Logo

Description automatically generated

**Online Vaccination Portal**

**IT1090 – Information System and Data Modeling**

**Sri Lanka Institute of Information Technology**

**Project ID – MLB\_08.01\_09**

**Hypothetical Scenario**

Hypothetically a person who is in search of an online vaccination can land on our website via web search. Then he or she will browse the website to see the news, upcoming events, and the vaccination plans we have to offer. Then the client will inquire about his doubts through the inquiry window. After clarifying everything he/she will proceed to register to the system by submitting the necessary information. Then the registered client will use the payment window to provide the necessary payment details to make the payment for

his/her vaccination plan. Once the payment is done, the medical department officer will receive the payment confirmation,

and then the manager approves the client’s vaccination details.

Our system interface environment and functionality are very client friendly. So, system clients can achieve their own goals easily and individually. According to our system functionality system, clients can register with our system within a few minutes through minimum documentation. Then clients can log in to our system with their own username and password.

If clients have any questions, they can contact us our admins and management through our contact us page and feedback page.

The system admin is the most powerful person in our system he can add, delete and manage our system, and further he also can control the clients activities in our system. System developers update our systems day by day to adapt to the rapidly changing modern world.

**Requirements analysis document**

1. Functional requirements

* An unregistered user should be able to register into the system.
* An unregistered user should be able to view the homepage of the system.
* A registered user should be able to log into the system by entering credentials.
* A registered user should be able to edit the user profile account details.
* A registered user should be able to make appointments for upcoming vaccination programs.
* A registered user should be able to enable the notifications of the system.
* A registered user should be able to request valid certificates.
* A registered user should be able to make payments for downloading the certificate
* A registered customer should be able to view the news page of the system.
* A registered customer should be able to receive notifications from the system via the mail.
* A medical department officer should be able to view the user details of the system
* A medical department officer should be able to view the current vaccine stock.
* A medical department officer should be able to restock the vaccine.
* A medical department officer should be able to enter the details of vaccinated people
* A medical department officer should be able to view appointment details of registered patients
* A medical department officer should be able to update the new vaccine stocks in the system
* A medical department officer should be able to update distributing vaccine stock
* A medical department officer should be able to schedule places for the vaccination programs
* A medical department officer should be able to check and view the death ratio, vaccination ratio, and vaccination details.
* The system should be able to maintain the system
* The system should be able to manage the profiles of the users of the system
* The system should be able to manage the data of the system

**Non – functional Requirements**

* + **Performance requirements**
    - * The system should be able to do quick responses to the users.
      * The system should be able to load the content to the user within a minimum second.
      * The system should be able to send the emails and send the relevant notifications to the user on time.
      * The system should be available to perform activities 24/7 every day and 365 days a year.
      * The system should be able to give the ability to download the pdf formats in a minimum of seconds.
      * The system should consist of a user-friendly interface.
      * The system should be able to verify user credentials and allows the users to use the system.
      * Through the different types of devices, the system should be available such as mobile phones, desktops, tablets, others, etc.
      * The system failures should not occur for a long period and they should be recovered with the help of system and testing engineers
      * The system should be able to respond to particular behaviors and reactions.
      * The system should be recommended the particular steps while the users are doing their registration/ payment processes.
      * The system should be able to display error messages when the users are doing some transactions with the system.
      * The system should be able to support more than 100 people at the same time
* **Security requirements**
* The system should be able to identify the non-registered users and the registered users
* The system should be able to use recovery methods after the system is faced with the failures
* The system should be able to allow the users to see the limited area of data.
* The system should be able to allow the users to see their data.
* The system should be able to protect its environment from the external parties/entities
* The system should not give access to the users to change the system data.
* The system should be able to protect the user data
* The system should be able to keep the encryption progress between the users and the system it should not be available for the external parties (Sensitive data).

**Diagram

Description automatically generatedEntity Relationship Model**

**Relational Data Model**

**Graphical user interface, application, Teams

Description automatically generated**

**SQL Commands**

create table registered\_\_\_Patient

(

id1 char(5) PRIMARY KEY,

firstname varchar(10) not null,

middlename varchar(10) not null,

lastname varchar(10) not null,

houseNumber varchar(5) not null,

city varchar(10) not null,

district varchar(10) not null,

nic char(12) not null,

DOB varchar(10) ,

email varchar(15) not null,

contact\_number char(10) not null,

);

create table vaccination\_\_center

(

center\_id char(5) PRIMARY KEY,

name varchar(10),

center\_contact int,

center\_location varchar(10),

);

create table registeredpatient\_vaccinationcenter

(

id2 char(5),

center\_id char(5),

date\_ varchar(10),

constraint PK\_id\_center\_id\_1 primary key(id2,center\_id),

constraint FK\_id1 foreign key (id2) references registered\_\_\_Patient(id1),

constraint FK\_centerid1 foreign key (center\_id) references vaccination\_\_center(center\_id),

);

create table vaccination\_schedule

(

schedule\_id char(5) PRIMARY KEY,

date\_ varchar(10),

time\_slots varchar(10),

starting\_time varchar(10),

ending\_time varchar(10),

);

create table vaccinationschedule\_vaccinationcenter

(

center\_id char(5),

schedule\_id char(5),

constraint PK\_center\_id\_schedule\_id primary key(center\_id,schedule\_id),

constraint FK\_centerid2 foreign key (center\_id) references vaccination\_\_center(center\_id),

constraint FK\_schedule\_id3 foreign key (schedule\_id) references vaccination\_schedule(schedule\_id),

);

create table dose

(

dose\_id char(5) PRIMARY KEY ,

dose\_name varchar(10),

dose\_date varchar(10),

dose\_time varchar(10),

dose\_amount int,

constraint FK\_dose\_id foreign key (dose\_id) references registered\_\_\_Patient(id1),

);

create table medical\_officer

(

officer\_id char(5) PRIMARY KEY,

officer\_name varchar(10),

job\_description varchar(1000),

);

create table vaccinationSchedule\_medicalOfficer

(

schedule\_id char(5),

officer\_id char(5),

constraint PK\_schedule\_id\_officer\_id primary key (schedule\_id, officer\_id),

constraint FK\_schedule\_id2 foreign key (schedule\_id) references vaccination\_schedule(schedule\_id),

constraint FK\_officer\_id2 foreign key (officer\_id) references medical\_officer(officer\_id),

);

create table vaccine

(

vaccine\_id char(5) PRIMARY KEY,

vaccine\_name varchar(10),

vaccine\_description varchar(1000),

batch\_no int,

expiring\_date varchar(10),

manufacturing\_date varchar(10),

distributor varchar(20),

vaccine\_stock int,

constraint FK\_vaccine\_id7 foreign key (vaccine\_id) references dose(dose\_id),

);

create table vaccine\_vaccination\_schedule

(

schedule\_id char(5),

vaccine\_id char(5),

constraint PK\_schedule\_id\_vaccine\_id primary key(schedule\_id,vaccine\_id),

constraint FK\_schedule\_id\_3 foreign key (schedule\_id) references vaccination\_schedule(schedule\_id),

constraint FK\_vaccine\_id4 foreign key (vaccine\_id) references vaccine(vaccine\_id),

);

create table record

(

vaccine\_id char(5),

officer\_id char(5),

constraint PK\_vaccine\_id\_officer\_id primary key (vaccine\_id,officer\_id),

constraint FK\_officer\_id1 foreign key (officer\_id) references medical\_officer(officer\_id),

constraint FK\_vaccine\_id1 foreign key (vaccine\_id) references vaccine(vaccine\_id),

);

insert into registered\_\_\_Patient values (12345,'dewmi','amanda','silva','45/56','moratuwa','colombo',123456789012, '12/34/2022','d88mi45',0978729635);

insert into registered\_\_\_Patient values (12346,'kavindu','suwindu','perera','47/56','dehiwala','moratuwa',123453455012, '12/34/2024','d77wmi45',0978823635);

insert into registered\_\_\_Patient values (12348,'saman','uwindu','fernando','48/56','katubadda','angulana',123456789072, '12/34/2026','de55',0978703635);

insert into registered\_\_\_Patient values (12395,'kasun','samindu','pieris','40/56','kadalana','',123456789017, '12/34/2062','dewmi45',0978723935);

insert into registered\_\_\_Patient values (12945,'rasa','thathsari','desilva','40/56','horana','colombo',123456789018, '12/34/6022','de4',0978723639);

insert into vaccination\_\_center values (12344,'saman',96594895,'katubdda');

insert into vaccination\_\_center values (12347,'supun',96594565,'rathmalana');

insert into vaccination\_\_center values (12349,'savindu',96534895,'moratuwa');

insert into vaccination\_\_center values (12345,'sahan',96545895,'kadalana');

insert into vaccination\_\_center values (12384,'sumanga',96454895,'pannipitiya');

insert into registeredpatient\_vaccinationcenter values (12344,67890,'34/3/5656');

insert into registeredpatient\_vaccinationcenter values (16344,67890,'12/2/2022');

insert into registeredpatient\_vaccinationcenter values (18344,67890,'23/12/2022');

insert into registeredpatient\_vaccinationcenter values (15344,67890,'4/1/2022');

insert into registeredpatient\_vaccinationcenter values (13344,67890,'3/5/2022');

insert into vaccination\_schedule values (12345,'12/2/2022','3-5pm','7pm', '10pm');

insert into vaccination\_schedule values (16345,'12/8/2022','8-5pm','11pm', '1pm');

insert into vaccination\_schedule values (17345,'12/7/2022','2-5pm','12pm', '12pm');

insert into vaccination\_schedule values (18345,'12/2/2022','8-5pm','13pm', '16pm');

insert into vaccination\_schedule values (19345,'12/7/2022','10-5pm','15pm', '16pm');

insert into vaccinationschedule\_vaccinationcenter values (12345,56789);

insert into vaccinationschedule\_vaccinationcenter values (12645,86789);

insert into vaccinationschedule\_vaccinationcenter values (12355,86789);

insert into vaccinationschedule\_vaccinationcenter values (12845,58679);

insert into vaccinationschedule\_vaccinationcenter values (18345,96789);

insert into dose values (16345,'saman','12/5/2000','4pm',300000);

insert into dose values (12645,'suwin','3/6/1990','3pm',309000);

insert into dose values (12365,'sanath','3/3/2000','2am',350000);

insert into dose values (16345,'samara','4/3/2022','4pm',380000);

insert into dose values (62345,'amara','3/6/2022','12am',310000);

insert into medical\_officer values (23455,'saman','engineer');

insert into medical\_officer values (23456,'kavindu','doctor')

insert into medical\_officer values (23457,'rasa','teacher');

insert into medical\_officer values (23458,'kavishka','technician');

insert into medical\_officer values (23459,'kasun','singer');

insert into vaccinationSchedule\_medicalOfficer values (12345,56889);

insert into vaccinationSchedule\_medicalOfficer values (13375,56789);

insert into vaccinationSchedule\_medicalOfficer values (18345,53789);

insert into vaccinationSchedule\_medicalOfficer values (12945,51789);

insert into vaccinationSchedule\_medicalOfficer values (12545,50789);

insert into vaccine values (12345,'saman','teacher', 2323,'12/23/2022' ,'4/2/2022' ,'nawaloka',23000);

insert into vaccine values (12346,'dewmi','engineer', 2325,'18/23/2022' ,'4/5/2022' ,'hemas',230788);

insert into vaccine values (12347,'kasun','doctor', 2327,'13/23/2022' ,'4/3/2022' ,'kotte',23088);

insert into vaccine values (12745,'nawindu','mechanic', 2383,'18/23/2022' ,'4/6/2022' ,'asiri',23990);

insert into vaccine values (82345,'ramani','painter', 2923,'16/23/2022' ,'4/9/2022' ,'durdens',23088);

insert into vaccine\_vaccination\_schedule values (12345,23000);

insert into vaccine\_vaccination\_schedule values (17345,23900);

insert into vaccine\_vaccination\_schedule values (12845,23900);

insert into vaccine\_vaccination\_schedule values (18345,93000);

insert into vaccine\_vaccination\_schedule values (18345,93000);

insert into record values (12365,29070);

insert into record values (12365,73870);

insert into record values (16365,73070);

insert into record values (17365,23670);

insert into record values (18365,23570);

**Group Details:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Student ID** | **Student Name** | **Contributions** |
| **1** | **IT21162596** | **Gunasekara M.V.G.R.S** | * **Creating the hypothetical scenario.** * **Helped creating the ER diagram.** * **Helped creating the relational schema.** * **Helped creating the database.** |
| **2** | **IT21161360** | **Silva K.P.D.A** | * **Creating requirements analysis documents.** * **Creating the database.** * **Helped creating the relational schema.** * **Created the mentioned tables in SQL.** * **Helped in creating ER diagram** |
| **3** | **IT21159930** | **Perera K.K.M** | * **Added the information to the relevant tables in SQL.** * **Helped in creating the ER diagram.** * **Created the relational schema.** * **Helped in creating the database.** |
| **4** | **IT21159794** | **Liyanaarachchi V.K** | * **Helped the creating the ER diagram.** |
| **5** | **IT21162124** | **Kumara D.D.K.C** | * **Helped the creating the relational schema.** |