

Report on

MediLink Database Project

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Project Overview

The healthcare needs of Dhaka residents are diverse and complex, necessitating a comprehensive and user-friendly database system to streamline access to medical services. Our project aims to develop such a system, designed specifically to simplify the process of finding suitable healthcare providers, including doctors, pharmacies, veterinarians, homeopathic practitioners, and blood donors. By organizing essential information and facilitating easy searches, we aim to enhance the healthcare experience for Dhaka residents.

Contributions

Table 1: Team Contributions

ID	Name	Tasks	Percentage
2221766642	Arefin Amin	Table [Patient, Consultation, Blood Donor], Query[5, 6, 7, 8] Conceptual UML, Logical UML, normalization Organizing the report	25%
2222904042	Fatema Tabassum Elma	Table [Medicine, Pharmacy, Medicine Availability], Query[9, 10, 11, 12] Logical UML Physical Design Diagram Project objective and project deliverable	25%
2221370642	Md. Ishzaz Asif Rafid	Table [Hospital, Doctor, Symptom], Query [1, 2, 3, 4, 17, 18, 19], Conceptual UML, Logical UML Conclusion, Acknowledgments, Normalization	25%
2131272042	Sabbir Hossain	Table [Delivery, Prescription, Review,], Query[13, 14, 15, 16] Logical UML, Organizing the report, Physical Diagram, Project Overview	25%

1 MediLink

2 Project Description

Our goal is to develop a user-friendly healthcare database tailored to the needs of Dhaka residents. The system aims to simplify the process of finding suitable doctors by organizing vital information, including doctor profiles, patient reviews, and regional availability. Users can easily locate nearby healthcare providers through a regional search, accessing comprehensive profiles of doctors with details on specialties and services. Patient input is encouraged, allowing users to share symptoms and medical history for personalized recommendations. A rating system based on expertise and patient satisfaction will assist users in assessing the quality of care. Beyond human doctors, the platform integrates pharmacy information, enabling users to check medicine availability at nearby pharmacies. The database also includes categories for pet doctors/veterinarians, homeopathic practitioners, and enthusiastic blood donors, facilitating quick access to alternative healthcare options and blood donation information during emergencies. Our platform aims to streamline healthcare information, making it easily accessible and user-friendly for the residents of Dhaka city.

3 Project Objective

The objectives of this projects are:

1. Develop a user-friendly healthcare database for Dhaka residents.
2. Enable easy access to nearby healthcare providers through regional search functionality.
3. Provide comprehensive doctor profiles with specialties and services for informed decision-making.
4. Implement a rating system to assess the quality of care based on expertise and patient satisfaction.
5. Integrate pharmacy information and categories for alternative healthcare options and blood donors.

4 Project Deliverable

1. Database Structure: A well-designed and organized database schema tailored to store healthcare information efficiently.
2. A comprehensive data model outlining the relationships between different entities and attributes within the database.
3. Sample Data Population: Population of the database with sample healthcare data to demonstrate functionality and test queries.
4. Quality Assurance Reports: Reports on database testing and validation procedures to ensure data integrity, consistency, and performance.

5 Design

5.1 Conceptual Design Diagram

Conceptual design diagram in this section. Sample image insertion is shown below

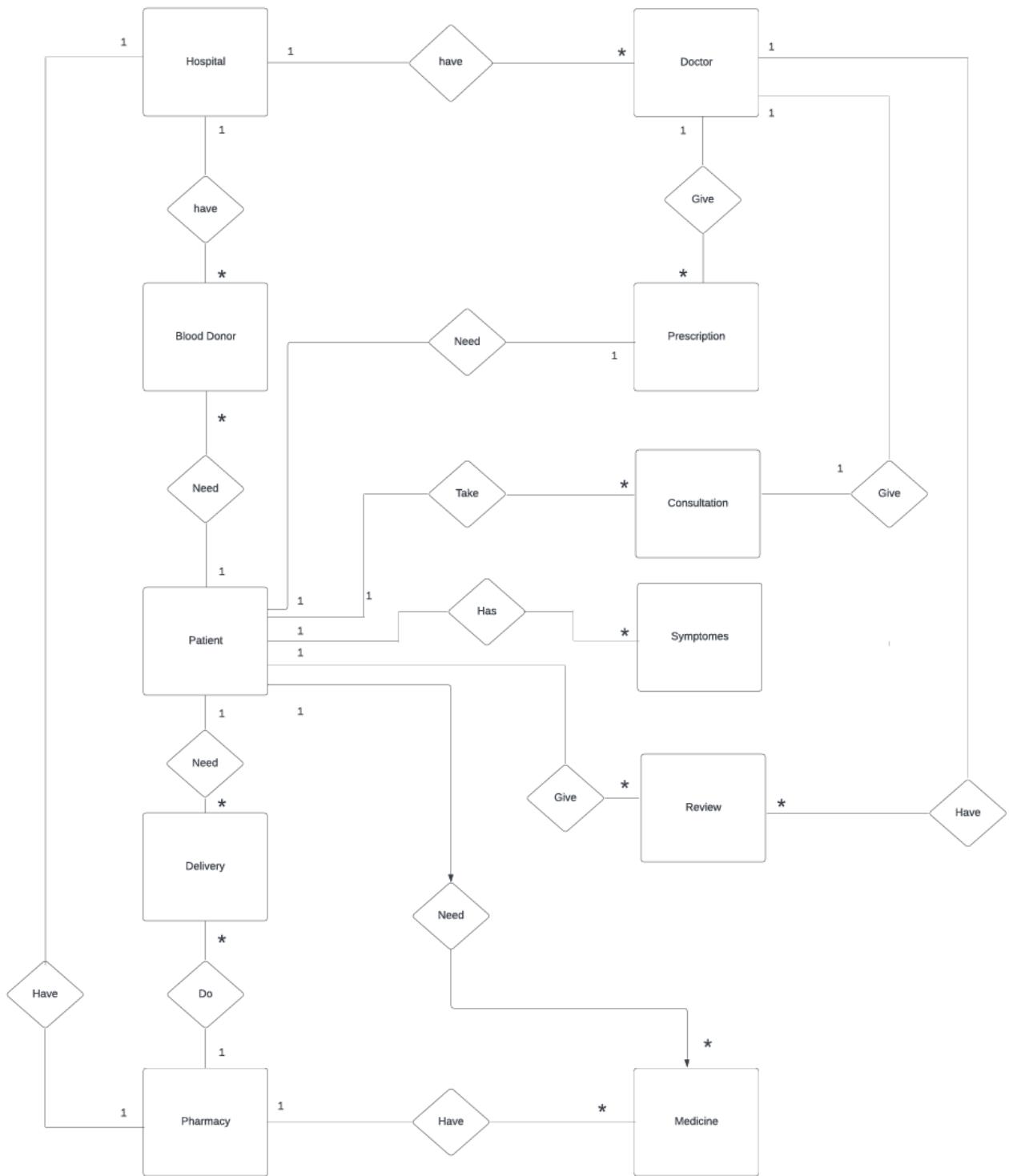
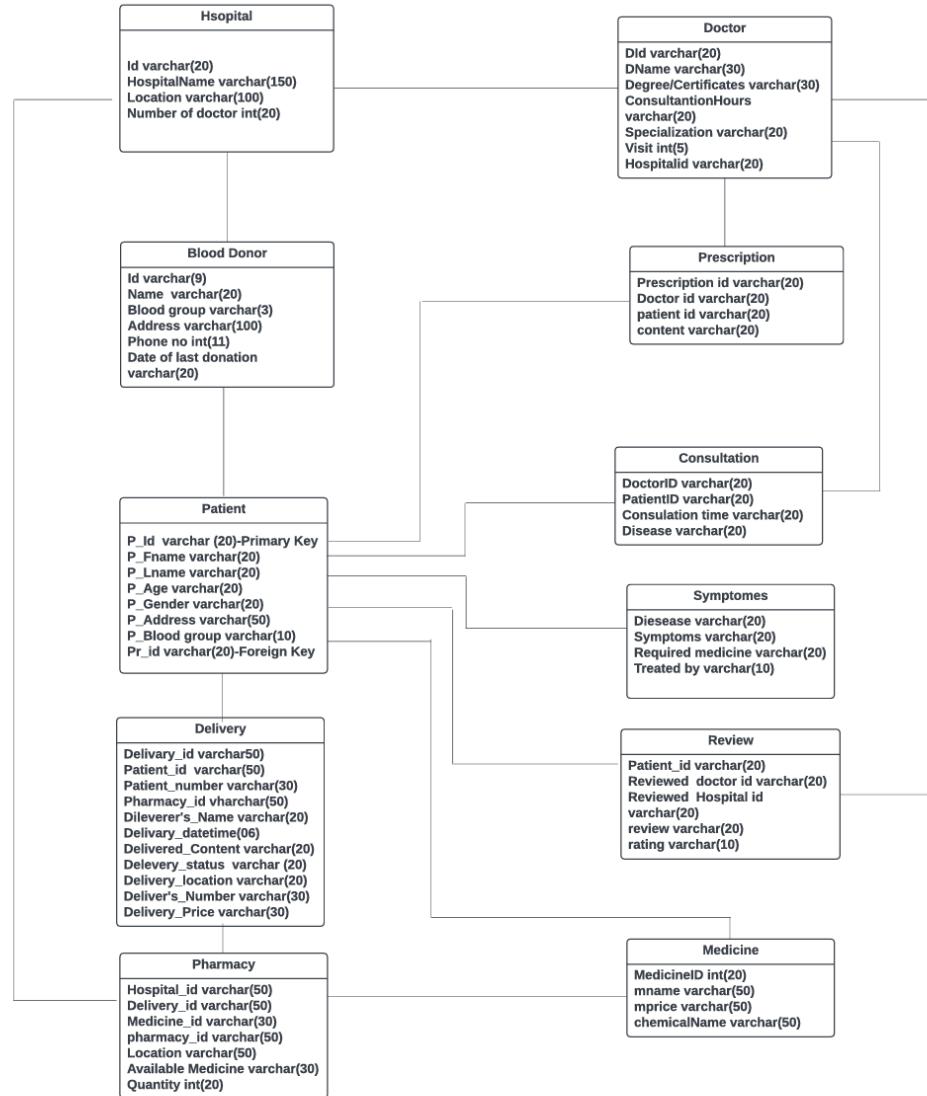


Figure 1: Conceptual design of the database

5.2 Logical Design Diagram

Logical design diagram in this section. Sample image insertion is shown in Figure 2.

**Figure 2:** Logical design of the database

5.3 Physical Design Diagram

Physical design diagram in this section. Sample image insertion shown in Figure 3.

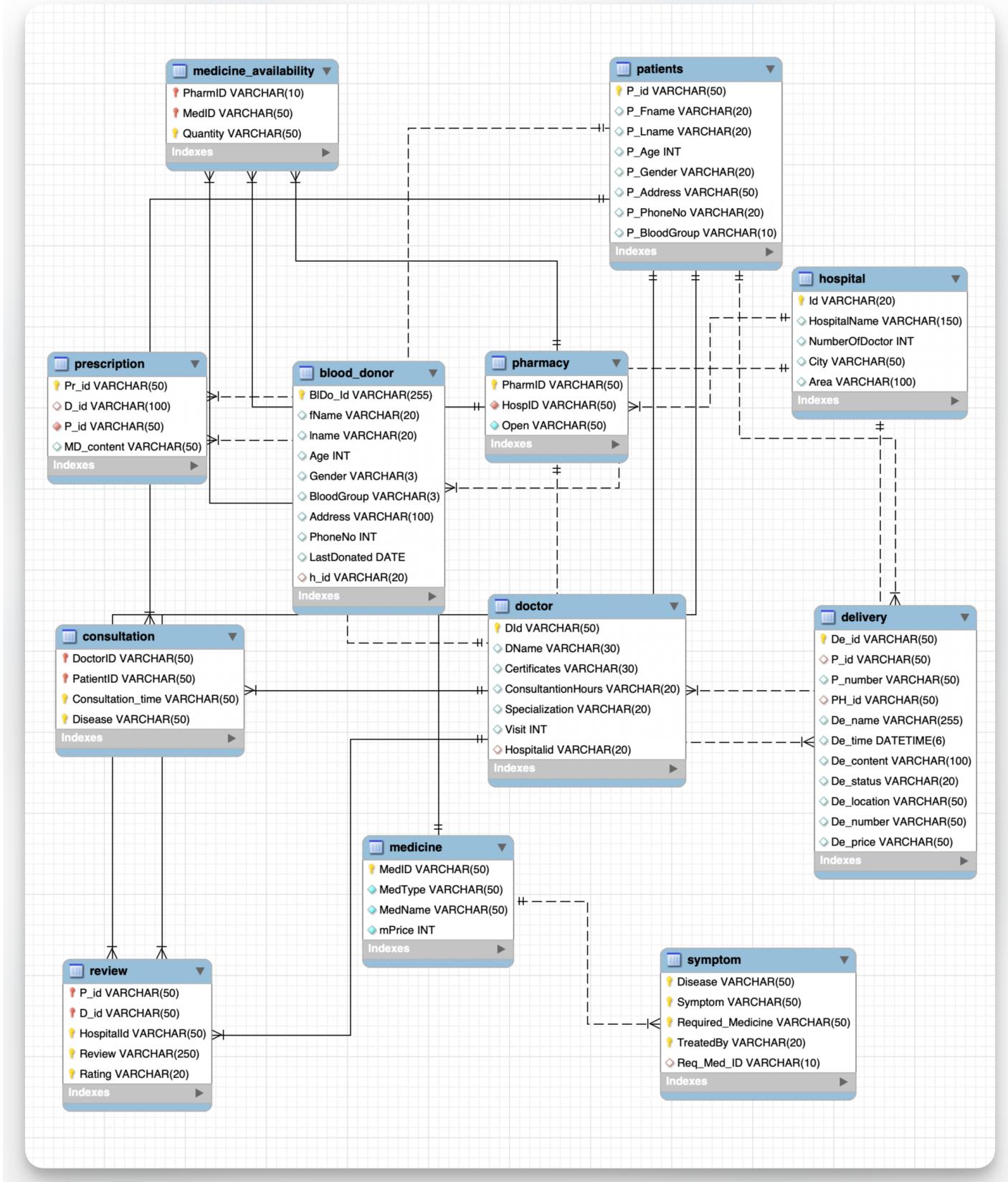


Figure 3: Physical design of the database

5.4 Normalization

In this section, we discuss the normalization of various tables within the ‘medilink’ database. The process ensures data integrity and establishes relationships between the tables through foreign key constraints.

5.4.1 Delivery Table

```

ALTER TABLE medilink.'delivery'
ADD CONSTRAINT Ph_id
FOREIGN KEY (PH_id)
REFERENCES medilink.'pharmacy' (PharmID)
ON DELETE set null
ON UPDATE cascade;

ALTER TABLE medilink.'delivery'
ADD CONSTRAINT p_id
FOREIGN KEY (p_id)
REFERENCES medilink.'patients' (p_id)
ON DELETE set null
ON UPDATE cascade;

```

5.4.2 Blood Donor Table

```

ALTER TABLE medilink.'blood_donor'
ADD CONSTRAINT h_id
FOREIGN KEY (h_id)
REFERENCES medilink.'hospital' (id)
ON DELETE set null
ON UPDATE cascade;

```

5.4.3 Consultation Table

```

ALTER TABLE medilink.'consultation'
ADD CONSTRAINT PatientID
FOREIGN KEY (PatientID)
REFERENCES medilink.'patients' (P_id)
ON DELETE no action
ON UPDATE no action;

ALTER TABLE medilink.'consultation'
ADD CONSTRAINT DoctorID
FOREIGN KEY (DoctorID)
REFERENCES medilink.'doctor' (Did)
ON DELETE no action
ON UPDATE no action;

```

5.4.4 Pharmacy Table

```
ALTER TABLE medilink.'pharmacy'
ADD CONSTRAINT HospID
FOREIGN KEY (HospID)
REFERENCES medilink.'hospital' (id)
ON DELETE cascade
ON UPDATE cascade;
```

5.4.5 Medicine Availability Table

```
ALTER TABLE medilink.'medicine_availability'
ADD CONSTRAINT PharmID
FOREIGN KEY (PharmID)
REFERENCES medilink.'pharmacy' (PharmID)
ON DELETE cascade
ON UPDATE cascade;

ALTER TABLE medilink.'medicine_availability'
ADD CONSTRAINT fk_medicine_availability_medid
FOREIGN KEY (MedID)
REFERENCES medilink.'medicine' (MedID)
ON DELETE cascade
ON UPDATE cascade;
```

5.4.6 Prescription Table

```
ALTER TABLE medilink.'prescription'
ADD CONSTRAINT d_id
FOREIGN KEY (d_id)
REFERENCES medilink.'doctor' (Did)
ON DELETE set null
ON UPDATE cascade;

ALTER TABLE medilink.'prescription'
ADD CONSTRAINT P_id
FOREIGN KEY (P_id)
REFERENCES medilink.'patients' (P_id)
ON DELETE no action
ON UPDATE no action;
```

5.4.7 Review Table

```

ALTER TABLE medilink.'review'
ADD CONSTRAINT FK_PatientID_Review
FOREIGN KEY (P_id)
REFERENCES medilink.'patients' (P_id)
ON DELETE cascade
ON UPDATE cascade;

ALTER TABLE medilink.'review'
ADD CONSTRAINT Fk_D_id
FOREIGN KEY (D_id)
REFERENCES medilink.'Doctor' (Did)
ON DELETE cascade
ON UPDATE cascade;

```

5.4.8 Symptom Table

```

ALTER TABLE medilink.'symptom'
ADD CONSTRAINT Req_Med_ID
FOREIGN KEY (Req_Med_ID)
REFERENCES medilink.'medicine' (MedID)
ON DELETE NO action
ON UPDATE cascade;

```

6 Implementation

6.1 Data Population

Sample data input from prescription table :

```

INSERT INTO Prescription (Pr_id, P_id, MD_content)

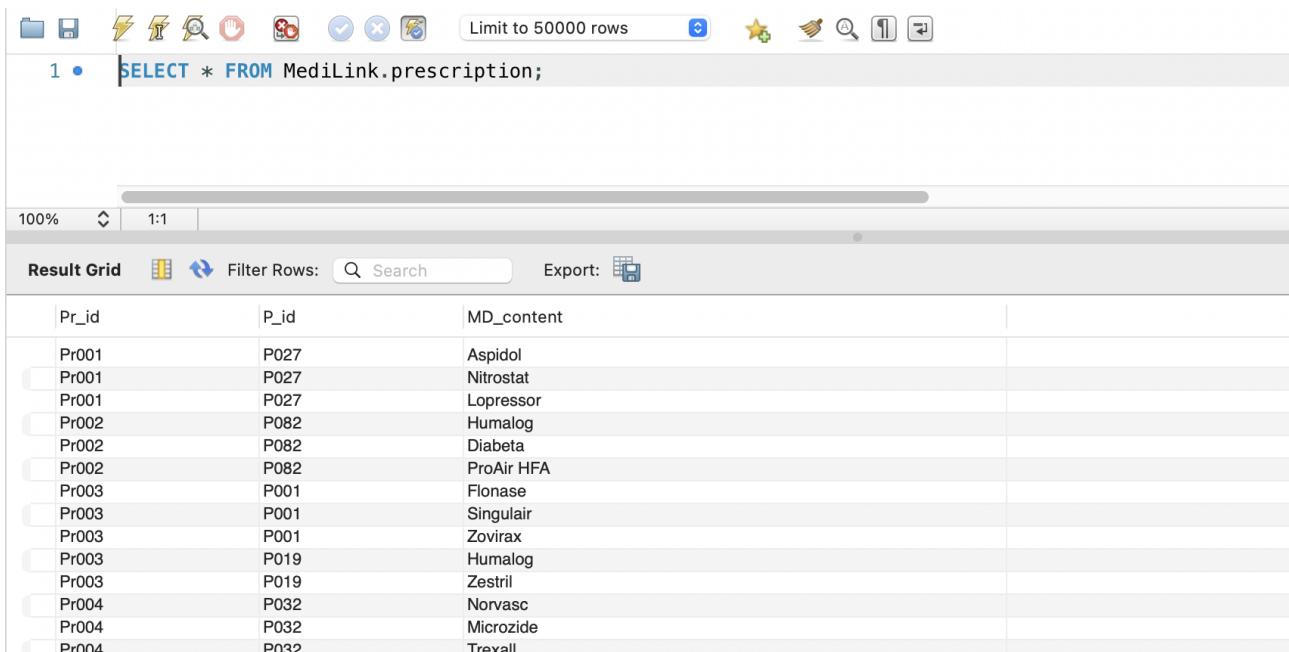
VALUES
("Pr001", "P027", "Aspidol"),
("Pr001", "P027", "Nitrostat"),
("Pr001", "P027", "Lopressor"),
("Pr002", "P082", "Humalog"),

```

```
("Pr002", "P082", "Diabeta"),
("Pr002", "P082", "ProAir HFA"),
("Pr003", "P001", "Flonase"),
("Pr003", "P001", "Singulair"),
("Pr003", "P001", "Zovirax"),
("Pr003", "P019", "Humalog"),
("Pr003", "P019", "Zestril");
```

Query for showing all the data from prescription table:

```
SELECT * FROM mediblink.prescription;
```



The screenshot shows the MySQL Workbench interface with the following details:

- Toolbar:** Includes icons for file operations, search, and database navigation.
- Query Editor:** Shows the query `1 • SELECT * FROM MediLink.prescription;`.
- Result Grid:** Displays the data from the prescription table in a grid format.
- Table Headers:** `Pr_id`, `P_id`, `MD_content`.
- Data Rows:** 16 rows of data, corresponding to the sample input provided above.

Pr_id	P_id	MD_content
Pr001	P027	Aspidol
Pr001	P027	Nitrostat
Pr001	P027	Lopressor
Pr002	P082	Humalog
Pr002	P082	Diabeta
Pr002	P082	ProAir HFA
Pr003	P001	Flonase
Pr003	P001	Singulair
Pr003	P001	Zovirax
Pr003	P019	Humalog
Pr003	P019	Zestril
Pr004	P032	Norvasc
Pr004	P032	Microzide
Pr004	P032	Trexall

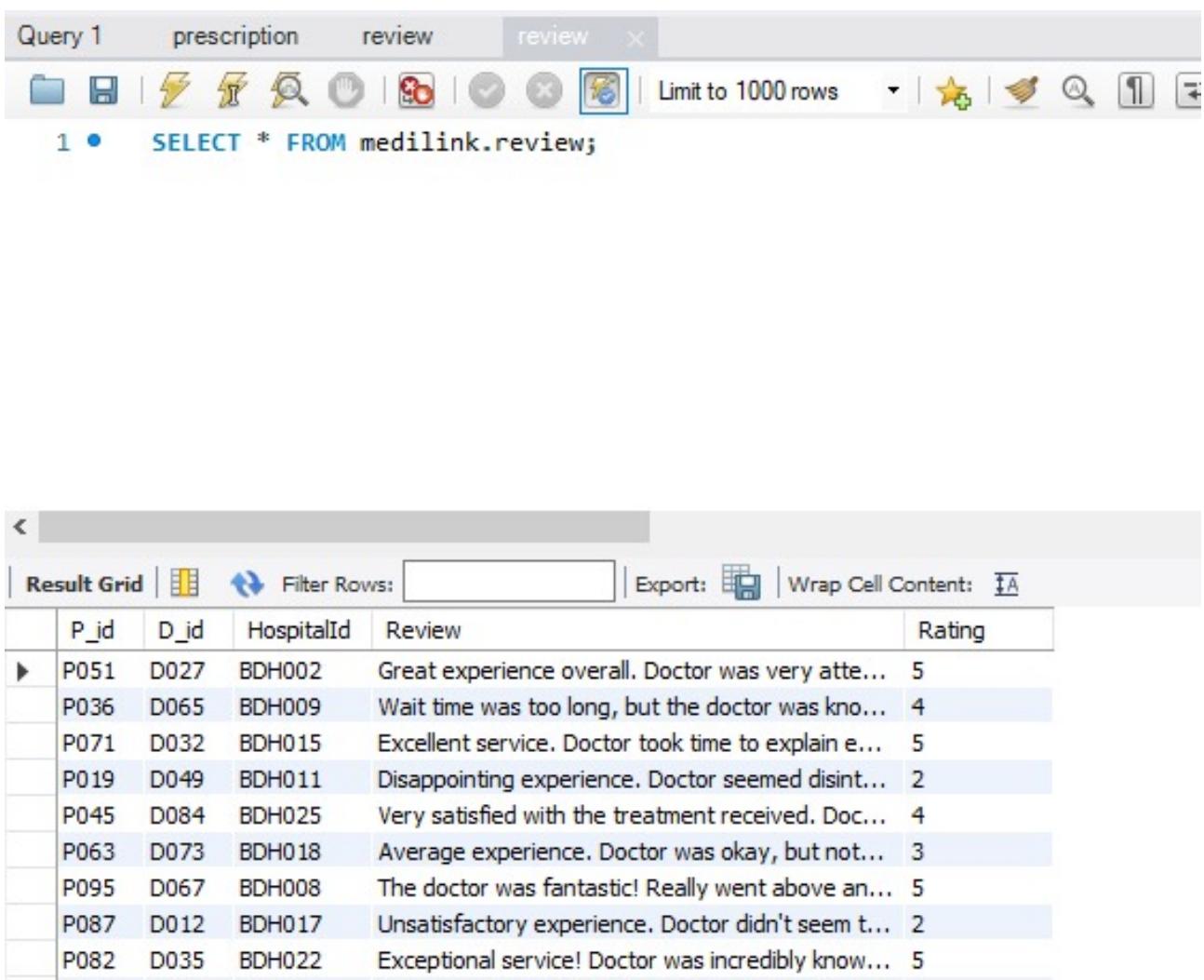
Figure 4: Showing The Prescription Table All Data**Sample data input for Review table :**

```
INSERT INTO Review (P_id, D_Id, HospitalId, Review, Rating)
VALUES
("P051", "D027", "BDH002", "Great experience overall. Doctor was very
attentive and helpful.", 5),
("P036", "D065", "BDH009", "Wait time was too long, but the doctor was
knowledgeable and friendly.", 4),
```

```
("P071", "D032", "BDH015", "Excellent service. Doctor took time to explain
everything thoroughly.", 5),
("P019", "D049", "BDH011", "Disappointing experience. Doctor seemed
disinterested and rushed through appointment.", 2),
("P045", "D084", "BDH025", "Very satisfied with the treatment received. Doctor
was caring and professional.", 4),
("P063", "D073", "BDH018", "Average experience. Doctor was okay, but nothing
exceptional.", 3),
("P095", "D067", "BDH008", "The doctor was fantastic! Really went above and
beyond to address my concerns.", 5),
("P087", "D012", "BDH017", "Unsatisfactory experience. Doctor didn't seem to
know much about my condition.", 2),
("P082", "D035", "BDH022", "Exceptional service! Doctor was incredibly
knowledgeable and caring.", 5),
("P042", "D086", "BDH013", "Mediocre experience. Doctor seemed distracted
during the appointment.", 3),
("P078", "D042", "BDH020", "Overall satisfied with the service provided by the
doctor.", 4),
("P041", "D057", "BDH019", "Very disappointed with the doctor's attitude.
Seemed very dismissive of my concerns.", 2),
("P011", "D048", "BDH010", "Fantastic doctor! Really took the time to listen
and address all my concerns.", 5),
("P059", "D009", "BDH007", "The doctor was excellent. Very professional and
knowledgeable.", 4),
("P049", "D093", "BDH003", "Below average experience. Doctor didn't seem very
interested in my case.", 3);
```

Query for showing all the values from review table:

```
SELECT * FROM medilink.review;
```



The screenshot shows the MySQL Workbench interface with a query editor and a result grid. The query editor contains the SQL command: `SELECT * FROM medilink.review;`. The result grid displays the following data:

	P_id	D_id	HospitalId	Review	Rating
▶	P051	D027	BDH002	Great experience overall. Doctor was very atte...	5
	P036	D065	BDH009	Wait time was too long, but the doctor was kno...	4
	P071	D032	BDH015	Excellent service. Doctor took time to explain e...	5
	P019	D049	BDH011	Disappointing experience. Doctor seemed disint...	2
	P045	D084	BDH025	Very satisfied with the treatment received. Doc...	4
	P063	D073	BDH018	Average experience. Doctor was okay, but not...	3
	P095	D067	BDH008	The doctor was fantastic! Really went above an...	5
	P087	D012	BDH017	Unsatisfactory experience. Doctor didn't seem t...	2
	P082	D035	BDH022	Exceptional service! Doctor was incredibly know...	5

Figure 5: Showing The Review Table All Data**Sample data input for Delivery Table:**

```

INSERT INTO Delivery (De_id, P_id, P_number, PH_id, De_name, De_time,
De_content, De_status, De_location,
De_number, De_price) VALUES

("De050", "P050", '01849798985', "PH050", "Rahim", '2024-04-21 15:20:00', '1.
Aspidol (20 pcs), 2. Nitrostat (10 pcs), 3. Lopressor (30 pcs)',
"Delivered", '1016/B, Paltan, Dhaka', '01746793985', '500'),

("De051", "P051", '01448798985', "PH051", "Hasan", '2024-07-22 15:40:00', '1.
Tylenol (20 pcs), 2. Robitussin (10 pcs), 3. ProAir HFA (30 pcs)', "On The
Way", '1027/X, Turag, Dhaka', '01889353339', '1270'),

("De052", "P052", '01348798985', "PH052", "Sakib", '2024-08-22 15:45:00', '1.
Tamiflu (20 pcs), 2. Tylenol (10 pcs), 3. Sudafed PE (30 pcs)',
"Delivered", '1027/Y, Uttara, Dhaka', '01989353341', '1310'),

```

("De053", "P053", '01949798985', "PH053", "Arif", '2024-09-22 15:50:00', '1. Synthroid (20 pcs), 2. Tums (10 pcs), 3. SSKI (30 pcs)', "Pending", '1027/Z, Uttara, Dhaka', '01389353343', '1350'),

("De054", "P054", '01849798985', "PH054", "Rasel", '2024-10-22 15:55:00', '1. Actigall (20 pcs), 2. Zofran (10 pcs), 3. Hemochron (30 pcs)', "On The Way", '1027/AA, Uttara, Dhaka', '01789353345', '1420'),

("De055", "P055", '01749798985', "PH055", "Shuvo", '2024-11-22 16:00:00', '1. Prilosec (20 pcs), 2. Zantac (10 pcs), 3. Pepcid (30 pcs)', "Delivered", '1027/AB, Uttara, Dhaka', '01689353347', '1390'),

("De056", "P056", '01649798985', "PH056", "Sakil", '2024-12-22 16:05:00', '1. Temovate (20 pcs), 2. Dovonex (10 pcs), 3. Psoriasis (30 pcs)', "Pending", '1027/AC, Uttara, Dhaka', '01589353349', '1460'),

("De057", "P057", '01549798985', "PH057", "Imran", '2024-01-22 16:10:00', '1. Lasix (20 pcs), 2. Epogen (10 pcs), 3. Rocaltrol (30 pcs)', "On The Way", '1027/AD, Uttara, Dhaka', '01489353351', '1550'),

("De058", "P058", '01449798985', "PH058", "Rony", '2024-02-22 16:15:00', '1. Zoloft (20 pcs), 2. Ativan (10 pcs), 3. Buspar (30 pcs)', "Delivered", '1027/AE, Uttara, Dhaka', '01389353353', '1480'),

("De059", "P059", '01950798985', "PH059", "Nasim", '2024-03-22 16:20:00', '1. Sovaldi (20 pcs), 2. Tylenol (10 pcs), 3. Xalatan (30 pcs)', "Pending", '1027/AF, Uttara, Dhaka', '01989353355', '1520'),

("De060", "P060", '01850798985', "PH060", "Sohag", '2024-04-22 16:25:00', '1. Trabeculectomy (20 pcs), 2. Tylenol (10 pcs), 3. Advil (30 pcs)', "On The Way", '1027/AG, Uttara, Dhaka', '01889353357', '1490'),

("De061", "P061", '01750798985', "PH061", "Sujan", '2024-05-22 16:30:00', '1. Kenalog (20 pcs), 2. Hemochron (10 pcs), 3. Activase (30 pcs)', "Delivered", '1027/AH, Uttara, Dhaka', '01789353359', '1560'),

("De062", "P062", '01650798985', "PH062", "Sumon", '2024-06-22 16:35:00', '1. Oxygen therapy (20 pcs), 2. Colcrys (10 pcs), 3. Indocin (30 pcs)', "Pending", '1027/AI, Uttara, Dhaka', '01689353361', '1630'),

("De063", "P063", '01550798985', "PH063", "Shamim", '2024-07-22 16:40:00', '1. Deltasone (20 pcs), 2. Imuran (10 pcs), 3. Apriso (30 pcs)', "On The Way", '1027/AJ, Uttara, Dhaka', '01589353363', '1700'),

("De064", "P064", '01450798985', "PH064", "Sajjad", '2024-08-22 16:45:00', '1.

```

Entocort (20 pcs), 2. Aricept (10 pcs), 3. Namenda (30 pcs)', "Delivered",
'1027/AK, Uttara, Dhaka', '01489353365', '1670'),

("De065", "P065", '01951798985', "PH065", "Nazrul", '2024-09-22 16:50:00', '1.
Zoloft (20 pcs), 2. Trexall (10 pcs), 3. Azulfidine (30 pcs)', "Pending",
'1027/AL, Uttara, Dhaka', '01389353367', '1740'),

("De066", "P066", '01851798985', "PH066", "Rabbi", '2024-10-22 16:55:00', '1.
Deltasone (20 pcs), 2. Advil (10 pcs), 3. Zofran (30 pcs)', "On The Way",
'1027/AM, Uttara, Dhaka', '01289353369', '1810');

```

Query for showing all the data from delivery table:

```

SELECT * FROM
medilink.delivery;

```

The screenshot shows the Oracle SQL Developer interface. At the top, there's a toolbar with various icons. Below it, a message bar says "Open Inspector for the selected object". The main area shows the query "1 • SELECT * FROM medilink.delivery;" followed by a result grid. The result grid has columns: DP_id, P_number, PH_id, De_name, De_time, De_content, De_status, De_location, De_number, and De_price. The data grid contains approximately 20 rows of delivery records.

DP_id	P_number	PH_id	De_name	De_time	De_content	De_status	De_location	De_number	De_price
D P219	01304324386	PH001	Johirul	2024-04-21 10:20:00...	1. Aspidol (20 pcs), 2. Nitrostat (10 pcs), 3. Lopressor (30...	Delivered	1016/A, Khilgaon, Dhaka	01846793985	500
D P222	01841793985	PH002	Arefin Amin	2024-03-22 11:20:00...	1. Humalog (20 pcs), 2. Glucophage (50 pcs), 3. Diabeta (...)	Pending	1016/B, Paltan, Dhaka	01302454389	1000
D P309	01841798985	PH003	Sabbir	2024-07-22 11:28:00...	1. Rosova 10mg (10 pcs), 2. Dialipin 500mg (30 pcs)	On The Way	1026/B, Motejheel, Dhaka	01589353241	675
D P384	01842798985	PH004	Rahim	2024-08-22 11:35:00...	1. Singulair (20 pcs), 2. Zovirax (10 pcs), 3. Advil (30 pcs)	Delivered	1026/C, Motijheel, Dhaka	01789353245	720
D P363	01741798985	PH005	Kamal	2024-09-22 11:40:00...	1. Glucophage XR (20 pcs), 2. Flovent (10 pcs), 3. Singula...	Pending	1026/D, Khilgaon, Dhaka	01989353247	850
D P192	01941798985	PH006	Sakib	2024-10-22 11:50:00...	1. Zestril (20 pcs), 2. Norvasc (10 pcs), 3. Microzide (30 pcs)	On The Way	1026/E, Badda, Dhaka	01689353249	920
D P086	01641798985	PH007	Ashraf	2024-11-22 11:55:00...	1. Trexall (20 pcs), 2. Deltasone (10 pcs), 3. Imritrex (30 pcs)	Delivered	1026/F, Gulshan, Dhaka	01589353251	780
D P273	01541798985	PH008	Moinul	2024-12-22 12:00:00...	1. Zofran (20 pcs), 2. Inderal (10 pcs), 3. Zithromax (30 pcs)	Pending	1026/G, Tejgaon, Dhaka	01489353253	1100
D P286	01441798985	PH009	Rashed	2024-01-22 12:10:00...	1. Tylenol (20 pcs), 2. Oxygen therapy (10 pcs), 3. Prozac...	On The Way	1026/H, Mirpur, Dhaka	01789353255	960
D P211	01341798985	PH010	Rezaul	2024-02-22 12:15:00...	1. Elavil (20 pcs), 2. Wellbutrin (10 pcs), 3. Ferrous sulfate...	Delivered	1026/I, Uttara, Dhaka	01889353257	830
D P392	01241798985	PH011	Raju	2024-03-22 12:20:00...	1. Nascoval (20 pcs), 2. Folivite (10 pcs), 3. Zofran (30 pcs)	Pending	1026/J, Dhanmondi, Dhaka	01989353259	780
D P241	01943798985	PH012	Shamim	2024-04-22 12:25:00...	1. Pedialyte (20 pcs), 2. Cipro (10 pcs), 3. Sudafed (30 pcs)	On The Way	1026/K, Mohammadpur, D...	01589353261	1150

Figure 6: Showing The Delivery Table All Data

Sample data input from doctor table :

```

INSERT INTO Doctor (DId, DName, Certificates, ConsultantionHours,
Specialization, Visit, Hospitalid)

VALUES

('D301', 'Dr. Aminul Islam', 'MBBS, FCPS', '8:00 AM - 11:00 AM',
'Gynecology', 22, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) + 1,
3, '0')) AS RandomHospitalId)),

('D302', 'Dr. Shamsul Haque', 'MBBS, MD', '10:00 AM - 2:00 PM',
'Orthopedics', 16, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) + 1,
3, '0')) AS RandomHospitalId)),

```

```

('D303', 'Dr. Rehana Akhter', 'MBBS, FCPS', '8:00 AM - 11:00 AM',
 'Gynecology', 20, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) + 1,
 3, '0')) AS RandomHospitalId)),

('D304', 'Dr. Khaled Ahmed', 'MBBS, MRCP', '2:00 PM - 6:00 PM',
 'Endocrinology', 19, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) +
 1, 3, '0')) AS RandomHospitalId)),

('D305', 'Dr. Nazma Begum', 'MBBS, FCPS', '9:00 AM - 12:00 PM',
 'Ophthalmology', 21, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) +
 1, 3, '0')) AS RandomHospitalId)),

('D306', 'Dr. Aminul Islam', 'MBBS, MD', '10:00 AM - 2:00 PM',
 'Neurology', 16, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) + 1, 3,
 '0')) AS RandomHospitalId)),

('D307', 'Dr. Shamsul Haque', 'MBBS, FCPS', '8:00 AM - 11:00 AM',
 'Pediatrics', 20, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) + 1,
 3, '0')) AS RandomHospitalId)),

('D318', 'Dr. Rehana Akhter', 'MBBS, MD', '10:00 AM - 2:00 PM',
 'Orthopedics', 16, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) + 1,
 3, '0')) AS RandomHospitalId)),

('D319', 'Dr. Khaled Ahmed', 'MBBS, FCPS', '8:00 AM - 11:00 AM',
 'Gynecology', 20, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) + 1,
 3, '0')) AS RandomHospitalId)),

('D320', 'Dr. Nazma Begum', 'MBBS, MD', '2:00 PM - 6:00 PM',
 'Endocrinology', 19, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) +
 1, 3, '0')) AS RandomHospitalId)),

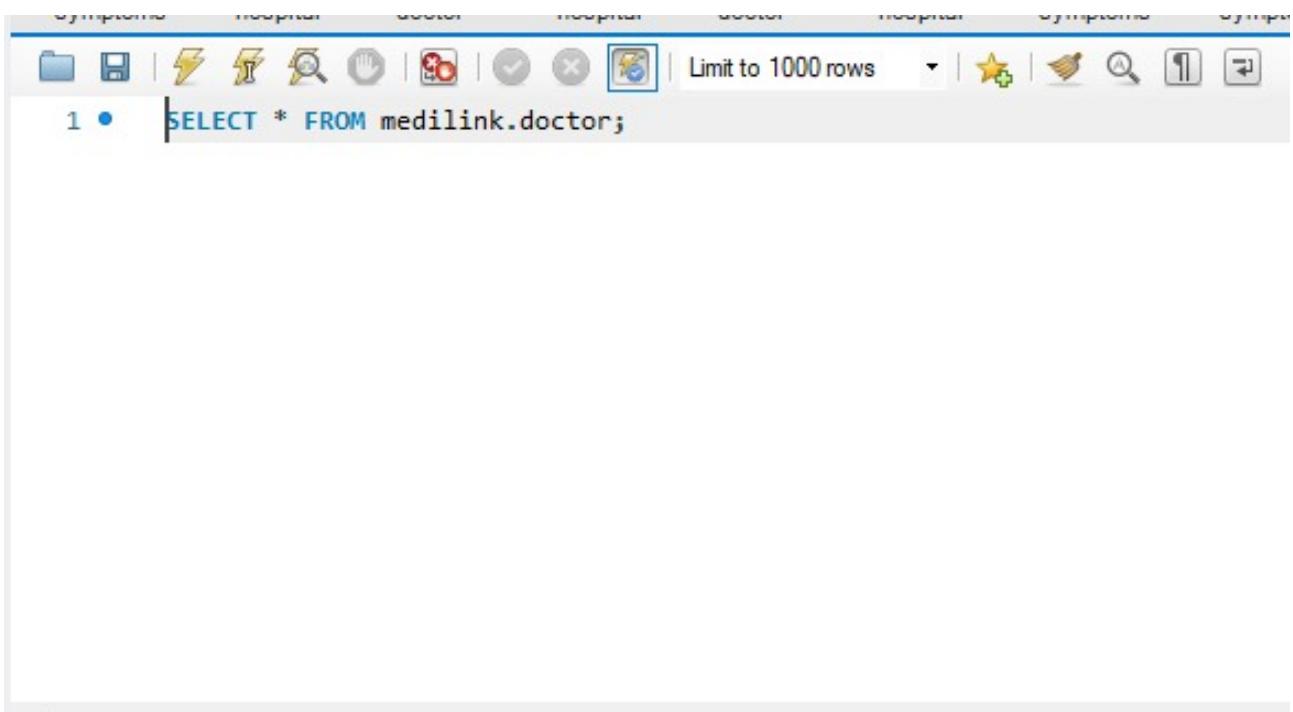
('D321', 'Dr. Aminul Islam', 'MBBS, FCPS', '9:00 AM - 12:00 PM',
 'Ophthalmology', 21, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) +
 1, 3, '0')) AS RandomHospitalId)),

('D322', 'Dr. Shamsul Haque', 'MBBS, MD', '10:00 AM - 2:00 PM',
 'Neurology', 16, (SELECT CONCAT('BDH', LPAD(FLOOR(RAND() * 110) + 1, 3,
 '0')) AS RandomHospitalId));

```

Query for showing all the data from doctor table:

SELECT * FROM medilink.doctor;



The screenshot shows the MySQL Workbench interface with a query editor window. The query is:

```
1 • | SELECT * FROM medilink.doctor;
```

The results are displayed in a grid format:

	DId	DName	Certificates	ConsultantHours	Specialization	Visit	Hospitalid
▶	D001	Dr. Abul Hassan	FCPS	9:00 AM - 12:00 PM	Cardiology	800	BDH104
	D002	Dr. Fahmida Akhtar	MD	10:00 AM - 2:00 PM	Dermatology	600	BDH059
	D004	Dr. Nusrat Jahan	MBBS	11:00 AM - 3:00 PM	Gynecology	880	BDH092
	D005	Dr. Shahidul Islam	MRCP	2:00 PM - 6:00 PM	Endocrinology	680	BDH061
	D006	Dr. Anika Rahman	FCPS	9:00 AM - 12:00 PM	Ophthalmology	760	BDH030
	D007	Dr. Ziauddin Ahmed	MBBS	10:00 AM - 2:00 PM	Neurology	640	BDH076
	D008	Dr. Taslima Akter	FCPS	8:00 AM - 11:00 AM	Pediatrics	840	BDH070
	D009	Dr. Mamunur Rashid	MS	11:00 AM - 3:00 PM	Cardiology	800	BDH010
	D010	Dr. Farhana Khan	FCPS	9:00 AM - 12:00 PM	Dermatology	600	BDH062
	D011	Dr. Rakib Hasan	MD	10:00 AM - 2:00 PM	Orthopedics	720	BDH057
	D012	Dr. Suraiya Begum	FCPS	8:00 AM - 11:00 AM	Gynecology	880	BDH098
	D013	Dr. Abdul Haque	MRCP	2:00 PM - 6:00 PM	Endocrinology	680	BDH098
	D014	Dr. Fatema Akter	FCPS	9:00 AM - 12:00 PM	Ophthalmology	760	BDH088
	D015	Dr. Aminul Islam	MD	10:00 AM - 2:00 PM	Neurology	640	BDH035
	D016	Dr. Sultana Khatun	FCPS	8:00 AM - 11:00 AM	Pediatrics	840	BDH019
	D017	Dr. Anwar Hossain	MS	11:00 AM - 3:00 PM	Cardiology	800	BDH101
	D018	Dr. Nazma Begum	MBBS	9:00 AM - 12:00 PM	Dermatology	600	BDH008

Figure 7: Showing The Doctor Table All Data**Sample data input from Hospital:**

```
INSERT INTO Hospital (Id, Name, Location, NumberOfDoctor)
VALUES
('BDH091', 'Chittagong General Hospital', 'Chittagong, Bangladesh', 220),
```

(‘BDH092’, ‘Maa Shishu O General Hospital’, ‘Chittagong, Bangladesh’, 260),
(‘BDH093’, ‘Max Hospital Chittagong’, ‘Chittagong, Bangladesh’, 290),
(‘BDH094’, ‘Metropolitan Hospital Ltd.’, ‘Chittagong, Bangladesh’, 230),
(‘BDH095’, ‘Parkway Hospitals Singapore’, ‘Dhaka, Bangladesh’, 280),
(‘BDH096’, ‘Rangpur Community Medical College Hospital’, ‘Rangpur, Bangladesh’, 250),
(‘BDH097’, ‘Rangpur General Hospital’, ‘Rangpur, Bangladesh’, 220),
(‘BDH098’, ‘Rangpur Medical College Hospital’, ‘Rangpur, Bangladesh’, 300),
(‘BDH099’, ‘Rangpur Metropolitan Hospital’, ‘Rangpur, Bangladesh’, 270),
(‘BDH100’, ‘Rangpur Red Crescent Maternity Hospital’, ‘Rangpur, Bangladesh’, 240),
(‘BDH101’, ‘Rangpur Red Crescent Medical College Hospital’, ‘Rangpur, Bangladesh’, 320),
(‘BDH102’, ‘Sheikh Hasina Medical College Hospital’, ‘Tangail, Bangladesh’, 250),
(‘BDH103’, ‘Shahid Ziaur Rahman Medical College Hospital’, ‘Bogra, Bangladesh’, 280),
(‘BDH104’, ‘Sylhet Womens Medical College Hospital’, ‘Sylhet, Bangladesh’, 220),
(‘BDH105’, ‘Uttara Adhunik Medical College Hospital’, ‘Dhaka, Bangladesh’, 260),
(‘BDH106’, ‘Uttara Central Hospital Limited’, ‘Dhaka, Bangladesh’, 300),
(‘BDH107’, ‘Uttara Crescent Hospital Limited’, ‘Dhaka, Bangladesh’, 230),
(‘BDH108’, ‘Uttara Modern Hospital Ltd.’, ‘Dhaka, Bangladesh’, 280),
(‘BDH109’, ‘Womens Medical College Hospital’, ‘Dhaka, Bangladesh’, 250),
(‘BDH110’, ‘Z.H. Sikder Womens Medical College Hospital’, ‘Dhaka, Bangladesh’, 210);

Query for showing all the data from hospital table:

```
SELECT * FROM medilink.hospital;
```

The screenshot shows the MySQL Workbench interface. At the top, there is a command line with the query: `1 • SELECT * FROM medilink.hospital;`. Below the command line is a results grid titled "Result Grid". The grid has four columns: "Id", "HospitalName", "Location", and "NumberOfDoctor". The data consists of 17 rows, each representing a hospital with its ID, name, location, and number of doctors.

	Id	HospitalName	Location	NumberOfDoctor
▶	BDH001	Dhaka Medical College Hospital	Dhaka, Bangladesh	500
	BDH002	Bangabandhu Sheikh Mujib Medical University H...	Dhaka, Bangladesh	600
	BDH003	Apollo Hospitals Dhaka	Dhaka, Bangladesh	300
	BDH004	Square Hospitals Limited	Dhaka, Bangladesh	400
	BDH005	Labaid Hospital	Dhaka, Bangladesh	350
	BDH006	Chittagong Medical College Hospital	Chittagong, Bangladesh	450
	BDH007	Combined Military Hospital (CMH)	Dhaka, Bangladesh	250
	BDH008	Ibn Sina Hospital	Dhaka, Bangladesh	320
	BDH009	Bangladesh Eye Hospital	Dhaka, Bangladesh	200
	BDH010	Bangladesh Specialized Hospital	Dhaka, Bangladesh	280
	BDH011	Holy Family Red Crescent Medical College Hospital	Dhaka, Bangladesh	270
	BDH012	National Institute of Cardiovascular Diseases (N...	Dhaka, Bangladesh	320
	BDH013	Shaheed Suhrawardy Medical College Hospital	Dhaka, Bangladesh	280
	BDH014	Bangladesh Medical College Hospital	Dhaka, Bangladesh	230
	BDH015	Sir Salimullah Medical College and Mitford Hospital	Dhaka, Bangladesh	260
	BDH016	Anwer Khan Modern Hospital	Dhaka, Bangladesh	180
	BDH017	Rannladesh Institute of Research and Rehabilit...	Dhaka, Rannladesh	310

Figure 8: Showing The Hospital Table All Data

Sample data input from Symptoms:

```
INSERT INTO Symptoms (Disease, Symptom, Required_Medicine, TreatedBy)

VALUES

('Heart Disease', 'Chest Pain', 'Aspirin', 'Cardiology'),

('Heart Disease', 'Shortness of breath', 'Nitroglycerin', 'Cardiology'),

('Heart Disease', 'Irregular heartbeat', 'Beta blockers', 'Cardiology'),

('Diabetes', 'Frequent urination', 'Insulin', 'Endocrinology'),

('Diabetes', 'Increased thirst', 'Metformin', 'Endocrinology'),

('Diabetes', 'Blurred vision', 'Glyburide', 'Endocrinology'),

('Asthma', 'Shortness of breath', 'Albuterol', 'Pulmonology'),
```

```
('Asthma', 'Wheezing', 'Steroid inhaler', 'Pulmonology'),  

('Asthma', 'Coughing', 'Leukotriene modifiers', 'Pulmonology'),  

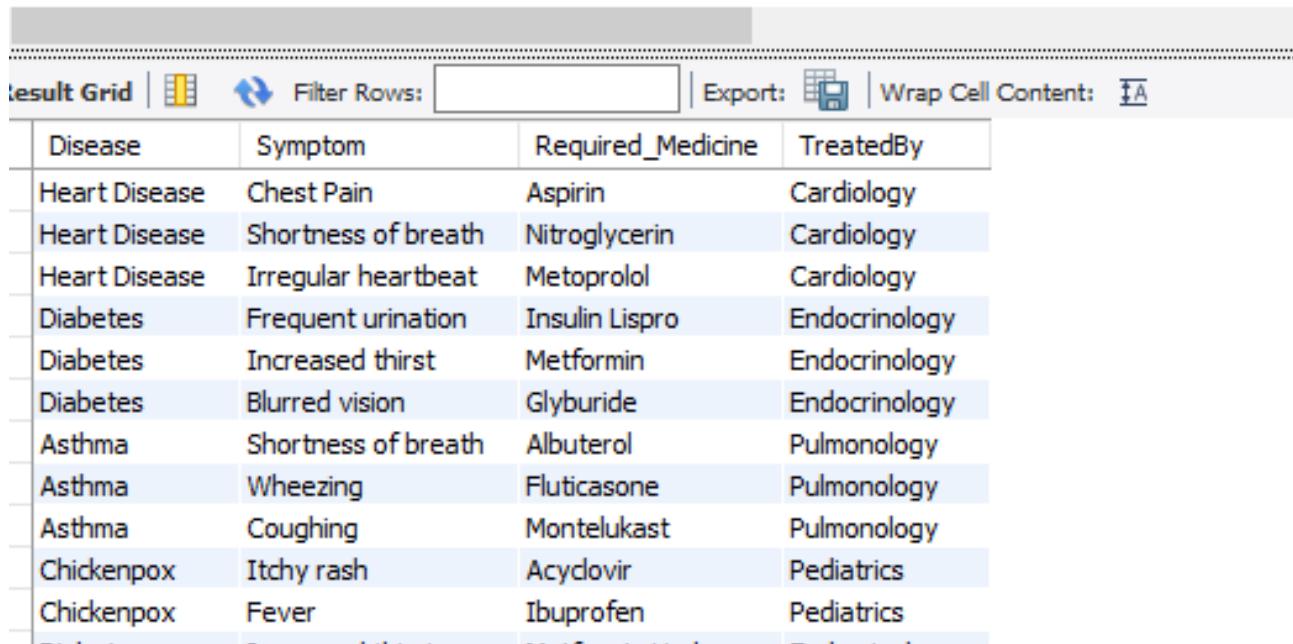
('Chickenpox', 'Itchy rash', 'Acyclovir', 'Pediatrics'),  

('Chickenpox', 'Fever', 'Ibuprofen', 'Pediatrics');
```

Query for showing all the data from Symptoms table:

```
SELECT * FROM medilink.Symptoms;
```

1 • **SELECT * FROM medilink.symptoms;**



The screenshot shows a MySQL Workbench result grid with the following data:

Disease	Symptom	Required_Medicine	TreatedBy
Heart Disease	Chest Pain	Aspirin	Cardiology
Heart Disease	Shortness of breath	Nitroglycerin	Cardiology
Heart Disease	Irregular heartbeat	Metoprolol	Cardiology
Diabetes	Frequent urination	Insulin Lispro	Endocrinology
Diabetes	Increased thirst	Metformin	Endocrinology
Diabetes	Blurred vision	Glyburide	Endocrinology
Asthma	Shortness of breath	Albuterol	Pulmonology
Asthma	Wheezing	Fluticasone	Pulmonology
Asthma	Coughing	Montelukast	Pulmonology
Chickenpox	Itchy rash	Acyclovir	Pediatrics
Chickenpox	Fever	Ibuprofen	Pediatrics

Figure 9: Showing The Symptoms Table All Data

Sample data input from Medicine:

```
INSERT INTO medicine (MedID, MedType, Medname, mPrice)  

VALUES  

('MD001', 'Aspirin', 'Aspidol', '50'),  

('MD002', 'Nitroglycerin', 'Nitrostat', '60'),
```

('MD003', 'Metoprolol', 'Lopressor', '70'),
('MD004', 'Insulin Lispro', 'Humalog', '80'),
('MD005', 'Metformin', 'Glucophage', '45'),
('MD006', 'Glyburide', 'Diabeta', '55'),
('MD007', 'Albuterol', 'ProAir HFA', '40'),
('MD008', 'Fluticasone', 'Flonase', '65'),
('MD009', 'Montelukast', 'Singulair', '70'),
('MD010', 'Acyclovir', 'Zovirax', '50'),
('MD011', 'Ibuprofen', 'Advil', '35'),
('MD012', 'Metformin Hydrochloride', 'Glucophage XR', '60'),
('MD013', 'Fluticasone Propionate', 'Flovent', '75'),
('MD014', 'Montelukast Sodium', 'Singulair', '80'),
('MD015', 'Lisinopril', 'Zestril', '70'),
('MD016', 'Amlodipine', 'Norvasc', '65'),
('MD017', 'Hydrochlorothiazide', 'Microzide', '55'),
('MD018', 'Methotrexate', 'Trexall', '90'),
('MD019', 'Prednisone', 'Deltasone', '45'),
('MD020', 'Sumatriptan', 'Imitrex', '75'),
('MD021', 'Ondansetron', 'Zofran', '70'),
('MD022', 'Propranolol', 'Inderal', '65'),
('MD023', 'Azithromycin', 'Zithromax', '80'),
('MD024', 'Acetaminophen', 'Tylenol', '40'),

```
('MD025', 'Oxygen therapy', 'Oxygen therapy', '120'),  
('MD026', 'Fluoxetine', 'Prozac', '70');
```

Query for showing all the data from Medicine table:

```
SELECT * FROM medilink.medicine;
```

```
1 •  SELECT * FROM medilink.medicine;
```

	MedID	MedType	MedName	mPrice
▶	MD001	Aspirin	Aspidol	50
	MD002	Nitroglycerin	Nitrostat	60
	MD003	Metoprolol	Lopressor	70
	MD004	Insulin Lispro	Humalog	80
	MD005	Metformin	Glucophage	45
	MD006	Glyburide	Diabeta	55
	MD007	Albuterol	ProAir HFA	40
	MD008	Fluticasone	Flonase	65
	MD009	Montelukast	Singulair	70
	MD010	Aцикловир	Zovirax	50
	MD011	Ibuprofen	Advil	35
	MD012	Metformin Hydrochloride	Glucophage XR	60
	MD013	Fluticasone Propionate	Flovent	75
	MD014	Montelukast Sodium	Singulair	80
	MD015	Lisinopril	Zestril	70
	MD016	Amlodipine	Norvasc	65
	MD017	Hydrochlorothiazide	Microzide	55

Figure 10: Showing The Medicine Table All Data

Sample data input from Medicine availability:

```
INSERT INTO medicine availability (PharmID, MedID, Quantity)
```

```
VALUES
```

```
('PH001', 'MD100', 30),
```

```
('PH001', 'MD101', 40),
```

```
('PH001', 'MD102', 25),
```

```
('PH001', 'MD103', 35),
```

```
('PH001', 'MD104', 45),
```

```
('PH001', 'MD105', 20),
```

```
('PH001', 'MD106', 50),  
('PH001', 'MD107', 30),  
('PH001', 'MD108', 40),  
('PH001', 'MD109', 35),  
('PH001', 'MD110', 45),  
('PH001', 'MD111', 25),  
('PH001', 'MD112', 30),  
('PH001', 'MD113', 40),  
('PH001', 'MD114', 35),  
('PH001', 'MD115', 20);
```

Query for showing all the data from Medicine availability table:

```
SELECT * FROM medilink.medicineavailability;
```

1 • **SELECT * FROM medilink.medicine_availability;**

The screenshot shows a database query results grid titled "Result Grid". The query executed was "SELECT * FROM medilink.medicine_availability;". The results are displayed in a table with columns: PharmID, MedID, and Quantity. The data consists of 10 rows, each representing a different medicine availability entry for a specific pharmacy ID (PH001).

	PharmID	MedID	Quantity
▶	PH001	MD100	30
	PH001	MD101	40
	PH001	MD102	25
	PH001	MD103	35
	PH001	MD104	45
	PH001	MD105	20
	PH001	MD106	50
	PH001	MD107	30
	PH001	MD108	40
	PH001	MD109	35
▼			
▼			

Figure 11: Showing The Medicine Availability Table All Data

Sample data input from Pharmacy:

```
INSERT INTO 'pharmacy' ('PharmID', 'HospID', 'Location', 'Open')
VALUES

('PH001', 'BDH001', 'Dhaka, Bangladesh', '9 am - 10 pm'),  

('PH002', 'BDH002', 'Dhaka, Bangladesh', '10 am - 9 pm'),  

('PH003', 'BDH003', 'Dhaka, Bangladesh', '8 am - 11 pm'),  

('PH004', 'BDH004', 'Dhaka, Bangladesh', '10:30 am - 8:30 pm'),  

('PH005', 'BDH005', 'Dhaka, Bangladesh', '9:30 am - 9:30 pm'),  

('PH006', 'BDH006', 'Chittagong, Bangladesh', '9 am - 10 pm'),  

('PH007', 'BDH007', 'Dhaka, Bangladesh', '9 am - 9 pm'),  

('PH008', 'BDH008', 'Dhaka, Bangladesh', '10 am - 8 pm'),  

('PH009', 'BDH009', 'Dhaka, Bangladesh', '8:30 am - 10:30 pm'),  

('PH010', 'BDH010', 'Dhaka, Bangladesh', '9:30 am - 9:30 pm'),
```

```
('PH011', 'BDH011', 'Dhaka, Bangladesh', '10 am - 9 pm'),  

('PH012', 'BDH012', 'Dhaka, Bangladesh', '9 am - 10 pm'),  

('PH013', 'BDH013', 'Dhaka, Bangladesh', '10:30 am - 8:30 pm'),  

('PH014', 'BDH014', 'Dhaka, Bangladesh', '9:30 am - 9:30 pm'),  

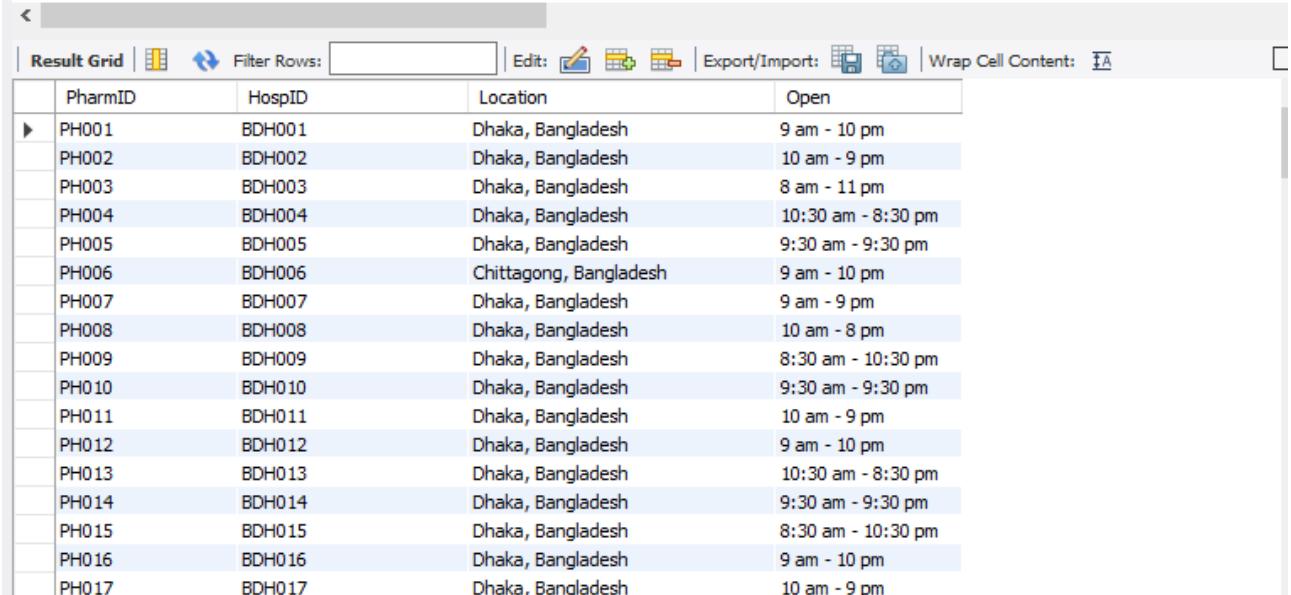
('PH015', 'BDH015', 'Dhaka, Bangladesh', '8:30 am - 10:30 pm'),  

('PH016', 'BDH016', 'Dhaka, Bangladesh', '9 am - 10 pm');
```

Query for showing all the data from Pharmacy table:

```
SELECT * FROM medilink.Patients;
```

```
1 • SELECT * FROM medilink.pharmacy;
```



The screenshot shows a database query results grid titled "Result Grid". The grid displays data from the "pharmacy" table. The columns are labeled "PharmID", "HospID", "Location", and "Open". The data consists of 17 rows, each representing a different pharmacy location with its ID, hospital ID, location, and operating hours.

	PharmID	HospID	Location	Open
▶	PH001	BDH001	Dhaka, Bangladesh	9 am - 10 pm
	PH002	BDH002	Dhaka, Bangladesh	10 am - 9 pm
	PH003	BDH003	Dhaka, Bangladesh	8 am - 11 pm
	PH004	BDH004	Dhaka, Bangladesh	10:30 am - 8:30 pm
	PH005	BDH005	Dhaka, Bangladesh	9:30 am - 9:30 pm
	PH006	BDH006	Chittagong, Bangladesh	9 am - 10 pm
	PH007	BDH007	Dhaka, Bangladesh	9 am - 9 pm
	PH008	BDH008	Dhaka, Bangladesh	10 am - 8 pm
	PH009	BDH009	Dhaka, Bangladesh	8:30 am - 10:30 pm
	PH010	BDH010	Dhaka, Bangladesh	9:30 am - 9:30 pm
	PH011	BDH011	Dhaka, Bangladesh	10 am - 9 pm
	PH012	BDH012	Dhaka, Bangladesh	9 am - 10 pm
	PH013	BDH013	Dhaka, Bangladesh	10:30 am - 8:30 pm
	PH014	BDH014	Dhaka, Bangladesh	9:30 am - 9:30 pm
	PH015	BDH015	Dhaka, Bangladesh	8:30 am - 10:30 pm
	PH016	BDH016	Dhaka, Bangladesh	9 am - 10 pm
	PH017	BDH017	Dhaka, Bangladesh	10 am - 9 pm

Figure 12: Showing The Patients Table All Data

Sample data input from Patients:

```
INSERT INTO Patient (P_id, P_name, P_age, P_gender, P_address, P_bloodGroup,
Prescription_Id)
VALUES
("P001", "Jack Smith", '23', 'M', '1016/A, Khilgaon, Dhaka', 'O-', 'Pr001'),
```

```

("P002", "Emily Johnson", '35', 'F', '1234/B, Gulshan, Dhaka', 'A+', 'Pr002'),  

("P003", "Michael Williams", '45', 'M', '5678/C, Dhanmondi, Dhaka', 'B-',  

 'Pr003'),  

("P004", "Sophia Brown", '30', 'F', '9876/D, Banani, Dhaka', 'AB+', 'Pr004'),  

("P005", "William Jones", '28', 'M', '5432/E, Uttara, Dhaka', 'O+', 'Pr005'),  

("P006", "Olivia Wilson", '29', 'F', '2468/F, Mirpur, Dhaka', 'A-', 'Pr006'),  

("P007", "Liam Taylor", '31', 'M', '1357/G, Mohakhali, Dhaka', 'B+', 'Pr007'),  

("P008", "Emma Anderson", '27', 'F', '8642/H, Baridhara, Dhaka', 'AB-',  

 'Pr008'),  

("P009", "Noah Martinez", '40', 'M', '9753/I, Khilkhet, Dhaka', 'O-', 'Pr009'),  

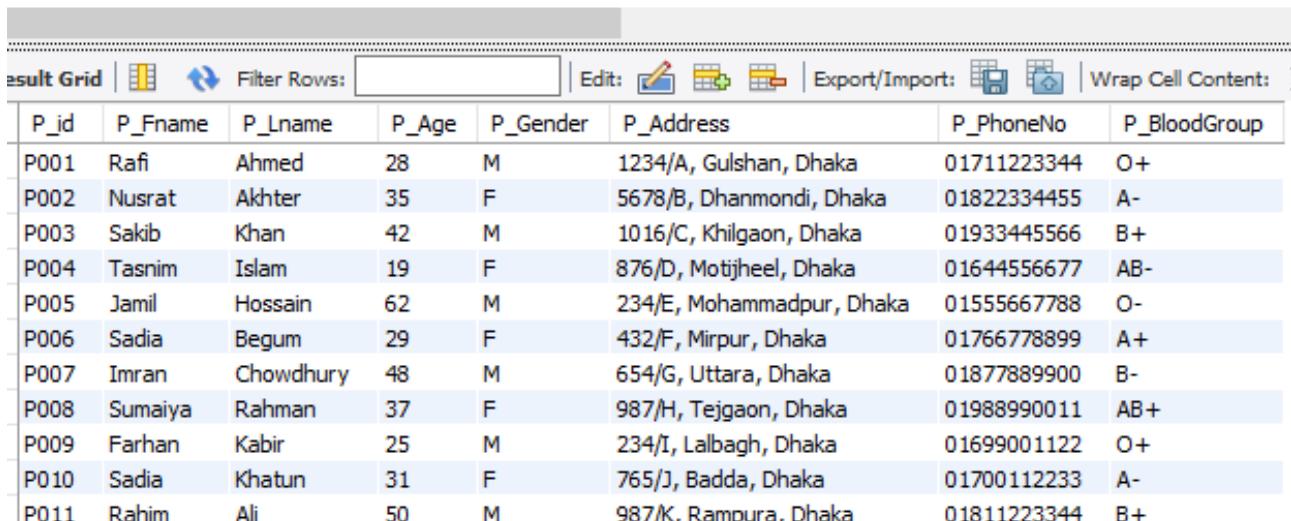
("P010", "Ava Brown", '33', 'F', '6429/J, Pallabi, Dhaka', 'A+', 'Pr010'),

```

Query for showing all the data from Patients table:

```
SELECT * FROM medilink.patients;
```

1 • **SELECT * FROM medilink.patients;**



P_id	P_Fname	P_Lname	P_Age	P_Gender	P_Address	P_PhoneNo	P_BloodGroup
P001	Rafi	Ahmed	28	M	1234/A, Gulshan, Dhaka	01711223344	O+
P002	Nusrat	Akhter	35	F	5678/B, Dhammondi, Dhaka	01822334455	A-
P003	Sakib	Khan	42	M	1016/C, Khilgaon, Dhaka	01933445566	B+
P004	Tasnim	Islam	19	F	876/D, Motijheel, Dhaka	01644556677	AB-
P005	Jamil	Hossain	62	M	234/E, Mohammadpur, Dhaka	01555667788	O-
P006	Sadia	Begum	29	F	432/F, Mirpur, Dhaka	01766778899	A+
P007	Imran	Chowdhury	48	M	654/G, Uttara, Dhaka	01877889900	B-
P008	Sumaiya	Rahman	37	F	987/H, Tejgaon, Dhaka	01988990011	AB+
P009	Farhan	Kabir	25	M	234/I, Lalbagh, Dhaka	01699001122	O+
P010	Sadia	Khatun	31	F	765/J, Badda, Dhaka	01700112233	A-
P011	Rahim	Ali	50	M	987/K, Rampura, Dhaka	01811223344	B+

Figure 13: Showing The Patients Table All Data

Sample data input from blood donor:

```
INSERT INTO Blood Donor
```

```
(BlDo_Id, fName, lname, Age, Gender, BloodGroup, Address,
PhoneNo, LastDonated) VALUES

("BlDo001", "Arefin", "Amin", 23, 'M', 'O-', '1016/A, Khilgaon, Dhaka',
'01566998877', '2023-04-15'),

("BlDo002", "Fatema", "Elma", 35, 'F', 'O+', '47/B, Gulshan, Dhaka',
'01777889900', '2022-12-28'),

("BlDo003", "Iszaz", "Rafid", 45, 'M', 'B+', '392/C, Dhanmondi, Dhaka',
'01688990011', '2023-01-10'),

("BlDo004", "Sabbir", "Hossain", 13, 'M', 'A+', '655/Tilpapra, Dhaka',
'01899001122', '2023-02-05'),

("BlDo005", "Nazia", "Khanom", 27, 'F', 'AB-', '109/KK, Sabujbagh, Dhaka',
'01555667788', '2023-03-20'),

("BlDo006", "Rahim", "Ali", 50, 'M', 'O-', '876/KS, New Market, Dhaka',
'01666778899', '2023-04-18'),

("BlDo007", "Shabnam", "Jahan", 31, 'F', 'B-', '432/KR, Sabujbagh, Dhaka',
'01777889900', '2023-05-01'),

("BlDo008", "Imran", "Chowdhury", 22, 'M', 'A+', '109/KQ, Kalbaga, Dhaka',
'01988990011', '2023-06-24'),

("BlDo009", "Tasnim", "Islam", 38, 'F', 'O+', '876/KP, Pallabi, Dhaka',
'01599001122', '2023-07-10'),

("BlDo010", "Rahat", "Kabir", 29, 'M', 'AB+', '432/KO, Chawkbazar, Dhaka',
'01811223344', '2023-08-05'),
```

Query for showing all the data from blood donor table:

```
SELECT * FROM medilink.blood donor;
```

```
1 •  SELECT * FROM medilink.blood_donor;
```

BlDo_Id	fName	Iname	Age	Gender	BloodGroup	Address	PhoneNo	LastDonated
BlDo001	Arefin	Amin	23	M	O-	1016/A, Khilgaon, Dhaka	1566998877	2023-04-15
BlDo002	Fatema	Elma	35	F	O+	47/B, Gulshan, Dhaka	1777889900	2022-12-28
BlDo003	Iszaz	Rafid	45	M	B+	392/C, Dhanmondi, Dhaka	1688990011	2023-01-10
BlDo004	Sabbir	Hossain	13	M	A+	655/Tilpapra, Dhaka	1899001122	2023-02-05
BlDo005	Nazia	Khanom	27	F	AB-	109/KK, Sabujbagh, Dhaka	1555667788	2023-03-20
BlDo006	Rahim	Ali	50	M	O-	876/KS, New Market, Dhaka	1666778899	2023-04-18
BlDo007	Shabnam	Jahan	31	F	B-	432/KR, Sabujbagh, Dhaka	1777889900	2023-05-01
BlDo008	Imran	Chowdhury	22	M	A+	109/KQ, Kalabagan, Dhaka	1988990011	2023-06-24
BlDo009	Tasnim	Islam	38	F	O+	876/KP, Pallabi, Dhaka	1599001122	2023-07-10
BlDo010	Rahat	Kabir	29	M	AB+	432/KO, Chawkbazar, Dhaka	1811223344	2023-08-05
BlDo011	Anika	Haque	41	F	A-	109/KM, Badda, Dhaka	1622334455	2023-09-15
BlDo012	Farhan	Palman	26	M	O+	876/KL, Ramna, Dhaka	1777889900	2023-10-20

Figure 14: Showing The blood donor Table All Data

Sample data input from consultation:

```
INSERT INTO consultation
```

Query for showing all the data from consultation table:

```
INSERT INTO Consultation (DoctorID, PatientID, Consultation_time, Disease)
VALUES

("D045", "P267", '10:00', 'Chickenpox'),

("D200", "P004", '08:00', 'Gastritis'),

("D134", "P124", '22:30', 'Hepatitis'),

("D065", "P345", '18:45', 'Gastric Ulcer'),

("D099", "P021", '14:15', 'Anxiety'),

("D176", "P197", '09:30', 'Arthritis'),

("D087", "P111", '17:20', 'Depression'),

("D029", "P396", '20:10', 'Eczema'),

("D051", "P250", '16:40', 'Hypertension'),

("D103", "P072", '11:50', 'Influenza'),
```

```
("D148", "P388", '13:25', 'Lupus'),
```

1 • **SELECT * FROM medilink.consultation;**

The screenshot shows the MySQL Workbench interface with the results of a query. The results are displayed in a grid format with the following columns: DoctorID, PatientID, Consultation_time, and Disease. The data consists of 12 rows, each representing a consultation entry.

DoctorID	PatientID	Consultation_time	Disease
D045	P267	10:00	Chickenpox
D200	P004	08:00	Gastritis
D134	P124	22:30	Hepatitis
D065	P345	18:45	Gastric Ulcer
D099	P021	14:15	Anxiety
D176	P197	09:30	Arthritis
D087	P111	17:20	Depression
D029	P396	20:10	Eczema
D051	P250	16:40	Hypertension
D103	P072	11:50	Influenza
D148	P388	13:25	Lupus
.....

Figure 15: Showing The consultation Table All Data

6.2 Data Manipulation

Query - 1 [Identifying disease]:

```
use medilink;

SELECT Disease,
       COUNT(*) AS matches

FROM symptoms
WHERE
symptom="Pale skin"
OR symptom="Shortness of breath"
OR symptom="Fatigue"
OR symptom="Pale skin"
OR symptom="Shortness of breath"

GROUP BY Disease

ORDER BY matches DESC
LIMIT 1;
```

```

1 • use medilink;
2     SELECT Disease, COUNT(*) AS matches
3         FROM symptoms where
4             symptom="Pale skin"
5         or symptom="Shortness of breath"
6         or symptom="Fatigue"
7         or symptom="Pale skin"
8         or symptom="Shortness of breath"
9             GROUP BY Disease
10            ORDER BY matches DESC
11            LIMIT 1;

```

Result Grid				Filter Rows:	<input type="text"/>	Export
	Disease	matches				
▶	Anemia	6				

Figure 16: For Identifying Disease

Query - 2 [finding doctor and hospital suited to patient disease]:

```

use medilink;

select Dname,Hospitalname,Location,certificates,ConsultantionHours,visit
from doctor full join hospital on(Hospitalid=Id) and Specialization=any(select
TreatedBy from symptoms where Disease="Anemia");

```

The screenshot shows a database interface with a toolbar at the top containing various icons for file operations, search, and export. A menu item 'Limit to 1000 rows' is visible. Below the toolbar, a code editor displays the following SQL query:

```

1  use medilink;
2  •  select Dname,Hospitalname,Location,certificates,ConsultantHours,
3    visit from doctor full join hospital on(Hospitalid=Id) and
4      Specialization=any(select TreatedBy from symptoms where Disease="Anemia");

```

Below the query is a result grid titled 'Result Grid'. The grid has columns: Dname, Hospitalname, Location, certificates, ConsultantHours, and visit. The data is as follows:

	Dname	Hospitalname	Location	certificates	ConsultantHours	visit
▶	Dr. Samira Islam	Square Hospitals Limited	Dhaka, Bangladesh	MD	9 AM - 1 PM	500
	Dr. Imran Hassan	Women's Medical College Hospital	Dhaka, Bangladesh	MD	10 AM - 3 PM	600
	Dr. Khalid Hassan	Dhaka Hospital	Dhaka, Bangladesh	MS	11 AM - 2 PM	550
	Dr. Farhan Islam	Islami Bank Hospital Mirpur	Dhaka, Bangladesh	MD	10 AM - 3 PM	600
	Dr. Salma Khan	Rangpur General Hospital	Rangpur, Bangladesh	MD	8 AM - 1 PM	600
	Dr. Naima Khan	Cantonment Public School and College	Chattogram, Bangladesh	MD	8 AM - 1 PM	600
	Dr. Imran Akhtar	Uttara Adhunik Medical College Hospital	Dhaka, Bangladesh	MS	11 AM - 2 PM	550
	Dr. Fatima Islam	National Institute of Cardiovascular Diseases (N...	Dhaka, Bangladesh	MD	10 AM - 3 PM	600
	Dr. Samira Islam	Square Hospitals Ltd, Panthapath	Dhaka, Bangladesh	MD	10 AM - 3 PM	600
	Dr. Imran Hassan	Kurmitola General Hospital	Dhaka, Bangladesh	MD	8 AM - 1 PM	600
	Dr. Aamir Rahman	Max Hospital Chittagong	Chittagong, Bangladesh	MD	11 AM - 2 PM	550
	Dr. Sara Khan	Shahabuddin Medical College & Hospital	Dhaka, Bangladesh	MD	10 AM - 3 PM	600
	Dr. Imran Islam	Uttara Modern Hospital Ltd.	Dhaka, Bangladesh	MD	8 AM - 1 PM	600
	Dr. Rukhsana Ha...	Niramoy Polyclinic	Dhaka, Bangladesh	MD	11 AM - 2 PM	550
	Dr. Farhan Akhtar	Niramoy Polyclinic	Dhaka, Bangladesh	MD	10 AM - 3 PM	600
	Dr. Ayesha Rah...	National Institute of Cardiovascular Diseases (N...	Dhaka, Bangladesh	MD	8 AM - 12 PM	550

Figure 17: For finding doctors

Query - 3 [finding Medicine according to disease and where the medicine can be found throughout the country]:

```

use medilink;
select m.MedName,m.mPrice,p.location,h.HospitalName as
  Pharmacy_Location,ma.Quantity
FROM medicine m left join medicine_availability ma
on(ma.MedID=m.MedID) left join pharmacy p on (p.PharmID=ma.PharmID)

left join hospital h on(h.Id=p.HospID) where medtype=
any(select Required_Medicine from symptoms where Disease='Anemia') and
ma.quantity is not null;

```

```

1 •  use `medilink`;
2 •  SELECT m.MedName,m.mPrice,p.location,h.HospitalName as Pharmacy_Location,ma.Quantity
3   FROM medicine m left join medicine_availability ma on(ma.MedID=m.MedID)
4   left join pharmacy p on (p.PharmID=ma.PharmID) left join hospital h on(h.Id=p.HospID)
5   where medtype=any(select Required_Medicine from symptoms where Disease='Anemia') and ma.quantity is not null;
6

```

Result Grid					
	MedName	mPrice	location	Pharmacy_Location	Quantity
▶	Fer-In-Sol	30	Dhaka, Bangladesh	Dhaka Medical College Hospital	30
	Fer-In-Sol	30	Dhaka, Bangladesh	Bangabandhu Sheikh Mujib Medical University H...	45
	Fer-In-Sol	30	Dhaka, Bangladesh	Square Hospitals Limited	13
	Fer-In-Sol	30	Dhaka, Bangladesh	Shahheed Suhrawardy Medical College Hospital	12
	Fer-In-Sol	30	Dhaka, Bangladesh	National Institute of Traumatology & Orthopedi...	15
	Fer-In-Sol	30	Dhaka, Bangladesh	Green Life Medical College & Hospital	17
	Fer-In-Sol	30	Dhaka, Bangladesh	International Medical College Hospital	18
	Fer-In-Sol	30	Dhaka, Bangladesh	Monowara Hospital Pvt. Ltd.	19
	Fer-In-Sol	30	Dhaka, Bangladesh	Ahsania Mission General Hospital	12
	Fer-In-Sol	30	Dhaka, Bangladesh	Prime General Hospital	16
	Fer-In-Sol	30	Dhaka, Bangladesh	Samorita Hospital Ltd.	17
	Fer-In-Sol	30	Rajshahi, Bangl...	Barind Medical College Hospital	18
	Fer-In-Sol	30	Dhaka, Bangladesh	Bangladesh ENT Hospital Ltd.	19
	Fer-In-Sol	30	Chittagong, Bangl...	Max Hospital Chittagong	12
	Fer-In-Sol	30	Rangpur, Bangl...	Rangpur Metropolitan Hospital	16
	Fer-In-Sol	30	Dhaka, Bangladesh	Uttara Central Hospital Limited	17

Figure 18: For finding medicine

Query - 4 [finding Prescriptions prescribed to Patient]:

```

SELECT p.p_id AS patientId,
       CONCAT(p.p_fname, ' ', p.p_lname) AS patientname,
       d.Did AS doctorId,
       d.Dname,
       pr.MD_content
FROM prescription pr
LEFT JOIN doctor d ON pr.D_id = d.did
LEFT JOIN patients p ON pr.P_id = p.P_id
WHERE p.P_id = "P038"
GROUP BY d.did, pr.MD_content;

```

```

1 •   SELECT p.p_id AS patientId,
2           CONCAT(p.p_fname, ' ', p.p_lname) AS patientnam
3           d.Did AS doctorId,
4           d.Dname,
5           pr.MD_content
6   FROM prescription pr
7   LEFT JOIN doctor d ON pr.D_id = d.did
8   LEFT JOIN patients p ON pr.P_id = p.P_id
9   WHERE p.P_id = "P038"
10  GROUP BY d.did, pr.MD_content;
11

```

Result Grid					
	patientId	patientname	doctorId	Dname	MD_content
	P038	Nadia Rahman	D038	Dr. Nafisa Akter	Advil
	P038	Nadia Rahman	D038	Dr. Nafisa Akter	Deltasone
	P038	Nadia Rahman	D038	Dr. Nafisa Akter	CellCept
	P038	Nadia Rahman	D091	Dr. Abdul Rahman	Advil
▶	P038	Nadia Rahman	D091	Dr. Abdul Rahman	Cipro
	P038	Nadia Rahman	D091	Dr. Abdul Rahman	Sudafed
	P038	Nadia Rahman	D110	Dr. Shabnam Sultana	Advil
	P038	Nadia Rahman	D110	Dr. Shabnam Sultana	Cipro
	P038	Nadia Rahman	D110	Dr. Shabnam Sultana	Sudafed
	P038	Nadia Rahman	D116	Dr. Rima Rahman	Advil
	P038	Nadia Rahman	D116	Dr. Rima Rahman	Cipro
	P038	Nadia Rahman	D116	Dr. Rima Rahman	Sudafed
	P038	Nadia Rahman	D122	Dr. Farzana Rahman	Advil
	P038	Nadia Rahman	D122	Dr. Farzana Rahman	Cipro
	P038	Nadia Rahman	D122	Dr. Farzana Rahman	Sudafed
	P038	Nadia Rahman	D128	Dr. Nazma Rahman	Advil
	P038	Nadia Rahman	D128	Dr. Nazma Rahman	Cipro

Figure 19: For finding prescriptions

Query - 5 [Seeing doctors and their reviews per patient]:

```
USE medilink;
SELECT d.dname,COUNT(r.review) AS total_reviews, AVG(r.rating) AS
    average_rating, GROUP_CONCAT(r.review SEPARATOR ';' ) AS reviews,
GROUP_CONCAT(p.P_Fname , ' ',p.P_Lname) as reviewed_by FROM doctor d JOIN
    review r
ON d.did = r.d_id join patients p on(p.P_id=r.P_id) GROUP BY d.dname;
```

```
1 • USE medilink;
2 • SELECT d.dname,COUNT(r.review) AS total_reviews , AVG(r.rating) AS average_rating, GROUP_CONCAT(r.review SEPARATOR ';' )
3 | AS reviews, GROUP_CONCAT(p.P_Fname , ' ',p.P_Lname) as reviewed_by
4 | FROM doctor d JOIN review r ON d.did = r.d_id join patients p on(p.P_id=r.P_id) GROUP BY d.dname;
5
```

Result Grid				
dname	total_reviews	average_rating	reviews	reviewed_by
Dr. Abdul Haque	2	3	Average experience. Doctor seemed competent...	Kamal Chowdhury,Rahim Hossain
Dr. Abdul Rahman	1	5	Fantastic doctor! Really took the time to listen a...	Rahat Khan
Dr. Abul Hassan	1	4	Overall satisfied with the service provided by th...	Tasnim Islam
Dr. Alamgir Hossain	2	3	Below average experience. Doctor didn't seem ...	Sumaiya Rahman,Farhan Kabir
Dr. Ali Ahmed	1	2	Very disappointed with the doctor's attitude. Se...	Reza Ali
Dr. Ali Hassan	1	2	Poor experience. Doctor seemed rushed and di...	Ibrahim Hossain
Dr. Anisur Rahman	1	5	Great experience overall. Doctor was very atte...	Rafiqul Islam
Dr. Anwar Hossain	2	4	The doctor was excellent. Very professional an...	Ibrahim Hossain,Rahat Khan
Dr. Arifur Rahman	2	3	Very disappointed with the doctor's attitude. Se...	Farhan Kabir,Rahim Hossain
Dr. Asadul Haque	1	3	Below average experience. Doctor didn't seem ...	Nadia Haque
Dr. Asma Akhter	3	3.333333333...	Average experience. Doctor seemed competent...	Nusrat Akhter,Rahim Ali,Kamal C...
Dr. Azizul Islam	1	3	Average experience. Doctor seemed competent...	Reza Ali
Dr. Azizur Rahman	2	4	Excellent service! Doctor was thorough and co...	Rahim Hossain,Tahmina Islam
Dr. Farid Hasan	1	4	Overall satisfied with the service provided by th...	Sakib Khan
Dr. Farida Akhter	1	5	Fantastic doctor! Really took the time to listen a...	Nadia Rahman
Dr. Farida Khanam	1	5	Great doctor! Very compassionate and knowled...	Sadia Khatur
Dr. Farzana Benum	1	5	Great doctor! Very compassionate and knowled...	Imran Chowdhury

Figure 20: For looking at doctors and their reviews**Query - 6 [All the blood donor for a Specific Patient]:**

```
USE medilink;
select bd.fname, bd.phoneNo, bd.lastDonated, bd.BloodGroup
from blood_donor bd
join patients p on bd.BloodGroup = p.P_BloodGroup and p.P_id = "P333"
order by bd.lastDonated asc
```

```

1 •  select bd.fname, bd.phoneNo, bd.lastDonated, bd.BloodGroup
2   from blood_donor bd
3   join patients p on bd.BloodGroup = p.P_BloodGroup and p.P_id = "P333"
4   order by bd.lastDonated asc

```

The screenshot shows a MySQL Workbench interface with a result grid. The grid has columns: fname, phoneNo, lastDonated, and BloodGroup. The data consists of 12 rows, each representing a donor with their name, phone number, last donation date, and blood group. All donors listed have O- blood type.

	fname	phoneNo	lastDonated	BloodGroup
▶	Arefin	1566998877	2020-04-15	O-
	Rahim	1677889900	2020-06-01	O-
	Nazia	1955667788	2021-07-06	O-
	Nazia	1511223344	2021-07-06	O-
	Sadia	1944556677	2021-11-11	O-
	Rahim	1666778899	2022-04-18	O-
	Rahim	1722334455	2022-04-21	O-
	Rahat	1566778899	2022-12-01	O-
	Rahat	1511223344	2022-12-01	O-
	Rahat	1900112233	2022-12-01	O-
	Nusrat	1911223344	2023-05-25	O-

Figure 21: For finding Blood Donor**Query -7 [All delivery tracking for a Specific Patient]:**

```

SELECT d.de_id, d.de_content, d.de_status
FROM delivery d
JOIN patients p ON d.P_id = p.P_id
WHERE p.P_id = 'P050'
ORDER BY d.de_status;

```

```

1 •  SELECT d.de_id, d.de_content, d.de_status
2   FROM delivery d
3   JOIN patients p ON d.P_id = p.P_id
4   WHERE p.P_id = 'P040'
5   ORDER BY d.de_status;
6

```

The screenshot shows a MySQL Workbench interface with a result grid. The grid has columns: de_id, de_content, and de_status. The data consists of 3 rows, each representing a delivery with its ID, content details, and status. The first two deliveries are marked as 'Delivered', while the third is marked as 'Pending'.

	de_id	de_content	de_status
▶	De040	1. CellCept (20 pcs), 2. Trabeculectomy (10 pcs), 3. Prilosec (30 pcs)	Delivered
	De112	1. Normal Saline (20 pcs), 2. Advil (10 pcs), 3. Deltasone (30 pcs)	Delivered
	De038	1. Deltasone (20 pcs), 2. Advil (10 pcs), 3. Zofran (30 pcs)	Pending

Figure 22: Tracking The delivery

Query 8 - [Finding all the specialized doctor in a specific area]:

```

SELECT d.dname, d.Certificates, d.ConsultantionHours, d.Visit, h.HospitalName
from doctor d
join hospital h on d.HospitalID = h.ID
where d.Specialization ='Cardiology' and h.city ='Dhaka' and h.area='Dhanmondi'

```

```

1 •  SELECT d.dname, d.Certificates, d.ConsultantionHours, d.Visit, h.HospitalName
2   from doctor d
3   join hospital h on d.HospitalID = h.ID
4   where d.Specialization ='Cardiology' and h.city ='Dhaka' and h.area='Dhanmondi'
5

```

The screenshot shows a database query results grid. At the top, there are buttons for 'Result Grid', 'Filter Rows', 'Export', and 'Wrap Cell Content'. The grid has columns: dname, Certificates, ConsultantionHours, Visit, and HospitalName. The data is as follows:

	dname	Certificates	ConsultantionHours	Visit	HospitalName
▶	Dr. Rezaul Hasan	MBBS	11:00 AM - 3:00 PM	720	Metropolitan Medical Centre Ltd.
	Dr. Rezaul Kabir	MBBS	11:00 AM - 3:00 PM	720	Islami Bank Hospital Dhanmondi
	Dr. Sajjad Rahman	MBBS	11:00 AM - 3:00 PM	800	Ahsania Mission General Hospital
	Dr. Rima Akter	MBBS, FCPS	9:00 AM - 12:00 PM	20	Japan Bangladesh Friendship Hospital
	Dr. Arafat Rahman	MBBS, FCPS	9:00 AM - 12:00 PM	20	Bangladesh ENT Hospital Ltd.
	Dr. Manirul Islam	MBBS, FCPS	9:00 AM - 12:00 PM	20	Bangladesh ENT Hospital Ltd.
	Dr. Anwar Hossain	MBBS, FCPS	9:00 AM - 12:00 PM	20	Japan Bangladesh Friendship Hospital
	Dr. Alif Hossain	MBBS, FCPS	9:00 AM - 12:00 PM	20	Bangladesh Medical College Hospital
	Dr. Salma Jahan	MBBS, FCPS	9:00 AM - 12:00 PM	20	Japan Bangladesh Friendship Hospital
	Dr. Arafat Rahman	MBBS, FCPS	9:00 AM - 12:00 PM	20	Anwer Khan Modern Hospital
	Dr. Anwar Hossain	MBBS, FCPS	9:00 AM - 12:00 PM	20	Japan Bangladesh Friendship Hospital
	Dr. Aminul Islam	MD	11:00 AM - 3:00 PM	760	Bangladesh Medical College Hospital

Figure 23: Finding Specialized Doctor in area**Query 9 - Finding Pharmacy in Specific Area within time range]:**

```

SELECT h.HospitalName, p.open as 'Open-Close'
from pharmacy p
join hospital h on p.HospID = h.ID
where h.city ='Dhaka' and h.area='Dhanmondi' and p.open = '9:30 am - 9:30 pm'

```

```

1 •  SELECT h.HospitalName, p.open as 'Open-Close'
2   from pharmacy p
3   join hospital h on p.HospID = h.ID
4   where h.city = 'Dhaka' and h.area='Dhanmondi' and p.open = '9:30 am - 9:30 pm'
5

```

The screenshot shows a database query results grid. At the top, there are buttons for 'Result Grid', 'Filter Rows:', 'Export:', and 'Wrap Cell Content:'. The grid itself has two columns: 'HospitalName' and 'Open-Close'. Four rows of data are listed:

HospitalName	Open-Close
Labaid Hospital	9:30 am - 9:30 pm
Bangladesh Medical College Hospital	9:30 am - 9:30 pm
Green Crescent Hospital	9:30 am - 9:30 pm
Japan Bangladesh Friendship Hospital	9:30 am - 9:30 pm

Figure 24: Finding Pharmacy in area with time range

Query 10 - [Which Medicine is low in stock in which pharmacy]:

```

SELECT *
FROM medicine_availability ma
JOIN pharmacy p ON p.PharmID = ma.PharmID
WHERE quantity < (SELECT AVG(quantity)
FROM medicine_availability)
GROUP BY ma.MedID, ma.PharmID;

```

```

1 •  SELECT *
2   FROM medicine_availability ma
3   JOIN pharmacy p ON p.PharmID = ma.PharmID
4   WHERE quantity < (SELECT AVG(quantity) FROM medicine_availability)
5   GROUP BY ma.MedID, ma.PharmID;
6

```

The screenshot shows a database query results grid. At the top, there are buttons for 'Result Grid' (selected), 'Filter Rows:', 'Export:' (with a CSV icon), and 'Wrap Cell Content:'. The grid has columns: PharmID, MedID, Quantity, PharmID, HospID, and Open. The data is as follows:

	PharmID	MedID	Quantity	PharmID	HospID	Open
▶	PH038	MD100	12	PH038	BDH038	10 am - 8 pm
	PH044	MD100	16	PH044	BDH044	10:30 am - 8:30 pm
	PH051	MD100	17	PH051	BDH051	8:30 am - 10:30 pm
	PH071	MD100	12	PH071	BDH071	10 am - 8 pm
	PH077	MD100	16	PH077	BDH077	10:30 am - 8:30 pm
	PH084	MD100	17	PH084	BDH084	8:30 am - 10:30 pm
	PH104	MD100	12	PH104	BDH104	8:30 am - 10:30 pm
	PH110	MD100	16	PH110	BDH110	9 am - 10 pm
	PH011	MD101	15	PH011	BDH011	10 am - 9 pm
	PH044	MD101	10	PH044	BDH044	10:30 am - 8:30 pm
	PH051	MD101	14	PH051	BDH051	8:30 am - 10:30 pm
	PH058	MD101	15	PH058	BDH058	10 am - 9 pm
	PH064	MD101	13	PH064	BDH064	10 am - 9 pm
	PH077	MD101	10	PH077	BDH077	10:30 am - 8:30 pm
	PH084	MD101	14	PH084	BDH084	8:30 am - 10:30 pm

Figure 25: Which Medicine is low in stock in which pharmacy

Query - 11 [Find the Doctors with review who have more than average rating]:

```

select d.DName,d.Hospitalid,d.certificates,d.specialization,r.review,r.rating
from doctor d inner join review r on(d.Did=r.d_id)
where rating>(select avg(rating)
from review
);

```

```

1 • select d.DName,d.Hospitalid,d.certificates,d.specialization,r.review,r.rating
2   from doctor d  inner join review r on(d.Did=r.d_id)
3   where rating>(select avg(rating) from review );

```

The screenshot shows a database query results grid titled 'Result Grid'. It displays a list of doctors with their names, hospital IDs, certificates, specializations, reviews, and average ratings. The columns are: DName, Hospitalid, certificates, specialization, review, and rating. The 'rating' column shows values such as 5, 4, 5, 4, etc., indicating which doctors have ratings above the average.

	DName	Hospitalid	certificates	specialization	review	rating
▶	Dr. Anisur Rahman	BDH002	MD	Orthopedics	Great experience overall. Doctor was very attentive and helpful.	5
	Dr. Kamal Hossain	BDH011	MD	Neurology	Wait time was too long, but the doctor was knowledgeable and friendly.	4
	Dr. Tamanna Akhter	BDH014	FCPS	Pediatrics	Excellent service. Doctor took time to explain everything thoroughly.	5
	Dr. Jahangir Alam	BDH047	MBBS	Dermatology	Very satisfied with the treatment received. Doctor was caring and professional.	4
	Dr. Rezaul Hasan	BDH057	MBBS	Cardiology	The doctor was fantastic! Really went above and beyond to address my concerns.	5
	Dr. Tareq Rahman	BDH092	MD	Orthopedics	Exceptional service! Doctor was incredibly knowledgeable and caring.	5
	Dr. Tania Begum	BDH022	FCPS	Dermatology	Overall satisfied with the service provided by the doctor.	4
	Dr. Asma Akhter	BDH095	FCPS	Pediatrics	Fantastic doctor! Really took the time to listen and address all my concerns.	5
	Dr. Mamunur Rashid	BDH010	MS	Cardiology	The doctor was excellent. Very professional and knowledgeable.	4
	Dr. Riaz Ahmed	BDH067	MBBS	Orthopedics	Highly recommend this doctor! Very thorough and caring.	5
	Dr. Tasnim Akhter	BDH034	FCPS	Pediatrics	The doctor was friendly and approachable. Made me feel at ease throughout the appointment.	4
	Dr. Nazma Begum	BDH008	MBBS	Dermatology	Great doctor! Very compassionate and knowledgeable.	5
	Dr. Jahangi Alam	BDH065	MBBS	Endocrinology	Satisfactory experience. Doctor was professional and courteous.	4
	Dr. Salma Islam	BDH020	FCPS	Gynecology	The doctor was amazing! Really took the time to explain everything in detail.	5
	Dr. Rabiu Islam	BDH044	MRCP	Endocrinology	Overall satisfied with the treatment received from the doctor.	4
	Dr. Shahidul Islam	BDH061	MRCP	Endocrinology	Great experience! Doctor was very thorough and caring.	5
	Dr. Arifur Rahman	BDH011	MD	Neurology	The doctor was excellent. Very knowledgeable and attentive.	4

Figure 26: which doctors have more than average rating

Query - 12 [List all patients with specific disease]:

```

select *
from patients p
join consultation c on p.p_id = c.PatientID where c.disease ='Atrial
Fibrillation'

```

The screenshot shows a database query results grid titled 'Result Grid'. It displays a list of patients with their names, patient IDs, addresses, phone numbers, blood groups, doctor IDs, consultation times, and diseases. The 'Disease' column shows 'Atrial Fibrillation' for all patients listed.

	P_Id	P_Fname	P_Lname	P_Age	P_Gender	P_Address	P_PhoneNo	P_BloodGroup	DoctorID	PatientID	Consultation_time	Disease
▶	P141	Rahat	Khan	47	M	109/EK, Pallabi, Dhaka	01511223344	O-	D093	P141	16:50	Atrial Fibrillation
	P013	Ibrahim	Hossain	22	M	543/M, Pallabi, Dhaka	01533445566	O-	D020	P013	11:30	Atrial Fibrillation
	P362	Sadia	Begum	41	F	876/MX, Badda, Dhaka	01622334455	A+	D002	P362	11:10	Atrial Fibrillation
	P391	Rafiq	Khan	73	M	432/OA, Rampura, Dhaka	01511223344	B-	D046	P391	20:20	Atrial Fibrillation
	P391	Rafiq	Khan	73	M	432/OA, Rampura, Dhaka	01511223344	B-	D153	P391	08:35	Atrial Fibrillation
	P391	Rafiq	Khan	73	M	432/OA, Rampura, Dhaka	01511223344	B-	D111	P391	22:00	Atrial Fibrillation
	P391	Rafiq	Khan	73	M	432/OA, Rampura, Dhaka	01511223344	B-	D063	P391	22:10	Atrial Fibrillation
	P392	Shahana	Begum	9	F	876/OB, Chawkbazar, Dhaka	01622334455	AB+	D063	P392	22:30	Atrial Fibrillation

Figure 27: List all patients with specific disease

Query 13 - [Which medicine is prescribed how many times]:

```

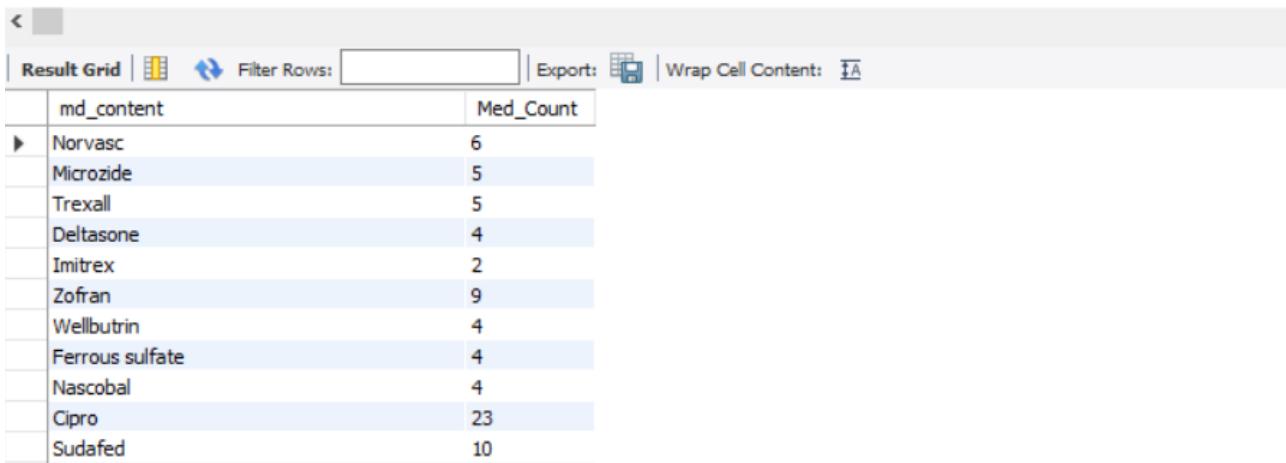
select p.md_content, count(p.md_content) as Med_Count
from prescription p
join consultation c on p.p_id = c.Patientid
group by p.MD_content

```

```

1 • select p.md_content, count(p.md_content) as Med_Count
2   from prescription p
3   join consultation c on p.p_id = c.Patientid
4   group by p.MD_Content

```



The screenshot shows a database query results grid. At the top, there is a toolbar with icons for back, forward, refresh, and other database operations. Below the toolbar, the grid has a header row with columns labeled "md_content" and "Med_Count". The main body of the grid contains 12 rows of data, each representing a different medicine and its count. The data is as follows:

md_content	Med_Count
Norvasc	6
Microzide	5
Trexall	5
Deltasone	4
Imitrex	2
Zofran	9
Wellbutrin	4
Ferrous sulfate	4
Nascobal	4
Cipro	23
Sudafed	10

Figure 28: Which medicine is prescribed how many times

Query 14 - [Currently popular pharmacy in specific Area]:

```

SELECT p.PharmID, COUNT(d.ph_ID) AS 'popularity_count'
FROM pharmacy p
JOIN delivery d ON p.PharmID = d.ph_ID
WHERE p.HospID IN (
    SELECT h.Id
    FROM hospital h
    WHERE h.City = 'Dhaka' AND h.Area = 'Dhanmondi'
)
GROUP BY p.PharmID
ORDER BY COUNT(d.ph_ID) DESC;

```

```

1 •   SELECT p.PharmID, COUNT(d.ph_ID) AS 'popularity_count'
2     FROM pharmacy p
3     JOIN delivery d ON p.PharmID = d.ph_ID
4     WHERE p.HospID IN (
5       SELECT h.Id
6         FROM hospital h
7        WHERE h.City = 'Dhaka' AND h.Area = 'Dhanmondi'
8     )
9     GROUP BY p.PharmID
10    ORDER BY COUNT(d.ph_ID) DESC;
11

```

The screenshot shows a database query results grid. The columns are labeled 'PharmID' and 'popularity_count'. The data rows are:

PharmID	popularity_count
PH078	4
PH079	4
PH023	3
PH086	3
PH109	2
PH062	2
PH005	2
PH075	2
PH038	1
PH014	1

Figure 29: Currently popular pharmacy in specific Area**Query 15 - [Viewing specific prescription information]:**

```

select *
from prescription p
where p.pr_id = 'Pr004'

```

```

1 •   select *
2     from prescription p
3     where p.pr_id = 'Pr004'

```

The screenshot shows a database query results grid. The columns are labeled 'Pr_id', 'P_id', and 'MD_content'. The data rows are:

Pr_id	P_id	MD_content
Pr004	P032	Norvasc
Pr004	P032	Microzide
Pr004	P032	Trexall

Figure 30: Viewing specific prescription information**Query 16 - [Query to find the top 3 hospitals with the most available medicines]:**

```
USE medilink;
```

```

SELECT h.HospitalName, COUNT(ma.MedID) AS TotalMedicines
FROM hospital h
JOIN pharmacy p ON h.Id = p.HospID
JOIN medicine_availability ma ON p.PharmID = ma.PharmID
GROUP BY h.HospitalName
ORDER BY TotalMedicines DESC
LIMIT 3;

```

The screenshot shows a MySQL query editor interface. At the top, there is a toolbar with various icons for file operations, search, and navigation. Below the toolbar, the query is displayed with line numbers:

```

1 USE medilink;
2
3 • SELECT h.HospitalName, COUNT(ma.MedID) AS TotalMedicines
4   FROM hospital h
5     JOIN pharmacy p ON h.Id = p.HospID
6     JOIN medicine_availability ma ON p.PharmID = ma.PharmID
7   GROUP BY h.HospitalName
8   ORDER BY TotalMedicines DESC
9   LIMIT 3;
10

```

After the query is executed, the results are shown in a result grid:

HospitalName	TotalMedicines
Dhaka Medical College Hospital	66
Bangabandhu Sheikh Mujib Medical University H...	66
Holy Family Red Crescent Medical College Hospital	20

Figure 31: Query to find the top 3 hospitals with the most available medicines

7 Data Manipulation(update/Delete)

Query 17 - [Updating quantity of medicine in a pharmacy]:

```

update medicine_availability
set quantity=20
where PharmID='PH001' and MedID='MD100';

```

The screenshot shows the MySQL Workbench interface. At the top, there's a toolbar with various icons for file operations, search, and navigation. Below the toolbar, a query window displays the following SQL code:

```

1 use medilink;
2
3 • update medicine_availability
4   set quantity=20
5   where PharmID='PH001' and MedID='MD100';
6
7 • select * from medicine_availability ;

```

Below the query window is a "Result Grid" pane. It has a header row with columns: PharmID, MedID, and Quantity. The main body of the grid contains 15 rows of data. The last row is highlighted in yellow. The grid shows the following data:

	PharmID	MedID	Quantity
▶	PH002	MD100	30
	PH003	MD100	35
	PH011	MD100	18
	PH038	MD100	12
	PH044	MD100	16
	PH051	MD100	17
	PH058	MD100	18
	PH064	MD100	19
	PH071	MD100	12
	PH077	MD100	16
	PH084	MD100	17
	PH091	MD100	18
	PH097	MD100	19
	PH104	MD100	12
	PH110	MD100	16
	PH002	MD101	40
	PH003	MD101	45

Below the grid, the text "medicine_availability3" is followed by a close button (X). At the bottom of the interface, there's an "Output" section with an "Action Output" tab. This tab shows a log of actions with their numbers, times, and descriptions:

#	Time	Action
1	01:12:18	use medilink
2	01:12:19	update medicine_availability set quantity=20 where PharmID='PH001' and MedID='MD100'
3	01:12:20	select * from medicine_availability LIMIT 0, 1000

Figure 32: Updating quantity of medicine in a pharmacy**Query 18 - [Query to Update Doctor information]:**

```
update doctor set visit=500 ,Certificates='FCPS'
```

```
where DId='D001';
```

The screenshot shows the MySQL Workbench interface. At the top, there's a toolbar with various icons for database management. Below the toolbar, the query editor contains the following SQL code:

```

1 use medilink;
2
3 • update doctor set visit=500 ,Certificates='FCPS'
4     where DId='D001';
5
6 • select * from doctor;

```

Below the query editor is a results grid titled "Result Grid". It displays a table of doctor information with the following columns: DId, DName, Certificates, ConsultantionHours, Specialization, Visit, and Hospitalid. The data includes 17 rows of doctor records.

	DId	DName	Certificates	ConsultantionHours	Specialization	Visit	Hospitalid
▶	D001	Dr. Abul Hassan	FCPS	9:00 AM - 12:00 PM	Cardiology	500	BDH104
	D002	Dr. Fahmida Akhtar	MD	10:00 AM - 2:00 PM	Dermatology	600	BDH059
	D003	Dr. Anwar Hossain	MBBS, FCPS	9:00 AM - 12:00 PM	Cardiology	20	BDH093
	D004	Dr. Nusrat Jahan	MBBS	11:00 AM - 3:00 PM	Gynecology	880	BDH092
	D005	Dr. Shahidul Islam	MRCP	2:00 PM - 6:00 PM	Endocrinology	680	BDH061
	D006	Dr. Anika Rahman	FCPS	9:00 AM - 12:00 PM	Ophthalmology	760	BDH030
	D007	Dr. Ziauddin Ahmed	MBBS	10:00 AM - 2:00 PM	Neurology	640	BDH076
	D008	Dr. Taslima Akter	FCPS	8:00 AM - 11:00 AM	Pediatrics	840	BDH070
	D009	Dr. Mamanur Rashid	MS	11:00 AM - 3:00 PM	Cardiology	800	BDH010
	D010	Dr. Farhana Khan	FCPS	9:00 AM - 12:00 PM	Dermatology	600	BDH062
	D011	Dr. Rakib Hasan	MD	10:00 AM - 2:00 PM	Orthopedics	720	BDH057
	D012	Dr. Suraiya Begum	FCPS	8:00 AM - 11:00 AM	Gynecology	880	BDH098
	D013	Dr. Abdul Haque	MRCP	2:00 PM - 6:00 PM	Endocrinology	680	BDH098
	D014	Dr. Fatema Akter	FCPS	9:00 AM - 12:00 PM	Ophthalmology	760	BDH088
	D015	Dr. Aminul Islam	MD	10:00 AM - 2:00 PM	Neurology	640	BDH035
	D016	Dr. Sultana Khatun	FCPS	8:00 AM - 11:00 AM	Pediatrics	840	BDH019
	D017	Dr. Anwar Hossain	MS	11:00 AM - 3:00 PM	Cardiology	800	BDH101

At the bottom left, there's an "Output" section showing the execution history:

- Action Output
- # Time Action
- 1 01:10:16 use medilink
- 2 01:10:18 update doctor set visit=500 ,Certificates='FCPS' where DId='D001'
- 3 01:10:20 select *from doctor LIMIT 0, 1000

Figure 33: Query to Update Doctor information

Query 19 - [Query to remove a hospital]:

```
delete from hospital where id="BDH001";
```

```
1   use medilink;
2
3 •  delete from hospital where id="BDH001";
4
5 •  select * from hospital;
```

The screenshot shows the MySQL Workbench interface. At the top, there is a toolbar with various icons for filtering rows, editing, exporting/importing, and wrapping cell content. Below the toolbar is a result grid table with columns: Id, HospitalName, NumberOfDoctor, City, and Area. The table contains 18 rows of hospital data. The row with Id BDH001 is highlighted. Below the table, the text "hospital 1" is visible. Under the "Output" tab, there is a log of actions:

#	Time	Action
1	01:06:53	use medilink
2	01:06:54	delete from hospital where id="BDH001"
3	01:06:56	select * from hospital LIMIT 0, 1000

Figure 34: Query to remove a hospital**Query 20 - [Query to remove medicine availability based on a condition]:**

```
DELETE FROM medicine_availability
WHERE MedID IN (
    SELECT MedID
    FROM medicine
    WHERE mprice = (SELECT MIN(De_price) FROM delivery)
)
```

```

AND PharmID = (SELECT PharmID FROM delivery WHERE De_price = (SELECT
    MIN(De_price) FROM delivery));

```

```

1
2 •   DELETE FROM medicine_availability
3   WHERE MedID IN (
4     SELECT MedID
5     FROM medicine
6     WHERE mprice = (SELECT MIN(De_price) FROM delivery)
7   )
8   AND PharmID = (SELECT PharmID FROM delivery WHERE De_price = (SELECT MIN(De_price) FROM delivery));
9
10
11 •   select *
12   from medicine_availability;
13

```

	PharmID	MedID	Quantity
▶	PH001	MD100	30
	PH002	MD100	30
	PH003	MD100	35
	PH011	MD100	18
	PH038	MD100	12
	PH044	MD100	16
	PH051	MD100	17
	PH058	MD100	18
	PH064	MD100	19
	PH071	MD100	12
	PH077	MD100	16
	PH084	MD100	17
	PH091	MD100	18
	PH097	MD100	19
	PH104	MD100	12
	PH110	MD100	16

e_availability1 x

Output:

#	Time	Action	Message
1	22:08:06	use new	0 row(s) affected
2	22:08:20	DELETE FROM medicine_availability WHERE MedID IN (SELECT MedID FROM medicine WHERE mprice = (SELECT MIN(De_price) FROM delivery))	0 row(s) affected
3	22:08:50	select * from medicine_availability LIMIT 0, 500	500 row(s) returned

Figure 35: Query to remove medicine availability based on a condition

8 Conclusions

The development of a user-friendly healthcare database tailored for Dhaka residents represents a significant advancement in enhancing access to healthcare services in the region. This project successfully created an intuitive interface with robust regional search functionality, enabling users to easily locate nearby healthcare providers, including doctors, pharmacies, and alternative healthcare options. Comprehensive doctor profiles, featuring detailed information on specialties, services, and patient reviews, empower residents to make informed decisions about their healthcare. The inclusion of a rating system based on expertise and patient satisfaction promotes transparency, trust, and a higher standard of care by enabling users to evaluate and compare healthcare providers effectively.

Additionally, the integration of pharmacy information allows users to check the availability of medicines at nearby locations, ensuring they can find essential medications with ease. The platform also caters to a broader spectrum of healthcare needs by including categories for pet doctors, homeopathic practitioners, and enthusiastic blood donors, facilitating quick access to alternative healthcare options and vital blood donation information during emergencies. This comprehensive approach ensures that users have access to a wide range of healthcare services and information, tailored to their specific needs.

The meticulous design of a well-structured database schema and a detailed data model outlining the

relationships between different entities ensures efficient storage and retrieval of healthcare information. Sample data population was used to demonstrate the database's functionality and facilitate thorough testing. Our quality assurance reports confirm that the database maintains high standards of data integrity, consistency, and performance, providing a reliable and robust platform for users. In conclusion, our healthcare database for Dhaka residents not only simplifies the process of finding and accessing healthcare services but also significantly enhances the overall quality of care through informed decision-making and user feedback. By streamlining healthcare information and making it easily accessible, this platform contributes to the well-being of Dhaka residents, offering a reliable, user-friendly tool that addresses the diverse healthcare needs of the community. This project exemplifies the potential for technology to improve healthcare accessibility and quality, setting a benchmark for future initiatives in the field.

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2. Special thanks to our four-person team for their collaborative effort in developing this healthcare database.
3. our team deserves recognition for their dedication and expertise in designing and implementing the database.
4. we extend our thanks to the users who will benefit from this platform, as their well-being and ease of access to healthcare services are the ultimate goals of our efforts.