SCHOOL OF COMPUTING
Faculty of Engineering

SECJ1023 – PROGRAMMING TECHNIQUE II

PT II PROJECT FINAL DRAFT

PATIENTS' DATA DISTRIBUTION SYSTEM

SECTION : 04 – 1SECR

COURSE NAME : BACHELOR OF COMPUTER SCIENCE – COMPUTER NETWORKS & SECURITY

STUDENTS' PARTICULARS

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Introduction to System

2020 is a year whereby a lot of turbulences and hard times being experienced around the globe. One of the enormous occurrences is the Covid-19 pandemic. By referring to that field and converging to the project given theme, my team and I decided to establish a system regarding the case. It is namely Patients' Data Distribution System. This system will be used to ease the traffic of patients in Malaysia and manage the collective of data. We can also apply a few statistical tools and data analysis that we had learned in other course to see the correlation and regression of data that we have. However, we just focused on the usability and main functions of our data distribution system.

System Objectives

Patients' data distribution system is not only used to set, save, and store the data of people recorded in our organization. It is also meant to do another important decision making in solving real life situation problems. Therefore, there are several objectives embedded in our project to make sure our system follows our demand during the codes building. The objectives are as follows:

a) To store, modify, and analyse the data of Covid-19 patients, either current or new patients as well as reading the existing data from a source file
b) To determine the severity level of patients admitted so that they can be placed in the wrong unit
c) To monitor and ease the traffic flow in a certain hospital or premises of Covid-19 patients to avoid overflow in wards

Proceeding from these listed objectives, we then come out with an overview of the system that can satisfy our goals and with the simplest interface. The usability principle and user experience are becoming two most important factors in designing our system to enhance the efficiency and comfortability.

Scope of System

Our system is targeted to be used among front liners in health care departments which is basically in hospitals and temporary medical centre. The significance is, with this system they can easily manage their premises by looking at the data collected and stored in this system. Thus, no more usage of conventional papers unless for certain purposes.

A new scope addition in our second draft of project is created. Now, we put more specifications on the system usage by specific personas. In our system, they will be three option (which is still in consideration along the project completion) of user that may have access to our system. They are current user, guest user, and admin user. The specification of task allowed to be done by each person are as follows.

- **Current user:** This option allows the user with assigned username and password to enter the system. In our case, it may be the hospital administration team such as senior nurses and safety officers to monitor the system. Under this mode, current user may have the full access to the system in term of modifying patients' data, access important information and other function as per stated in system objectives.
- **Guest mode:** This option allows the user without assigned username and password to enter the system. Guest mode only lets the user to see every single detail that were included in the system without having the authority to modify or change any content of it. This option may be used by general nurses and doctors to know which ward locates critical patients or highly risk of infected person. Maybe janitors also can use the system when they are going to the cleaning to check for safety measures before entering patients' wards.
- **Admin mode:** This option allows ONLY ONE person that was assigned to monitor the login and logout of users in the system. That person will own a unique, private, and confidential credentials to enter the system, maybe a security engineer or data analyst. This function was established to supervise the system to avoid any threats from irresponsible party and if there is a threat, a quick measure will be taken.

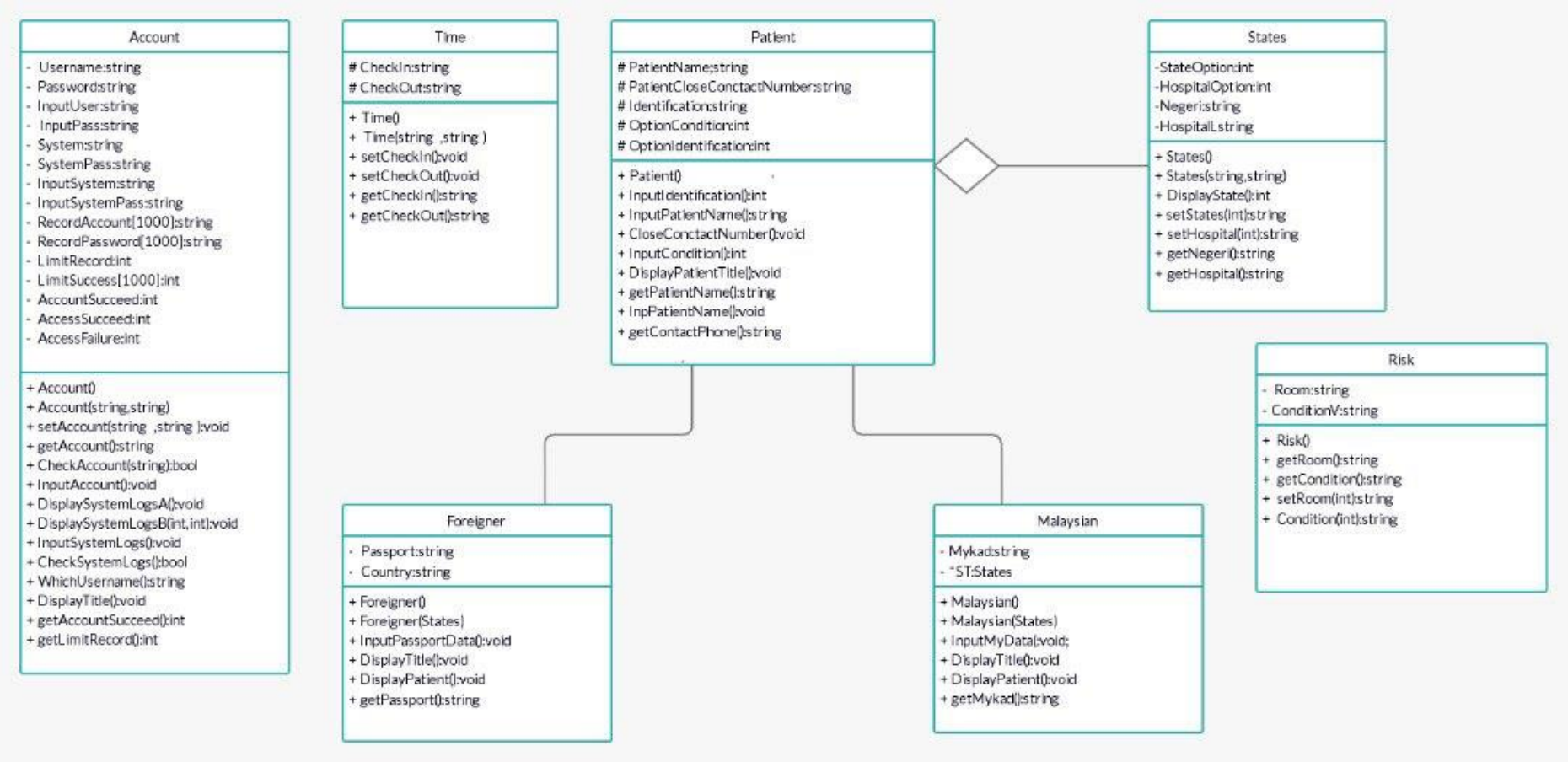


Figure 1 shows our UML class diagram for our system

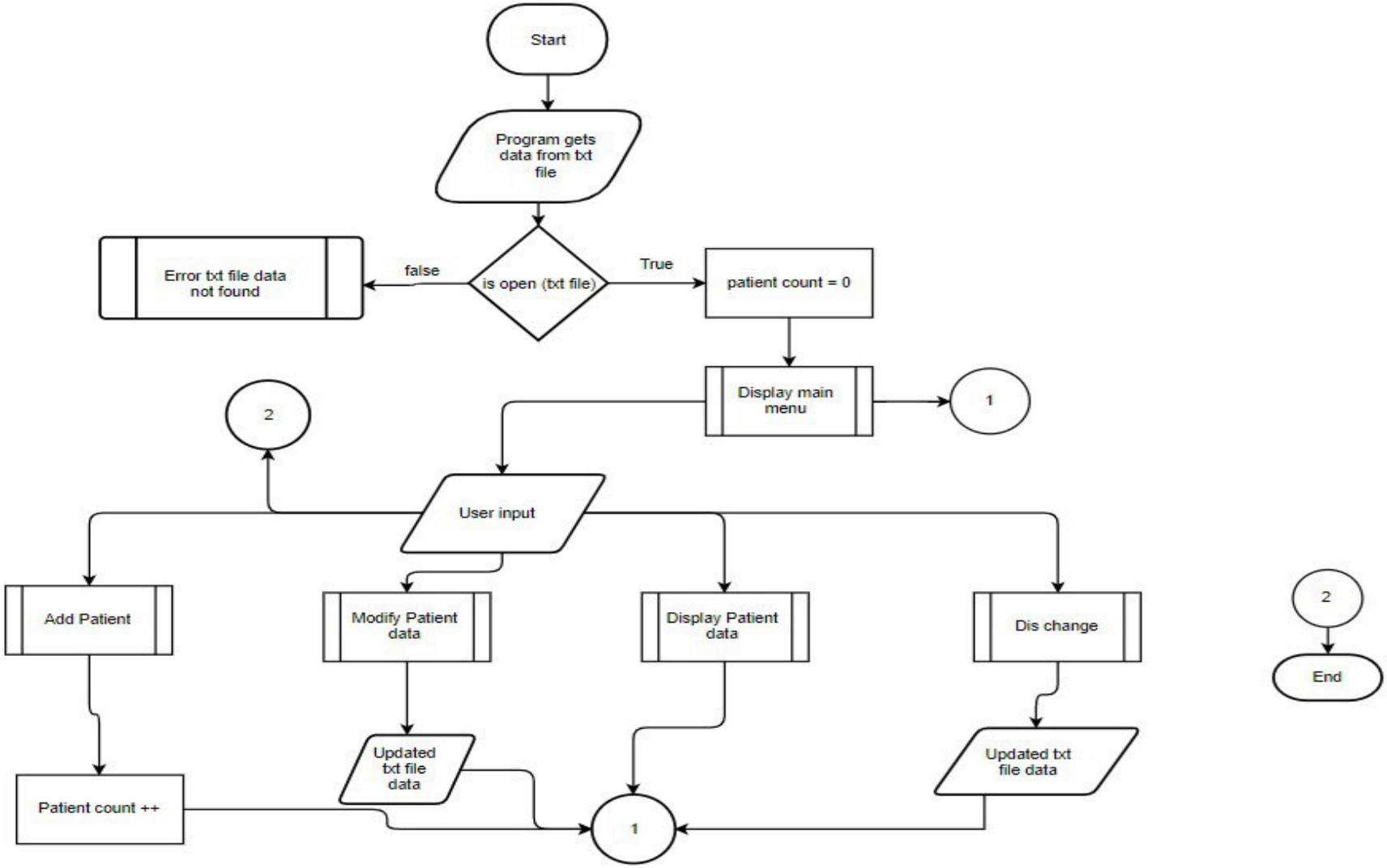
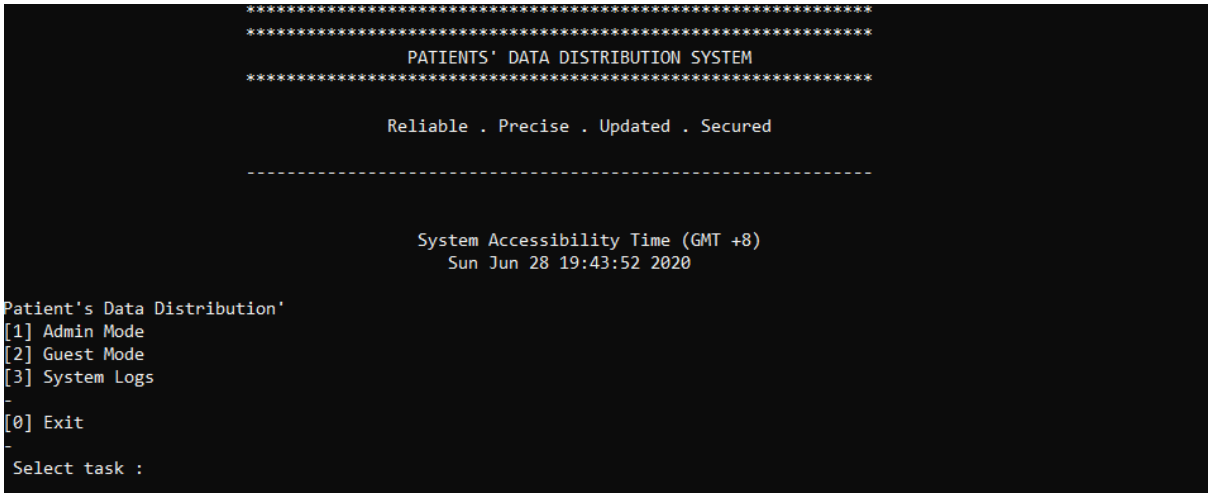


Figure 2 shows a flowchart of our system

Example of Input and Outputs

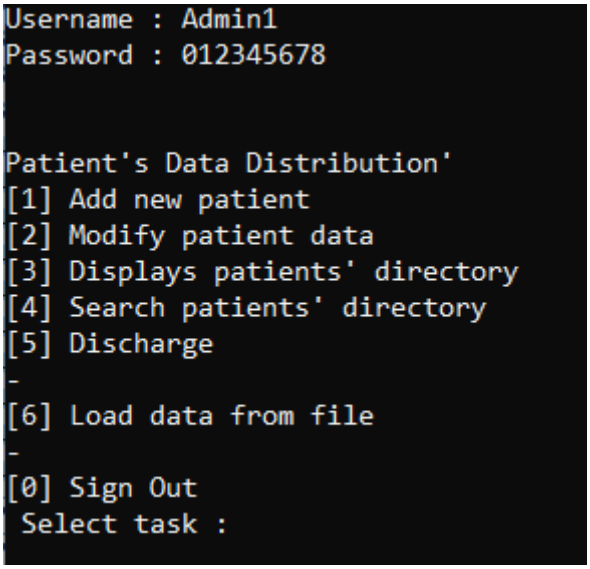


- A welcome screen is shown with several options. INPUT:

  [1] For admin, credentials will be given upon logging in to the system and allows the user to modify everything.

  [2] Guest can only see the data. No permission to modify.

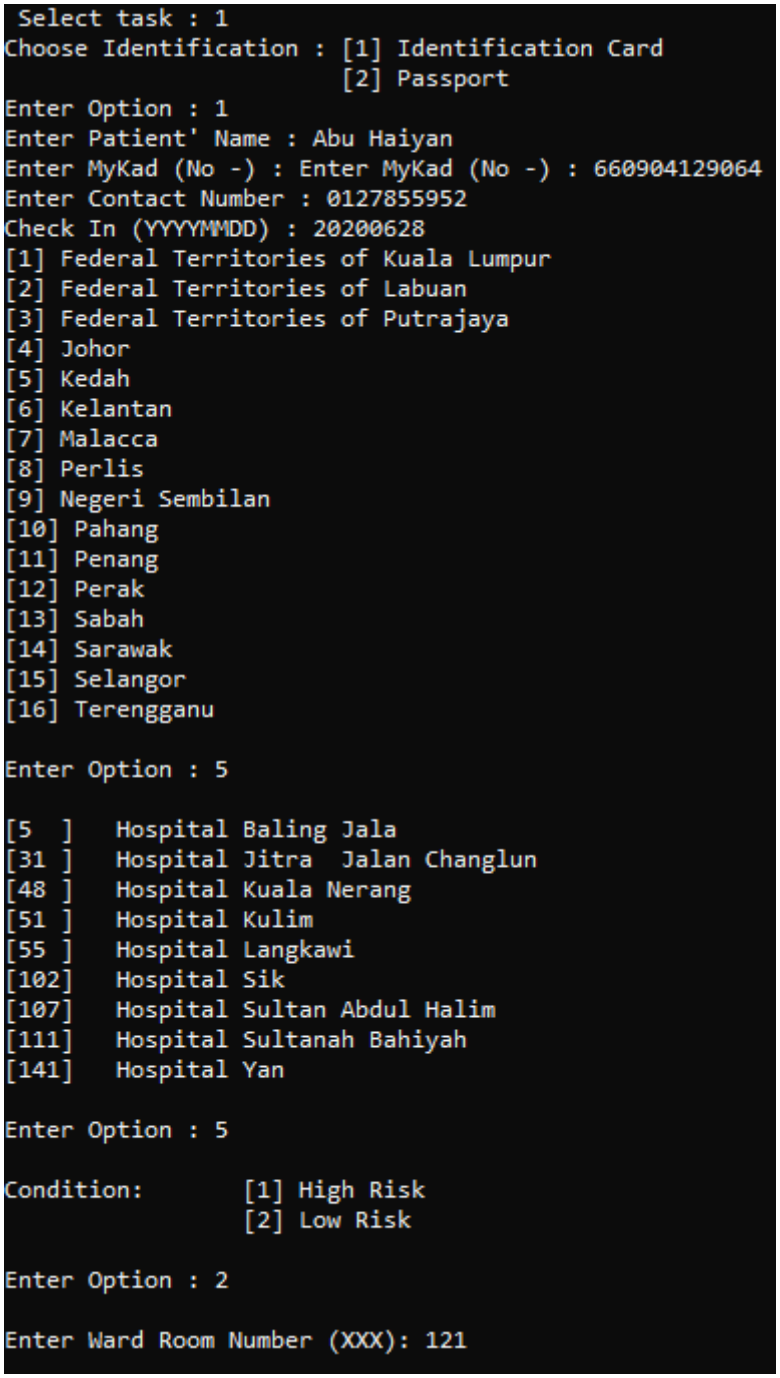
  [3] Activity monitoring by admin(s)



- When user choose input [1], they must enter username and password so that they can act as an admin to access all functions. INPUTS:

  [1] Adding new patient to the system storage
  [2] Modify data function
  [3] Display data function
  [4] Search function
  [5] Discharge function
  [6] Read data from existing file
  [0] Sign Out

IF (INPUT == [1])


Select task : 1
Choose Identification : [1] Identification Card
[2] Passport
Enter Option : 1
Enter Patient' Name : Abu Haiyan
Enter MyKad (No -) : Enter MyKad (No -) : 660904129064
Enter Contact Number : 0127855952
Check In (YYYYMMDD) : 20200628
[1] Federal Territories of Kuala Lumpur
[2] Federal Territories of Labuan
[3] Federal Territories of Putrajaya
[4] Johor
[5] Kedah
[6] Kelantan
[7] Malacca
[8] Perlis
[9] Negeri Sembilan
[10] Pahang
[11] Penang
[12] Perak
[13] Sabah
[14] Sarawak
[15] Selangor
[16] Terengganu
Enter Option : 5
[5] Hospital Baling Jala
[31] Hospital Jitra Jalan Changlun
[48] Hospital Kuala Nerang
[51] Hospital Kulim
[55] Hospital Langkawi
[102] Hospital Sik
[107] Hospital Sultan Abdul Halim
[111] Hospital Sultanah Bahiyah
[141] Hospital Yan
Enter Option : 5
Condition: [1] High Risk
[2] Low Risk
Enter Option : 2
Enter Ward Room Number (XXX): 121

IF (INPUT == [3])

```
Patient's Data Distribution'
[1] Add new patient
[2] Modify patient data
[3] Displays patients' directory
[4] Search patients' directory
[5] Discharge
-
[6] Load data from file
-
[0] Sign Out
 Select task : 3
Choose Identification : [1] Identification Card
                        [2] Passport
Enter Option : 1
  No             PatientName               Condition            State           Hospital    Room  Contact Number   MyCard Number
   1                     Abu      High Risk Mortality      Pulau PinangHospital Balik Pulau     213      0127855952    660904129064
```

IF (INPUT == [4])

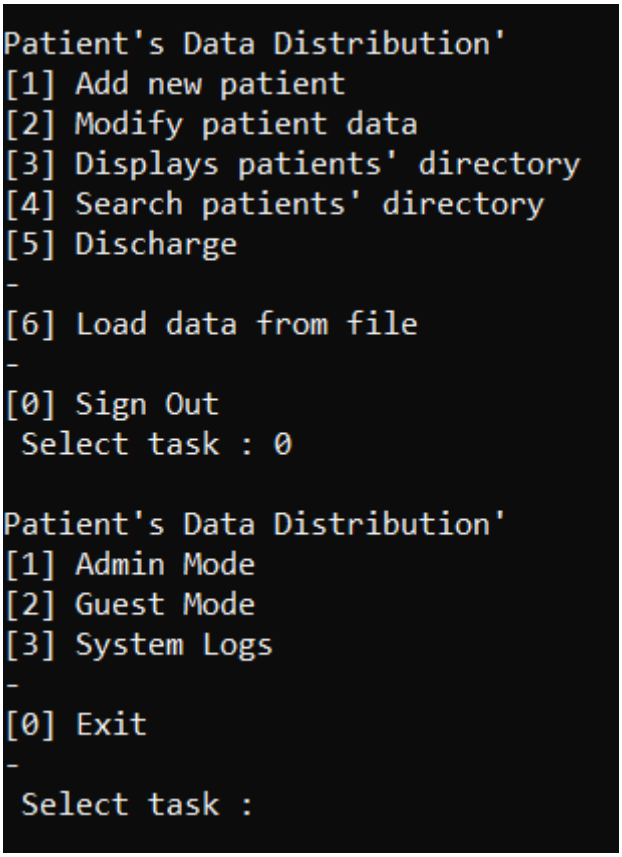
```
Patient's Data Distribution'
[1] Add new patient
[2] Modify patient data
[3] Displays patients' directory
[4] Search patients' directory
[5] Discharge
-
[6] Load data from file
-
[0] Sign Out
 Select task : 4
Choose Identification : [1] Identification Card
                        [2] Passport
Enter Option : 1
Enter MyKad : 001108010679
   No      Patient Name Condition            State          Hospital    RoomContact Number Nationality          ID
```

- If there is no data for demanded patient, nothing will be displayed

IF (INPUT == [5])

```
Patient's Data Distribution'
[1] Add new patient
[2] Modify patient data
[3] Displays patients' directory
[4] Search patients' directory
[5] Discharge
-
[6] Load data from file
-
[0] Sign Out
 Select task : 5
Choose Identification : [1] Identification Card
                        [2] Passport
Enter Option : 1
Enter MyKad : 660904129064
Check Out (YYYYMMDD) : 20201208
[1] Write data to file
[0] Exit
 Select task : 1
```

IF (INPUT == [0])



IF (INPUT == [2]) – Guest Mode

IF (INPUT == [3]) – System Logs

```
Patient's Data Distribution'
[1] Admin Mode
[2] Guest Mode
[3] System Logs
-
[0] Exit
-
 Select task : 3
Username : Admin
Password : 876543210

   No    Username    Password         Condition

Account Access Succeed : 0
Account Access Failure : 0
Access Attempted       : 0
-
System Access Succeed : 1
System Access Failure : 0
Access Attempted      : 1

Patient's Data Distribution'
[1] Admin Mode
[2] Guest Mode
[3] System Logs
-
[0] Exit
-
 Select task :
```

Pre-Defined Admin Credentials

CREDENTIALS #1

USERNAME: Admin1

PASSWORD: 012345678

CREDENTIALS #2

USERNAME: Admin2

PASSWORD: 876543210

CREDENTIALS #3

USERNAME: Admin3

PASSWORD: 012345678

CREDENTIALS #4

USERNAME: Admin4

PASSWORD: 876543210

CREDENTIALS #5

USERNAME: Admin5

PASSWORD: 012345678

SYSTEM LOGS CREDENTIALS

USERNAME: Admin

PASSWORD: 876543210