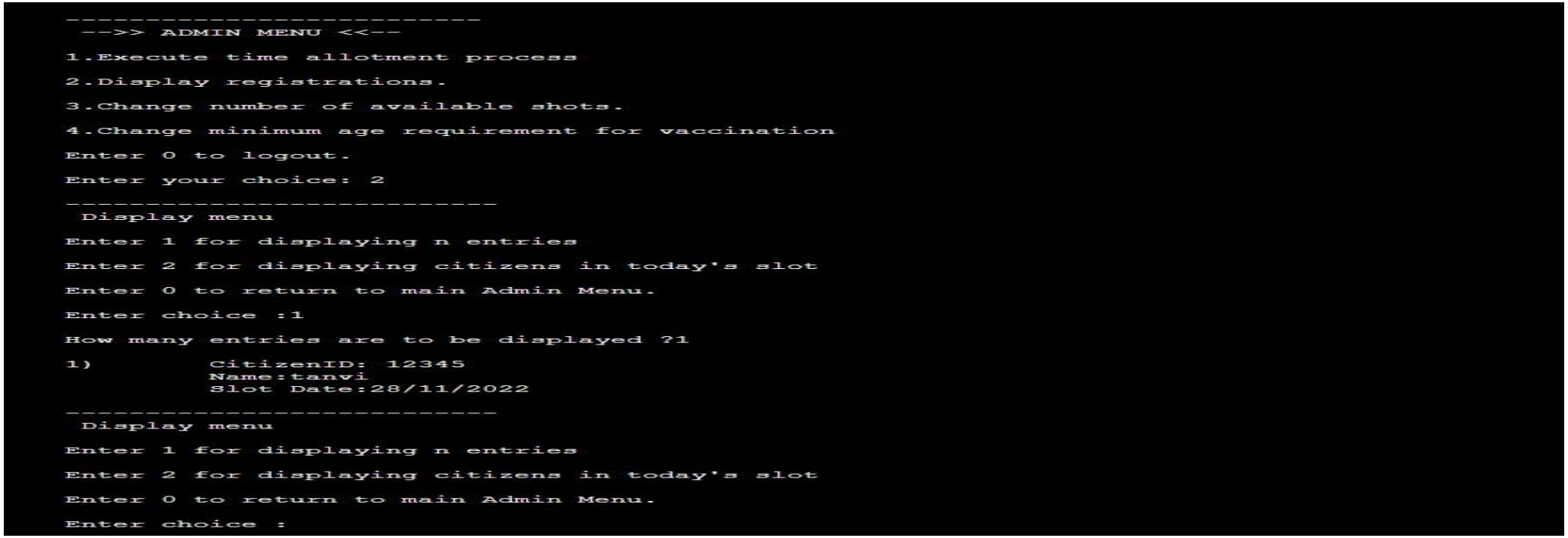
After registering they can login and see there details .

And see that slot has been provided or not .



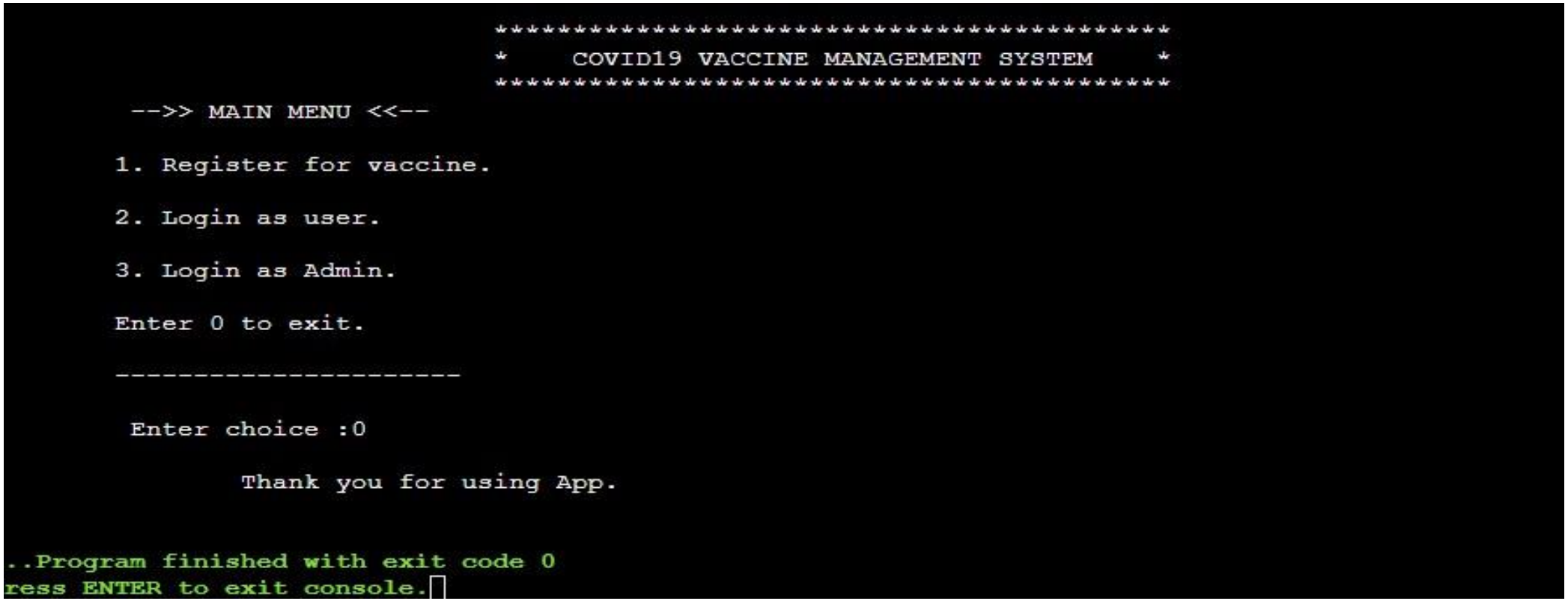
Implementation

And at the last the admin can login , and they can see how many citizen has registered for the vaccine , what are the age of the citizen , and then accordingly they can provide the slot for the vaccine .

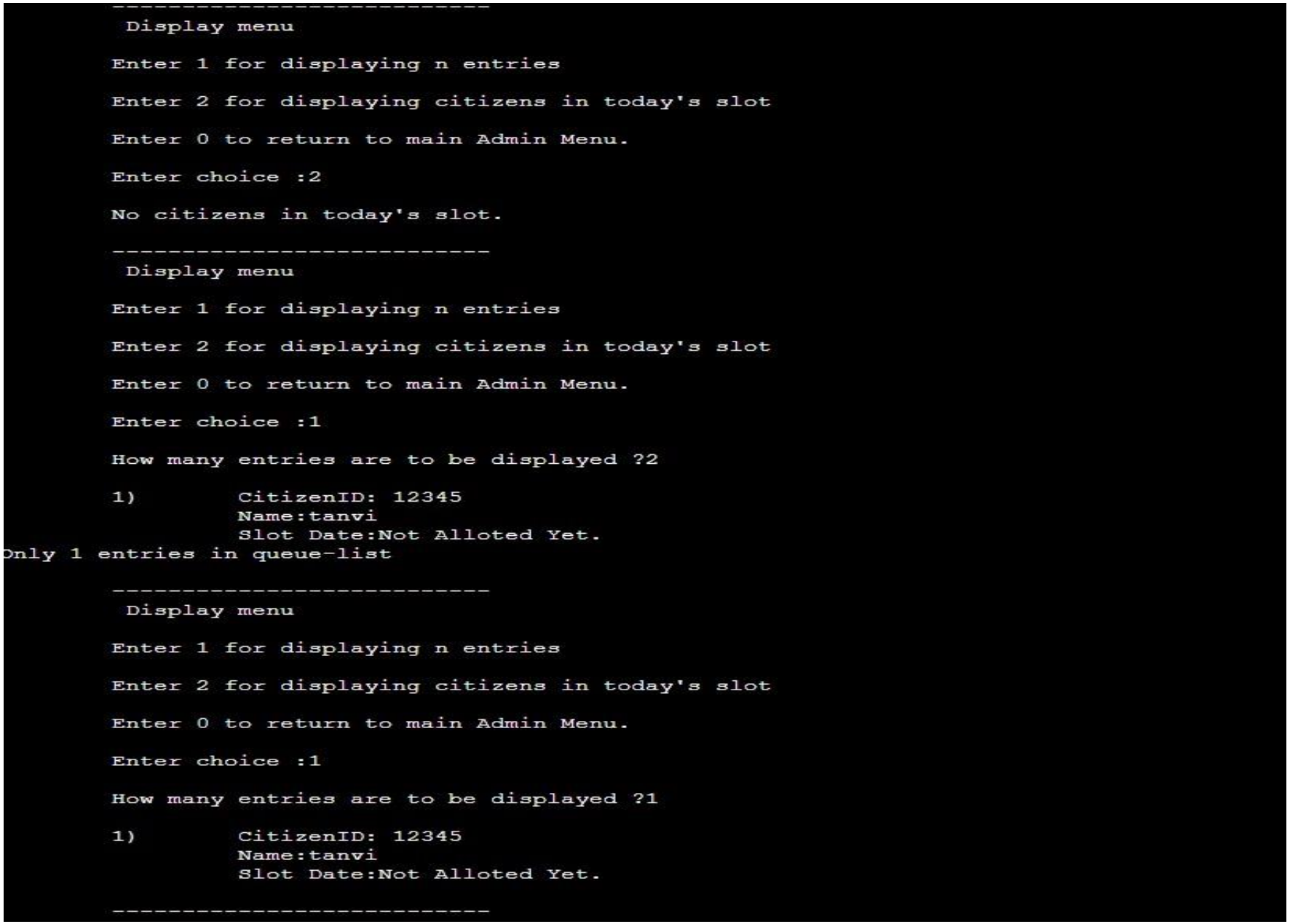


Implementation

After allotting the slot the admin can log out from the app successfully .



Deployment


Display menu
Enter 1 for displaying n entries
Enter 2 for displaying citizens in today's slot
Enter 0 to return to main Admin Menu.
Enter choice :2
No citizens in today's slot.
Display menu
Enter 1 for displaying n entries
Enter 2 for displaying citizens in today's slot
Enter 0 to return to main Admin Menu.
Enter choice :1
How many entries are to be displayed ?2
1) CitizenID: 12345
Name:tanvi
Slot Date:Not Alloted Yet.
Only 1 entries in queue-list
Display menu
Enter 1 for displaying n entries
Enter 2 for displaying citizens in today's slot
Enter 0 to return to main Admin Menu.
Enter choice :1
How many entries are to be displayed ?1
1) CitizenID: 12345
Name:tanvi
Slot Date:Not Alloted Yet.

Application of the Project

1. The Citizen class which holds the data of the registered citizens and Citizen Queue List,

the encompassing data structure which maintains priority and smoothens the allotment process.

2. The Admin class provides the functionalities required by a system administrator,

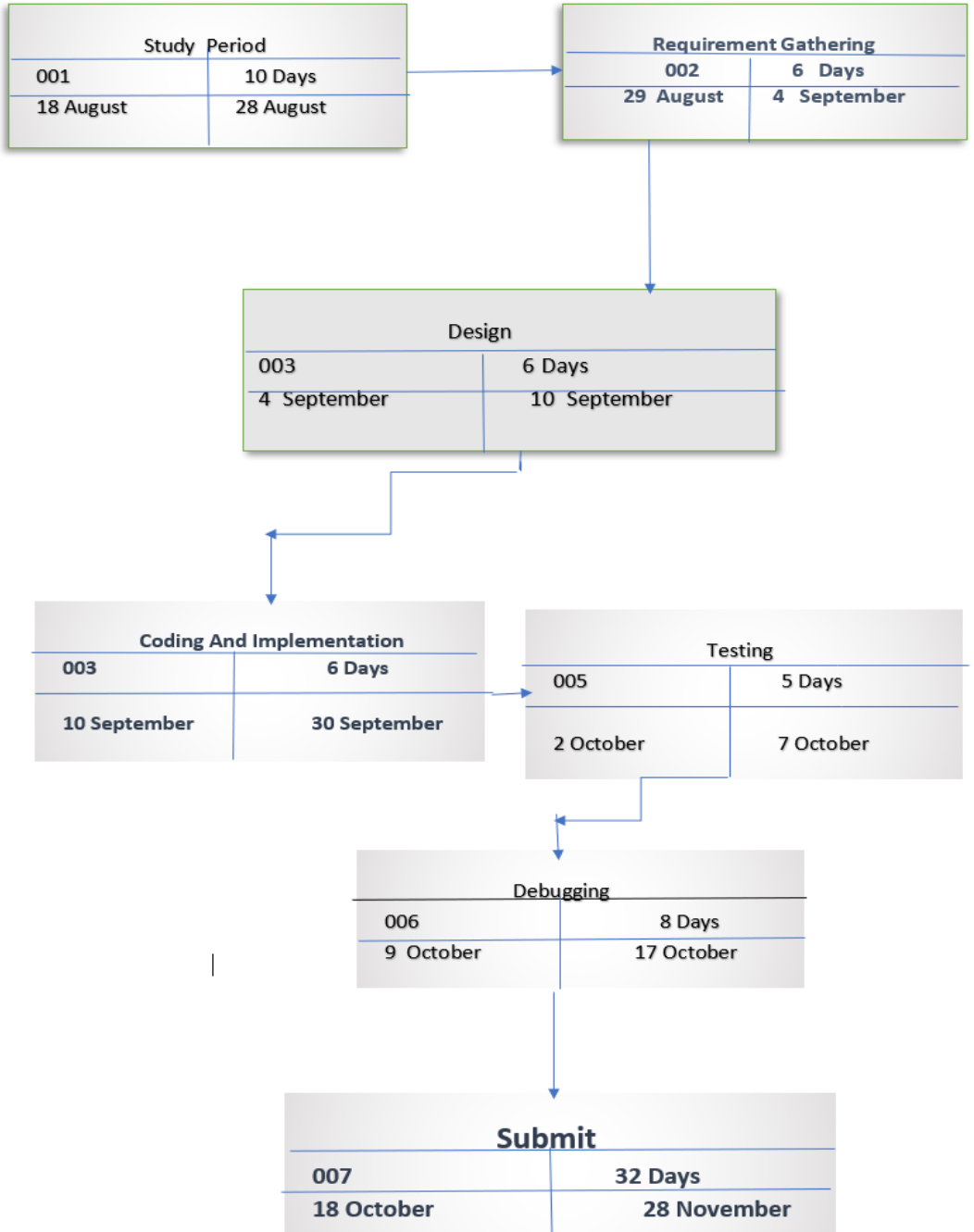
including running the allotment process, and changing certain parameters which influence the allotment, including age eligibility and vaccine availability.

The class also has some limited measure of privilege on citizen data.

3. The main source file contains the user interface to the application and facilitates registration,

and citizen and admin login.

PERT Chart


Study Period
001
10 Days
18 August
28 August
Requirement Gathering
002
6 Days
29 August
4 September
Design
003
6 Days
4 September
10 September
Coding And Implementation
003
6 Days
10 September
30 September
Testing
005
5 Days
2 October
7 October
Debugging
006
8 Days
9 October
17 October
Submit
007
32 Days
18 October
28 November

References

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https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-(covid-19)-vaccine-research-and-development

6) *vaccine development and distribution. Let us learn more about vaccines – from how they work and how they're made to ensuring safety and equitable access*
https://www.who.int/news-room/feature-stories/detail/how-are-vaccines-developed

Thank You