# DBMS PROJECT REVIEW

DONE BY

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20BPS1111

# TABLE OF CONTENTS

# ABSTRACT AND INRODUCTION


## ABSTRACT :

The vaccination detail project enables the management to easily perform manipulation , insertion and deletion of records. This project is convenient for people handling the managing department to easily access the record and also inserting new records.


## INTRODUCTION :

Main objective of the Hospital Management System is to design a system for better patient care . To create the most efficient solutions to improve productivity and business value of health care sectors.

## LITERATURE REVIEW

### EXISTING SYSTEM :

There is exactly no such specific existing system for vaccination updation. The proposed system might be useful for management people to know the availability of vaccines, Medical history of Patients and Vaccination details which comprises of the type of vaccine injected and state which includes dosage information.

### PROPOSED SYSTEM :

This system makes it convenient for people to know their regular updation about vaccines and more information regarding the same.

# DESCRIPTION OF PROJECT :

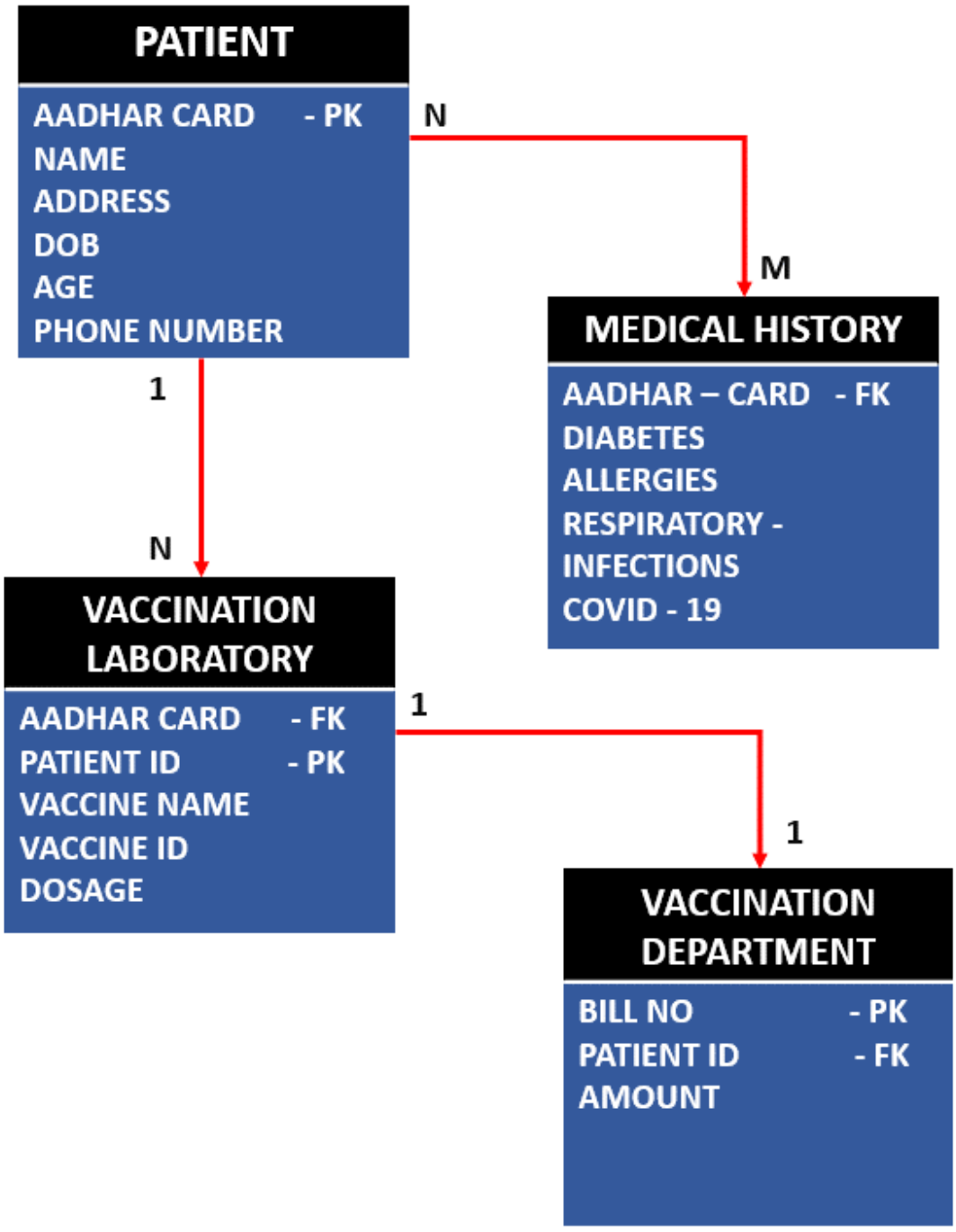
- DATABASE DESIGN
- ER DIAGRAM
- CONVERSION TO RELATIONAL SCHEMA
- NORMALIZATION
- MODULES

# DATABASE DESIGN

**PK = PRIMARY KEY**

**FK = FOREIGN KEY**

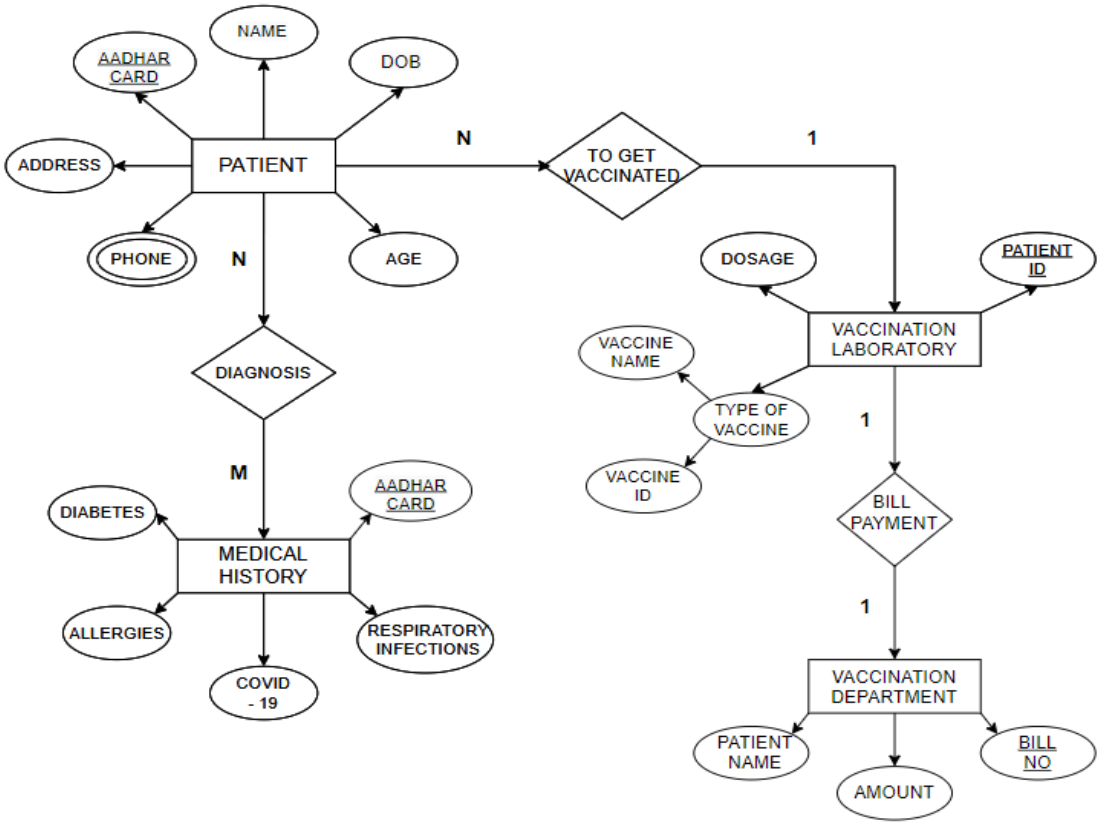
**TABLES = PATIENT , MEDICAL HISTORY , VACCINATION LABORATORY , VACCINATION DEPARTMENT**




DESCRIPTION OF PROJECT

# PROJECT DESCRIPTION : ER DIAGRAM

## ER DIAGRAM




## TABLE DESCRIPTION :

- PATIENT (Name, Aadhar card,DOB, Age, Address, Phone)
- MEDICAL_HISTORY (Aadhar card, Diabetes, Allergies, Covid-19, Respiratory _infections)
- VACCINATION_LABPRATORY (Dosage, Patient_ID, Vaccine_name, Vaccine_ID)
- VACCINATION_DEPARTMENT (Patient_name, Amount, Bill_no)

# ER DIAGRAM TO RELATIONAL MODEL

## MAPPING OF REGULAR ENTITIES

### STRONG ENTITY

- PATIENT
- VACCINATION LABORATORY
- VACCINATION DEPARTMENT
- MEDICAL HISTORY

### WEAK ENTITY

- NO WEAK ENTITY PRESENT

### RELATIONSHIPS

1 : N = Vaccination Laboratory→ Patient

M : N = Patient →Medical History

1 : 1 = Vaccination Laboratory → Vaccination Department

### PATIENT

| NAME | AADHAR_CARD | ADDRESS | DOB | PHONE | AGE |
|---|---|---|---|---|---|

### MEDICAL HISTORY

| AADHAR CARD | DIABETES | ALLERGIES | RESPIRATORY INFECTIONS | COVID-19 |
|---|---|---|---|---|

### VACCINATION LABORATORY

| DOSAGE | PATIENT ID | VACCINE NAME | VACCINE NO |
|---|---|---|---|

### VACCINATION DEPARTMENT

| BILL NO | PATIENT NAME | AMOUNT |
|---|---|---|

# ER DIAGRAM TO RATIONAL MODEL

## MAPPING OF 1 : N RELATIONSHIP

**PATIENT (1)**

| AADHAR_CARD | NAME | ADDRESS | PHONE | DOB | AGE |
|---|---|---|---|---|---|

**VACCINATION LABORATORY(n)**

| AADHAR_CARD | PATIENT ID | DOSAGE | VACCINE NAME | VACCINE NO |
|---|---|---|---|---|

## MAPPING OF MULTIVALUED ATTRIBUTE

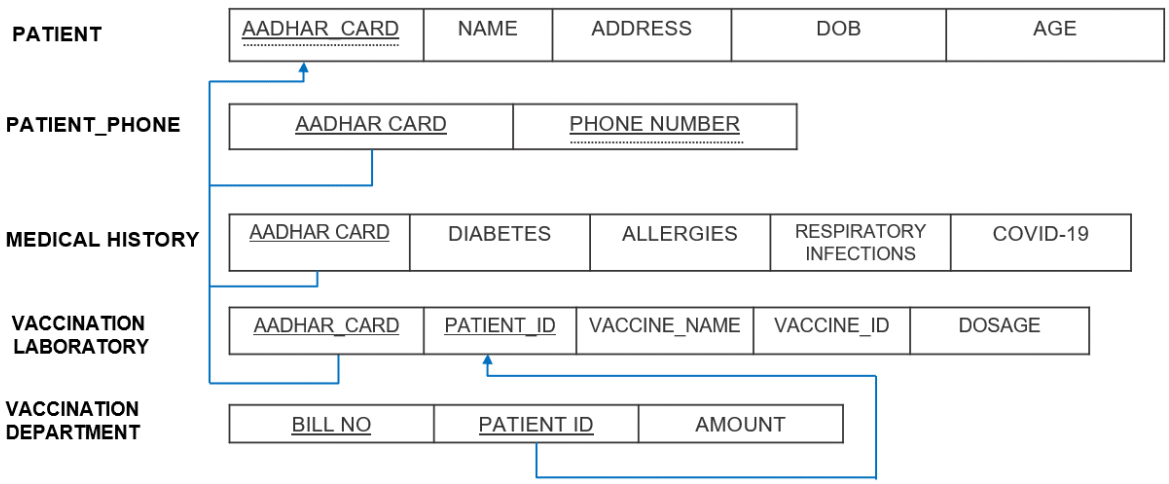
**PATIENT**

| NAME | AADHAR CARD | ADDRESS | DOB | AGE |
|---|---|---|---|---|

**PATIENT_PHONE**

| AADHAR CARD | PHONE NUMBER |
|---|---|

## ER DIAGRAM TO RELATIONAL MODEL



# NORMALIZATION

**TABLE 1 : PATIENT (UNNORMALISED FORM)**

| AADHAR CARD | NAME | ADDRESS | PHONE | DOB | AGE |
|---|---|---|---|---|---|
| 1345 7890 7354 | LILY | CHENNAI | 22246820, 9962979550 | 23.03.2003 | 18 |
| 1234 5678 9012 | WILL | BANGALORE | 9962979525 | 22.11.2000 | 21 |
| 9876 5467 8263 | SAM | MUMBAI | 9962979505 | 13.12.1986 | 35 |
| 8221 0354 7211 | LEO | CHENNAI | 22347894 | 1.07.1994 | 27 |
| 3452 9970 6321 | NANCY | DELHI | 8056145467, 22340911 | 29.2.1980 | 41 |

**1NF :**

| AADHAR CARD | NAME | ADDRESS | PHONE | DOB | AGE |
|---|---|---|---|---|---|
| 1345 7890 7354 | LILY | CHENNAI | 22246820 | 23.03.2003 | 18 |
| 1345 7890 7354 | LILY | CHENNAI | 9962979550 | 23.03.2003 | 18 |
| 1234 5678 9012 | WILL | BANGALORE | 9962979525 | 22.11.2000 | 21 |
| 9876 5467 8263 | SAM | MUMBAI | 9962979505 | 13.12.1986 | 35 |
| 8221 0354 7211 | LEO | CHENNAI | 22347894 | 1.07.1994 | 27 |
| 3452 9970 6321 | NANCY | DELHI | 8056145467 | 29.2.1980 | 41 |
| 3452 9970 6321 | NANCY | DELHI | 22340911 | 29.2.1980 | 41 |

The table has no partial functional dependency and hence exists in 2NF

# NORMALIZATION

**3NF**

{Aadhar_card} -> { name , address , phone , dob, age }

{Dob) - > {age}

| AADHAR CARD | NAME | ADDRESS | PHONE | DOB | AGE |
|---|---|---|---|---|---|
| 1345 7890 7354 | LILY | CHENNAI | 22246820 | 23.03.2003 | 18 |
| 1345 7890 7354 | LILY | CHENNAI | 9962979550 | 23.03.2003 | 18 |
| 1234 5678 9012 | WILL | BANGALORE | 9962979525 | 22.11.2000 | 21 |
| 9876 5467 8263 | SAM | MUMBAI | 9962979505 | 13.12.1986 | 35 |
| 8221 0354 7211 | LEO | CHENNAI | 22347894 | 1.07.1994 | 27 |
| 3452 9970 6321 | NANCY | DELHI | 8056145467 | 29.2.1980 | 41 |
| 3452 9970 6321 | NANCY | DELHI | 22340911 | 29.2.1980 | 41 |

| AADHAR CARD | NAME | ADDRESS | PHONE | DOB |
|---|---|---|---|---|
| 1345 7890 7354 | LILY | CHENNAI | 22246820 | 23.03.2003 |
| 1345 7890 7354 | LILY | CHENNAI | 9962979550 | 23.03.2003 |
| 1234 5678 9012 | WILL | BANGALORE | 9962979525 | 22.11.2000 |
| 9876 5467 8263 | SAM | MUMBAI | 9962979505 | 13.12.1986 |
| 8221 0354 7211 | LEO | CHENNAI | 22347894 | 1.07.1994 |
| 3452 9970 6321 | NANCY | DELHI | 8056145467 | 29.2.1980 |
| 3452 9970 6321 | NANCY | DELHI | 22340911 | 29.2.1980 |

| DOB | AGE |
|---|---|
| 23.03.2003 | 18 |
| 22.11.2000 | 21 |
| 13.12.1986 | 35 |
| 1.07.1994 | 27 |
| 29.2.1980 | 41 |

Thus, transitive functional dependency has been successfully removed by the end of 3NF

# NORMALIZATION

**4NF**

F = { (Aadhar_card, name, address , dd, mm, yy) --> Phone}

| AADHAR CARD | NAME | ADDRESS | PHONE | DOB |
|---|---|---|---|---|
| 1345 7890 7354 | LILY | CHENNAI | 22246820 | 23.03.2003 |
| 1345 7890 7354 | LILY | CHENNAI | 9962979550 | 23.03.2003 |
| 1234 5678 9012 | WILL | BANGALORE | 9962979525 | 22.11.2000 |
| 9876 5467 8263 | SAM | MUMBAI | 9962979505 | 13.12.1986 |
| 8221 0354 7211 | LEO | CHENNAI | 22347894 | 1.07.1994 |
| 3452 9970 6321 | NANCY | DELHI | 8056145467 | 29.2.1980 |
| 3452 9970 6321 | NANCY | DELHI | 22340911 | 29.2.1980 |

| AADHAR CARD | NAME | ADDRESS | DOB |
|---|---|---|---|
| 1345 7890 7354 | LILY | CHENNAI | 23.03.2003 |
| 1345 7890 7354 | LILY | CHENNAI | 23.03.2003 |
| 1234 5678 9012 | WILL | BANGALORE | 22.11.2000 |
| 9876 5467 8263 | SAM | MUMBAI | 13.12.1986 |
| 8221 0354 7211 | LEO | CHENNAI | 1.07.1994 |
| 3452 9970 6321 | NANCY | DELHI | 29.2.1980 |
| 3452 9970 6321 | NANCY | DELHI | 29.2.1980 |

| AADHAR CARD | PHONE |
|---|---|
| 1345 7890 7354 | 22246820 |
| 1345 7890 7354 | 9962979550 |
| 1234 5678 9012 | 9962979525 |
| 9876 5467 8263 | 9962979505 |
| 8221 0354 7211 | 22347894 |
| 3452 9970 6321 | 8056145467 |
| 3452 9970 6321 | 22340911 |

Thus, multivalued functional dependency has been successfully removed by the end of 4NF

# NORMALIZATION

**5NF**

| AADHAR CARD | NAME | ADDRESS | DOB |
|---|---|---|---|
| 1345 7890 7354 | LILY | CHENNAI | 23.03.2003 |
| 1345 7890 7354 | LILY | CHENNAI | 23.03.2003 |
| 1234 5678 9012 | WILL | BANGALORE | 22.11.2000 |
| 9876 5467 8263 | SAM | MUMBAI | 13.12.1986 |
| 8221 0354 7211 | LEO | CHENNAI | 1.07.1994 |
| 3452 9970 6321 | NANCY | DELHI | 29.2.1980 |
| 3452 9970 6321 | NANCY | DELHI | 29.2.1980 |

| AADHAR CARD | PHONE |
|---|---|
| 1345 7890 7354 | 22246820 |
| 1345 7890 7354 | 9962979550 |
| 1234 5678 9012 | 9962979525 |
| 9876 5467 8263 | 9962979505 |
| 8221 0354 7211 | 22347894 |
| 3452 9970 6321 | 8056145467 |
| 3452 9970 6321 | 22340911 |

| AADHAR CARD | NAME | ADDRESS | PHONE | DOB |
|---|---|---|---|---|
| 1345 7890 7354 | LILY | CHENNAI | 22246820 | 23.03.2003 |
| 1345 7890 7354 | LILY | CHENNAI | 9962979550 | 23.03.2003 |
| 1234 5678 9012 | WILL | BANGALORE | 9962979525 | 22.11.2000 |
| 9876 5467 8263 | SAM | MUMBAI | 9962979505 | 13.12.1986 |
| 8221 0354 7211 | LEO | CHENNAI | 22347894 | 1.07.1994 |
| 3452 9970 6321 | NANCY | DELHI | 8056145467 | 29.2.1980 |
| 3452 9970 6321 | NANCY | DELHI | 22340911 | 29.2.1980 |

Joining the above two decomposed tables, the resultant table does not contain any spurious tuples and hence it is a lossless decomposition.

# NORMALIZATION

**TABLE 2 – MEDICAL HISTORY (UNNORMALISED FORM)**

| AADHAR CARD | DIABETES | ALLERGIES | RESPIRATORY INFECTIONS | COVID – 19 |
|---|---|---|---|---|
| 1345 7890 7354 | NO | NO | NO | NO |
| 1234 5678 9012 | NO | YES | NO | NO |
| 9876 5467 8263 | YES | NO | YES | NO |
| 8221 0354 7211 | NO | NO | NO | NO |
| 3452 9970 6321 | YES | YES | YES | YES |

This table has unique atomic values, has no partial functional dependency, no transitive functional dependency, no trivial functional dependency, no multivalued functional dependency and hence it satisfies every Normalisation

**TABLE 3 – VACCINATION LABORATORY (UNNORMALISED FORM)**

| Patient ID | DOSAGE | VACCINE ID | VACCINE NAME |
|---|---|---|---|
| 1. | FIRST | 1 | COVISHIELD |
| 2. | SECOND | 2 | COVAXINE |
| 3. | SECOND | 1 | COVISHIELD |
| 4. | FIRST | 3 | SPUTNIK V |
| 5. | FIRST | 2 | COVAXINE |

The table has unique atomic values and has no partial functional dependency and hence this table exists in 1NF and 2NF

# NORMALIZATION

**3NF**

{Patient_id} -> {Dosage, Vaccine ID, Vaccine name}

{Vaccine ID) - > {Vaccine name}

| Patient ID | DOSAGE | VACCINE ID | VACCINE NAME |
|---|---|---|---|
| 1. | FIRST | 1 | COVISHIELD |
| 2. | SECOND | 2 | COVAXINE |
| 3. | SECOND | 1 | COVISHIELD |
| 4. | FIRST | 3 | SPUTNIK V |
| 5. | FIRST | 2 | COVAXINE |

| Patient ID | DOSAGE | VACCINE ID |
|---|---|---|
| 1. | FIRST | 1 |
| 2. | SECOND | 2 |
| 3. | SECOND | 1 |
| 4. | FIRST | 3 |
| 5. | FIRST | 2 |

Thus, transitive functional dependency has been successfully removed by the end of 3NF

| VACCINE ID | VACCINE NAME |
|---|---|
| 1 | COVISHIELD |
| 2 | COVAXINE |
| 3 | SPUTNIK V |

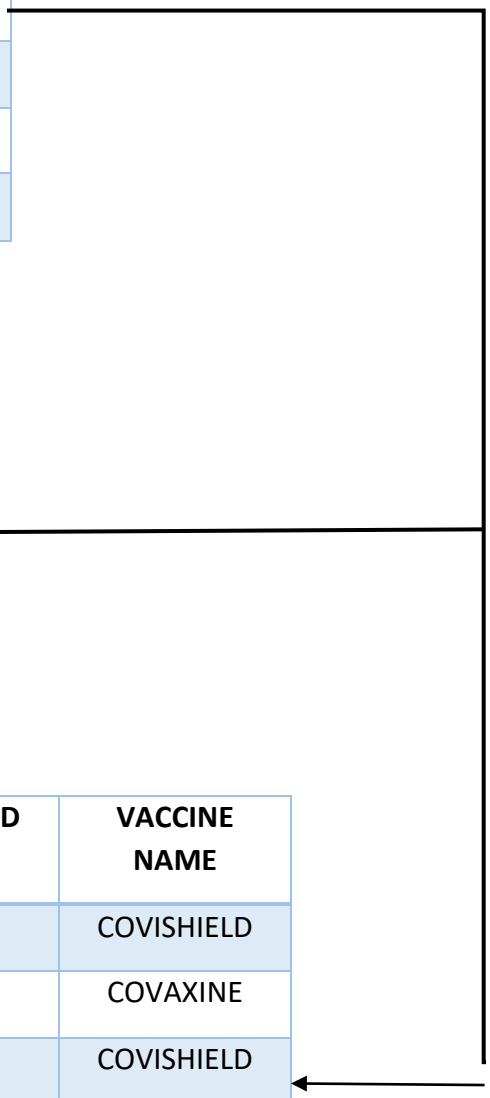
This table has no trivial functional dependency, no multivalued functional dependency and hence satisfies the BCNF and 4NF.

# NORMALIZATION

**5NF**

| **Patient ID** | **DOSAGE** | **VACCINE ID** |
|---|---|---|
| 1. | FIRST | 1 |
| 2. | SECOND | 2 |
| 3. | SECOND | 1 |
| 4. | FIRST | 3 |
| 5. | FIRST | 2 |

| **VACCINE ID** | **VACCINE NAME** |
|---|---|
| 1 | COVISHIELD |
| 2 | COVAXINE |
| 3 | SPUTNIK V |



| **Patient ID** | **DOSAGE** | **VACCINE ID** | **VACCINE NAME** |
|---|---|---|---|
| 1. | FIRST | 1 | COVISHIELD |
| 2. | SECOND | 2 | COVAXINE |
| 3. | SECOND | 1 | COVISHIELD |
| 4. | FIRST | 3 | SPUTNIK V |
| 5. | FIRST | 2 | COVAXINE |

Joining the above two decomposed tables, the resultant table does not contain any spurious tuples and hence it is a lossless decomposition and fifth normal form is satisfied.

**TABLE 4 – VACCINATION DEPARTMENT (UNNORMALISED FORM)**

| BILL NO | Patient Name | AMOUNT |
|---|---|---|
| 1111 | LILY | 250 |
| 1123 | WILL | 250 |
| 1103 | SAM | 250 |
| 1112 | LEO | 300 |
| 1117 | NANCY | 250 |

This table has unique atomic values and no partial functional dependency and hence it exists 1NF and 2NF

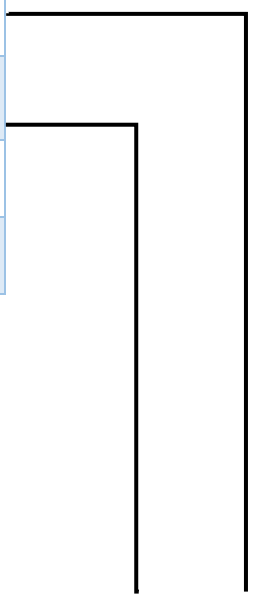
**3NF**

F={ {Bill no} **->**{Patient_Name,Amount} ,

{Patient_Name} **->**{Amount} ,

}

| BILL NO | Patient Name | AMOUNT |
|---|---|---|
| 1111 | LILY | 250 |
| 1123 | WILL | 250 |
| 1103 | SAM | 250 |
| 1112 | LEO | 300 |
| 1117 | NANCY | 250 |



| BILL NO | Patient Name |
|---|---|
| 1111 | LILY |
| 1123 | WILL |
| 1103 | SAM |
| 1112 | LEO |
| 1117 | NANCY |

| Patient Name | AMOUNT |
|---|---|
| LILY | 250 |
| WILL | 250 |
| SAM | 250 |
| LEO | 300 |
| NANCY | 250 |

Thus, transitive functional dependency has been successfully removed by the end of 3NF

This table has no trivial functional dependency, no multivalued functional dependency and hence it satisfies BCNF and 4NF.

**5NF**

| BILL NO | Patient Name |
|---|---|
| 1111 | LILY |
| 1123 | WILL |
| 1103 | SAM |
| 1112 | LEO |
| 1117 | NANCY |

| Patient Name | AMOUNT |
|---|---|
| LILY | 250 |
| WILL | 250 |
| SAM | 250 |
| LEO | 300 |
| NANCY | 250 |

| BILL NO | Patient Name | AMOUNT |
|---|---|---|
| 1111 | LILY | 250 |
| 1123 | WILL | 250 |
| 1103 | SAM | 250 |
| 1112 | LEO | 300 |
| 1117 | NANCY | 250 |

Joining the above two decomposed tables, the resultant table does not contain any spurious tuples and hence it is a lossless decomposition and fifth normal form is satisfied.

# MODULES

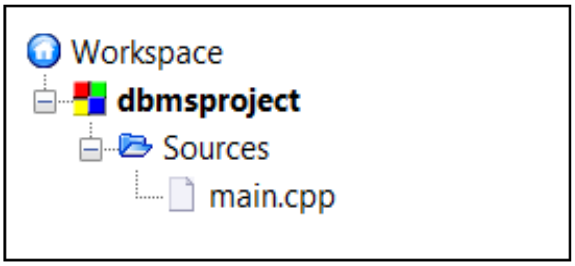
**MODULES AND ITS DESCRIPTION**

★ Understanding and Analyzing the basic motive of the project and providing the efficient solution for it.

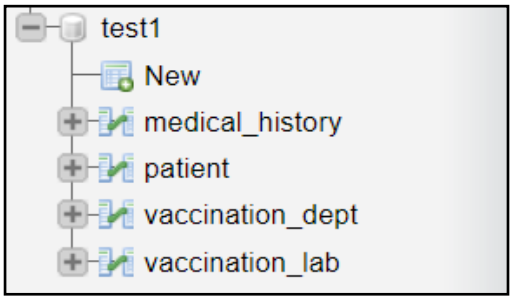
★ Installation of the necessary software involved namely CodeBlocks , XAMPP server.

★ Having knowledge about Programming languages such as C++ and Structured Query Language (SQL)

★ Containing the Source code for this project (main.cpp)




★ Creation of database and including the tables and appropriate schemas in PHPmyAdmin through XAMPP




★ Linking and Ensuring strong connection between source code and PHPmyAdmin .

★ Application is created and operations like **INSERTION , DELETION** and **DISPLAY** can be performed

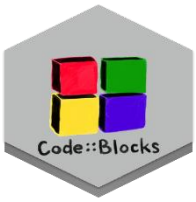
# TOOLS USED , CODES , AND SNAPSHOTS (INPUT AND OUTPUT)

# TOOLS AND LANGUAGES USED :

## FRONT END :

LANGUAGE : C++

SOFTWARE : CODEBLOCKS





## LINKING TOOL :

XAMPP ( PHPmyAdmin)

## BACK END :

PHPmyAdmin , SQL



TOOLS USED

# CODES

```cpp
#include <iostream>
#include<bits/stdc++.h>
#include<windows.h>
#include<string.h>
#include<mysql.h>
#include<sstream>
#include<stdlib.h>
using namespace std;

const char* hostname = "localhost";
const char* username = "root";
const char* password = "";
const char* database = "test1";
unsigned int port    = 3306;
const char* unixsocket =NULL;
unsigned long clientflag = 0 ;

//database connection

MYSQL* connectdatabase()
{
    MYSQL* conn;
    conn = mysql_init(0);
    conn = mysql_real_connect(conn, hostname, username, password, database, port,unixsocket, clientflag);
    if(conn)
    {
        cout<<"Connected successfully...\n"<<endl;
        return conn;
    }
    else
    {
        cout<<"Failed to connect to database"<<endl;
        return conn;
    }
}

insertion(MYSQL* conn)
{
    int ins1 = 0, ins2 = 0, ins3 = 0, ins4 = 0, d;
    stringstream ss1,ss2,ss3,ss4;
    string aadhar,name,add,dob,age,phone,diabetes,allergies,r_infec,covid,pid,vname,vid,dosage,bno,amt;
    cout<<"Enter the aadhar card number : ";
    cin>>aadhar;
    cout<<"Enter the name : ";
    cin>>name;
     cout<<"Enter the address : ";
     cin>>add;
     cout<<"Enter the DOB : ";
     cin>>dob;
     cout<<"Enter the age : ";
     cin>>age;
     cout<<"Enter the phone number : ";
     cin>>phone;
     cout<<"Enter YES or NO for Diabetes : ";
     cin>>diabetes;
     cout<<"Enter YES or NO for Allergies : ";
     cin>>allergies;
     cout<<"Enter YES or NO for Respiratory infections : ";
     cin>>r_infec;
     cout<<"Enter YES or NO if Patient was infected by COVID-19 : ";
     cin>>covid;
     cout<<"Enter the Patient ID : ";
     cin>>pid;
     cout<<"Enter the Vaccination Name : ";
     cin>>vname;
     if(vname=="Covishield"){
         vid="1";
     }
```

# CODES

```
    if(vname=="Covaxine"){
        vid="2";
    }
    if(vname=="SputnikV"){
        vid="3";
    }
    cout<<"Enter 0 for first dosage , 1 for second dosage and 2 for completion of 2 doses : ";
    cin>>d;

    while(!(d>=0 && d<=2)){
        cout<<"INVALID NUMBER !...Enter again \n";
        cin>>d;
    }
    cout<<"Enter the Bill No : ";
    cin>>bno;
    cout<<"Enter the Amount : ";
    cin>>amt;
    if(d==0){
        dosage = "Appearing for first dose";
    }
    if(d==1){
        dosage = "Completion of first dose";
    }
    if(d==2){
        dosage = "Completion of both the doses";
    }
    ss1<<"INSERT INTO Patient VALUES ('"+aadhar+"','"+name+"','"+add+"','"+dob+"','"+age+"','"+phone+"')";
    string query1 = ss1.str();
    const char* q1 = query1.c_str();
    ins1 = mysql_query(conn,q1);
    ss2<<"INSERT INTO Medical_history VALUES ('"+aadhar+"','"+diabetes+"','"+allergies+"','"+r_infec+"','"+covid+"')";
    string query2 = ss2.str();
    const char* q2 = query2.c_str();
    ins2 = mysql_query(conn,q2);
    ss3<<"INSERT INTO Vaccination_Lab VALUES ('"+aadhar+"','"+pid+"','"+vname+"','"+vid+"','"+dosage+"')";
    string query3 = ss3.str();
    const char* q3 = query3.c_str();
    ins3 = mysql_query(conn,q3);
    ss4<<"INSERT INTO Vaccination_dept VALUES ('"+pid+"','"+amt+"','"+bno+"')";
    string query4 = ss4.str();
    const char* q4 = query4.c_str();
    ins4 = mysql_query(conn,q4);
    if(ins1 == 0 && ins2 == 0 && ins3 == 0 && ins4 == 0)
    {
        cout<<"\nRecord inserted successfully.....!!!!\n"<<endl;
    }
    else
    {
        cout<<"Failed to insert........\n"<<endl;
    }
}

display(MYSQL* conn)
{
    int c = 1;
    MYSQL_ROW row,row1;
    MYSQL_RES* res;
    if(conn)
    {
        int qstate = mysql_query(conn,"SELECT * FROM Patient, Medical_History WHERE Patient.Aadhar_card = Medical_history.M_Aadhar");
        if(!qstate)
        {
            res = mysql_store_result(conn);
            int count = mysql_num_fields(res);
            cout<<"PERSONAL AND MEDICAL HISTORY OF PATIENTS\n"<<endl;
            while(row=mysql_fetch_row(res))
            {
                cout<<"DETAILS OF PATIENT "<<c<<" HISTORY :\n"<<endl;

                    cout<<"Name                    : "<<row[1]<<"\n";
                    cout<<"Address                 : "<<row[2]<<"\n";
                    cout<<"DOB                     : "<<row[3]<<"\n";
                    cout<<"Age                     : "<<row[4]<<"\n";
                    cout<<"Phone number            : "<<row[5]<<"\n";
                    cout<<"Diabetes                : "<<row[7]<<"\n";
                    cout<<"Allergies               : "<<row[8]<<"\n";
                    cout<<"Respiratory Infections  : "<<row[9]<<"\n";
                    cout<<"Covid-19                : "<<row[10]<<endl<<endl;
```

# CODES

```
                c++;
                cout<<endl;
            }
        }
        cout<<endl;
    }
    else
    {
        cout<<"\nFailed to fetch data.....\n"<<endl;
    }
}
display1(MYSQL* conn)
{
    int c = 1;
    MYSQL_ROW row;
    MYSQL_RES* res;
    if(conn)
    {
        int qstate = mysql_query(conn,"SELECT * FROM Vaccination_lab,Vaccination_dept WHERE Vaccination_lab.Patient_ID = Vaccination_dept.VPatient_ID");
        if(!qstate)
        {
            res = mysql_store_result(conn);
            int count = mysql_num_fields(res);
            cout<<"VACCINATION DETAILS OF PATIENTS\n"<<endl;
            while(row=mysql_fetch_row(res))
            {
                cout<<"VACCINATION DETAILS OF PATIENT "<<c<<" HISTORY :\n"<<endl;

                    cout<<"Aadhar Number            : "<<row[0]<<"\n";
                    cout<<"Patient ID               : "<<row[1]<<"\n";
                    cout<<"Vaccine Name             : "<<row[2]<<"\n";
                    cout<<"Vaccine ID               : "<<row[3]<<"\n";
                    cout<<"Dosage                   : "<<row[4]<<"\n";
                    cout<<"Bill Number              : "<<row[7]<<"\n";
                    cout<<"Amount                   : "<<row[6]<<endl<<endl;
                    c++;
            }
            cout<<endl;
        }
        cout<<endl;
    }
    else
    {
        cout<<"\nFailed to fetch data.....\n"<<endl;
```

```
    }
}
display2(MYSQL* conn)
{
    string a;
    int not_found=0,tot=0,not_found1=0,tot1=0;
    cout<<"Enter the aadhar number for details to be searched : ";
    cin>>a;
    MYSQL_ROW row;
    MYSQL_RES* res;
    if(conn)
    {
        int qstate = mysql_query(conn,"SELECT * FROM Patient INNER JOIN Medical_history ON Patient.Aadhar_card=Medical_history.M_Aadhar");
        if(!qstate)
        {
            res = mysql_store_result(conn);
            int count = mysql_num_fields(res);
            while(row=mysql_fetch_row(res))
            {
                    if(row[0]==a)
                    {
                        cout<<"\n\nDETAILS OF PATIENT WHOSE AADHAR CARD NUMBER IS "<<a<<" :\n"<<endl;
                        cout<<"Aadhar Card            : "<<row[0]<<endl;
                        cout<<"Name                   : "<<row[1]<<endl;
                        cout<<"Address                : "<<row[2]<<endl;
                        cout<<"DOB                    : "<<row[3]<<endl;
                        cout<<"Age                    : "<<row[4]<<endl;
                        cout<<"Phone number           : "<<row[5]<<endl;
                        cout<<"Diabetes               : "<<row[7]<<endl;
                        cout<<"Allergies              : "<<row[8]<<endl;
                        cout<<"Respiratory Infections : "<<row[9]<<endl;
                        cout<<"Covid-19               : "<<row[10]<<endl;
                        int p = 1;
                        not_found=0;
                        tot++;
                        if(p=1)
                            break;
                    }
                    else
                    {
                        not_found++;
                    }
```

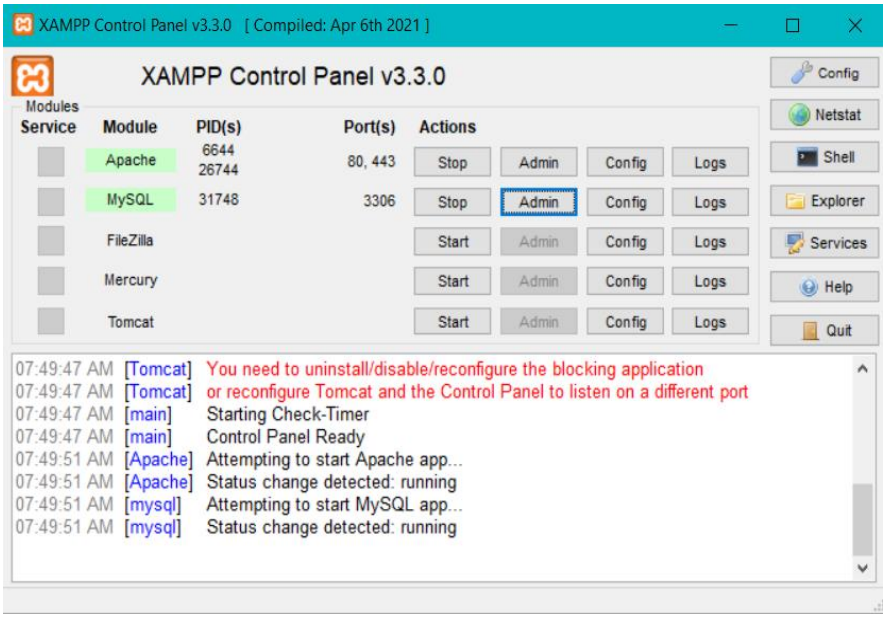
# CODES

```
                    tot++;
                }
            }
            int qstate1 = mysql_query(conn,"SELECT * FROM Vaccination_Lab INNER JOIN Vaccination_dept ON Vaccination_lab.Patient_ID=Vaccination_dept.VPatient_ID");
            if(!qstate1)
            {
                res = mysql_store_result(conn);
                int count = mysql_num_fields(res);
                while(row=mysql_fetch_row(res))
                {
                        if(row[0]==a)
                        {
                            cout<<"Patient ID             : "<<row[1]<<"\n";
                            cout<<"Vaccination Name       : "<<row[2]<<"\n";
                            cout<<"Vaccination ID         : "<<row[3]<<"\n";
                            cout<<"Dosage                 : "<<row[4]<<"\n";
                            cout<<"Amount                 : "<<row[6]<<"\n";
                            cout<<"Bill Number            : "<<row[7]<<"\n"<<endl<<endl;
                            int p = 1;
                            not_found=0;
                            tot1++;
                            if(p=1)
                                break;
                        }
                        else
                        {
                            not_found1++;
                        }
                        tot1++;
                    }
            }
            if(not_found==tot && not_found1==tot1)
            {
                cout<<"\nNo record found .....\n"<<endl;
            }
        }
    }

deletion(MYSQL* conn)
{
    MYSQL_ROW row;
    MYSQL_RES* res;
    string username;
    stringstream ss,sss;

    cout<<"Enter the Aadhar card of record which has to be deleted : ";
    cin>>username;
    sss<<"SELECT * FROM Patient WHERE Aadhar_card = ' "+username+" ' ";
    string query = sss.str();
    const char* q = query.c_str();
    mysql_query(conn,q);
    res = mysql_store_result(conn);
    int count = mysql_num_fields(res);
    my_ulonglong x = mysql_num_rows(res);
    if(x>0)
    {
        ss<<"DELETE FROM Patient WHERE Aadhar_card = ' "+username+" ' ";
        string query = ss.str();
        const char* q = query.c_str();
        mysql_query(conn,q);
        cout<<x<<" Record having Aadhar no. as "<<username<<" is found!"<<endl<<"Record found and deleted!....\n"<<endl;
    }
    else
    {
        cout<<"\nNO RECORD FOUND !!\n"<<endl;
    }
}

int main()
{
    MYSQL* conn = connectdatabase();
    int choice,n;
    cout<<endl;
    cout<<"Enter 1 for inserting new record \nEnter 2 for displaying all Patient's Medical Records \n";
    cout<<"Enter 3 for displaying all Patient's Vaccination details \n";
    cout<<"Enter 4 for displaying a particular Patient's Record\nEnter 5 for Deletion of a Particular Record\n"<<endl;
    cout<<"Enter the no. of times the operations has to be performed : ";
    cin>>n;
    cout<<endl;
    for(int i=0;i<n;i++)
    {
        cout<<"----------------------------------------------------------------\n";
        cout<<"Enter you choice : ";
        cin>>choice;
        cout<<endl;
        if(choice==1)
```

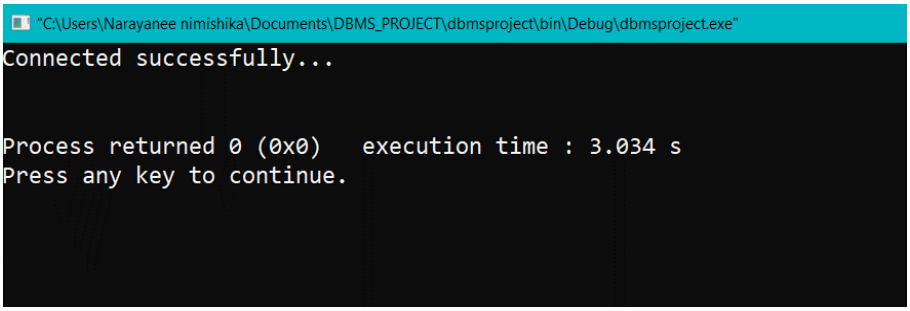
# CODES

```
318         {
319             insertion(conn);
320         }
321         if(choice==2)
322         {
323             display(conn);
324         }
325         if(choice==3)
326         {
327             display1(conn);
328         }
329         if(choice==4)
330         {
331             display2(conn);
332         }
333         if(choice==5)
334         {
335             deletion(conn);
336         }
337     }
338     return 0;
339 }
340
```

## ENSURING CONNECTION OF DATABASE VIA XAMPP:




**XAMPP SERVER**




**OUTPUT WINODW**

# SNAPSHOT (IMPLEMENTATION-1)

Initially there are two record inserted in the database. In addition to that the following operations are made on the database.

In the first instance, we perform **INSERTION OPERATION** of a record.

```
"C:\Users\Narayanee nimishika\Documents\DBMS_PROJECT\dbmsproject\bin\Debug\dbmsproject.exe"
Connected successfully...   // Ensuring database connectivity


Enter 1 for inserting new record
Enter 2 for displaying all Patient's Medical Records
Enter 3 for displaying all Patient's Vaccination details
Enter 4 for displaying a particular Patient's Record
Enter 5 for Deletion of a Particular Record
 // No. of times the operation has to be performed
Enter the no. of times the operations has to be performed : 1

------------------------------------------------------------
Enter you choice : 1   // Entering choice 1 for insertion operation

Enter the aadhar card number                          : 100110241015
Enter the name                                        : Jack
Enter the address                                     : Paris
Enter the DOB                                         : 18/10/1975
Enter the age                                         : 46
Enter the phone number                                : 9962047519
Enter YES or NO for Diabetes                          : YES
Enter YES or NO for Allergies                         : YES
Enter YES or NO for Respiratory infections            : NO
Enter YES or NO if Patient was infected by COVID-19 : YES
Enter the Patient ID                                  : 1179
Enter the Vaccination Name                            : SputnikV
Enter 0 for first dosage , 1 for second dosage and 2 for completion of 2 doses : 1
Enter the Bill No                                     : 107
Enter the Amount                                      : 750

Record inserted successfully.....!!!!  // Indication of record being inserted
```

**The new record is inserted in the database**

+ Options

| | Aadhar_card | Name | Address | Dob | Age | Phone |
|---|---|---|---|---|---|---|
| Edit Copy Delete | 100110021003 | Harry | London | 24/5/1996 | 26 | 9789898264 |
| Edit Copy Delete | 100110241015 | Jack | Paris | 18/10/1975 | 46 | 9962047519 |
| Edit Copy Delete | 100210011004 | Alexa | NewYork | 10/9/1980 | 41 | 9962972987 |

# SNAPSHOT (IMPLEMENTATION-2)

Entering the number 2 for **DISPLAYING** the medical and personal details of all Patients record inserted in the database.

```
Enter you choice : 2    // No. 2 is for displaying all patients medical and personal details

PERSONAL AND MEDICAL HISTORY OF PATIENTS

DETAILS OF PATIENT 1 HISTORY :     // Displaying Patient 1 details

Name                    : Harry
Address                 : London
DOB                     : 24/5/1996
Age                     : 26
Phone number            : 9789898264
Diabetes                : NO
Allergies               : YES
Respiratory Infections  : MO
Covid-19                : YES


DETAILS OF PATIENT 2 HISTORY :     // Displaying Patient 2 details

Name                    : Jack
Address                 : Paris
DOB                     : 18/10/1975
Age                     : 46
Phone number            : 9962047519
Diabetes                : YES
Allergies               : YES
Respiratory Infections  : NO
Covid-19                : YES


DETAILS OF PATIENT 3 HISTORY :     // Displaying Patient 3 details

Name                    : Alexa
Address                 : NewYork
DOB                     : 10/9/1980
Age                     : 41
Phone number            : 9962972987
Diabetes                : YES
Allergies               : NO
Respiratory Infections  : YES
Covid-19                : NO
```

**QUERY USED :** SELECT * FROM Patient , Medical_History WHERE Patient.Aadhar_card = Medical_history.M_Aadhar

Medical and Personal details of all patients have been displayed

# SNAPSHOT (IMPLEMENTATION-3)

Entering the number 3 for **DISPLAYING** the Vaccination details of all Patients record inserted in the database.

```
Enter the no. of times the operations has to be performed : 1

------------------------------------------------------------
Enter you choice : 3     // No. 3 is for displaying the Vaccination details of all Patients

VACCINATION DETAILS OF PATIENTS

VACCINATION DETAILS OF PATIENT 1 HISTORY :      // Displaying Vaccination details of Patient 1

Aadhar Number             : 100110021003
Patient ID                : 1112
Vaccine Name              : Covishield
Vaccine ID                : 1
Dosage                    : Appearing for first dose
Bill Number               : 134
Amount                    : 500

VACCINATION DETAILS OF PATIENT 2 HISTORY :      // Displaying Vaccination details of Patient 2

Aadhar Number             : 100110241015
Patient ID                : 1179
Vaccine Name              : SputnikV
Vaccine ID                : 3
Dosage                    : Completion of first dose
Bill Number               : 107
Amount                    : 750

VACCINATION DETAILS OF PATIENT 3 HISTORY :      // Displaying Vaccination details of Patient 3

Aadhar Number             : 100210011004
Patient ID                : 1117
Vaccine Name              : Covaxine
Vaccine ID                : 2
Dosage                    : Completion of both the doses
Bill Number               : 143
Amount                    : 950
```

**QUERY USED :** SELECT * FROM Vaccination_lab , Vaccination_dept WHERE Vaccination_lab.Patient_ID = Vaccination_dept.VPatient_ID

The Vaccination details of all Patients record entered in the database is being displayed.

# SNAPSHOT (IMPLEMENTATION - 4)

Entering the number 4 for **RETRIEVING** and **DISPLAYING** a particular patient's record with the help of the Primary Key "Aadhar_No".

```
Enter the no. of times the operations has to be performed : 2  // Performing search operation twice

------------------------------------------------------------
Enter you choice : 4   // Entering no. 4 for displaying a particular Patient's record

Enter the aadhar number for details to be searched : 1234  // Entering a random  Aadhar number
                                                             which is not in the database
No record found .....  // Displaying ERROR message

------------------------------------------------------------
Enter you choice : 4

Enter the aadhar number for details to be searched : 100110021003  // Entering correct Aadhar number


DETAILS OF PATIENT WHOSE AADHAR CARD NUMBER IS 100110021003 :  // Displaying the details

Aadhar Card            : 100110021003
Name                   : Harry
Address                : London
DOB                    : 24/5/1996
Age                    : 26
Phone number           : 9789898264
Diabetes               : NO
Allergies              : YES
Respiratory Infections : MO
Covid-19               : YES
Patient ID             : 1112
Vaccination Name       : Covishield
Vaccination ID         : 1
Dosage                 : Appearing for first dose
Amount                 : 500
Bill Number            : 134
```

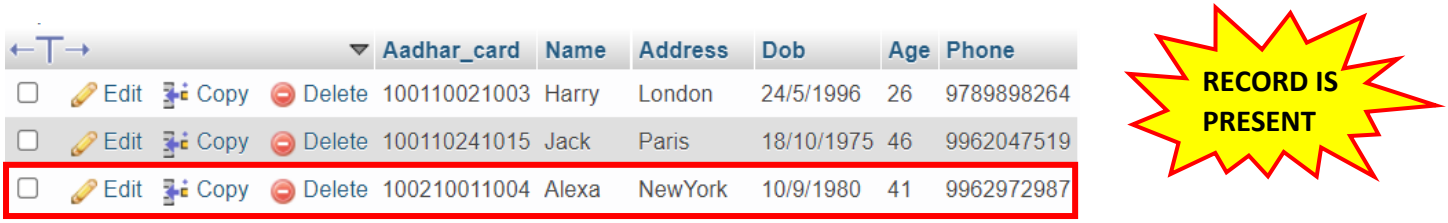
**QUERY USED :** (A) SELECT * FROM Patient INNER JOIN Medical_history ON Patient.Aadhar_card = Medical_history.M_Aadhar

(B) SELECT * FROM Vaccination_Lab INNER JOIN Vaccination_dept ON Vaccination_lab.Patient_ID = Vaccination_dept.VPatient_ID

The details of Patient whose Aadhar number is entered has been displayed.

# SNAPSHOT (IMPLEMENTATION-5)

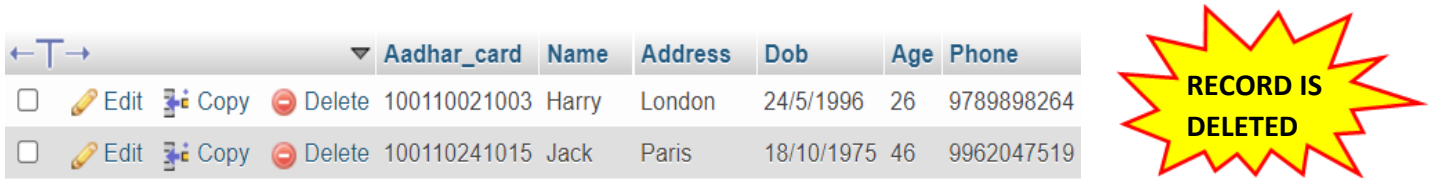
Entering the number 5 for performing **DELETION** operation on the database with the help of Primary Key “Aadhar_No”



| | Aadhar_card | Name | Address | Dob | Age | Phone |
|---|---|---|---|---|---|---|
| Edit Copy Delete | 100110021003 | Harry | London | 24/5/1996 | 26 | 9789898264 |
| Edit Copy Delete | 100110241015 | Jack | Paris | 18/10/1975 | 46 | 9962047519 |
| Edit Copy Delete | 100210011004 | Alexa | NewYork | 10/9/1980 | 41 | 9962972987 |



```
Enter the no. of times the operations has to be performed : 2   // Performing delete operation twice

------------------------------------------------------------
Enter you choice : 5    // Entering no. 5 for deleting a Patient's record

Enter the Aadhar card of record which has to be deleted : 1234 // Entering a random number which is
                                                                not in the database

NO RECORD FOUND !!    // Displaying ERROR message

------------------------------------------------------------
Enter you choice : 5

Enter the Aadhar card of record which has to be deleted : 100210011004 // Entering correct no.

1 Record having Aadhar no. as 100210011004 is found!    // Record FOUND and DELETED
Record found and deleted!....
```



| | Aadhar_card | Name | Address | Dob | Age | Phone |
|---|---|---|---|---|---|---|
| Edit Copy Delete | 100110021003 | Harry | London | 24/5/1996 | 26 | 9789898264 |
| Edit Copy Delete | 100110241015 | Jack | Paris | 18/10/1975 | 46 | 9962047519 |



**QUERY USED :** DELETE FROM Patient WHERE Aadhar_card = ' " + Aadhar_No + " '

**Aadhar_No** in the query is the input entered by the user

Therefore , **DELETION** operation can be easily performed because “Aadhar_No” is a primary key and hence deleting the record from the table which has the **Primary Key** results in deletion of records in all other tables which are having “Aadhar_No” as **Foreign Key.**

# CONCLUSION AND REFERENCES

## CONCLUSION :

The proposed system will be helpful for people who are managing the hospital department by therefore providing easy and quick access to data, manipulation and deletion of records can also be made easily. Retrieving a particular Patient's record can also be done smoothly. The main outcome of this project is to provide to create the most efficient solutions to improve productivity and business value of health care sectors

## GUIDANCE :

Dr.K.P.Vijayakumar (FACULTY)

## REFERENCES :

YouTube tutorials

https://youtu.be/siQCWPxDtMo

Geeks for Geeks

Stack overflow