

# DATABASE SYSTEMS LAB

## MINI PROJECT

**Title:** To implement a covid vaccination database management system including the design and backend of the system.

**Problem Statement:** Create frontend for project application, write programs in backend using C# for connecting the frontend of the application to the database of Microsoft Sql Server Management Studio.

**Technologies Used:** Visual Studio C#, Microsoft Sql Server Management Studio.

**Application Name-** Mahe Covid Information system

### Team Details:

Batch 2 Team Noobmasters

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## Introduction

In Mahe covid information system, we have created a database where we store the vaccination details of student as well as faculty, and a person who is a part of the administration can check their vaccination status. We have created separate forms where student and faculty can insert their vaccination details as well as update them if they get vaccinated later after inserting their data.

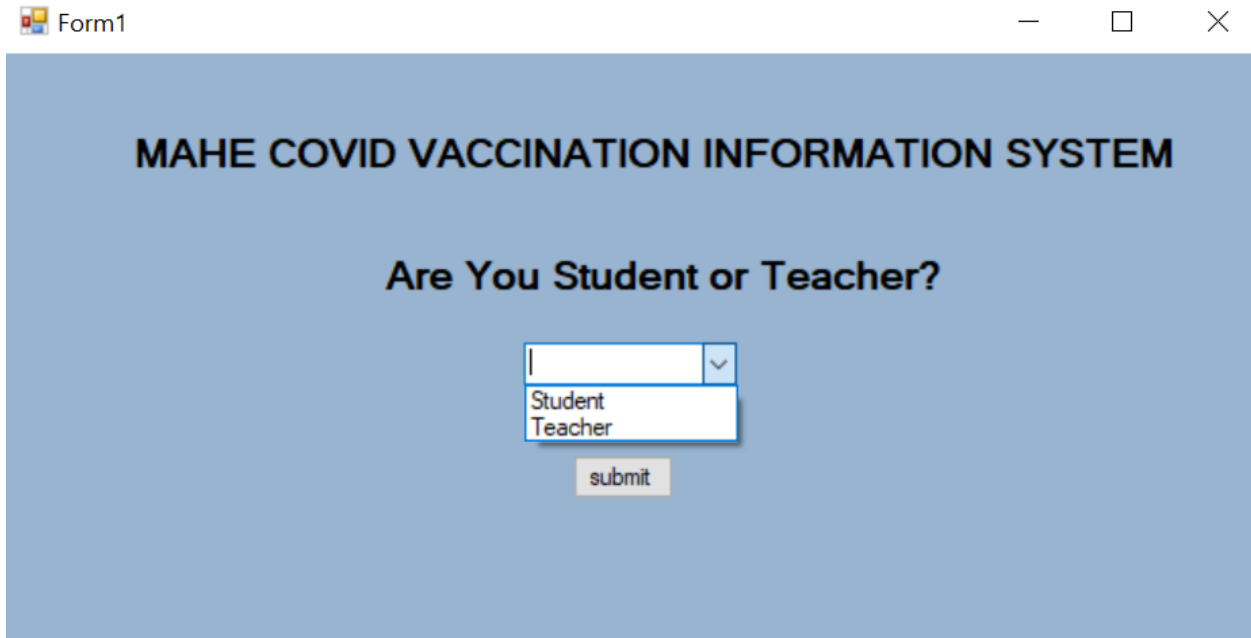
The aim of this project is-

1. To keep record of all the students' vaccination status.
2. To inform the unvaccinated people to get vaccinated as soon as possible.

The following technologies have been used -

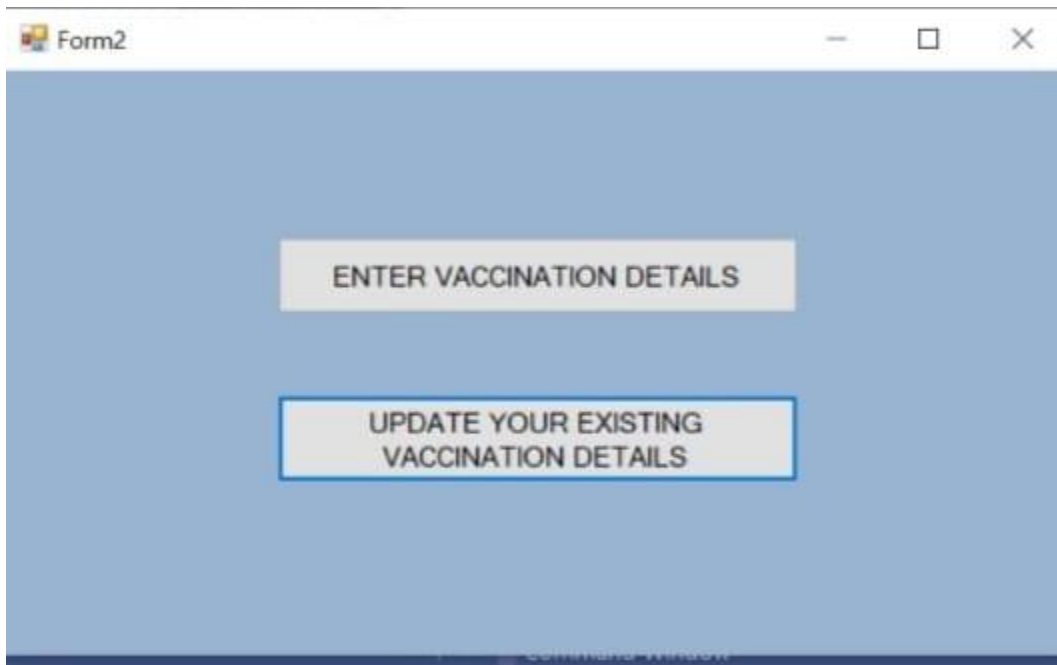
1. **Visual Studio** – For creating frontend using C# language. This is the main user interface that a person will interact with and in backend it connects the frontend of this application to database.
2. **Microsoft Sql Server**- For maintaining database.

Front page-



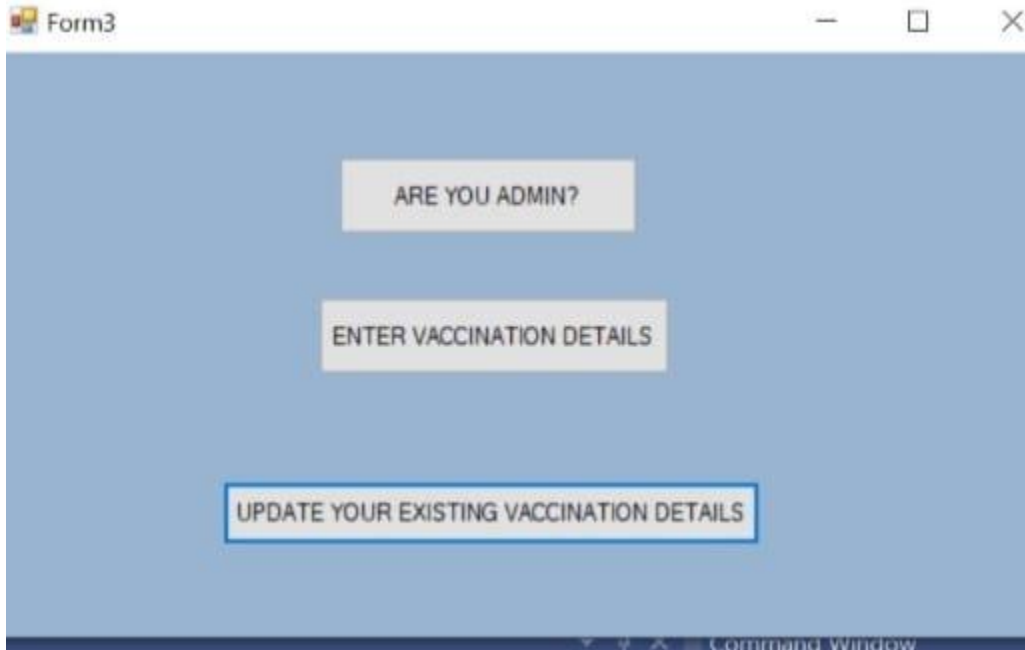
The screenshot shows a web application window titled "Form1". The background is a solid light blue. At the top center, the text "MAHE COVID VACCINATION INFORMATION SYSTEM" is displayed in bold black capital letters. Below this, the question "Are You Student or Teacher?" is centered in bold black text. Underneath the question is a dropdown menu with a white background and a blue border. The dropdown is open, showing two options: "Student" and "Teacher". Below the dropdown is a small, light gray rectangular button with the word "submit" in black lowercase letters. The window has standard Windows-style window controls (minimize, maximize, close) in the top right corner.

If he selects student,



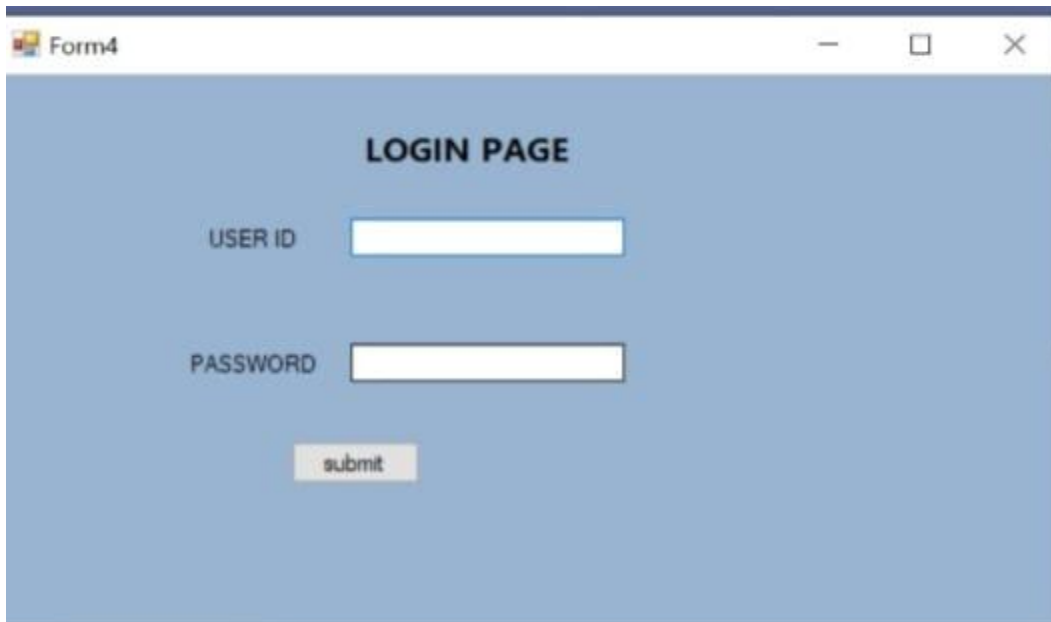
The screenshot shows a web application window titled "Form2". The background is a solid light blue. In the center, there are two rectangular buttons with a light gray background and a blue border. The top button contains the text "ENTER VACCINATION DETAILS" in bold black capital letters. The bottom button contains the text "UPDATE YOUR EXISTING VACCINATION DETAILS" in bold black capital letters. The window has standard Windows-style window controls (minimize, maximize, close) in the top right corner.

If he selects teacher,



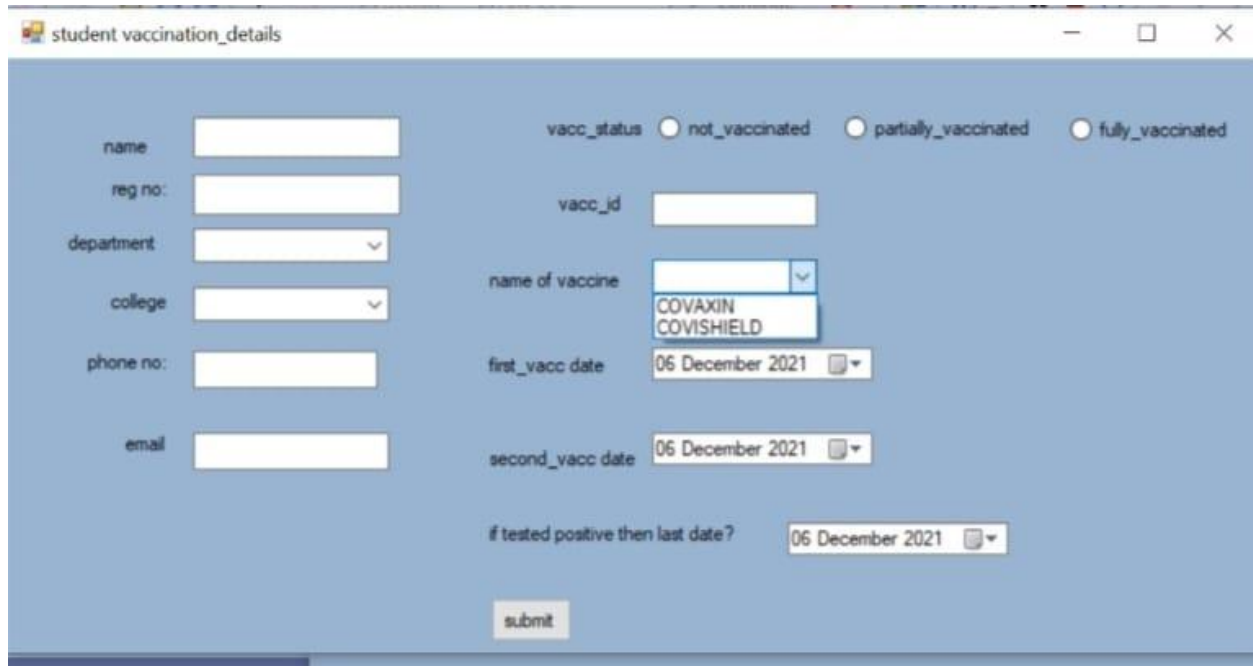
A screenshot of a Windows application window titled "Form3". The window has a light blue background and contains three buttons stacked vertically in the center. The top button is labeled "ARE YOU ADMIN?". The middle button is labeled "ENTER VACCINATION DETAILS". The bottom button is labeled "UPDATE YOUR EXISTING VACCINATION DETAILS" and is highlighted with a blue border. The window's title bar includes standard Windows window controls (minimize, maximize, close) on the right. At the bottom of the window, a "Command Window" is visible.

Admin page-



A screenshot of a Windows application window titled "Form4". The window has a light blue background and displays a "LOGIN PAGE". At the top center, the text "LOGIN PAGE" is written in bold. Below this, there are two input fields. The first is labeled "USER ID" and the second is labeled "PASSWORD". Below the input fields is a button labeled "submit". The window's title bar includes standard Windows window controls (minimize, maximize, close) on the right.

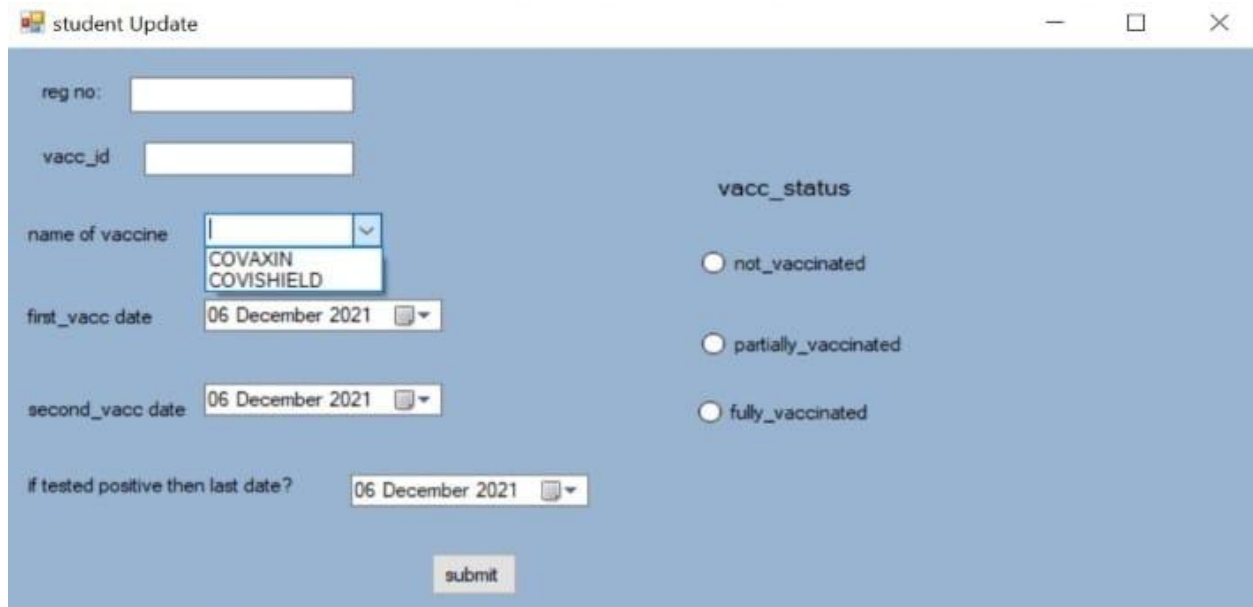
Inserting student vaccination details-



A screenshot of a web application window titled "student vaccination\_details". The form is set against a light blue background and contains the following fields and controls:

- name**: A text input field.
- reg no:**: A text input field.
- department**: A dropdown menu.
- college**: A dropdown menu.
- phone no:**: A text input field.
- email**: A text input field.
- vacc\_status**: Three radio buttons labeled "not\_vaccinated", "partially\_vaccinated", and "fully\_vaccinated".
- vacc\_id**: A text input field.
- name of vaccine**: A dropdown menu with "COVAXIN" and "COVISHIELD" as options.
- first\_vacc date**: A date picker showing "06 December 2021".
- second\_vacc date**: A date picker showing "06 December 2021".
- if tested positive then last date?**: A date picker showing "06 December 2021".
- submit**: A button at the bottom center.

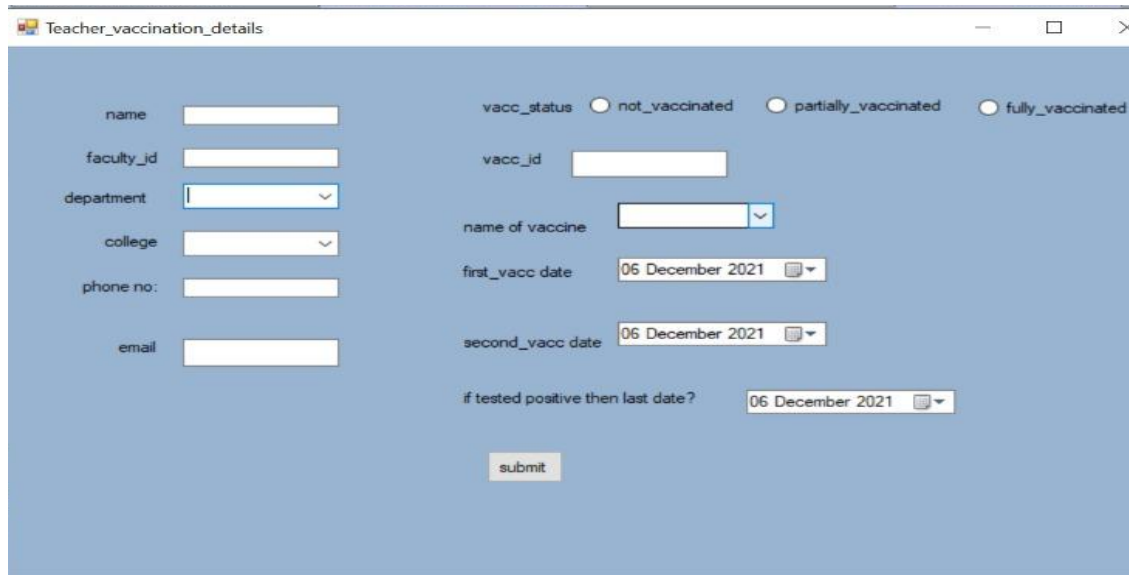
Updating student vaccination details-



A screenshot of a web application window titled "student Update". The form is set against a light blue background and contains the following fields and controls:

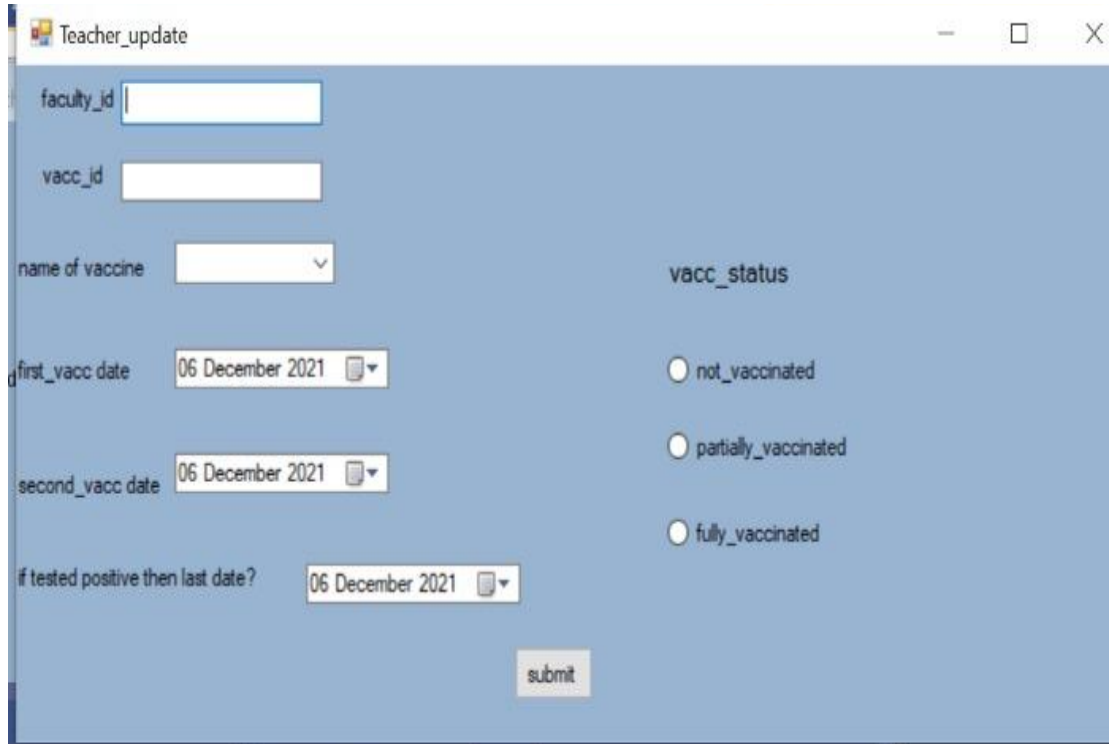
- reg no:**: A text input field.
- vacc\_id**: A text input field.
- name of vaccine**: A dropdown menu with "COVAXIN" and "COVISHIELD" as options.
- first\_vacc date**: A date picker showing "06 December 2021".
- second\_vacc date**: A date picker showing "06 December 2021".
- if tested positive then last date?**: A date picker showing "06 December 2021".
- vacc\_status**: Three radio buttons labeled "not\_vaccinated", "partially\_vaccinated", and "fully\_vaccinated".
- submit**: A button at the bottom center.

## Inserting faculty details-



The screenshot shows a web form titled "Teacher\_vaccination\_details". It contains two columns of input fields. The left column includes text boxes for "name", "faculty\_id", "department" (a dropdown menu), "college" (a dropdown menu), "phone no:", and "email". The right column includes radio buttons for "vacc\_status" with options "not\_vaccinated", "partially\_vaccinated", and "fully\_vaccinated"; a text box for "vacc\_id"; a dropdown menu for "name of vaccine"; and date pickers for "first\_vacc date", "second\_vacc date", and "if tested positive then last date?". All date pickers are set to "06 December 2021". A "submit" button is located at the bottom center of the form.

## Updating faculty details-

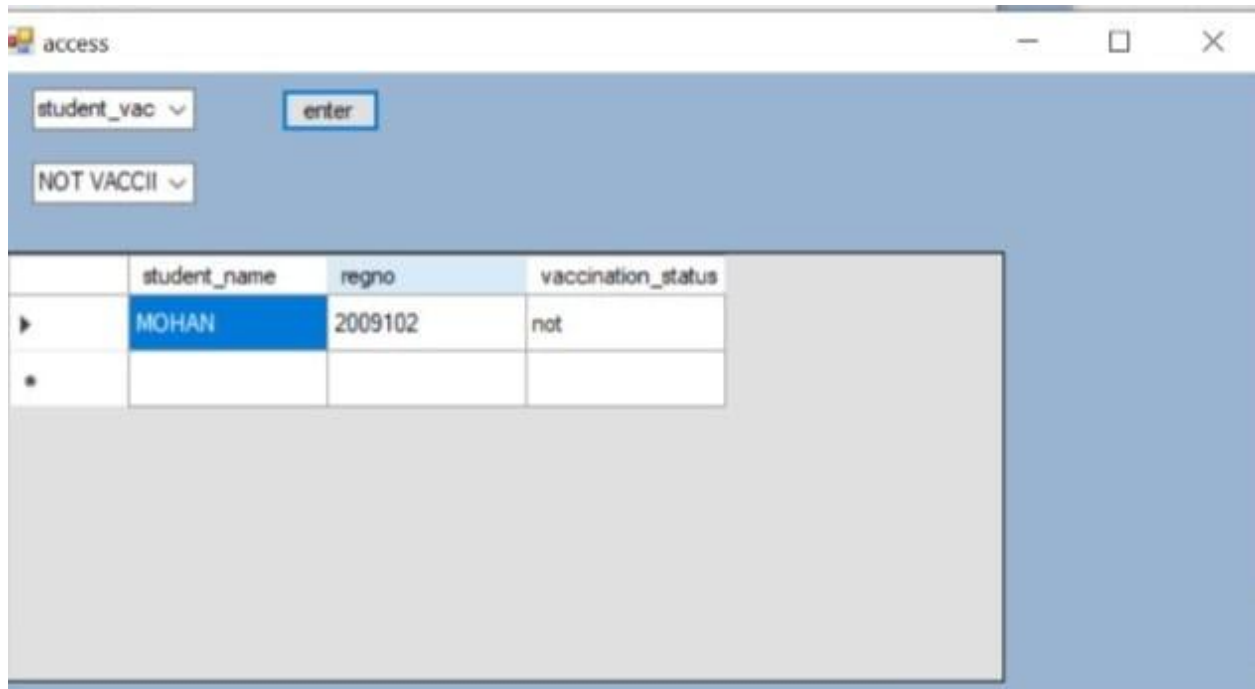


The screenshot shows a web form titled "Teacher\_update". It contains two columns of input fields. The left column includes text boxes for "faculty\_id" and "vacc\_id"; a dropdown menu for "name of vaccine"; date pickers for "first\_vacc date" and "second\_vacc date"; and a date picker for "if tested positive then last date?". All date pickers are set to "06 December 2021". The right column includes the label "vacc\_status" followed by three radio buttons: "not\_vaccinated", "partially\_vaccinated", and "fully\_vaccinated". A "submit" button is located at the bottom center of the form.

This is admin page if he logs in with correct user id(noobmasters) and password(noobmasters).



The screenshot shows a window titled 'access' with a blue background. At the top, there is a dropdown menu with a downward arrow and an 'enter' button. Below the dropdown menu, there is a small dropdown menu with two options: 'NOT VACCINAT' and 'PARTIAL VACC'. A large, empty rectangular box is positioned below these elements.



The screenshot shows the same 'access' window, but now it displays a table with student data. The table has four columns: 'student\_name', 'regno', 'vaccination\_status', and an unnamed column. The first row of data shows 'MOHAN' as the student name, '2009102' as the regno, and 'not' as the vaccination status. The second row is empty. The table is set against a light gray background.

	student_name	regno	vaccination_status
▶	MOHAN	2009102	not
*			

## Part of Frontend Code(C#)-

//Inserting function

```
private void collect_details()
{
    DB_connect();
    String name=Name.Text;
    int reg_no=int.Parse(reg.Text);
    String dep=department.Text;
    String col=college.Text;
    String phone_no=phone.Text;
    String email=e_mail.Text;
    String address = "@"+col;
    String query1= "insert into student values('"+reg_no+"','"+
name+"','"+phone_no+"','"+dep+"','"+email+"','"+col+"')";
    String vacc_id=vaccination_id.Text;
    String vaccine=vaccines.Text;
    String is_vaccinated="not";
    if (not_vaccinated.Checked) {
vaccine="NULL"; first_date="";second_date=""; }
    else if(partially_vaccinated.Checked){
is_vaccinated="partial";second_date="";}
    else if(fully_vaccinated.Checked)is_vaccinated="full";

    String query2= "insert into student_vaccination values('"+reg_no+"','"+
Vacc_id+"','"+is_vaccinated+"','"+vaccine+"','"+
+first_date+"','"+second_date+"','"+infected_date+"')";

    SqlCommand cmd = new SqlCommand();
    cmd.Connection = conn;
    cmd.CommandType=CommandType.Text;
    cmd.CommandText=query1;
    cmd.ExecuteNonQuery();
    cmd.CommandText=query2;
    cmd.ExecuteNonQuery();
    conn.Close();
}
private void DB_connect()
{
    String connectionString = "Data
Source=DESKTOP-O6PII7R\\SQL_COMPILER;
Initial Catalog=dbs_lab;Integrated Security=True";
    conn=new SqlConnection(connectionString);
```



```

        conn.Open();
    }

    private void submit_Click(object sender, EventArgs e)
    {
        this.collect_details();

        MessageBox.Show("entered details succesfully");
        this.Close();
    }

```

//Update function

```

private void update()
{
    DB_connect();
    int reg_no = int.Parse(reg.Text);
    String vacc_id = vaccination_id.Text;
    String vaccine=vaccines.Text;
    String is_vaccinated = "not";
    if (partially_vaccinated.Checked) is_vaccinated="partial";
    else if (fully_vaccinated.Checked) is_vaccinated="full";
    String first_date = firstDate.Text;
    String second_date = secondDate.Text;
    String infected_date = infectedDate.Text;
    if (first_date.Equals("1900-01-01")) first_date=null;
    if (second_date.Equals("1900-01-01")) second_date=null;
    if (infected_date.Equals("1900-01-01")) infected_date=null;
    String query1 = "update student_vaccination set vaccination_status
=@vxn,vaccination_id=@id,vaccine_name=@name,first_vaccine_date=@
first,second_vaccine_date=@second,last_infected_date=@last where
regno =@rg";
    SqlCommand command = new SqlCommand();
    command.Connection = conn;
    SqlParameter pa1 = new SqlParameter();
    command.CommandText = query1;
    command.CommandType = CommandType.Text;
    command.Parameters.AddWithValue("@vxn", is_vaccinated);
    command.Parameters.AddWithValue("@rg", reg_no);
    command.Parameters.AddWithValue("@id", vacc_id);
    command.Parameters.AddWithValue("@name", vaccine);
    command.Parameters.AddWithValue("@first", first_date);
    command.Parameters.AddWithValue("@second", second_date);
    command.Parameters.AddWithValue("@last",infected_date);
    command.ExecuteNonQuery();
    MessageBox.Show("Updated!");
}

```

```

        conn.Close();
    }
    private void submit_Click(object sender, EventArgs e)
    {
        this.update();
        this.Close();
    }
}

```

## SQL queries-

Create table university(college varchar(50),address varchar(50));

Create table student(regno int,student\_name varchar(50),  
phone varchar(50),dept varchar(50),  
email varchar(50), college varchar(50), primary key(regno),  
foreign key(college) references university);

Create table faculty(faculty\_id int,faculty\_name varchar(50),  
phone varchar(50),dept varchar(50),  
email varchar(50), college varchar(50), primary key(faculty\_id),  
foreign key(college) references university);

Create table student\_vaccination(regno int, vaccination\_id varchar(50),  
vaccination\_status varchar(50),vaccine\_name varchar(50),  
first\_vaccine\_date date,second\_vaccine\_date date,  
last\_infected\_date date,primary key(regno,vaccination\_id),  
foreign key(regno) references student);

Create table faculty\_vaccination(faculty\_id int, vaccination\_id varchar(50),  
vaccination\_status varchar(50),vaccine\_name varchar(50),  
first\_vaccine\_date date,second\_vaccine\_date date,last\_infected\_date date,  
primary key(faculty\_id,vaccination\_id),foreign key(faculty\_id) references faculty);

insert into college values('MIT','@MIT');

insert into student values(1909101,'Rakesh','9821421620',  
'IT','[rakesh@gmail.com](mailto:rakesh@gmail.com)','KMC');

insert into faculty values(101,'Renu','9432054169','IT','[renu@gmail.com](mailto:renu@gmail.com)','KMC');

insert into student\_vaccination(regno,  
Vaccination\_id,vaccination\_status,  
vaccine\_name, first\_vaccine\_date) values(1909101,'50101','partial',  
'COVISHIELD','2021-10-29');

Insert into faculty\_vaccination values(  
101,'55101','full','COVAXIN','2021-05-20','2021-06-30','2021-03-10');

## SQL complex queries-

```
select s.student_name,s.regno,v.vaccination_status from student s inner
join student_vaccination v on s.regno=v.regno
where s.regno in(select regno
from student_vaccination where vaccination_status='not')
```

```
select s.student_name,s.regno,v.vaccination_status from student s inner
join student_vaccination v on s.regno=v.regno
where s.regno in(select regno
from student_vaccination where vaccination_status='partial')
```

```
select s.faculty_name,s.faculty_id,v.vaccination_status from faculty s inner
join faculty_vaccination v on s.regno=v.regno
where s.regno in(select regno
from faculty_vaccination where vaccination_status='not')
```

```
select s.faculty_name,s.faculty_id,v.vaccination_status from faculty s inner
join faculty_vaccination v on s.regno=v.regno
where s.regno in(select regno
from faculty_vaccination where vaccination_status='partial')
```

```
select s.name,s.university,v.vaccine_status,v.vaccine_name from
student s inner join student_vaccination v on s.regno=v.regno
where regno in (select regno from student where University='MIT');
```

```
select s.name,v.vaccine_status,v.vaccine_name from student s
inner join student_vaccination v on s.regno=v.regno where regno in
(select regno from student_vaccination where vaccine_name='COVAXIN');
```

## Procedure-

```
Create or replace procedure number_of_students
(regno in integer,student_name in varchar) is
Count integer
```

```
Begin
```

```
Select count (*) into counter from student s inner
join student_vaccination v on s.regno=v.regno
where s.regno in(select regno
```

```
from student_vaccination where vaccination_status='not')
```

```
dbms_output.put_line('Number of people not vaccinated='||count);
```

```
end;
```

```
/
```

## Trigger-

```
Create or replace trigger alert
After insert on student_vaccination
For each row
begin
if(:new.vaccination_status="not")
then
dbms_output.put_line("Please visit kmc at the earliest and visit
https://manipal.edu/kmc-mangalore/about-kmc/Free-Vaccination-banner.html for
more information");
End if;
End;
/
```