National Health Mission (NHM)
DBMS Project

A project report submitted as a part of the Continuous Internal Assessment - 3
for the course *Database Management Systems (DSC201-3)*

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October, 2024

Introduction

The National Health Mission (NHM) has been a transformative force in India's healthcare system, vital in improving healthcare access, infrastructure, and quality. Since its inception in 2013, NHM has launched numerous initiatives designed to address the healthcare needs of both rural and urban populations, with a special focus on maternal and child health, disease control, and infrastructure development. These initiatives, along with the mission's key successes, have significantly contributed to improving the overall health outcomes in the country. The table below highlights some of NHM's major initiatives and its most notable successes, showcasing how the mission has positively impacted India's healthcare landscape.

Initiatives of the National Health Mission (NHM)

The National Health Mission has launched a variety of programs aimed at improving healthcare access, quality, and delivery across India. These initiatives target both rural and urban populations, focusing on everything from maternal and child health to disease control and infrastructure development. Below are the key initiatives under NHM, along with details about their impact.

Major Initiatives	Details
Accredited Social Health Activists (ASHA)	- More than 9.15 lakh ASHA activists are working nationwide. - They play a critical role in promoting institutional deliveries, immunization programs, and disease control efforts.
Rogi Kalyan Samiti (RKS) / Hospital Management	- 31,673 Rogi Kalyan Samitis have been established across District and Sub-District Hospitals, Community Health Centres, and Primary Health Centres.

Major Initiatives	Details
	- These registered societies ensure hospitals provide adequate facilities for patient care.
United Grants to Sub-Centres (SC)	- Sub-centres are better equipped to deliver improved healthcare services, especially in rural areas.
Village Health Sanitation and Nutrition Committee (VHSNC)	- Comprised of members from Panchayati Raj Institutions. - Over 5 lakh VHSNCs have been established. - They focus on public service monitoring, planning health activities, and enhancing community participation.
Janani Suraksha Yojana (JSY)	- This scheme encourages pregnant women to opt for institutional deliveries, reducing maternal mortality. - Over 8.55 crore women have benefited from the scheme so far.
Janani Shishu Suraksha Karyakram (JSSK)	- Pregnant women bear no expenses for deliveries in public health institutions. - Free healthcare services are provided to sick infants up to one year of age.
National Mobile Medical Units (NMMUs)	- 1107 Mobile Medical Units (MMUs) have been deployed across 333 districts to enhance healthcare delivery in remote areas.
National Ambulance Service	- A toll-free number provides nationwide ambulance services, ensuring immediate access to emergency care.
Infrastructure Development	- 33% of NHM funds are allocated for healthcare infrastructure development, which includes constructing new facilities and upgrading existing ones to meet healthcare demands.
Comprehensive Primary Health Care (CPHC)	- This initiative aims to improve healthcare access by leveraging Information, Communication, and Technology (ICT) tools, enhancing the quality of care, and providing better access to modern drugs and diagnostics.

Major Successes of the National Health Mission (NHM)

Over the years, the NHM has achieved several milestones in improving healthcare outcomes. Two of its most successful initiatives are **Mission Indradhanush** and the **Kayakalp Initiative**. Both programs have made significant strides in public health.

Successes	Details
Mission Indradhanush	- Helped increase immunization coverage by more than 5% within just one year, significantly improving protection for children against life-threatening diseases.
Kayakalp Initiative	- Focused on improving hygiene, sanitation, waste management, and infection control in public health facilities. - Awards under this initiative have led to better standards of sanitation across hospitals.

These initiatives have greatly contributed to NHM's overarching goal of enhancing healthcare delivery and access, particularly for underserved populations.

Creating a DBMS Project for National Health Mission (NHM)

In this project, we aim to create a database management system (DBMS) to streamline the operations of the **National Health Mission (NHM)**, with a focus on **hospital management** and **immunization services**. The NHM, launched by the Government of India, has played a pivotal role in addressing health-related challenges across the country, especially among vulnerable populations. Effective management of health data is critical for such a large-scale initiative, and this project seeks to create a database that can handle various aspects like patient management, healthcare workers' assignment, hospital inventories, and vaccination records.

Project Objectives

The main objective of this DBMS is to design a structured, relational database that supports the key functions of NHM, particularly:

- **Hospital Management**: Keeping track of hospital resources, medical staff, and treatment consultations.

- **Immunization**: Maintaining detailed vaccination records for infants, children, and mothers across various health centers.

This system will ensure that the information related to patient care, healthcare workers, hospitals, and vaccination centers is well organized, easily retrievable, and secure.

For this project, we are taking **Assam** as the case study. The database has been designed after gathering insights and suggestions from officials working for NHM Assam. The structure has been tailored to meet the specific needs and challenges faced by healthcare facilities in Assam, ensuring that it aligns with real-world practices in the region.

The database is structured around key entities involved in NHM's hospital management and immunization processes. Below is a brief overview of the tables created in this project:

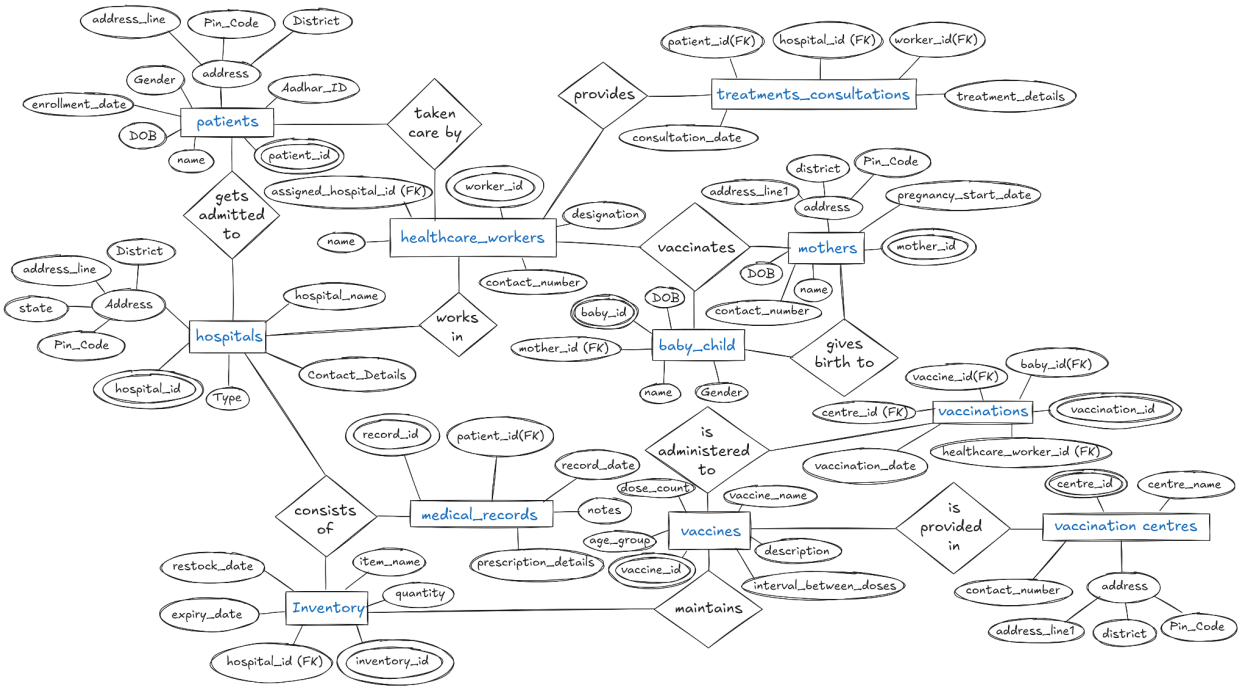
Database Structure

The database is structured using multiple tables, each serving a specific purpose related to NHM's objectives. Below is an overview of the tables created for the system:

1. **baby_child**: This table captures details of babies and children eligible for immunization, including their IDs, names, date of birth, gender, and links to their mothers' records.
2. **healthcare_workers**: Stores information about healthcare workers involved in immunization and hospital management, including their names, designations, and contact details, as well as the hospital to which they are assigned.
3. **hospitals**: Contains data about hospitals registered under NHM, including hospital names, types, addresses, and contact information. This table links to healthcare workers and patients receiving treatment at these facilities.
4. **inventory**: Tracks the hospital inventory, managing information about medical supplies, quantities, restock dates, and expiry dates to ensure adequate resources are available for patient care and immunization.
5. **medical_records**: This table maintains detailed medical records for patients, including diagnosis notes, prescriptions, and consultation dates, which are crucial for effective treatment and follow-up care.
6. **mothers**: Stores details of mothers, including their demographic data, contact details, and pregnancy-related information. It helps to link mother-child records for immunization and maternal care tracking.

7. **patients**: Contains general patient information, such as patient IDs, names, addresses, and Aadhar IDs, which are vital for managing hospital admissions, treatment records, and immunization schedules.
8. **treatments_consultations**: Records information on patient consultations, including diagnoses, treatment details, the healthcare worker involved, and the hospital where the consultation took place.
9. **vaccination_centres**: Stores information on the centers providing vaccinations, including addresses, contact numbers, and district-level information.
10. **vaccinations**: Tracks vaccination records for children, linking them to healthcare workers, vaccination centers, and the specific vaccines administered.
11. **vaccines**: Contains details about vaccines, including vaccine names, the appropriate age group for administration, dosage, and route of administration.

ER Diagram



Creating the Database and Tables

The first step is to create a database called `national_health_mission` to store all the relevant tables and data for the hospital management and immunization system. The SQL syntax to create the database is:

```
create  database national_health_mission;
```

Once the database is created, we proceed by creating the necessary tables that will organize the information. Below is a breakdown of each table and its structure.

1. Patients Table

The `Patients` table stores patient-related details like their ID, name, date of birth, and address.

```
CREATE TABLE Patients (
  patient_id INT PRIMARY KEY,
  name VARCHAR(255),
  DOB DATE,
  Gender VARCHAR(10),
  address_line_1 VARCHAR(255),
  district VARCHAR(50),
  PIN_Code INT,
  Aadhar_ID VARCHAR(12) UNIQUE,
  Enrollment_Date DATE
);
```

```
mysql> DESCRIBE patients;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| patient_id      | int          | NO   | PRI | NULL    |       |
| name            | varchar(255) | YES  |     | NULL    |       |
| DOB             | date         | YES  |     | NULL    |       |
| Gender          | varchar(10)  | YES  |     | NULL    |       |
| address_line_1  | varchar(255) | YES  |     | NULL    |       |
| district        | varchar(50)  | YES  |     | NULL    |       |
| PIN_Code        | int          | YES  |     | NULL    |       |
| Aadhar_ID       | varchar(12)  | YES  | UNI | NULL    |       |
| Enrollment_Date | date         | YES  |     | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
9 rows in set (0.00 sec)
```

2. Hospitals Table

The `Hospitals` table stores information about hospitals, including their type, location, and contact details.

```
CREATE TABLE Hospitals (
  hospital_id INT PRIMARY KEY,
  hospital_name VARCHAR(255),
  Type VARCHAR(50),
  Address VARCHAR(255),
  Contact VARCHAR(20),
  District VARCHAR(50),
  PIN_Code INT,
  State VARCHAR(50)
);
```

```
mysql> DESCRIBE hospitals;
+---------------+--------------+------+-----+---------+-------+
| Field         | Type         | Null | Key | Default | Extra |
+---------------+--------------+------+-----+---------+-------+
| hospital_id   | int          | NO   | PRI | NULL    |       |
| hospital_name | varchar(255) | YES  |     | NULL    |       |
| Type          | varchar(50)  | YES  |     | NULL    |       |
| Address       | varchar(255) | YES  |     | NULL    |       |
| Contact       | varchar(20)  | YES  |     | NULL    |       |
| District      | varchar(50)  | YES  |     | NULL    |       |
| PIN_Code      | int          | YES  |     | NULL    |       |
| State         | varchar(50)  | YES  |     | NULL    |       |
+---------------+--------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

3. Healthcare Workers Table

The `Healthcare_Workers` table stores the details of healthcare professionals, such as their designation and the hospital they are assigned to.

```
CREATE TABLE Healthcare_Workers (

  worker_id INT PRIMARY KEY,

  name VARCHAR(255),

  designation VARCHAR(50),

  contact_number VARCHAR(20),

  assigned_hospital_id INT,

  FOREIGN KEY (assigned_hospital_id) REFERENCES
Hospitals(hospital_id)

);
```

```
mysql> DESCRIBE healthcare_workers;
+----------------------+-------------+------+-----+---------+-------+
| Field                | Type        | Null | Key | Default | Extra |
+----------------------+-------------+------+-----+---------+-------+
| worker_id            | int         | NO   | PRI | NULL    |       |
| name                 | varchar(255) | YES  |     | NULL    |       |
| designation          | varchar(50) | YES  |     | NULL    |       |
| contact_number       | varchar(20) | YES  |     | NULL    |       |
| assigned_hospital_id | int         | YES  | MUL | NULL    |       |
+----------------------+-------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

4. Treatments and Consultations Table

The `Treatments_Consultations` table logs patient diagnoses and treatment details, linking the information to the patient, hospital, and healthcare worker.

```
CREATE TABLE Treatments_Consultations (

  patient_id INT,

  hospital_id INT,
```

```
  worker_id INT,
  diagnosis VARCHAR(255),
  treatment_details VARCHAR(255),
  consultation_date DATE,
  PRIMARY KEY (patient_id, hospital_id, worker_id),
  FOREIGN KEY (patient_id) REFERENCES Patients(patient_id),
  FOREIGN KEY (hospital_id) REFERENCES Hospitals(hospital_id),
  FOREIGN KEY (worker_id) REFERENCES
Healthcare_Workers(worker_id)
);
```

```
mysql> DESCRIBE treatments_consultations;
+--------------------+--------------+------+-----+---------+-------+
| Field              | Type         | Null | Key | Default | Extra |
+--------------------+--------------+------+-----+---------+-------+
| patient_id         | int          | NO   | PRI | NULL    |       |
| hospital_id        | int          | NO   | PRI | NULL    |       |
| worker_id          | int          | NO   | PRI | NULL    |       |
| diagnosis          | varchar(255) | YES  |     | NULL    |       |
| treatment_details  | varchar(255) | YES  |     | NULL    |       |
| consultation_date  | date         | YES  |     | NULL    |       |
+--------------------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

5. Inventory Table

The `Inventory` table records hospital supplies, their quantities, and expiration details.

```
CREATE TABLE Inventory (
  inventory_id INT PRIMARY KEY,
  hospital_id INT,
  item_name VARCHAR(255),
```

```
  quantity INT,
  restock_date DATE,
  expiry_date DATE,
  FOREIGN KEY (hospital_id) REFERENCES Hospitals(hospital_id)
);
```

```
mysql> DESCRIBE inventory;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| inventory_id | int          | NO   | PRI | NULL    |       |
| hospital_id  | int          | YES  | MUL | NULL    |       |
| item_name    | varchar(255) | YES  |     | NULL    |       |
| quantity     | int          | YES  |     | NULL    |       |
| restock_date | date         | YES  |     | NULL    |       |
| expiry_date  | date         | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

6. Medical Records Table

The `Medical_Records` table keeps track of patient medical records, including notes and prescriptions.

```
CREATE TABLE Medical_Records (
  record_id INT PRIMARY KEY,
  patient_id INT,
  record_date DATE,
  notes TEXT,
  prescription_details TEXT,
  FOREIGN KEY (patient_id) REFERENCES Patients(patient_id)
```

```
);
```

```
mysql> DESCRIBE medical_records;
+----------------------+------+------+-----+---------+-------+
| Field                | Type | Null | Key | Default | Extra |
+----------------------+------+------+-----+---------+-------+
| record_id            | int  | NO   | PRI | NULL    |       |
| patient_id           | int  | YES  | MUL | NULL    |       |
| record_date          | date | YES  |     | NULL    |       |
| notes                | text | YES  |     | NULL    |       |
| prescription_details | text | YES  |     | NULL    |       |
+----------------------+------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

7. Mothers Table

The `Mothers` table stores information about mothers registered in the system, such as contact details and pregnancy start date

```
CREATE TABLE Mothers (
  mother_id INT PRIMARY KEY,
  name VARCHAR(255),
  DOB DATE,
  address_line_1 VARCHAR(255),
  district VARCHAR(50),
  PIN_Code INT,
  contact_number VARCHAR(20),
  pregnancy_start_date DATE
);
```

```
mysql> DESCRIBE mothers;
+----------------------+--------------+------+-----+---------+-------+
| Field                | Type         | Null | Key | Default | Extra |
+----------------------+--------------+------+-----+---------+-------+
| mother_id            | int          | NO   | PRI | NULL    |       |
| name                 | varchar(255) | YES  |     | NULL    |       |
| DOB                  | date         | YES  |     | NULL    |       |
| address_line_1       | varchar(255) | YES  |     | NULL    |       |
| district             | varchar(50)  | YES  |     | NULL    |       |
| PIN_Code             | int          | YES  |     | NULL    |       |
| contact_number       | varchar(20)  | YES  |     | NULL    |       |
| pregnancy_start_date | date         | YES  |     | NULL    |       |
+----------------------+--------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

8. Baby and Child Table

The `Baby_Child` table stores details about babies and children linked to their mothers.

```
CREATE TABLE Baby_Child (
  baby_id INT PRIMARY KEY,
  mother_id INT,
  name VARCHAR(255),
  DOB DATE,
  gender VARCHAR(10),
  FOREIGN KEY (mother_id) REFERENCES Mothers(mother_id)
);
```

```
mysql> DESCRIBE baby_child;
+-----------+--------------+------+-----+---------+-------+
| Field     | Type         | Null | Key | Default | Extra |
+-----------+--------------+------+-----+---------+-------+
| baby_id   | int          | NO   | PRI | NULL    |       |
| mother_id | int          | YES  | MUL | NULL    |       |
| name      | varchar(255) | YES  |     | NULL    |       |
| DOB       | date         | YES  |     | NULL    |       |
| gender    | varchar(10)  | YES  |     | NULL    |       |
+-----------+--------------+------+-----+---------+-------+
5 rows in set (0.00 sec)
```

9. Vaccines Table

The `Vaccines` table stores information about various vaccines, including their age group and dosage instructions.

```
CREATE TABLE Vaccines (

  vaccine_id INT PRIMARY KEY,

  vaccine_name VARCHAR(255),

  age_group VARCHAR(50),

  when_to_give VARCHAR(255),

  dose VARCHAR(50),

  route VARCHAR(50),

  site VARCHAR(100)

);
```

```
mysql> DESCRIBE vaccines;
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| vaccine_id   | int          | NO   | PRI | NULL    |       |
| vaccine_name | varchar(255) | YES  |     | NULL    |       |
| age_group    | varchar(50)  | YES  |     | NULL    |       |
| when_to_give | varchar(255) | YES  |     | NULL    |       |
| dose         | varchar(50)  | YES  |     | NULL    |       |
| route        | varchar(50)  | YES  |     | NULL    |       |
| site         | varchar(100) | YES  |     | NULL    |       |
+--------------+--------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

10. Vaccination Centres Table

The `Vaccination_Centres` table stores information about vaccination centers, including location and contact details.

```
CREATE TABLE Vaccination_Centres (

  centre_id INT PRIMARY KEY,

  centre_name VARCHAR(255),

  address_line_1 VARCHAR(255),

  district VARCHAR(50),

  PIN_Code INT,

  contact_number VARCHAR(20)

);
```

```
mysql> DESCRIBE vaccination_centres;
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| centre_id      | int         | NO   | PRI | NULL    |       |
| centre_name    | varchar(255) | YES  |     | NULL    |       |
| address_line_1 | varchar(255) | YES  |     | NULL    |       |
| district       | varchar(50)  | YES  |     | NULL    |       |
| PIN_Code       | int         | YES  |     | NULL    |       |
| contact_number | varchar(20)  | YES  |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

11. Vaccinations Table

The `Vaccinations` table logs details of administered vaccines, linking them to the baby, vaccine, center, and healthcare worker.

```
CREATE TABLE Vaccinations (

  vaccination_id INT PRIMARY KEY,

  baby_id INT,

  vaccine_id INT,

  centre_id INT,

  vaccination_date DATE,

  dose_number INT,

  healthcare_worker_id INT,

  FOREIGN KEY (baby_id) REFERENCES Baby_Child(baby_id),

  FOREIGN KEY (vaccine_id) REFERENCES Vaccines(vaccine_id),

  FOREIGN KEY (centre_id) REFERENCES
Vaccination_Centres(centre_id),
```

```
  FOREIGN KEY (healthcare_worker_id) REFERENCES
Healthcare_Workers(worker_id)

);
```

```
mysql> describe vaccinations;
+----------------------+------+------+-----+---------+-------+
| Field                | Type | Null | Key | Default | Extra |
+----------------------+------+------+-----+---------+-------+
| vaccination_id       | int  | NO   | PRI | NULL    |       |
| baby_id              | int  | YES  | MUL | NULL    |       |
| vaccine_id           | int  | YES  | MUL | NULL    |       |
| centre_id            | int  | YES  | MUL | NULL    |       |
| vaccination_date     | date | YES  |     | NULL    |       |
| dose_number          | int  | YES  |     | NULL    |       |
| healthcare_worker_id | int  | YES  | MUL | NULL    |       |
+----------------------+------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

Inserting Data into the Tables

After creating the database and tables, the next step is to populate them with relevant data. This ensures the system has enough information to perform meaningful operations and queries.

1. Inserting Data into the Patients Table

To add patient details, we use the `INSERT INTO` statement:

```
INSERT INTO Patients (patient_id, name, DOB, Gender,
address_line_1, district, PIN_Code, Aadhar_ID, Enrollment_Date)
VALUES
(101, 'Anurag Barman', '1995-04-12', 'Male', 'Ganeshguri',
'Guwahati', 781006, '123456789012', '2023-05-21'),
(102, 'Pallabi Hazarika', '1993-11-07', 'Female', 'Bhangagarh',
'Guwahati', 781005, '123456789013', '2023-06-13'),
(103, 'Deepa Saikia', '1987-09-25', 'Female', 'Silpukhuri',
'Jorhat', 785001, '123456789014', '2023-07-02'),
```

```
(104, 'Bikram Gogoi', '1999-12-30', 'Male', 'Uzan Bazar',
'Dibrugarh', 786001, '123456789015', '2023-08-05'),
(105, 'Bishal Baruah', '2001-03-14', 'Male', 'Paltan Bazar',
'Tezpur', 784001, '123456789016', '2023-09-11'),
(106, 'Rahul Deka', '1994-07-19', 'Male', 'Beltola', 'Guwahati',
781028, '123456789017', '2023-08-15'),
(107, 'Kalpana Roy', '1992-02-18', 'Female', 'Fancy Bazaar',
'Dhubri', 783301, '123456789018', '2023-07-23'),
(108, 'Pranjal Nath', '1989-05-29', 'Male', 'Lakhtokia',
'Nagaon', 782001, '123456789019', '2023-09-20'),
(109, 'Aparna Das', '2000-10-10', 'Female', 'Chandmari',
'Silchar', 788001, '123456789020', '2023-07-01'),
(110, 'Neha Phukan', '1998-11-15', 'Female', 'Zoo Road',
'Jorhat', 785002, '123456789021', '2023-08-03'),
(111, 'Sushant Borah', '1997-01-20', 'Male', 'Khanapara',
'Tezpur', 784001, '123456789022', '2023-09-12'),
(112, 'Anamika Kalita', '1996-03-09', 'Female', 'Rajgarh',
'Sivasagar', 785640, '123456789023', '2023-10-04'),
(113, 'Rohan Bhuyan', '1990-08-27', 'Male', 'Hatigaon',
'Guwahati', 781038, '123456789024', '2023-09-22'),
(114, 'Saurabh Das', '1988-12-06', 'Male', 'Maligaon',
'Tinsukia', 786125, '123456789025', '2023-06-28'),
(115, 'Taniya Baishya', '1995-07-16', 'Female', 'Kachari Basti',
'Barpeta', 781301, '123456789026', '2023-09-29');
```

```
mysql> SELECT * FROM patients;
+------------+-----------------+------------+--------+---------------+-----------+----------+--------------+-----------------+
| patient_id | name            | DOB        | Gender | address_line_1 | district  | PIN_Code | Aadhar_ID    | Enrollment_Date |
+------------+-----------------+------------+--------+---------------+-----------+----------+--------------+-----------------+
|        101 | Anurag Barman   | 1995-04-12 | Male   | Ganeshguri    | Guwahati  |   781006 | 123456789012 | 2023-05-21      |
|        102 | Pallabi Hazarika | 1993-11-07 | Female | Bhangagarh    | Guwahati  |   781005 | 123456789013 | 2023-06-13      |
|        103 | Deepa Saikia    | 1987-09-25 | Female | Silpukhuri    | Jorhat    |   785001 | 123456789014 | 2023-07-02      |
|        104 | Bikram Gogoi    | 1999-12-30 | Male   | Uzan Bazar    | Dibrugarh |   786001 | 123456789015 | 2023-08-05      |
|        105 | Bishal Baruah   | 2001-03-14 | Male   | Paltan Bazar  | Tezpur    |   784001 | 123456789016 | 2023-09-11      |
|        106 | Rahul Deka      | 1994-07-19 | Male   | Beltola       | Guwahati  |   781028 | 123456789017 | 2023-08-15      |
|        107 | Kalpana Roy     | 1992-02-18 | Female | Fancy Bazaar  | Dhubri    |   783301 | 123456789018 | 2023-07-23      |
|        108 | Pranjal Nath    | 1989-05-29 | Male   | Lakhtokia     | Nagaon    |   782001 | 123456789019 | 2023-09-20      |
|        109 | Aparna Das      | 2000-10-10 | Female | Chandmari     | Silchar   |   788001 | 123456789020 | 2023-07-01      |
|        110 | Neha Phukan     | 1998-11-15 | Female | Zoo Road      | Jorhat    |   785002 | 123456789021 | 2023-08-03      |
|        111 | Sushant Borah   | 1997-01-20 | Male   | Khanapara     | Tezpur    |   784001 | 123456789022 | 2023-09-12      |
|        112 | Anamika Kalita  | 1996-03-09 | Female | Rajgarh       | Sivasagar |   785640 | 123456789023 | 2023-10-04      |
|        113 | Rohan Bhuyan    | 1990-08-27 | Male   | Hatigaon      | Guwahati  |   781038 | 123456789024 | 2023-09-22      |
|        114 | Saurabh Das     | 1988-12-06 | Male   | Maligaon      | Tinsukia  |   786125 | 123456789025 | 2023-06-28      |
|        115 | Taniya Baishya  | 1995-07-16 | Female | Kachari Basti | Barpeta   |   781301 | 123456789026 | 2023-09-29      |
+------------+-----------------+------------+--------+---------------+-----------+----------+--------------+-----------------+
15 rows in set (0.00 sec)
```

2. Inserting Data into the Hospitals Table

Add hospital details by inserting records for each hospital.

```
INSERT INTO Hospitals (hospital_id, hospital_name, Type,
Address, Contact, District, PIN_Code, State)
VALUES
(201, 'Apollo Hospitals', 'Multi-speciality', 'G.S Road,
Guwahati', '0361-2450303', 'Guwahati', 781005, 'Assam'),
(202, 'Pratiksha Hospital', 'Private', 'VIP Road, Guwahati',
'0361-2335555', 'Guwahati', 781022, 'Assam'),
(203, 'Jorhat Medical College', 'Government', 'M.G Road,
Jorhat', '0376-2371111', 'Jorhat', 785001, 'Assam'),
(204, 'Dibrugarh Civil Hospital', 'Government', 'Lahoal,
Dibrugarh', '0373-2314111', 'Dibrugarh', 786001, 'Assam'),
(205, 'Tezpur Medical College', 'Government', 'Paruwa, Tezpur',
'03712-224111', 'Tezpur', 784001, 'Assam'),
(206, 'Dispur Hospitals', 'Private', 'G.S. Road, Dispur',
'0361-2221111', 'Guwahati', 781006, 'Assam'),
(207, 'Silchar Medical College', 'Government', 'Silcoorie Grant,
Silchar', '03842-229110', 'Silchar', 788001, 'Assam'),
(208, 'Assam Medical College', 'Government', 'Barbari,
Dibrugarh', '0373-2300111', 'Dibrugarh', 786002, 'Assam'),
(209, 'GNRC Hospital', 'Private', 'Six Mile, Guwahati',
'0361-2227700', 'Guwahati', 781022, 'Assam'),
(210, 'Down Town Hospital', 'Private', 'Down Town, Guwahati',
'0361-2331001', 'Guwahati', 781006, 'Assam'),
(211, 'Marwari Hospitals', 'Private', 'S.S Road, Guwahati',
'0361-2540000', 'Guwahati', 781001, 'Assam'),
(212, 'Barpeta Civil Hospital', 'Government', 'College Road,
Barpeta', '03665-252111', 'Barpeta', 781301, 'Assam'),
(213, 'Sivasagar Civil Hospital', 'Government', 'Sivasagar',
'03772-222111', 'Sivasagar', 785640, 'Assam'),
(214, 'Nagaon Civil Hospital', 'Government', 'Near ASTC,
Nagaon', '03672-220333', 'Nagaon', 782001, 'Assam'),
```

```
(215, 'Tinsukia Civil Hospital', 'Government', 'Borguri,
Tinsukia', '0374-2330400', 'Tinsukia', 786125, 'Assam');
```

```
mysql> SELECT * FROM hospitals;
+-------------+--------------------------+-----------------+--------------------------+--------------+-----------+----------+-------+
| hospital_id | hospital_name            | Type            | Address                  | Contact      | District  | PIN_Code | State |
+-------------+--------------------------+-----------------+--------------------------+--------------+-----------+----------+-------+
|         201 | Apollo Hospitals         | Multi-speciality | G.S Road, Guwahati       | 0361-2450303 | Guwahati  |   781005 | Assam |
|         202 | Pratiksha Hospital       | Private          | VIP Road, Guwahati       | 0361-2335555 | Guwahati  |   781022 | Assam |
|         203 | Jorhat Medical College   | Government       | M.G Road, Jorhat         | 0376-2371111 | Jorhat    |   785001 | Assam |
|         204 | Dibrugarh Civil Hospital | Government       | Lahoal, Dibrugarh        | 0373-2314111 | Dibrugarh |   786001 | Assam |
|         205 | Tezpur Medical College   | Government       | Paruwa, Tezpur           | 03712-224111 | Tezpur    |   784001 | Assam |
|         206 | Dispur Hospitals         | Private          | G.S. Road, Dispur        | 0361-2221111 | Guwahati  |   781006 | Assam |
|         207 | Silchar Medical College  | Government       | Silcoorie Grant, Silchar | 03842-229110 | Silchar   |   788001 | Assam |
|         208 | Assam Medical College    | Government       | Barbari, Dibrugarh       | 0373-2300111 | Dibrugarh |   786002 | Assam |
|         209 | GNRC Hospital            | Private          | Six Mile, Guwahati       | 0361-2227700 | Guwahati  |   781022 | Assam |
|         210 | Down Town Hospital       | Private          | Down Town, Guwahati      | 0361-2331001 | Guwahati  |   781006 | Assam |
|         211 | Marwari Hospitals        | Private          | S.S Road, Guwahati       | 0361-2540000 | Guwahati  |   781001 | Assam |
|         212 | Barpeta Civil Hospital   | Government       | College Road, Barpeta    | 03665-252111 | Barpeta   |   781301 | Assam |
|         213 | Sivasagar Civil Hospital | Government       | Sivasagar                | 03772-222111 | Sivasagar |   785640 | Assam |
|         214 | Nagaon Civil Hospital    | Government       | Near ASTC, Nagaon        | 03672-220333 | Nagaon    |   782001 | Assam |
|         215 | Tinsukia Civil Hospital  | Government       | Borguri, Tinsukia        | 0374-2330400 | Tinsukia  |   786125 | Assam |
+-------------+--------------------------+-----------------+--------------------------+--------------+-----------+----------+-------+
15 rows in set (0.00 sec)
```

3. Inserting Data into the Healthcare_Workers Table

Healthcare worker records can be added as shown below:

```
INSERT INTO Healthcare_Workers (worker_id, name, designation,
contact_number, assigned_hospital_id)
VALUES
(301, 'Dr. Manjit Das', 'Doctor', '7896541230', 201),
(302, 'Dr. Aruna Barman', 'Doctor', '7896541231', 202),
(303, 'Nayan Sarma', 'Nurse', '7896541232', 203),
(304, 'Dr. Manash Dutta', 'Doctor', '7896541233', 204),
(305, 'Pranami Hazarika', 'Pharmacist', '7896541234', 205),
(306, 'Dr. Rakesh Baruah', 'Doctor', '7896541235', 206),
(307, 'Bijoy Saikia', 'Lab Technician', '7896541236', 207),
(308, 'Dr. Sonali Roy', 'Doctor', '7896541237', 208),
(309, 'Mitali Nath', 'Nurse', '7896541238', 209),
(310, 'Dr. Anil Bhattacharya', 'Doctor', '7896541239', 210),
(311, 'Dr. Rajib Deka', 'Doctor', '7896541240', 211),
(312, 'Krishna Sharma', 'Nurse', '7896541241', 212),
(313, 'Dr. Asha Borthakur', 'Doctor', '7896541242', 213),
(314, 'Priyanka Das', 'Pharmacist', '7896541243', 214),
(315, 'Dr. Suman Kalita', 'Doctor', '7896541244', 215);
```

```
mysql> select * from healthcare_workers;
+-----------+----------------------+----------------+----------------+----------------------+
| worker_id | name                 | designation    | contact_number | assigned_hospital_id |
+-----------+----------------------+----------------+----------------+----------------------+
|       301 | Dr. Manjit Das       | Doctor         | 7896541230     |                  201 |
|       302 | Dr. Aruna Barman     | Doctor         | 7896541231     |                  202 |
|       303 | Nayan Sarma          | Nurse          | 7896541232     |                  203 |
|       304 | Dr. Manash Dutta     | Doctor         | 7896541233     |                  204 |
|       305 | Pranami Hazarika     | Pharmacist     | 7896541234     |                  205 |
|       306 | Dr. Rakesh Baruah    | Doctor         | 7896541235     |                  206 |
|       307 | Bijoy Saikia         | Lab Technician | 7896541236     |                  207 |
|       308 | Dr. Sonali Roy       | Doctor         | 7896541237     |                  208 |
|       309 | Mitali Nath          | Nurse          | 7896541238     |                  209 |
|       310 | Dr. Anil Bhattacharya | Doctor         | 7896541239     |                  210 |
|       311 | Dr. Rajib Deka       | Doctor         | 7896541240     |                  211 |
|       312 | Krishna Sharma       | Nurse          | 7896541241     |                  212 |
|       313 | Dr. Asha Borthakur   | Doctor         | 7896541242     |                  213 |
|       314 | Priyanka Das         | Pharmacist     | 7896541243     |                  214 |
|       315 | Dr. Suman Kalita     | Doctor         | 7896541244     |                  215 |
+-----------+----------------------+----------------+----------------+----------------------+
15 rows in set (0.00 sec)
```

4. Inserting Data into the Treatments_Consultations Table

To log consultations and treatments, we use the following:

```
INSERT INTO Treatments_Consultations (patient_id, hospital_id,
worker_id, diagnosis, treatment_details, consultation_date)
VALUES
(101, 201, 301, 'Fever', 'Prescribed Paracetamol',
'2023-05-22'),
(102, 202, 302, 'Hypertension', 'Prescribed Amlodipine',
'2023-06-14'),
(103, 203, 303, 'Diabetes', 'Prescribed Metformin',
'2023-07-03'),
(104, 204, 304, 'Fracture', 'Recommended X-ray, Cast Applied',
'2023-08-06'),
(105, 205, 305, 'Anemia', 'Prescribed Iron Supplements',
'2023-09-12'),
(106, 206, 306, 'Cold', 'Prescribed Antihistamines',
'2023-08-16'),
(107, 207, 307, 'Pregnancy Checkup', 'Routine Checkup',
'2023-07-24'),
(108, 208, 308, 'Asthma', 'Prescribed Inhalers', '2023-09-21'),
```

```
(109, 209, 309, 'Migraine', 'Prescribed Pain Relievers',
'2023-07-02'),
(110, 210, 310, 'Fever', 'Prescribed Ibuprofen', '2023-08-04'),
(111, 211, 311, 'Thyroid', 'Prescribed Levothyroxine',
'2023-09-13'),
(112, 212, 312, 'Cold', 'Prescribed Antihistamines',
'2023-10-05'),
(113, 213, 313, 'Gastric Issues', 'Prescribed Antacids',
'2023-09-23'),
(114, 214, 314, 'Back Pain', 'Prescribed Muscle Relaxants',
'2023-06-29'),
(115, 215, 315, 'Ear Infection', 'Prescribed Antibiotics',
'2023-09-30');
```

```
mysql> SELECT * FROM treatments_consultations;
+------------+-------------+-----------+-------------------+---------------------------------+-------------------+
| patient_id | hospital_id | worker_id | diagnosis         | treatment_details               | consultation_date |
+------------+-------------+-----------+-------------------+---------------------------------+-------------------+
|        101 |         201 |       301 | Fever             | Prescribed Paracetamol          | 2023-05-22        |
|        102 |         202 |       302 | Hypertension      | Prescribed Amlodipine           | 2023-06-14        |
|        103 |         203 |       303 | Diabetes          | Prescribed Metformin            | 2023-07-03        |
|        104 |         204 |       304 | Fracture          | Recommended X-ray, Cast Applied | 2023-08-06        |
|        105 |         205 |       305 | Anemia            | Prescribed Iron Supplements     | 2023-09-12        |
|        106 |         206 |       306 | Cold              | Prescribed Antihistamines       | 2023-08-16        |
|        107 |         207 |       307 | Pregnancy Checkup | Routine Checkup                 | 2023-07-24        |
|        108 |         208 |       308 | Asthma            | Prescribed Inhalers             | 2023-09-21        |
|        109 |         209 |       309 | Migraine          | Prescribed Pain Relievers       | 2023-07-02        |
|        110 |         210 |       310 | Fever             | Prescribed Ibuprofen            | 2023-08-04        |
|        111 |         211 |       311 | Thyroid           | Prescribed Levothyroxine        | 2023-09-13        |
|        112 |         212 |       312 | Cold              | Prescribed Antihistamines       | 2023-10-05        |
|        113 |         213 |       313 | Gastric Issues    | Prescribed Antacids             | 2023-09-23        |
|        114 |         214 |       314 | Back Pain         | Prescribed Muscle Relaxants     | 2023-06-29        |
|        115 |         215 |       315 | Ear Infection     | Prescribed Antibiotics          | 2023-09-30        |
+------------+-------------+-----------+-------------------+---------------------------------+-------------------+
15 rows in set (0.00 sec)
```

5. Inserting Data into the Inventory Table

Populate the inventory with hospital supplies:

```
INSERT INTO Inventory (inventory_id, hospital_id, item_name,
quantity, restock_date, expiry_date)
VALUES
(401, 201, 'Paracetamol', 500, '2023-05-10', '2024-12-31'),
(402, 202, 'Amlodipine', 200, '2023-06-01', '2025-01-31'),
(403, 203, 'Metformin', 300, '2023-07-05', '2025-06-30'),
(404, 204, 'X-ray Film', 50, '2023-08-15', '2026-12-31'),
(405, 205, 'Iron Supplements', 600, '2023-09-10', '2025-07-31'),
```

```
(406, 206, 'Antihistamines', 400, '2023-08-12', '2025-05-30'),
(407, 207, 'Prenatal Vitamins', 350, '2023-07-20',
'2025-09-30'),
(408, 208, 'Inhalers', 150, '2023-09-22', '2025-11-15'),
(409, 209, 'Pain Relievers', 600, '2023-07-05', '2026-02-28'),
(410, 210, 'Ibuprofen', 700, '2023-08-04', '2025-10-31'),
(411, 211, 'Levothyroxine', 250, '2023-09-02', '2026-05-31'),
(412, 212, 'Antihistamines', 350, '2023-10-01', '2025-06-30'),
(413, 213, 'Antacids', 500, '2023-09-25', '2026-12-31'),
(414, 214, 'Muscle Relaxants', 200, '2023-06-27', '2026-03-31'),
(415, 215, 'Antibiotics', 300, '2023-09-15', '2025-09-30');
```

```
mysql> SELECT * FROM inventory;
+--------------+-------------+-------------------+----------+--------------+-------------+
| inventory_id | hospital_id | item_name         | quantity | restock_date | expiry_date |
+--------------+-------------+-------------------+----------+--------------+-------------+
|          401 |         201 | Paracetamol       |      500 | 2023-05-10   | 2024-12-31  |
|          402 |         202 | Amlodipine        |      200 | 2023-06-01   | 2025-01-31  |
|          403 |         203 | Metformin         |      300 | 2023-07-05   | 2025-06-30  |
|          404 |         204 | X-ray Film        |       50 | 2023-08-15   | 2026-12-31  |
|          405 |         205 | Iron Supplements  |      600 | 2023-09-10   | 2025-07-31  |
|          406 |         206 | Antihistamines    |      400 | 2023-08-12   | 2025-05-30  |
|          407 |         207 | Prenatal Vitamins |      350 | 2023-07-20   | 2025-09-30  |
|          408 |         208 | Inhalers          |      150 | 2023-09-22   | 2025-11-15  |
|          409 |         209 | Pain Relievers    |      600 | 2023-07-05   | 2026-02-28  |
|          410 |         210 | Ibuprofen         |      700 | 2023-08-04   | 2025-10-31  |
|          411 |         211 | Levothyroxine     |      250 | 2023-09-02   | 2026-05-31  |
|          412 |         212 | Antihistamines    |      350 | 2023-10-01   | 2025-06-30  |
|          413 |         213 | Antacids          |      500 | 2023-09-25   | 2026-12-31  |
|          414 |         214 | Muscle Relaxants  |      200 | 2023-06-27   | 2026-03-31  |
|          415 |         215 | Antibiotics       |      300 | 2023-09-15   | 2025-09-30  |
+--------------+-------------+-------------------+----------+--------------+-------------+
15 rows in set (0.00 sec)
```

6. Inserting Data into the Medical Records Table

Insert medical records associated with each patient:

```
INSERT INTO Medical_Records (record_id, patient_id, record_date,
notes, prescription_details)
VALUES
(501, 101, '2023-05-22', 'High fever with body aches',
'Paracetamol 500mg, 1 tablet every 6 hours'),
(502, 102, '2023-06-14', 'Blood pressure at 160/100',
'Amlodipine 5mg daily'),
```

```
(503, 103, '2023-07-03', 'Blood sugar levels high', 'Metformin
500mg twice daily'),
(504, 104, '2023-08-06', 'Fracture in left arm', 'X-ray, Cast
applied'),
(505, 105, '2023-09-12', 'Low hemoglobin levels', 'Iron
supplements, 1 tablet daily'),
(506, 106, '2023-08-16', 'Runny nose and sneezing',
'Antihistamines, 1 tablet twice daily'),
(507, 107, '2023-07-24', 'Routine pregnancy checkup', 'No
prescription'),
(508, 108, '2023-09-21', 'Shortness of breath', 'Inhaler, 2
puffs twice daily'),
(509, 109, '2023-07-02', 'Severe headache and nausea', 'Pain
relievers, as needed'),
(510, 110, '2023-08-04', 'Fever and sore throat', 'Ibuprofen
400mg, every 8 hours'),
(511, 111, '2023-09-13', 'Thyroid imbalance', 'Levothyroxine
50mcg daily'),
(512, 112, '2023-10-05', 'Cough and congestion',
'Antihistamines, 1 tablet daily'),
(513, 113, '2023-09-23', 'Acidity and gastric discomfort',
'Antacids as needed'),
(514, 114, '2023-06-29', 'Chronic back pain', 'Muscle relaxants,
as needed'),
(515, 115, '2023-09-30', 'Ear infection with pain',
'Antibiotics, 500mg every 8 hours');
```

```
mysql> SELECT * FROM medical_records;
+-----------+------------+-------------+-------------------------------+-----------------------------------------+
| record_id | patient_id | record_date | notes                         | prescription_details                    |
+-----------+------------+-------------+-------------------------------+-----------------------------------------+
|       501 |        101 | 2023-05-22  | High fever with body aches    | Paracetamol 500mg, 1 tablet every 6 hours |
|       502 |        102 | 2023-06-14  | Blood pressure at 160/100     | Amlodipine 5mg daily                    |
|       503 |        103 | 2023-07-03  | Blood sugar levels high       | Metformin 500mg twice daily             |
|       504 |        104 | 2023-08-06  | Fracture in left arm          | X-ray, Cast applied                     |
|       505 |        105 | 2023-09-12  | Low hemoglobin levels         | Iron supplements, 1 tablet daily        |
|       506 |        106 | 2023-08-16  | Runny nose and sneezing       | Antihistamines, 1 tablet twice daily    |
|       507 |        107 | 2023-07-24  | Routine pregnancy checkup     | No prescription                         |
|       508 |        108 | 2023-09-21  | Shortness of breath           | Inhaler, 2 puffs twice daily            |
|       509 |        109 | 2023-07-02  | Severe headache and nausea    | Pain relievers, as needed               |
|       510 |        110 | 2023-08-04  | Fever and sore throat         | Ibuprofen 400mg, every 8 hours          |
|       511 |        111 | 2023-09-13  | Thyroid imbalance             | Levothyroxine 50mcg daily               |
|       512 |        112 | 2023-10-05  | Cough and congestion          | Antihistamines, 1 tablet daily          |
|       513 |        113 | 2023-09-23  | Acidity and gastric discomfort | Antacids as needed                      |
|       514 |        114 | 2023-06-29  | Chronic back pain             | Muscle relaxants, as needed             |
|       515 |        115 | 2023-09-30  | Ear infection with pain       | Antibiotics, 500mg every 8 hours        |
+-----------+------------+-------------+-------------------------------+-----------------------------------------+
15 rows in set (0.00 sec)
```

7. Inserting Data into the Mothers Table

Add information about mothers:

```
INSERT INTO Mothers (mother_id, name, DOB, address_line_1,
district, PIN_Code, contact_number, pregnancy_start_date)
VALUES
(601, 'Mitali Saikia', '1992-03-12', 'Fancy Bazar', 'Guwahati',
781001, '7896541001', '2023-05-15'),
(602, 'Nandita Das', '1994-09-23', 'Zoo Road', 'Jorhat', 785002,
'7896541002', '2023-06-01'),
(603, 'Rina Nath', '1993-01-18', 'Panbazar', 'Silchar', 788001,
'7896541003', '2023-06-10'),
(604, 'Parul Gogoi', '1990-12-07', 'Silpukhuri', 'Dibrugarh',
786001, '7896541004', '2023-07-05'),
(605, 'Kasturi Phukan', '1996-08-22', 'Hatigaon', 'Nagaon',
782001, '7896541005', '2023-08-02'),
(606, 'Anamika Bhuyan', '1991-04-29', 'Ganeshguri', 'Guwahati',
781006, '7896541006', '2023-09-10'),
(607, 'Rita Kalita', '1995-02-14', 'Chandmari', 'Tezpur',
784001, '7896541007', '2023-07-20'),
(608, 'Sharmistha Roy', '1993-07-15', 'Khanapara', 'Sivasagar',
785640, '7896541008', '2023-09-25'),
(609, 'Preeti Baruah', '1997-11-08', 'Maligaon', 'Barpeta',
781301, '7896541009', '2023-05-10'),
```

```
(610, 'Chitra Deka', '1992-05-20', 'Paltan Bazar', 'Tinsukia',
786125, '7896541010', '2023-06-18'),
(611, 'Kalpana Barman', '1991-10-13', 'Rajgarh', 'Jorhat',
785002, '7896541011', '2023-07-07'),
(612, 'Pallavi Dutta', '1994-12-11', 'Uzan Bazar', 'Dhubri',
783301, '7896541012', '2023-08-19'),
(613, 'Sangeeta Sharma', '1996-09-01', 'Lakhtokia', 'Tezpur',
784001, '7896541013', '2023-09-05'),
(614, 'Rupa Das', '1990-06-25', 'Beltola', 'Guwahati', 781028,
'7896541014', '2023-10-02'),
(615, 'Neha Gogoi', '1993-03-18', 'Bhangagarh', 'Nagaon',
782001, '7896541015', '2023-09-29');
```

```
mysql> SELECT * FROM mothers;
+-----------+----------------+------------+----------------+-----------+----------+----------------+----------------------+
| mother_id | name           | DOB        | address_line_1 | district  | PIN_Code | contact_number | pregnancy_start_date |
+-----------+----------------+------------+----------------+-----------+----------+----------------+----------------------+
|       601 | Mitali Saikia  | 1992-03-12 | Fancy Bazar    | Guwahati  |   781001 | 7896541001     | 2023-05-15           |
|       602 | Nandita Das    | 1994-09-23 | Zoo Road       | Jorhat    |   785002 | 7896541002     | 2023-06-01           |
|       603 | Rina Nath      | 1993-01-18 | Panbazar       | Silchar   |   788001 | 7896541003     | 2023-06-10           |
|       604 | Parul Gogoi    | 1990-12-07 | Silpukhuri     | Dibrugarh |   786001 | 7896541004     | 2023-07-05           |
|       605 | Kasturi Phukan | 1996-08-22 | Hatigaon       | Nagaon    |   782001 | 7896541005     | 2023-08-02           |
|       606 | Anamika Bhuyan | 1991-04-29 | Ganeshguri     | Guwahati  |   781006 | 7896541006     | 2023-09-10           |
|       607 | Rita Kalita    | 1995-02-14 | Chandmari      | Tezpur    |   784001 | 7896541007     | 2023-07-20           |
|       608 | Sharmistha Roy | 1993-07-15 | Khanapara      | Sivasagar |   785640 | 7896541008     | 2023-09-25           |
|       609 | Preeti Baruah  | 1997-11-08 | Maligaon       | Barpeta   |   781301 | 7896541009     | 2023-05-10           |
|       610 | Chitra Deka    | 1992-05-20 | Paltan Bazar   | Tinsukia  |   786125 | 7896541010     | 2023-06-18           |
|       611 | Kalpana Barman | 1991-10-13 | Rajgarh        | Jorhat    |   785002 | 7896541011     | 2023-07-07           |
|       612 | Pallavi Dutta  | 1994-12-11 | Uzan Bazar     | Dhubri    |   783301 | 7896541012     | 2023-08-19           |
|       613 | Sangeeta Sharma | 1996-09-01 | Lakhtokia      | Tezpur    |   784001 | 7896541013     | 2023-09-05           |
|       614 | Rupa Das       | 1990-06-25 | Beltola        | Guwahati  |   781028 | 7896541014     | 2023-10-02           |
|       615 | Neha Gogoi     | 1993-03-18 | Bhangagarh     | Nagaon    |   782001 | 7896541015     | 2023-09-29           |
+-----------+----------------+------------+----------------+-----------+----------+----------------+----------------------+
15 rows in set (0.00 sec)
```

8. Inserting Data into the Baby_Child Table

Insert details of children or babies:

```
INSERT INTO Baby_Child (baby_id, mother_id, name, DOB, gender)
VALUES
(701, 601, 'Riju Saikia', '2024-01-10', 'Male'),
(702, 602, 'Parul Das', '2024-01-15', 'Female'),
(703, 603, 'Anurag Nath', '2024-02-03', 'Male'),
(704, 604, 'Tanmay Gogoi', '2024-02-22', 'Male'),
(705, 605, 'Kavya Phukan', '2024-03-12', 'Female'),
(706, 606, 'Priya Bhuyan', '2024-03-18', 'Female'),
(707, 607, 'Aryan Kalita', '2024-04-05', 'Male'),
(708, 608, 'Shreya Roy', '2024-05-07', 'Female'),
(709, 609, 'Arjun Baruah', '2024-04-11', 'Male'),
```

```
(710, 610, 'Kritika Deka', '2024-04-15', 'Female'),
(711, 611, 'Rohit Barman', '2024-05-05', 'Male'),
(712, 612, 'Aditi Dutta', '2024-06-01', 'Female'),
(713, 613, 'Soham Sharma', '2024-06-10', 'Male'),
(714, 614, 'Ishani Das', '2024-07-08', 'Female'),
(715, 615, 'Raghav Gogoi', '2024-07-12', 'Male');
```

```
mysql> SELECT * FROM baby_child;
+---------+-----------+--------------+------------+--------+
| baby_id | mother_id | name         | DOB        | gender |
+---------+-----------+--------------+------------+--------+
|     701 |       601 | Riju Saikia  | 2024-01-10 | Male   |
|     702 |       602 | Parul Das    | 2024-01-15 | Female |
|     703 |       603 | Anurag Nath  | 2024-02-03 | Male   |
|     704 |       604 | Tanmay Gogoi | 2024-02-22 | Male   |
|     705 |       605 | Kavya Phukan | 2024-03-12 | Female |
|     706 |       606 | Priya Bhuyan | 2024-03-18 | Female |
|     707 |       607 | Aryan Kalita | 2024-04-05 | Male   |
|     708 |       608 | Shreya Roy   | 2024-05-07 | Female |
|     709 |       609 | Arjun Baruah | 2024-04-11 | Male   |
|     710 |       610 | Kritika Deka | 2024-04-15 | Female |
|     711 |       611 | Rohit Barman | 2024-05-05 | Male   |
|     712 |       612 | Aditi Dutta  | 2024-06-01 | Female |
|     713 |       613 | Soham Sharma | 2024-06-10 | Male   |
|     714 |       614 | Ishani Das   | 2024-07-08 | Female |
|     715 |       615 | Raghav Gogoi | 2024-07-12 | Male   |
+---------+-----------+--------------+------------+--------+
15 rows in set (0.00 sec)
```

9. Inserting Data into the Vaccine Table

The data for this table has been retrieved from the ***National Immunization Schedule (NIS) for Infants, Children, and Pregnant Women.***

Category	Vaccine	When to Give	Dose	Route	Site
Pregnant Women	Td-1	Early in pregnancy	0.5 ml	Intra-muscular	Upper Arm
	Td-2	4 weeks after Td-1	0.5 ml	Intra-muscular	Upper Arm
	Td-Booster	If received 2 Td doses in a pregnancy within 3 yrs	0.5 ml	Intra-muscular	Upper Arm

Category	Vaccine	When to Give	Dose	Route	Site
Infants	BCG	At birth or as early as possible till 1 year	0.1 ml	Intra-dermal	Left Upper Arm
	Hepatitis B	At birth or as early as possible within 24 hours	0.5 ml	Intra-muscular	Antero-lateral side of mid-thigh
	OPV-0	At birth or as early as possible within the first 15 days	2 drops	Oral	Oral
	OPV 1, 2 & 3	At 6, 10, 14 weeks (can be given till 5 years)	2 drops	Oral	Oral
	Pentavalent 1, 2 & 3	At 6, 10, 14 weeks (can be given till 1 year)	0.5 ml	Intra-muscular	Antero-lateral side of left mid-thigh
	Rotavirus	At 6, 10, 14 weeks (can be given till 1 year)	5 drops	Oral	Oral
	PCV	At 6, 10, 14 weeks (can be given till 1 year)	0.5 ml	Intra-muscular	Antero-lateral side of right mid-thigh
	IPV	Two fractional doses at 6 and 14 weeks	0.1 ml	Intradermal	Right Upper Arm
	MR 1st dose	9 completed months - 12 months (can be given till 5 years)	0.5 ml	Sub-cutaneous	Right Upper Arm
	PCV booster	9 completed months - 12 months	0.5 ml	Intra-muscular	Antero-lateral side of right mid-thigh

Category	Vaccine	When to Give	Dose	Route	Site
	JE-1**	9 completed months - 12 months	0.5 ml	Intra-muscular	Antero-lateral side of left mid-thigh
	Vitamin A (1st dose)	At 9 completed months with MR	1 ml (1 lakh IU)	Oral	Oral
Children	DPT booster 1	16-24 months	0.5 ml	Intra-muscular	Antero-lateral side of left mid-thigh
	MR 2nd dose	16-24 months	0.5 ml	Sub-cutaneous	Right Upper Arm
	OPV Booster	16-24 months	2 drops	Oral	Oral
	JE-2**	16-24 months	0.5 ml	Intra-muscular	Antero-lateral side of left mid-thigh
	Vitamin A***	16-24 month with MR and remaining at interval of 6 months up to age of 5 years	2 ml (2 lakh IU)	Oral	Oral
	DPT Booster 2	5-6 years	0.5 ml	Intra-muscular	Upper Arm
	Td	10 years & 16 years	0.5 ml	Intra-muscular	Upper Arm

Notes:

- *Give Td-2 or Booster doses before 36 weeks of pregnancy. However, give these even if more than 36 weeks have passed. Give Td to a woman in labour, if she has not previously received Td.*
- **JE vaccine is in selected endemic districts.**

- ***The 2nd to 9th doses of Vitamin A can be administered to children 1-5 years old during biannual rounds, in collaboration with ICDS.**

Populate the vaccines table with data:

```
INSERT INTO Vaccines (vaccine_id, vaccine_name, age_group,
when_to_give, dose, route, site)
VALUES
(1, 'Td-1', 'Pregnant Women', 'Early in pregnancy', '0.5 ml',
'Intra-muscular', 'Upper Arm'),
(2, 'Td-2', 'Pregnant Women', '4 weeks after Td-1', '0.5 ml',
'Intra-muscular', 'Upper Arm'),
(3, 'Td-Booster', 'Pregnant Women', 'If received 2 Td doses in a
pregnancy within 3 years', '0.5 ml', 'Intra-muscular', 'Upper
Arm'),
(4, 'BCG', 'Infants', 'At birth or as early as possible till 1
year', '0.1 ml', 'Intra-dermal', 'Left Upper Arm'),
(5, 'Hepatitis B', 'Infants', 'At birth or as early as possible
within 24 hours', '0.5 ml', 'Intra-muscular', 'Antero-lateral
side of mid-thigh'),
(6, 'OPV-0', 'Infants', 'At birth or as early as possible within
the first 15 days', '2 drops', 'Oral', 'Oral'),
(7, 'OPV 1, 2 & 3', 'Infants', 'At 6, 10, 14 weeks (can be given
till 5 years)', '2 drops', 'Oral', 'Oral'),
(8, 'Pentavalent 1, 2 & 3', 'Infants', 'At 6, 10, 14 weeks (can
be given till 1 year)', '0.5 ml', 'Intra-muscular',
'Antero-lateral side of left mid-thigh'),
(9, 'Rotavirus', 'Infants', 'At 6, 10, 14 weeks (can be given
till 1 year)', '5 drops', 'Oral', 'Oral'),
(10, 'PCV', 'Infants', 'At 6, 10, 14 weeks (can be given till 1
year)', '0.5 ml', 'Intra-muscular', 'Antero-lateral side of
right mid-thigh'),
(11, 'IPV', 'Infants', 'Two fractional doses at 6 and 14 weeks',
'0.1 ml', 'Intra-dermal', 'Right Upper Arm'),
```

```
(12, 'MR 1st dose', 'Infants', '9 completed months - 12 months (can be given till 5 years)', '0.5 ml', 'Sub-cutaneous', 'Right Upper Arm'),
(13, 'PCV booster', 'Infants', '9 completed months - 12 months', '0.5 ml', 'Intra-muscular', 'Antero-lateral side of right mid-thigh'),
(14, 'JE-1', 'Infants', '9 completed months - 12 months', '0.5 ml', 'Intra-muscular', 'Antero-lateral side of left mid-thigh'),
(15, 'Vitamin A (1st dose)', 'Infants', 'At 9 completed months with MR', '1 ml (1 lakh IU)', 'Oral', 'Oral'),
(16, 'DPT booster 1', 'Children', '16-24 months', '0.5 ml', 'Intra-muscular', 'Antero-lateral side of left mid-thigh'),
(17, 'MR 2nd dose', 'Children', '16-24 months', '0.5 ml', 'Sub-cutaneous', 'Right Upper Arm'),
(18, 'OPV Booster', 'Children', '16-24 months', '2 drops', 'Oral', 'Oral'),
(19, 'JE-2', 'Children', '16-24 months', '0.5 ml', 'Intra-muscular', 'Antero-lateral side of left mid-thigh'),
(20, 'Vitamin A (16-24 months)', 'Children', '16-24 months with MR and remaining at intervals of 6 months up to age of 5 years', '2 ml (2 lakh IU)', 'Oral', 'Oral'),
(21, 'DPT Booster 2', 'Children', '5-6 years', '0.5 ml', 'Intra-muscular', 'Upper Arm'),
(22, 'Td', 'Children', '10 years & 16 years', '0.5 ml', 'Intra-muscular', 'Upper Arm');
```

```
mysql> SELECT * FROM vaccines;
+------------+-----------------------+---------------+-----------------------------------------------------------------------------------------+-----------------+-----------------+-----------------------------------------+
| vaccine_id | vaccine_name          | age_group     | when_to_give                                                                            | dose            | route           | site                                    |
+------------+-----------------------+---------------+-----------------------------------------------------------------------------------------+-----------------+-----------------+-----------------------------------------+
|          1 | Td-1                  | Pregnant Women | Early in pregnancy                                                                      | 0.5 ml          | Intra-muscular | Upper Arm                               |
|          2 | Td-2                  | Pregnant Women | 4 weeks after Td-1                                                                      | 0.5 ml          | Intra-muscular | Upper Arm                               |
|          3 | Td-Booster            | Pregnant Women | If received 2 Td doses in a pregnancy within 3 years                                    | 0.5 ml          | Intra-muscular | Upper Arm                               |
|          4 | BCG                   | Infants       | At birth or as early as possible till 1 year                                            | 0.1 ml          | Intra-dermal   | Left Upper Arm                          |
|          5 | Hepatitis B           | Infants       | At birth or as early as possible within 24 hours                                        | 0.5 ml          | Intra-muscular | Antero-lateral side of mid-thigh        |
|          6 | OPV-0                 | Infants       | At birth or as early as possible within the first 15 days                               | 2 drops         | Oral           | Oral                                    |
|          7 | OPV 1, 2 & 3          | Infants       | At 6, 10, 14 weeks (can be given till 5 years)                                          | 2 drops         | Oral           | Oral                                    |
|          8 | Pentavalent 1, 2 & 3  | Infants       | At 6, 10, 14 weeks (can be given till 1 year)                                           | 0.5 ml          | Intra-muscular | Antero-lateral side of left mid-thigh   |
|          9 | Rotavirus             | Infants       | At 6, 10, 14 weeks (can be given till 1 year)                                           | 5 drops         | Oral           | Oral                                    |
|         10 | PCV                   | Infants       | At 6, 10, 14 weeks (can be given till 1 year)                                           | 0.5 ml          | Intra-muscular | Antero-lateral side of right mid-thigh  |
|         11 | IPV                   | Infants       | Two fractional doses at 6 and 14 weeks                                                  | 0.1 ml          | Intra-dermal   | Right Upper Arm                         |
|         12 | MR 1st dose           | Infants       | 9 completed months - 12 months (can be given till 5 years)                              | 0.5 ml          | Sub-cutaneous  | Right Upper Arm                         |
|         13 | PCV booster           | Infants       | 9 completed months - 12 months                                                          | 0.5 ml          | Intra-muscular | Antero-lateral side of right mid-thigh  |
|         14 | JE-1                  | Infants       | 9 completed months - 12 months                                                          | 0.5 ml          | Intra-muscular | Antero-lateral side of left mid-thigh   |
|         15 | Vitamin A (1st dose)  | Infants       | At 9 completed months with MR                                                           | 1 ml (1 lakh IU) | Oral           | Oral                                    |
|         16 | DPT booster 1         | Children      | 16-24 months                                                                            | 0.5 ml          | Intra-muscular | Antero-lateral side of left mid-thigh   |
|         17 | MR 2nd dose           | Children      | 16-24 months                                                                            | 0.5 ml          | Sub-cutaneous  | Right Upper Arm                         |
|         18 | OPV Booster           | Children      | 16-24 months                                                                            | 2 drops         | Oral           | Oral                                    |
|         19 | JE-2                  | Children      | 16-24 months                                                                            | 0.5 ml          | Intra-muscular | Antero-lateral side of left mid-thigh   |
|         20 | Vitamin A (16-24 months) | Children   | 16-24 months with MR and remaining at intervals of 6 months up to age of 5 years        | 2 ml (2 lakh IU) | Oral           | Oral                                    |
|         21 | DPT Booster 2         | Children      | 5-6 years                                                                               | 0.5 ml          | Intra-muscular | Upper Arm                               |
|         22 | Td                    | Children      | 10 years & 16 years                                                                     | 0.5 ml          | Intra-muscular | Upper Arm                               |
+------------+-----------------------+---------------+-----------------------------------------------------------------------------------------+-----------------+-----------------+-----------------------------------------+
22 rows in set (0.00 sec)
```

10. Inserting Data into the Vaccination Centres Table

Insert vaccination center records:

```
INSERT INTO Vaccination_Centres (centre_id, centre_name,
address_line_1, district, PIN_Code, contact_number)
VALUES
(801, 'Pragjyotish Hospital Vaccination Centre', 'Fancy Bazar',
'Guwahati', 781001, '7896541101'),
(802, 'Jorhat Medical Vaccination Centre', 'Zoo Road', 'Jorhat',
785002, '7896541102'),
(803, 'Silchar Nursing Vaccination Centre', 'Panbazar',
'Silchar', 788001, '7896541103'),
(804, 'Dibrugarh Medical Vaccination Centre', 'Silpukhuri',
'Dibrugarh', 786001, '7896541104'),
(805, 'Nagaon Public Vaccination Centre', 'Hatigaon', 'Nagaon',
782001, '7896541105'),
(806, 'Guwahati City Vaccination Centre', 'Ganeshguri',
'Guwahati', 781006, '7896541106'),
(807, 'Tezpur District Vaccination Centre', 'Chandmari',
'Tezpur', 784001, '7896541107'),
(808, 'Sivasagar Urban Vaccination Centre', 'Khanapara',
'Sivasagar', 785640, '7896541108'),
(809, 'Barpeta Community Vaccination Centre', 'Maligaon',
'Barpeta', 781301, '7896541109'),
(810, 'Tinsukia Rural Vaccination Centre', 'Paltan Bazar',
'Tinsukia', 786125, '7896541110'),
(811, 'Jorhat Health Vaccination Centre', 'Rajgarh', 'Jorhat',
785002, '7896541111'),
(812, 'Dhubri Vaccination Centre', 'Uzan Bazar', 'Dhubri',
783301, '7896541112'),
(813, 'Tezpur Community Vaccination Centre', 'Lakhtokia',
'Tezpur', 784001, '7896541113'),
(814, 'Guwahati Beltola Vaccination Centre', 'Beltola',
'Guwahati', 781028, '7896541114'),
```

```
(815, 'Nagaon Public Health Vaccination Centre', 'Bhangagarh',
'Nagaon', 782001, '7896541115');
```

```
mysql> SELECT * FROM vaccination_centres;
+-----------+-----------------------------------------+----------------+-----------+----------+----------------+
| centre_id | centre_name                             | address_line_1 | district  | PIN_Code | contact_number |
+-----------+-----------------------------------------+----------------+-----------+----------+----------------+
|       801 | Pragjyotish Hospital Vaccination Centre | Fancy Bazar    | Guwahati  |   781001 | 7896541101     |
|       802 | Jorhat Medical Vaccination Centre       | Zoo Road       | Jorhat    |   785002 | 7896541102     |
|       803 | Silchar Nursing Vaccination Centre      | Panbazar       | Silchar   |   788001 | 7896541103     |
|       804 | Dibrugarh Medical Vaccination Centre    | Silpukhuri     | Dibrugarh |   786001 | 7896541104     |
|       805 | Nagaon Public Vaccination Centre        | Hatigaon       | Nagaon    |   782001 | 7896541105     |
|       806 | Guwahati City Vaccination Centre        | Ganeshguri     | Guwahati  |   781006 | 7896541106     |
|       807 | Tezpur District Vaccination Centre      | Chandmari      | Tezpur    |   784001 | 7896541107     |
|       808 | Sivasagar Urban Vaccination Centre      | Khanapara      | Sivasagar |   785640 | 7896541108     |
|       809 | Barpeta Community Vaccination Centre    | Maligaon       | Barpeta   |   781301 | 7896541109     |
|       810 | Tinsukia Rural Vaccination Centre       | Paltan Bazar   | Tinsukia  |   786125 | 7896541110     |
|       811 | Jorhat Health Vaccination Centre        | Rajgarh        | Jorhat    |   785002 | 7896541111     |
|       812 | Dhubri Vaccination Centre               | Uzan Bazar     | Dhubri    |   783301 | 7896541112     |
|       813 | Tezpur Community Vaccination Centre     | Lakhtokia      | Tezpur    |   784001 | 7896541113     |
|       814 | Guwahati Beltola Vaccination Centre     | Beltola        | Guwahati  |   781028 | 7896541114     |
|       815 | Nagaon Public Health Vaccination Centre | Bhangagarh     | Nagaon    |   782001 | 7896541115     |
+-----------+-----------------------------------------+----------------+-----------+----------+----------------+
15 rows in set (0.00 sec)
```

11. Inserting Data into the Vaccinations Table

Log vaccinations given to babies:

```
INSERT INTO vaccinations (vaccination_id, baby_id, vaccine_id,
centre_id, vaccination_date, dose_number, health_worker_id,
healthcare_worker_id) VALUES
(20101, 701, 3, 801, '2024-01-11', 1, 301, 301),
(20102, 702, 4, 803, '2024-01-16', 1, 302, 302),
(20103, 703, 5, 804, '2024-02-04', 1, 303, 303),
(20104, 704, 6, 805, '2024-02-23', 1, 304, 304),
(20105, 705, 7, 806, '2024-03-13', 1, 305, 305),
(20106, 706, 8, 807, '2024-03-19', 1, 306, 306),
(20107, 707, 12, 811, '2024-04-06', 1, 307, 307),
(20108, 708, 15, 812, '2024-05-08', 1, 308, 308),
(20109, 709, 20, 813, '2024-04-12', 1, 309, 309),
(20110, 710, 16, 814, '2024-04-16', 1, 310, 310),
(20111, 711, 22, 815, '2024-05-06', 1, 311, 311),
(20112, 712, 3, 801, '2024-06-02', 2, 301, 301),
(20113, 713, 7, 802, '2024-06-11', 2, 302, 302),
(20114, 714, 4, 804, '2024-07-09', 1, 303, 303),
(20115, 715, 19, 805, '2024-07-13', 1, 304, 304);
```

```
mysql> SELECT * FROM vaccinations;
+----------------+---------+------------+-----------+------------------+-------------+----------------------+
| vaccination_id | baby_id | vaccine_id | centre_id | vaccination_date | dose_number | healthcare_worker_id |
+----------------+---------+------------+-----------+------------------+-------------+----------------------+
|          20101 |     701 |          3 |       801 | 2024-01-11       |           1 |                  301 |
|          20102 |     702 |          4 |       803 | 2024-01-16       |           1 |                  302 |
|          20103 |     703 |          5 |       804 | 2024-02-04       |           1 |                  303 |
|          20104 |     704 |          6 |       805 | 2024-02-23       |           1 |                  304 |
|          20105 |     705 |          7 |       806 | 2024-03-13       |           1 |                  305 |
|          20106 |     706 |          8 |       807 | 2024-03-19       |           1 |                  306 |
|          20107 |     707 |         12 |       811 | 2024-04-06       |           1 |                  307 |
|          20108 |     708 |         15 |       812 | 2024-05-08       |           1 |                  308 |
|          20109 |     709 |         20 |       813 | 2024-04-12       |           1 |                  309 |
|          20110 |     710 |         16 |       814 | 2024-04-16       |           1 |                  310 |
|          20111 |     711 |         22 |       815 | 2024-05-06       |           1 |                  311 |
|          20112 |     712 |          3 |       801 | 2024-06-02       |           2 |                  301 |
|          20113 |     713 |          7 |       802 | 2024-06-11       |           2 |                  302 |
|          20114 |     714 |          4 |       804 | 2024-07-09       |           1 |                  303 |
|          20115 |     715 |         19 |       805 | 2024-07-13       |           1 |                  304 |
+----------------+---------+------------+-----------+------------------+-------------+----------------------+
15 rows in set (0.00 sec)
```

Updating the tables with DML commands

1. Adding ASHA and ANM workers to the `healthcare_workers` table

```
INSERT INTO Healthcare_Workers (worker_id, name, designation,
contact_number, assigned_hospital_id) VALUES
(316, 'Kiran Dutta', 'ASHA', '9876543210', 201),
(317, 'Pratiksha Boro', 'ANM', '8765432109', 202),
(318, 'Subhashini Mahanta', 'ASHA', '7654321098', 203),
(319, 'Rupali Saikia', 'ANM', '6543210987', 204),
(320, 'Dipanjali Dutta', 'ASHA', '5432109876', 205);
```

```
mysql> select * from healthcare_workers;
+-----------+----------------------+----------------+----------------+----------------------+
| worker_id | name                 | designation    | contact_number | assigned_hospital_id |
+-----------+----------------------+----------------+----------------+----------------------+
|       301 | Dr. Manjit Das       | Doctor         | 7896541230     |                  201 |
|       302 | Dr. Aruna Barman     | Doctor         | 7896541231     |                  202 |
|       303 | Nayan Sarma          | Nurse          | 7896541232     |                  203 |
|       304 | Dr. Manash Dutta     | Doctor         | 7896541233     |                  204 |
|       305 | Pranami Hazarika     | Pharmacist     | 7896541234     |                  205 |
|       306 | Dr. Rakesh Baruah    | Doctor         | 7896541235     |                  206 |
|       307 | Bijoy Saikia         | Lab Technician | 7896541236     |                  207 |
|       308 | Dr. Sonali Roy       | Doctor         | 7896541237     |                  208 |
|       309 | Mitali Nath          | Nurse          | 7896541238     |                  209 |
|       310 | Dr. Anil Bhattacharya | Doctor         | 7896541239     |                  210 |
|       311 | Dr. Rajib Deka       | Doctor         | 7896541240     |                  211 |
|       312 | Krishna Sharma       | Nurse          | 7896541241     |                  212 |
|       313 | Dr. Asha Borthakur   | Doctor         | 7896541242     |                  213 |
|       314 | Priyanka Das         | Pharmacist     | 7896541243     |                  214 |
|       315 | Dr. Suman Kalita     | Doctor         | 7896541244     |                  215 |
|       316 | Kiran Dutta          | ASHA           | 9876543210     |                  201 |
|       317 | Pratiksha Boro       | ANM            | 8765432109     |                  202 |
|       318 | Subhashini Mahanta   | ASHA           | 7654321098     |                  203 |
|       319 | Rupali Saikia        | ANM            | 6543210987     |                  204 |
|       320 | Dipanjali Dutta      | ASHA           | 5432109876     |                  205 |
+-----------+----------------------+----------------+----------------+----------------------+
20 rows in set (0.00 sec)
```

2. Updating the contact_number of a specific healthcare worker

```
UPDATE Healthcare_Workers
SET contact_number = '9876543211'
WHERE worker_id = 316;
```

```
mysql> SELECT * FROM Healthcare_Workers
    -> WHERE worker_id = 316;
+-----------+-------------+-------------+----------------+----------------------+
| worker_id | name        | designation | contact_number | assigned_hospital_id |
+-----------+-------------+-------------+----------------+----------------------+
|       316 | Kiran Dutta | ASHA        | 9876543211     |                  201 |
+-----------+-------------+-------------+----------------+----------------------+
1 row in set (0.00 sec)
```

3. Renaming Vaccination_Centres to Vaccination_Stations

```
RENAME TABLE Vaccination_Centres TO Vaccination_Stations;
```

Filtering and Manipulating Data

1. Retrieve Vaccination Stations Located in a Specific District

```
SELECT * FROM Vaccination_Stations
WHERE district = ‘Guwahati’;
```

```
mysql> SELECT * FROM Vaccination_Stations
    -> WHERE district = 'Guwahati';
+-----------+-----------------------------------------+----------------+----------+----------+----------------+
| centre_id | centre_name                             | address_line_1 | district | PIN_Code | contact_number |
+-----------+-----------------------------------------+----------------+----------+----------+----------------+
|       801 | Pragjyotish Hospital Vaccination Centre | Fancy Bazar    | Guwahati |   781001 | 7896541101     |
|       806 | Guwahati City Vaccination Centre        | Ganeshguri     | Guwahati |   781006 | 7896541106     |
|       814 | Guwahati Beltola Vaccination Centre     | Beltola        | Guwahati |   781028 | 7896541114     |
+-----------+-----------------------------------------+----------------+----------+----------+----------------+
3 rows in set (0.00 sec)
```

2. Count Healthcare Workers Assigned to Each Hospital

```
SELECT assigned_hospital_id, COUNT(worker_id) AS num_workers
FROM Healthcare_Workers
GROUP BY assigned_hospital_id;
```

```
mysql> SELECT assigned_hospital_id, COUNT(worker_id) AS num_workers
    -> FROM Healthcare_Workers
    -> GROUP BY assigned_hospital_id;
+----------------------+-------------+
| assigned_hospital_id | num_workers |
+----------------------+-------------+
|                  201 |           2 |
|                  202 |           2 |
|                  203 |           2 |
|                  204 |           2 |
|                  205 |           2 |
|                  206 |           1 |
|                  207 |           1 |
|                  208 |           1 |
|                  209 |           1 |
|                  210 |           1 |
|                  211 |           1 |
|                  212 |           1 |
|                  213 |           1 |
|                  214 |           1 |
|                  215 |           1 |
+----------------------+-------------+
15 rows in set (0.00 sec)
```

3. Retrieve Unique Item Names from Inventory with a Limit

```
SELECT DISTINCT item_name FROM Inventory
LIMIT 5;
```

```
mysql> SELECT DISTINCT item_name FROM Inventory
    -> LIMIT 5;
+------------------+
| item_name        |
+------------------+
| Paracetamol      |
| Amlodipine       |
| Metformin        |
| X-ray Film       |
| Iron Supplements |
+------------------+
5 rows in set (0.00 sec)
```

4. Find Patients whose name starts with ‘A’

```
SELECT * FROM patients
```

```
WHERE name LIKE 'a%';
```

```
mysql> SELECT * FROM patients
    -> WHERE name LIKE 'a%';
+------------+---------------+------------+--------+----------------+-----------+----------+--------------+-----------------+
| patient_id | name          | DOB        | Gender | address_line_1 | district  | PIN_Code | Aadhar_ID    | Enrollment_Date |
+------------+---------------+------------+--------+----------------+-----------+----------+--------------+-----------------+
|        101 | Anurag Barman | 1995-04-12 | Male   | Ganeshguri     | Guwahati  |   781006 | 123456789012 | 2023-05-21      |
|        109 | Aparna Das    | 2000-10-10 | Female | Chandmari      | Silchar   |   788001 | 123456789020 | 2023-07-01      |
|        112 | Anamika Kalita | 1996-03-09 | Female | Rajgarh        | Sivasagar |   785640 | 123456789023 | 2023-10-04      |
+------------+---------------+------------+--------+----------------+-----------+----------+--------------+-----------------+
3 rows in set (0.00 sec)
```

5. Calculate the total number of items available in Inventory

SELECT SUM(quantity) AS total_items FROM Inventory;

```
mysql> SELECT SUM(quantity) AS total_items FROM Inventory;
+--------------+
| total_items  |
+--------------+
|         5450 |
+--------------+
1 row in set (0.00 sec)
```

Using Joins, Nested Queries, Sub Queries and Aggregate Functions

1. Retrieve Healthcare Workers with Their Assigned Hospitals

```
SELECT hw.worker_id, hw.name, hw.assigned_hospital_id,
h.hospital_name
FROM Healthcare_Workers hw
JOIN Hospitals h ON hw.assigned_hospital_id = h.hospital_id;
```

```
mysql> SELECT hw.worker_id, hw.name, hw.assigned_hospital_id, h.hospital_name
    -> FROM Healthcare_Workers hw
    -> JOIN Hospitals h ON hw.assigned_hospital_id = h.hospital_id;
+-----------+----------------------+---------------------+--------------------------+
| worker_id | name                 | assigned_hospital_id | hospital_name            |
+-----------+----------------------+---------------------+--------------------------+
|       301 | Dr. Manjit Das       |                 201 | Apollo Hospitals         |
|       316 | Kiran Dutta          |                 201 | Apollo Hospitals         |
|       302 | Dr. Aruna Barman     |                 202 | Pratiksha Hospital       |
|       317 | Pratiksha Boro       |                 202 | Pratiksha Hospital       |
|       303 | Nayan Sarma          |                 203 | Jorhat Medical College   |
|       318 | Subhashini Mahanta   |                 203 | Jorhat Medical College   |
|       304 | Dr. Manash Dutta     |                 204 | Dibrugarh Civil Hospital |
|       319 | Rupali Saikia        |                 204 | Dibrugarh Civil Hospital |
|       305 | Pranami Hazarika     |                 205 | Tezpur Medical College   |
|       320 | Dipanjali Dutta      |                 205 | Tezpur Medical College   |
|       306 | Dr. Rakesh Baruah    |                 206 | Dispur Hospitals         |
|       307 | Bijoy Saikia         |                 207 | Silchar Medical College  |
|       308 | Dr. Sonali Roy       |                 208 | Assam Medical College    |
|       309 | Mitali Nath          |                 209 | GNRC Hospital            |
|       310 | Dr. Anil Bhattacharya |                 210 | Down Town Hospital       |
|       311 | Dr. Rajib Deka       |                 211 | Marwari Hospitals        |
|       312 | Krishna Sharma       |                 212 | Barpeta Civil Hospital   |
|       313 | Dr. Asha Borthakur   |                 213 | Sivasagar Civil Hospital |
|       314 | Priyanka Das         |                 214 | Nagaon Civil Hospital    |
|       315 | Dr. Suman Kalita     |                 215 | Tinsukia Civil Hospital  |
+-----------+----------------------+---------------------+--------------------------+
20 rows in set (0.00 sec)
```

2. Retrieve baby and their mother information

```
SELECT bc.baby_id, bc.name AS baby_name, m.name AS mother_name,
m.contact_number
FROM baby_child bc
JOIN mothers m ON bc.mother_id = m.mother_id;
```

```
mysql> SELECT bc.baby_id, bc.name AS baby_name, m.name AS mother_name, m.contact_number
    -> FROM baby_child bc
    -> JOIN mothers m ON bc.mother_id = m.mother_id;
+---------+-------------+----------------+----------------+
| baby_id | baby_name   | mother_name    | contact_number |
+---------+-------------+----------------+----------------+
|     701 | Riju Saikia | Mitali Saikia  | 7896541001     |
|     702 | Parul Das   | Nandita Das    | 7896541002     |
|     703 | Anurag Nath | Rina Nath      | 7896541003     |
|     704 | Tanmay Gogoi | Parul Gogoi    | 7896541004     |
|     705 | Kavya Phukan | Kasturi Phukan | 7896541005     |
|     706 | Priya Bhuyan | Anamika Bhuyan | 7896541006     |
|     707 | Aryan Kalita | Rita Kalita    | 7896541007     |
|     708 | Shreya Roy  | Sharmistha Roy | 7896541008     |
|     709 | Arjun Baruah | Preeti Baruah  | 7896541009     |
|     710 | Kritika Deka | Chitra Deka    | 7896541010     |
|     711 | Rohit Barman | Kalpana Barman | 7896541011     |
|     712 | Aditi Dutta | Pallavi Dutta  | 7896541012     |
|     713 | Soham Sharma | Sangeeta Sharma | 7896541013     |
|     714 | Ishani Das  | Rupa Das       | 7896541014     |
|     715 | Raghav Gogoi | Neha Gogoi     | 7896541015     |
+---------+-------------+----------------+----------------+
15 rows in set (0.00 sec)
```

3. Count Vaccinations Administered by Each Healthcare Worker

```
SELECT hw.name AS worker_name, COUNT(v.vaccination_id) AS
num_vaccinations
FROM healthcare_workers hw
JOIN vaccinations v ON hw.worker_id = v.healthcare_worker_id
GROUP BY hw.name;
```

```
mysql> SELECT hw.name AS worker_name, COUNT(v.vaccination_id) AS num_vaccinations
    -> FROM healthcare_workers hw
    -> JOIN vaccinations v ON hw.worker_id = v.healthcare_worker_id
    -> GROUP BY hw.name;
+----------------------+------------------+
| worker_name          | num_vaccinations |
+----------------------+------------------+
| Dr. Manjit Das       |                2 |
| Dr. Aruna Barman     |                2 |
| Nayan Sarma          |                2 |
| Dr. Manash Dutta     |                2 |
| Pranami Hazarika     |                1 |
| Dr. Rakesh Baruah    |                1 |
| Bijoy Saikia         |                1 |
| Dr. Sonali Roy       |                1 |
| Mitali Nath          |                1 |
| Dr. Anil Bhattacharya |                1 |
| Dr. Rajib Deka       |                1 |
+----------------------+------------------+
11 rows in set (0.01 sec)
```

4. Retrieve Patients and Their Medical Records

```
SELECT p.name AS patient_name, mr.record_date, mr.notes
FROM patients p
JOIN medical_records mr ON p.patient_id = mr.patient_id;
```

```
mysql> SELECT p.name AS patient_name, mr.record_date, mr.notes
    -> FROM patients p
    -> JOIN medical_records mr ON p.patient_id = mr.patient_id;
+-----------------+-------------+-------------------------------+
| patient_name    | record_date | notes                         |
+-----------------+-------------+-------------------------------+
| Anurag Barman   | 2023-05-22  | High fever with body aches    |
| Pallabi Hazarika| 2023-06-14  | Blood pressure at 160/100     |
| Deepa Saikia    | 2023-07-03  | Blood sugar levels high       |
| Bikram Gogoi    | 2023-08-06  | Fracture in left arm          |
| Bishal Baruah   | 2023-09-12  | Low hemoglobin levels         |
| Rahul Deka      | 2023-08-16  | Runny nose and sneezing       |
| Kalpana Roy     | 2023-07-24  | Routine pregnancy checkup     |
| Pranjal Nath    | 2023-09-21  | Shortness of breath           |
| Aparna Das      | 2023-07-02  | Severe headache and nausea    |
| Neha Phukan     | 2023-08-04  | Fever and sore throat         |
| Sushant Borah   | 2023-09-13  | Thyroid imbalance             |
| Anamika Kalita  | 2023-10-05  | Cough and congestion          |
| Rohan Bhuyan    | 2023-09-23  | Acidity and gastric discomfort|
| Saurabh Das     | 2023-06-29  | Chronic back pain             |
| Taniya Baishya  | 2023-09-30  | Ear infection with pain       |
+-----------------+-------------+-------------------------------+
15 rows in set (0.00 sec)
```

5. List All Hospitals and Their Inventory Items

```
SELECT h.hospital_name, i.item_name, i.quantity
FROM hospitals h
JOIN inventory i ON h.hospital_id = i.hospital_id;
```

```
mysql> SELECT h.hospital_name, i.item_name, i.quantity
    -> FROM hospitals h
    -> JOIN inventory i ON h.hospital_id = i.hospital_id;
+-------------------------+-------------------+----------+
| hospital_name           | item_name         | quantity |
+-------------------------+-------------------+----------+
| Apollo Hospitals        | Paracetamol       |      500 |
| Pratiksha Hospital      | Amlodipine        |      200 |
| Jorhat Medical College  | Metformin         |      300 |
| Dibrugarh Civil Hospital| X-ray Film        |       50 |
| Tezpur Medical College  | Iron Supplements  |      600 |
| Dispur Hospitals        | Antihistamines    |      400 |
| Silchar Medical College | Prenatal Vitamins |      350 |
| Assam Medical College   | Inhalers          |      150 |
| GNRC Hospital           | Pain Relievers    |      600 |
| Down Town Hospital      | Ibuprofen         |      700 |
| Marwari Hospitals       | Levothyroxine     |      250 |
| Barpeta Civil Hospital  | Antihistamines    |      350 |
| Sivasagar Civil Hospital| Antacids          |      500 |
| Nagaon Civil Hospital   | Muscle Relaxants  |      200 |
| Tinsukia Civil Hospital | Antibiotics       |      300 |
+-------------------------+-------------------+----------+
```

6. Retrieve Vaccination Details for Each Baby

```
SELECT bc.name AS baby_name, v.vaccination_date,
vac.vaccine_name
FROM baby_child bc
JOIN vaccinations v ON bc.baby_id = v.baby_id
JOIN vaccines vac ON v.vaccine_id = vac.vaccine_id;
```

```
mysql> SELECT bc.name AS baby_name, v.vaccination_date, vac.vaccine_name
    -> FROM baby_child bc
    -> JOIN vaccinations v ON bc.baby_id = v.baby_id
    -> JOIN vaccines vac ON v.vaccine_id = vac.vaccine_id;
+--------------+-----------------+--------------------------+
| baby_name    | vaccination_date | vaccine_name             |
+--------------+-----------------+--------------------------+
| Riju Saikia  | 2024-01-11      | Td-Booster               |
| Parul Das    | 2024-01-16      | BCG                      |
| Anurag Nath  | 2024-02-04      | Hepatitis B              |
| Tanmay Gogoi | 2024-02-23      | OPV-0                    |
| Kavya Phukan | 2024-03-13      | OPV 1, 2 & 3             |
| Priya Bhuyan | 2024-03-19      | Pentavalent 1, 2 & 3     |
| Aryan Kalita | 2024-04-06      | MR 1st dose              |
| Shreya Roy   | 2024-05-08      | Vitamin A (1st dose)     |
| Arjun Baruah | 2024-04-12      | Vitamin A (16-24 months) |
| Kritika Deka | 2024-04-16      | DPT booster 1            |
| Rohit Barman | 2024-05-06      | Td                       |
| Aditi Dutta  | 2024-06-02      | Td-Booster               |
| Soham Sharma | 2024-06-11      | OPV 1, 2 & 3             |
| Ishani Das   | 2024-07-09      | BCG                      |
| Raghav Gogoi | 2024-07-13      | JE-2                     |
+--------------+-----------------+--------------------------+
15 rows in set (0.00 sec)
```

7. Retrieve Mothers in the Same District

```
SELECT m1.name AS mother_name_1, m2.name AS mother_name_2,
m1.district
FROM mothers m1
JOIN mothers m2 ON m1.district = m2.district AND m1.mother_id <>
m2.mother_id;
```

```
mysql> SELECT m1.name AS mother_name_1, m2.name AS mother_name_2, m1.district
    -> FROM mothers m1
    -> JOIN mothers m2 ON m1.district = m2.district AND m1.mother_id <> m2.mother_id;
+-----------------+-----------------+----------+
| mother_name_1   | mother_name_2   | district |
+-----------------+-----------------+----------+
| Rupa Das        | Mitali Saikia   | Guwahati |
| Anamika Bhuyan  | Mitali Saikia   | Guwahati |
| Kalpana Barman  | Nandita Das     | Jorhat   |
| Neha Gogoi      | Kasturi Phukan  | Nagaon   |
| Rupa Das        | Anamika Bhuyan  | Guwahati |
| Mitali Saikia   | Anamika Bhuyan  | Guwahati |
| Sangeeta Sharma | Rita Kalita     | Tezpur   |
| Nandita Das     | Kalpana Barman  | Jorhat   |
| Rita Kalita     | Sangeeta Sharma | Tezpur   |
| Anamika Bhuyan  | Rupa Das        | Guwahati |
| Mitali Saikia   | Rupa Das        | Guwahati |
| Kasturi Phukan  | Neha Gogoi      | Nagaon   |
+-----------------+-----------------+----------+
12 rows in set (0.00 sec)
```

8. Retrieve Patients with Specific Treatment Diagnosis After a Certain Date

```
SELECT p.name AS patient_name
FROM patients p
WHERE EXISTS (
   SELECT 1
   FROM treatments_consultations tc
   WHERE tc.patient_id = p.patient_id
     AND tc.diagnosis = 'Fever'
     AND tc.consultation_date > '2023-01-01'
);
```

```
mysql> SELECT p.name AS patient_name
    -> FROM patients p
    -> WHERE EXISTS (
    ->     SELECT 1
    ->     FROM treatments_consultations tc
    ->     WHERE tc.patient_id = p.patient_id
    ->       AND tc.diagnosis = 'Fever'
    ->       AND tc.consultation_date > '2023-01-01'
    -> );
+---------------+
| patient_name  |
+---------------+
| Anurag Barman |
| Neha Phukan   |
+---------------+
2 rows in set (0.00 sec)
```

9. Retrieve Babies with Vaccinations Administered by Specific Healthcare Workers

```
SELECT bc.name AS baby_name
FROM baby_child bc
WHERE bc.baby_id IN (
    SELECT v.baby_id
    FROM vaccinations v
    WHERE v.healthcare_worker_id IN (
        SELECT hw.worker_id
        FROM healthcare_workers hw
        WHERE hw.designation = 'Nurse'
    )
);
```

```
mysql> SELECT bc.name AS baby_name
    -> FROM baby_child bc
    -> WHERE bc.baby_id IN (
    ->     SELECT v.baby_id
    ->     FROM vaccinations v
    ->     WHERE v.healthcare_worker_id IN (
    ->         SELECT hw.worker_id
    ->         FROM healthcare_workers hw
    ->         WHERE hw.designation = 'Nurse'
    ->     )
    -> );
+--------------+
| baby_name    |
+--------------+
| Anurag Nath  |
| Ishani Das   |
| Arjun Baruah |
+--------------+
3 rows in set (0.00 sec)
```

10. Retrieve Babies with Any Vaccination After a Specific Date

```
SELECT bc.name AS baby_name
FROM baby_child bc
WHERE bc.baby_id = ANY (
   SELECT v.baby_id
   FROM vaccinations v
   WHERE v.vaccination_date > '2024-04-12 '
);
```

```
mysql> SELECT bc.name AS baby_name
    -> FROM baby_child bc
    -> WHERE bc.baby_id = ANY (
    ->     SELECT v.baby_id
    ->     FROM vaccinations v
    ->     WHERE v.vaccination_date > '2024-04-12 '
    -> );
+--------------+
| baby_name    |
+--------------+
| Shreya Roy   |
| Kritika Deka |
| Rohit Barman |
| Aditi Dutta  |
| Soham Sharma |
| Ishani Das   |
| Raghav Gogoi |
+--------------+
7 rows in set, 1 warning (0.00 sec)
```

Performing Transaction Control Language (TCL) and VDL (Visual Data Language) Commands

1. Insert a New Patient and Commit the Transaction

```
-- Start the transaction
START TRANSACTION;

-- Insert a new patient
```

INSERT INTO patients (patient_id, name, DOB, Gender, address_line_1, district, PIN_Code, Aadhar_ID, Enrollment_Date)
VALUES (116, 'Rohit Kataki', '1990-03-01', 'Male', 'Chandmari', 'Guwahati', '781001', '8134863827', NOW());

-- Commit the transaction
COMMIT;

```
mysql> start transaction;
Query OK, 0 rows affected (0.00 sec)

mysql> INSERT INTO patients (patient_id, name, DOB, Gender, address_line_1, district, PIN_Code, Aadhar_ID, Enrollment_Date)
    -> VALUES (116, 'Rohit Kataki', '1990-03-01', 'Male', 'Chandmari', 'Guwahati', '781001', '8134863827', NOW());
Query OK, 1 row affected, 1 warning (0.00 sec)

mysql> commit;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM patients WHERE name = 'Rohit Kataki';
+------------+--------------+------------+--------+---------------+----------+----------+------------+-----------------+
| patient_id | name         | DOB        | Gender | address_line_1 | district | PIN_Code | Aadhar_ID  | Enrollment_Date |
+------------+--------------+------------+--------+---------------+----------+----------+------------+-----------------+
|        116 | Rohit Kataki | 1990-03-01 | Male   | Chandmari      | Guwahati |   781001 | 8134863827 | 2024-10-17      |
+------------+--------------+------------+--------+---------------+----------+----------+------------+-----------------+
1 row in set (0.00 sec)
```

2. Insert a New Healthcare Worker and Rollback the Transaction

-- Start the transaction
START TRANSACTION;

-- Attempt to insert a new healthcare worker
INSERT INTO healthcare_workers (worker_id, name, designation, contact_number, assigned_hospital_id)
VALUES (321, 'Junu Kalita', 'Nurse', '7896541239', 201);

-- Rollback the transaction
ROLLBACK;

```
mysql> START TRANSACTION;
Query OK, 0 rows affected (0.00 sec)

mysql> INSERT INTO healthcare_workers (worker_id, name, designation, contact_number, assigned_hospital_id)
    -> VALUES (321, 'Junu Kalita', 'Nurse', '7896541239', 201);
Query OK, 1 row affected (0.00 sec)

mysql> ROLLBACK;
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM healthcare_workers;
+-----------+----------------------+----------------+----------------+----------------------+
| worker_id | name                 | designation    | contact_number | assigned_hospital_id |
+-----------+----------------------+----------------+----------------+----------------------+
|       301 | Dr. Manjit Das       | Doctor         | 7896541230     |                  201 |
|       302 | Dr. Aruna Barman     | Doctor         | 7896541231     |                  202 |
|       303 | Nayan Sarma          | Nurse          | 7896541232     |                  203 |
|       304 | Dr. Manash Dutta     | Doctor         | 7896541233     |                  204 |
|       305 | Pranami Hazarika     | Pharmacist     | 7896541234     |                  205 |
|       306 | Dr. Rakesh Baruah    | Doctor         | 7896541235     |                  206 |
|       307 | Bijoy Saikia         | Lab Technician | 7896541236     |                  207 |
|       308 | Dr. Sonali Roy       | Doctor         | 7896541237     |                  208 |
|       309 | Mitali Nath          | Nurse          | 7896541238     |                  209 |
|       310 | Dr. Anil Bhattacharya | Doctor         | 7896541239     |                  210 |
|       311 | Dr. Rajib Deka       | Doctor         | 7896541240     |                  211 |
|       312 | Krishna Sharma       | Nurse          | 7896541241     |                  212 |
|       313 | Dr. Asha Borthakur   | Doctor         | 7896541242     |                  213 |
|       314 | Priyanka Das         | Pharmacist     | 7896541243     |                  214 |
|       315 | Dr. Suman Kalita     | Doctor         | 7896541244     |                  215 |
|       316 | Kiran Dutta          | ASHA           | 9876543211     |                  201 |
|       317 | Pratiksha Boro       | ANM            | 8765432109     |                  202 |
|       318 | Subhashini Mahanta   | ASHA           | 7654321098     |                  203 |
|       319 | Rupali Saikia        | ANM            | 6543210987     |                  204 |
|       320 | Dipanjali Dutta      | ASHA           | 5432109876     |                  205 |
+-----------+----------------------+----------------+----------------+----------------------+
20 rows in set (0.00 sec)
```

3. Use SAVEPOINT to Create a Rollback Point

-- Start the transaction
START TRANSACTION;

-- Insert the first mother
INSERT INTO mothers (mother_id, name, DOB, address_line_1, district, PIN_Code, contact_number, pregnancy_start_date)
VALUES (616, 'Anjali Das', '1995-05-15', 'Kahilipara, Guwahati', '781019', '9876543210', '2024-08-01');

-- Set a savepoint
SAVEPOINT savepoint1;

-- Insert the second mother
INSERT INTO mothers (mother_id, name, DOB, address_line_1, district, PIN_Code, contact_number, pregnancy_start_date)
VALUES (617, 'Priya Sharma', '1992-03-30', 'Nagaon, Assam', '782001', '9876543211', '2024-08-15');

-- Rollback to the savepoint
ROLLBACK TO savepoint1;

-- Commit the remaining changes
COMMIT;

```
mysql> select * from mothers;
+-----------+-----------------+------------+----------------+-----------+----------+----------------+----------------------+
| mother_id | name            | DOB        | address_line_1 | district  | PIN_Code | contact_number | pregnancy_start_date |
+-----------+-----------------+------------+----------------+-----------+----------+----------------+----------------------+
|       601 | Mitali Saikia   | 1992-03-12 | Fancy Bazar    | Guwahati  |   781001 | 7896541001     | 2023-05-15           |
|       602 | Nandita Das     | 1994-09-23 | Zoo Road       | Jorhat    |   785002 | 7896541002     | 2023-06-01           |
|       603 | Rina Nath       | 1993-01-18 | Panbazar       | Silchar   |   788001 | 7896541003     | 2023-06-10           |
|       604 | Parul Gogoi     | 1990-12-07 | Silpukhuri     | Dibrugarh |   786001 | 7896541004     | 2023-07-05           |
|       605 | Kasturi Phukan  | 1996-08-22 | Hatigaon       | Nagaon    |   782001 | 7896541005     | 2023-08-02           |
|       606 | Anamika Bhuyan  | 1991-04-29 | Ganeshguri     | Guwahati  |   781006 | 7896541006     | 2023-09-10           |
|       607 | Rita Kalita     | 1995-02-14 | Chandmari      | Tezpur    |   784001 | 7896541007     | 2023-07-20           |
|       608 | Sharmistha Roy  | 1993-07-15 | Khanapara      | Sivasagar |   785640 | 7896541008     | 2023-09-25           |
|       609 | Preeti Baruah   | 1997-11-08 | Maligaon       | Barpeta   |   781301 | 7896541009     | 2023-05-10           |
|       610 | Chitra Deka     | 1992-05-20 | Paltan Bazar   | Tinsukia  |   786125 | 7896541010     | 2023-06-18           |
|       611 | Kalpana Barman  | 1991-10-13 | Rajgarh        | Jorhat    |   785002 | 7896541011     | 2023-07-07           |
|       612 | Pallavi Dutta   | 1994-12-11 | Uzan Bazar     | Dhubri    |   783301 | 7896541012     | 2023-08-19           |
|       613 | Sangeeta Sharma | 1996-09-01 | Lakhtokia      | Tezpur    |   784001 | 7896541013     | 2023-09-05           |
|       614 | Rupa Das        | 1990-06-25 | Beltola        | Guwahati  |   781028 | 7896541014     | 2023-10-02           |
|       615 | Neha Gogoi      | 1993-03-18 | Bhangagarh     | Nagaon    |   782001 | 7896541015     | 2023-09-29           |
|       616 | Anjali Das      | 1995-05-15 | Kahilipara     | Guwahati  |   781019 | 9876543210     | 2024-08-01           |
+-----------+-----------------+------------+----------------+-----------+----------+----------------+----------------------+
16 rows in set (0.00 sec)
```

Conclusion

This DBMS project for the **National Health Mission (NHM)** offers a structured and efficient way to manage hospital operations and immunization tracking, which are essential components of public healthcare. By centralizing patient information, healthcare worker data, inventory tracking, and immunization records, this database can significantly improve the workflow in hospitals and healthcare centers under NHM. It allows healthcare administrators to manage resources effectively, ensure timely vaccinations, and monitor patient care, leading to better health outcomes.

One of the key advantages of this database is its ability to facilitate real-time monitoring and updates. Hospital administrators can access accurate data about patient treatments, vaccination schedules, and resource availability, which can improve decision-making and overall hospital management. Additionally, by having a unified system, the database reduces the chances of errors and omissions in patient records, ensuring that every individual receives the necessary medical attention, whether it be for regular treatments or vaccinations.

Looking toward the future, this database can be expanded to include additional features such as analytics for tracking the spread of diseases, predictive tools for resource management, and integration with government health initiatives. These improvements

will help in creating a more robust system capable of supporting the evolving needs of healthcare in India. By further developing this project, we can contribute to NHM's mission of achieving universal healthcare coverage and improved public health services.

For access to the complete database structure and code, visit the project's repository on GitHub: **https://github.com/junaaaak/nhm_dbms**. Feel free to contribute, suggest improvements, or explore how this system can be adapted to various other healthcare initiatives.