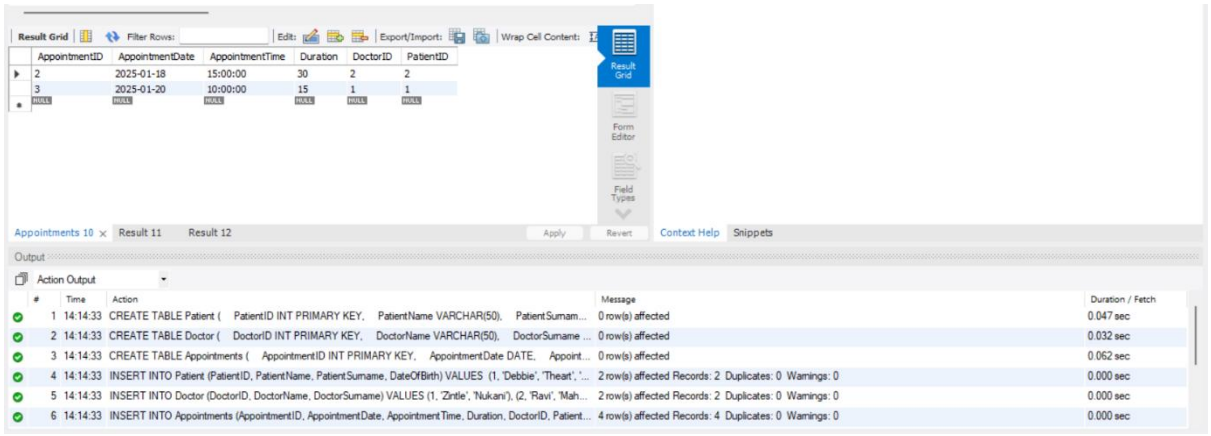
Question 3

```
-- Q.3.1: Create the Patient table
CREATE TABLE Patient (
    PatientID INT PRIMARY KEY,
    PatientName VARCHAR(50),
    PatientSurname VARCHAR(50),
    DateOfBirth DATE
);

-- Q.3.2: Create the Doctor table
CREATE TABLE Doctor (
    DoctorID INT PRIMARY KEY,
    DoctorName VARCHAR(50),
    DoctorSurname VARCHAR(50)
);

-- Q.3.3: Create the Appointments table
CREATE TABLE Appointments (
    AppointmentID INT PRIMARY KEY,
    AppointmentDate DATE,
    AppointmentTime TIME,
    Duration INT,
    DoctorID INT,
    PatientID INT,
    FOREIGN KEY (DoctorID) REFERENCES Doctor(DoctorID),
    FOREIGN KEY (PatientID) REFERENCES Patient(PatientID)
);

-- Q.3.4: Insert data into Patient table
INSERT INTO Patient (PatientID, PatientName, PatientSurname, DateOfBirth)
VALUES
(1, 'Debbie', 'Theart', '1980-03-17'),
(2, 'Thomas', 'Duncan', '1976-08-12');

-- Insert data into Doctor table
```

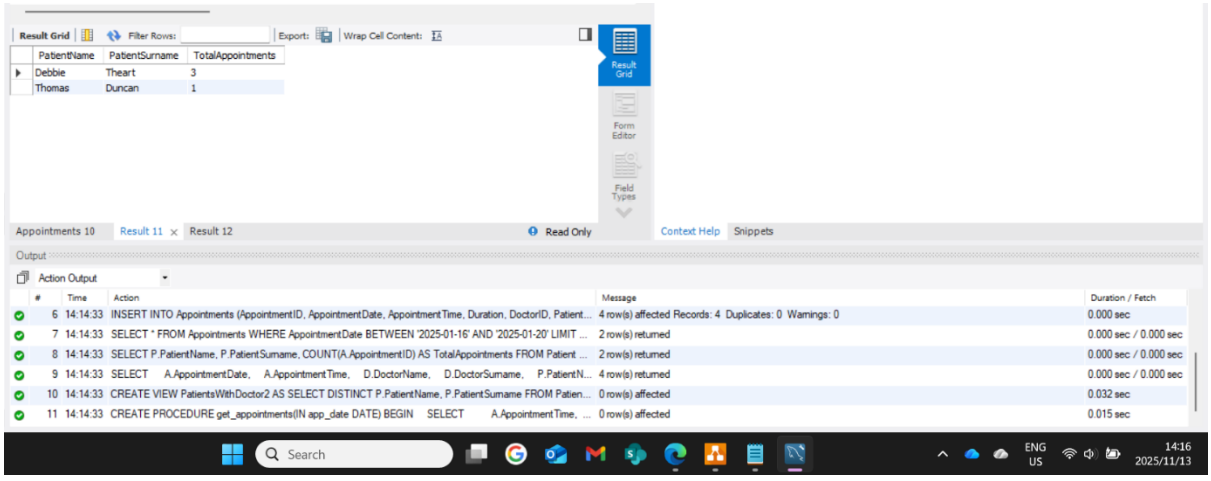
```
INSERT INTO Doctor (DoctorID, DoctorName, DoctorSurname)
VALUES
(1, 'Zintle', 'Nukani'),
(2, 'Ravi', 'Maharaj');

-- Insert data into Appointments table
INSERT INTO Appointments (AppointmentID, AppointmentDate, AppointmentTime, Duration, DoctorID, PatientID)
VALUES
(1, '2025-01-15', '09:00:00', 15, 2, 1),
(2, '2025-01-18', '15:00:00', 30, 2, 2),
(3, '2025-01-20', '10:00:00', 15, 1, 1),
(4, '2025-01-21', '11:00:00', 15, 2, 1);

-- Q.3.5: Display appointments between 2025-01-16 and 2025-01-20 inclusive
SELECT *
FROM Appointments
WHERE AppointmentDate BETWEEN '2025-01-16' AND '2025-01-20';

-- Q.3.6: Display patient names with total number of appointments, sorted descending
SELECT P.PatientName, P.PatientSurname, COUNT(A.AppointmentID) AS TotalAppointments
FROM Patient P
LEFT JOIN Appointments A ON P.PatientID = A.PatientID
GROUP BY P.PatientID
ORDER BY TotalAppointments DESC;

-- Q.3.7: Display all appointments with details, sorted by date descending
SELECT
    A.AppointmentDate,
    A.AppointmentTime,
    D.DoctorName,
    D.DoctorSurname,
    P.PatientName,
    P.PatientSurname
FROM Appointments A
```

```
JOIN Doctor D ON A.DoctorID = D.DoctorID
JOIN Patient P ON A.PatientID = P.PatientID
ORDER BY A.AppointmentDate DESC;

-- Q.3.8: Create a view for patients with appointments with DoctorID 2
CREATE VIEW PatientsWithDoctor2 AS
SELECT DISTINCT P.PatientName, P.PatientSurname
FROM Patient P
JOIN Appointments A ON P.PatientID = A.PatientID
WHERE A.DoctorID = 2
ORDER BY P.PatientSurname ASC;

-- Q.3.9: Create stored procedure to get appointments for a given date
DELIMITER $$
CREATE PROCEDURE get_appointments(IN app_date DATE)
BEGIN
    SELECT
        A.AppointmentTime,
        A.Duration,
        D.DoctorName,
        D.DoctorSurname,
        P.PatientName,
        P.PatientSurname
    FROM Appointments A
    JOIN Doctor D ON A.DoctorID = D.DoctorID
    JOIN Patient P ON A.PatientID = P.PatientID
    WHERE A.AppointmentDate = app_date
    ORDER BY A.AppointmentTime ASC;
END $$
DELIMITER ;
```

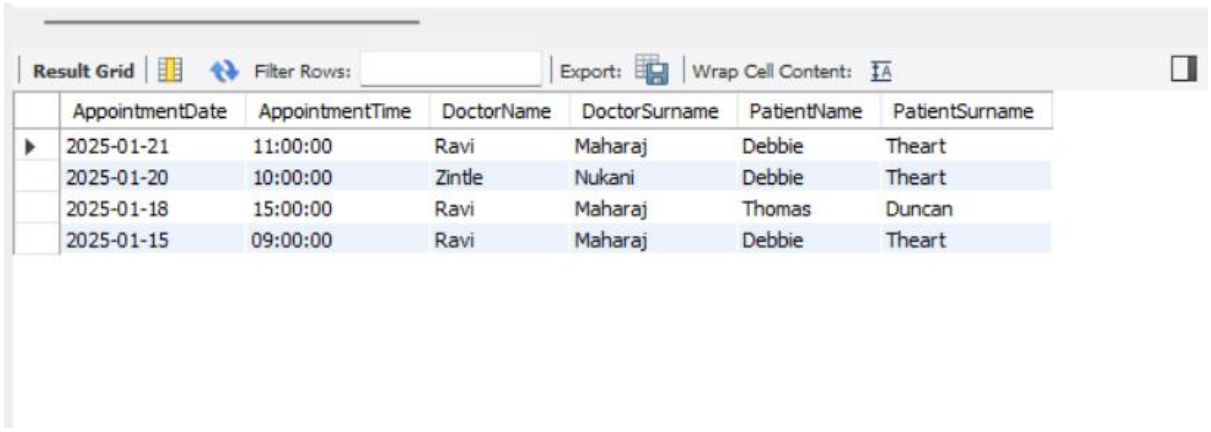
3.5.


Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
AppointmentID AppointmentDate AppointmentTime Duration DoctorID PatientID
2 2025-01-18 15:00:00 30 2 2
3 2025-01-20 10:00:00 15 1 1
Appointments 10
Result 11
Result 12
Apply
Revert
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
1 14:14:33 CREATE TABLE Patient (PatientID INT PRIMARY KEY, PatientName VARCHAR(50), PatientSurnam... 0 row(s) affected 0.047 sec
2 14:14:33 CREATE TABLE Doctor (DoctorID INT PRIMARY KEY, DoctorName VARCHAR(50), DoctorSurname ... 0 row(s) affected 0.032 sec
3 14:14:33 CREATE TABLE Appointments (AppointmentID INT PRIMARY KEY, AppointmentDate DATE, Appoint... 0 row(s) affected 0.062 sec
4 14:14:33 INSERT INTO Patient (PatientID, PatientName, PatientSurname, DateOfBirth) VALUES (1, 'Debbie', 'Theart', '... 2 row(s) affected Records: 2 Duplicates: 0 Warnings: 0 0.000 sec
5 14:14:33 INSERT INTO Doctor (DoctorID, DoctorName, DoctorSurname) VALUES (1, 'Zintle', 'Nukani'), (2, 'Ravi', 'Mah... 2 row(s) affected Records: 2 Duplicates: 0 Warnings: 0 0.000 sec
6 14:14:33 INSERT INTO Appointments (AppointmentID, AppointmentDate, AppointmentTime, Duration, DoctorID, Patient... 4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0 0.000 sec

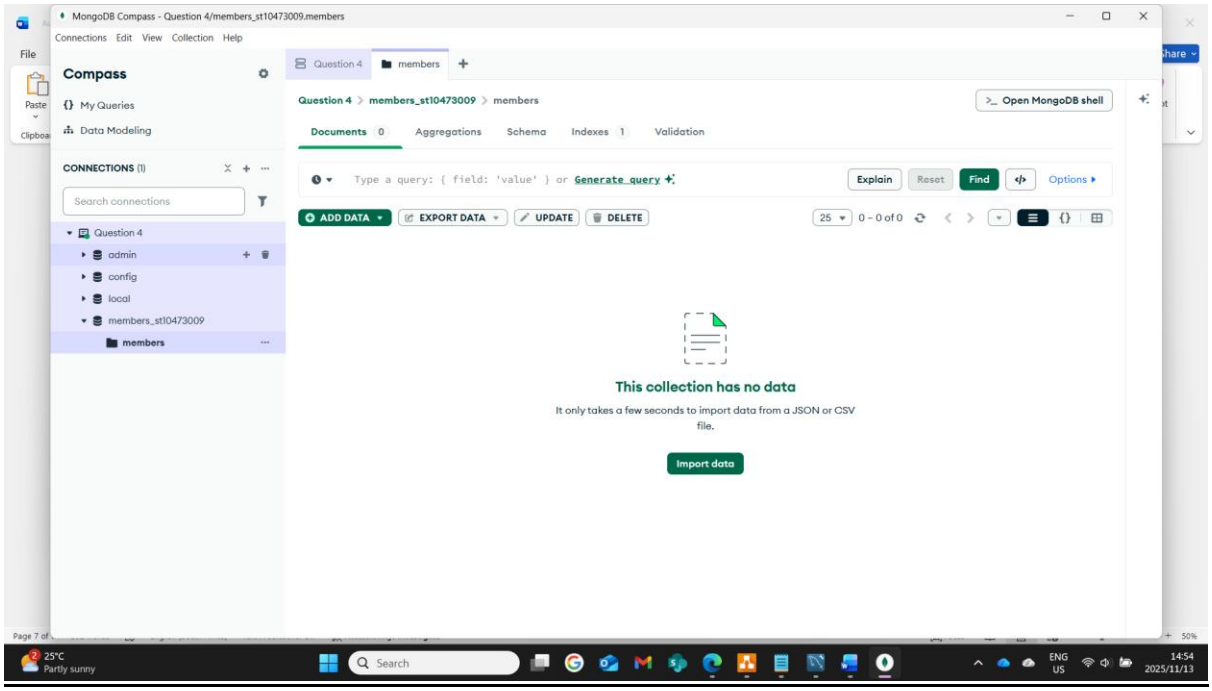
3.6.

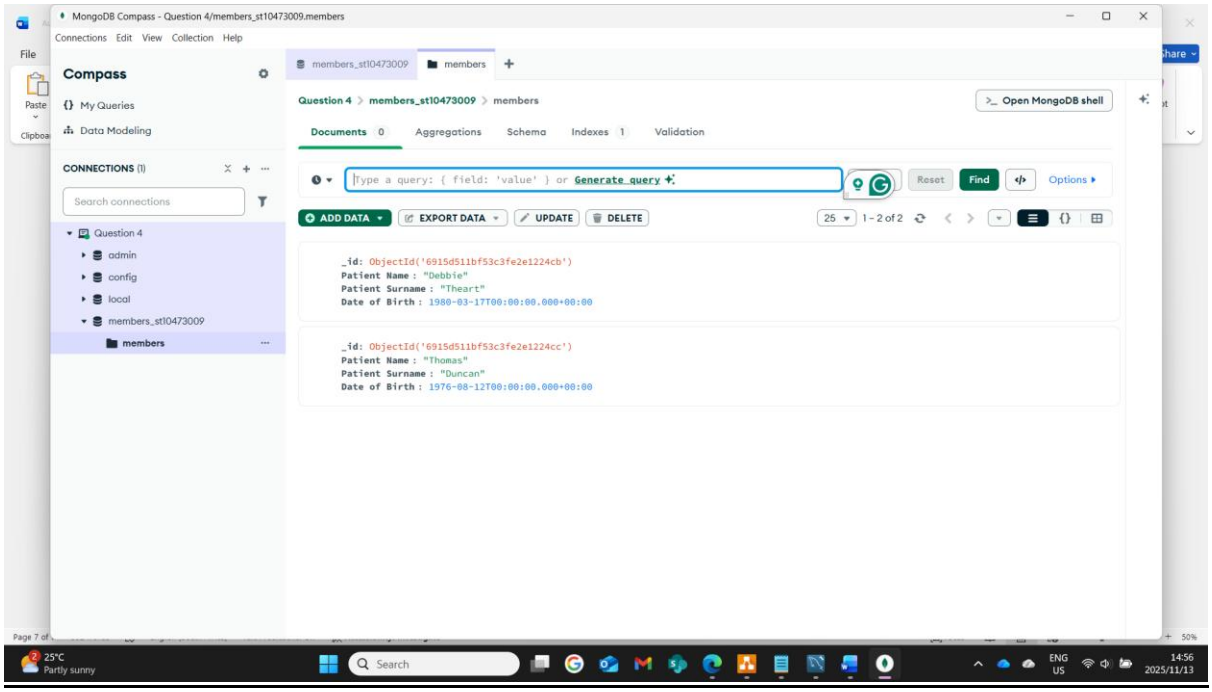

Result Grid
Filter Rows:
Export:
Wrap Cell Content:
PatientName PatientSurname TotalAppointments
Debbie Theart 3
Thomas Duncan 1
Appointments 10
Result 11
Result 12
Read Only
Context Help
Snippets
Output
Action Output
Time Action Message Duration / Fetch
6 14:14:33 INSERT INTO Appointments (AppointmentID, AppointmentDate, AppointmentTime, Duration, DoctorID, Patient... 4 row(s) affected Records: 4 Duplicates: 0 Warnings: 0 0.000 sec
7 14:14:33 SELECT * FROM Appointments WHERE AppointmentDate BETWEEN '2025-01-16' AND '2025-01-20' LIMIT ... 2 row(s) returned 0.000 sec / 0.000 sec
8 14:14:33 SELECT P.PatientName, P.PatientSurname, COUNT(A.AppointmentID) AS TotalAppointments FROM Patient ... 2 row(s) returned 0.000 sec / 0.000 sec
9 14:14:33 SELECT A.AppointmentDate, A.AppointmentTime, D.DoctorName, D.DoctorSurname, P.PatientN... 4 row(s) returned 0.000 sec / 0.000 sec
10 14:14:33 CREATE VIEW PatientsWithDoctor2 AS SELECT DISTINCT P.PatientName, P.PatientSurname FROM Patien... 0 row(s) affected 0.032 sec
11 14:14:33 CREATE PROCEDURE get_appointments(IN app_date DATE) BEGIN SELECT A.AppointmentTime, ... 0 row(s) affected 0.015 sec
Search
ENG
US
14:16
2025/11/13

3.7.


Result Grid
Filter Rows:
Export:
Wrap Cell Content:
AppointmentDate AppointmentTime DoctorName DoctorSurname PatientName PatientSurname
2025-01-21 11:00:00 Ravi Maharaj Debbie Theart
2025-01-20 10:00:00 Zintle Nukani Debbie Theart
2025-01-18 15:00:00 Ravi Maharaj Thomas Duncan
2025-01-15 09:00:00 Ravi Maharaj Debbie Theart

Question 4


MongoDB Compass - Question 4/members_st10473009.members
Connections Edit View Collection Help
Compass
My Queries
Data Modeling
CONNECTIONS (1)
Search connections
Question 4
admin
config
local
members_st10473009
members
Question 4 > members_st10473009 > members
Open MongoDB shell
Documents 0
Aggregations
Schema
Indexes 1
Validation
Type a query: { field: 'value' } or Generate query
Explain
Reset
Find
Options
ADD DATA
EXPORT DATA
UPDATE
DELETE
0 - 0 of 0
This collection has no data
It only takes a few seconds to import data from a JSON or CSV file.
Import data


MongoDB Compass - Question 4/members_st10473009.members
Connections Edit View Collection Help
Compass
My Queries
Data Modeling
CONNECTIONS (1)
Search connections
Question 4
admin
config
local
members_st10473009
members
Question 4 > members_st10473009 > members
Open MongoDB shell
Documents 0
Aggregations
Schema
Indexes 1
Validation
Type a query: { field: 'value' } or Generate query
Reset
Find
Options
ADD DATA
EXPORT DATA
UPDATE
DELETE
1 - 2 of 2
_id: ObjectId('6915d511bf53c3fe2e1224cb')
Patient Name : "Debbie"
Patient Surname : "Theart"
Date of Birth : 1980-03-17T00:00:00.000+00:00
_id: ObjectId('6915d511bf53c3fe2e1224cc')
Patient Name : "Thomas"
Patient Surname : "Duncan"
Date of Birth : 1976-08-12T00:00:00.000+00:00

```
>_MONGOSH
> use members_st10473009
< switched to db members_st10473009
>
>
  db.members.find().pretty();
< {
    _id: ObjectId('6915d511bf53c3fe2e1224cb'),
    'Patient Name': 'Debbie',
    'Patient Surname': 'Theart',
    'Date of Birth': 1980-03-17T00:00:00.000Z
  }
  {
    _id: ObjectId('6915d511bf53c3fe2e1224cc'),
    'Patient Name': 'Thomas',
    'Patient Surname': 'Duncan',
    'Date of Birth': 1976-08-12T00:00:00.000Z
  }
members_st10473009>
```

```
> // Q4.4 Query all the documents of patients born after 1979-01-12
  db.members.find(
    { "Date of Birth": { $gt: ISODate("1979-01-12T00:00:00Z") } }
  ).pretty();
< {
    _id: ObjectId('6915d511bf53c3fe2e1224cb'),
    'Patient Name': 'Debbie',
    'Patient Surname': 'Theart',
    'Date of Birth': 1980-03-17T00:00:00.000Z
  }
members_st10473009>
```