Medicine Reminder Application:

The Medicine Reminder Application is designed to help users manage their medication schedules effectively. It allows users to add their prescribed medicines, set reminders for taking those medicines, track their medication intake, and store information about prescriptions and prescribing doctors.

Tables Used:

1. Users

- This table stores information about the application users, such as their username, email, and password. Each user is identified by a unique `UserID`. Other relevant user information can be added based on the application's requirements.

2. Medicines:

- The Medicines table contains information about each prescribed medicine, including its name, dosage, frequency, start date, and end date. The `MedicineID` serves as a unique identifier for each medicine.

3. Reminders:

- The Reminders table is responsible for storing reminders set by users for taking specific medicines at scheduled times. It includes a `ReminderID` as a unique identifier, along with the `UserID` and `MedicineID` as foreign keys to associate reminders with specific users and medicines.

4. IntakeLogs

- The IntakeLogs table keeps a record of each instance when a user takes a medicine. It stores information such as the date and time of intake, the dosage taken, and the status (e.g., taken, missed). The `LogID` is a unique identifier for each intake log, and `UserID` and `MedicineID` are foreign keys linking the log to the user and the prescribed medicine.

5. Prescriptions

- The Prescriptions table is used to store information about prescriptions issued to users by doctors. It includes details like the `PrescriptionID`, `UserID` (foreign key linking to Users table),

`DoctorName`, and `PrescriptionDate`. Additional information about the prescription can be added based on the application's needs.

6. Doctors

- The Doctors table stores information about the doctors who prescribe medicines to users. It includes a unique `DoctorID`, `DoctorName`, `Specialization`, and `ContactInfo`. The `DoctorID` can be used as a reference in the Prescriptions table to associate specific prescriptions with prescribing doctors.

Relationships:

- Users and Medicines: One-to-Many relationship. A user can have multiple prescribed medicines.

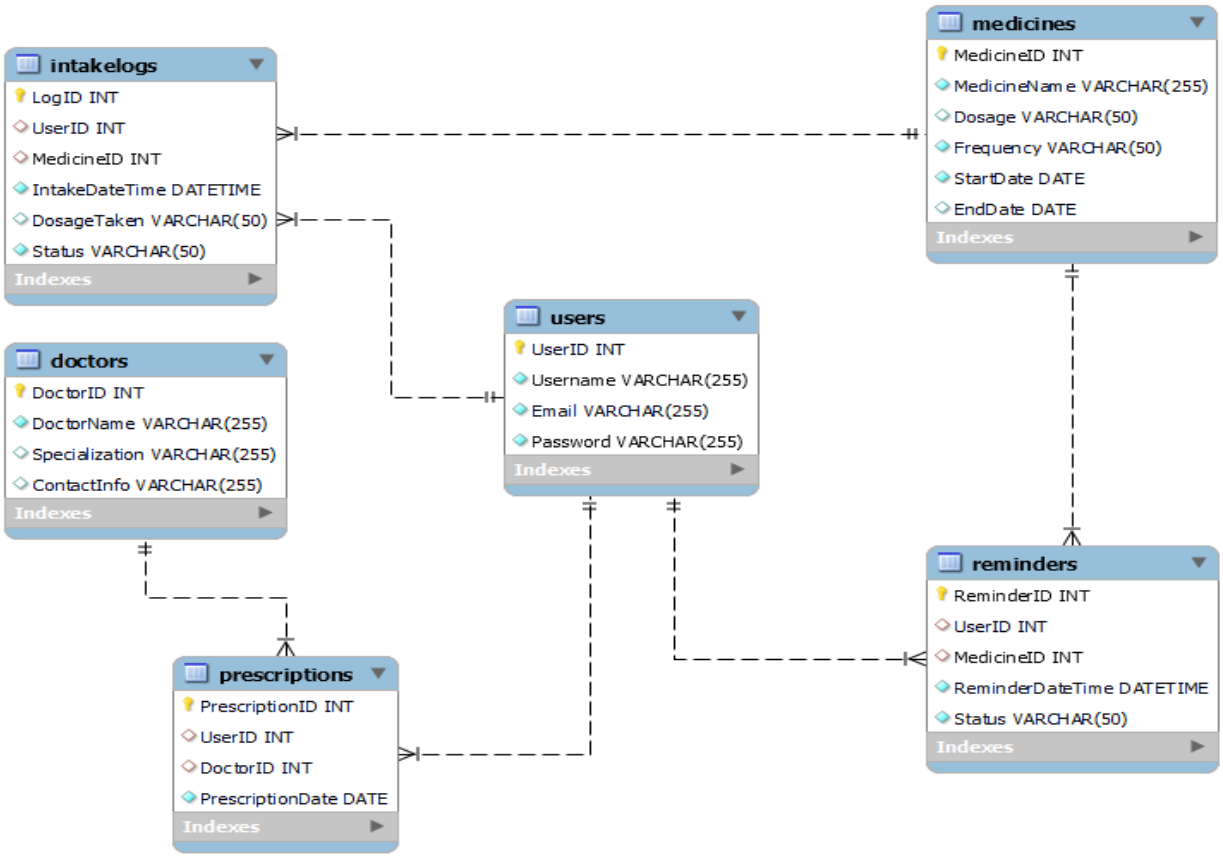
- Medicines and Reminders: One-to-Many relationship. A medicine can have multiple reminders set by the user.

- Users and IntakeLogs: One-to-Many relationship. A user can have multiple intake logs for different medicines.

- Users and Prescriptions: One-to-Many relationship. A user can have multiple prescriptions.

- Doctors and Prescriptions: One-to-Many relationship. A doctor can have multiple prescriptions associated with them.

ER Diagram



User Table

UserID	Username	Email	Password
1	Jane	jane123@gmail.com	dghdfjr
2	Alice	alice@abc.com	hyr647ht
3	John	john@tuf.com	hfh23
4	Noe	noe@abc.com	nfwm7

- The given table is already in 1NF since each cell contains a single value.
- all non-key attributes are fully functionally dependent on the primary key (UserID). So, the table is already in 2NF.
- In 3NF, the table must be in 2NF, and no transitive dependencies should exist.

- Looking at the table, we don't have any transitive dependencies.So the table is in 3NF.

Medicine Table

MedicineID	MedicineName	Dosage	Frequency	StartDate	EndDate
1	Aspirin	1 tablet	daily	2023-01-01	2023-02-01
2	Antibiotic	1 capsule	Twice a day	2023-02-15	2023-03-01
3	Painkiller	2 tablets	As needed	2023-01-10	2023-01-15
4	Vitamin C	1 tablet	daily	2023-02-01	2023-02-28

- The given table is already in 1NF since each cell contains a single value.
- In 2NF, the table must be in 1NF, and all non-key attributes should be fully functionally dependent on the primary key. In this case, all non-key attributes are fully functionally dependent on the primary key (MedicineID). So, the table is already in 2NF..
- In 3NF, the table must be in 2NF, and there should be no transitive dependencies. Looking at the table, we don't have any transitive dependencies. All the non-key attributes are directly dependent on the primary key (**MedicineID**). So, the given table is already in 3NF.

Reminder Table

ReminderID	UserID	MedicineID	ReminderDateTime	Status
1	1	1	2023-01-05 08:00:00	Pending
2	2	2	2023-02-20 10:00:00	Pending
3	3	3	2023-01-12 15:30:00	Pending
4	4	4	2023-02-05 09:00:00	Pending

- The given table is already in 1NF since each cell contains a single value.
- all non-key attributes are fully functionally dependent on the primary key. So, the table is already in 2NF.
- In 3NF, the table must be in 2NF, and no transitive dependencies should exist. Looking at the table, we don't have any transitive dependencies. So the table is in 3NF.

IntakeLogs Table

LogID	UserID	MedicineID	IntakeDateTime	DosageTaken	Status
1	1	1	2023-02-20 10:30:00	1 tablet	taken
2	2	2	2023-01-05 08:15:00	1 capsule	missed
3	3	3	2023-01-12 15:45:00	2 tablets	taken

4	4	4	2023-02-05 09:30:00	1 tablet	missed

- The given table is already in 1NF since each cell contains a single value.
- all non-key attributes are fully functionally dependent on the primary key (UserID). So, the table is already in 2NF.
- In 3NF, the table must be in 2NF, and no transitive dependencies should exist.
- Looking at the table, we don't have any transitive dependencies.So the table is in 3NF.

Prescription Table

PrescriptionID	UserID	DoctorID	DoctorName	PrescriptionDate
1	1	Dr. Meera	Dr. Meera	01-10-2023
2	2	Dr. Rahul	Dr. Rahul	16-02-2023
3	3	Dr. Aakamsha	Dr. Aakamsha	20-02-2023
4	4	Dr. John	Dr. John	05-03-2023

- The original table is already in 1NF since each cell contains a single value.
- **DoctorName** is functionally dependent on **DoctorID**, so we need to remove the partial dependency.So another Doctors table should be created.
- So the table is split into Prescription and Doctors table.

Prescription Table

PrescriptionID	UserID	DoctorID	PrescriptionDate
1	1	Dr. Meera	01-10-2023
2	2	Dr. Rahul	16-02-2023
3	3	Dr. Aakamsha	20-02-2023
4	4	Dr. John	05-03-2023

Doctors Table

DoctorID	DoctorName	Specialization	ContactInfo
1	Dr. Meera	Cardiology	987654321
2	Dr. Rahul	Pathology	876543290
3	Dr. Aakamsha	Gynacology	457892330
4	Dr. John	Pediatrics	933471110

Here all the tables are in normalized form.