

Al-Maaref University

Database Suspect

Nour Merhi

Database Lab

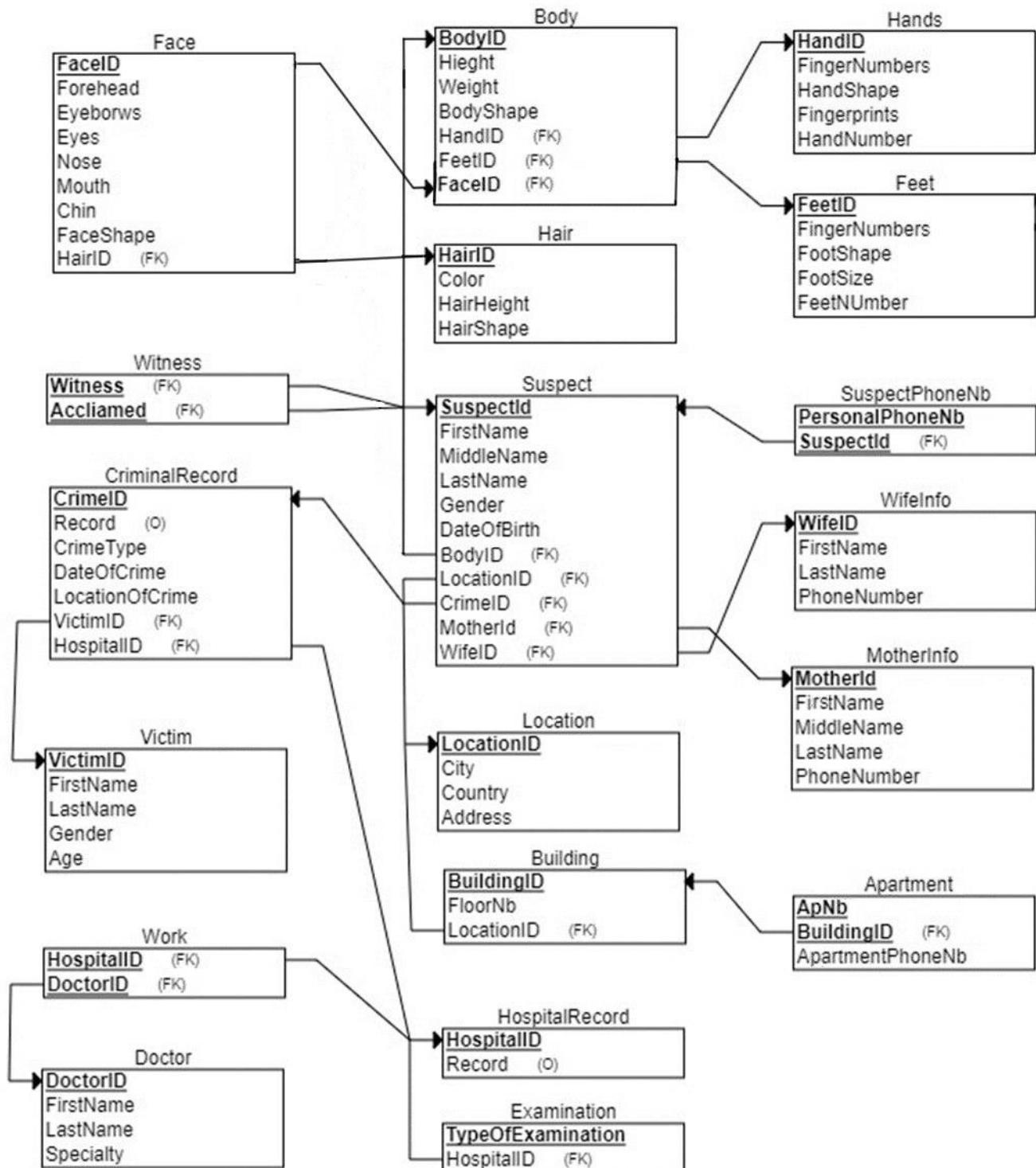
Dr. Wael Ayoub

Friday, January 5, 2024

Table of Contents

| | |
|--|----|
| Relational Model:..... | 3 |
| Creating Database:..... | 4 |
| Inserting data to tables: | 6 |
| • Hair table:..... | 6 |
| • Hands table:..... | 7 |
| • Feet Table:..... | 7 |
| • Face table:..... | 7 |
| • Body table: | 8 |
| • Building | 9 |
| • Apartment..... | 9 |
| • Location..... | 10 |
| • Doctor | 10 |
| • Hospital Record:..... | 11 |
| • Examination: | 11 |
| • Working | 12 |
| • Victim: | 12 |
| • Criminal Record:..... | 12 |
| • Mother Info:..... | 13 |
| • Wife Info:..... | 14 |
| • Suspect:..... | 14 |
| • Suspect Phone Number:..... | 15 |
| • Witness: | 15 |
| Queries Done on this Project:..... | 16 |
| a) 10 Select, Insert, Update, and Delete queries. | 16 |
| b) 5 sub-queries..... | 18 |
| c) 5 Join queries..... | 19 |
| d) 5 Views..... | 21 |
| e) 5 Stored procedures..... | 22 |
| f) 5 Triggers | 25 |
| Creating Users: | 25 |
| Giving permission for users:..... | 26 |

Relational Model:



Creating Database:

```
create database if not exists suspect;  
use suspect;
```

```
create table Hair (  
hairID int primary key not null,  
Color varchar (15),  
HairHeight varchar (10),  
HairShape varchar (20)  
);
```

```
create table Face (  
faceID int primary key not null,  
forehead varchar (10) not null,  
eyebrows varchar (10) not null,  
eyeColor varchar (10) not null,  
nose varchar (10) not null,  
mouth varchar (10) not null,  
chin varchar (10) not null,  
faceShape varchar (20) not null,  
HairId int not null,  
foreign key (hairID) references Hair  
(hairID)  
);
```

```
create table Hands (  
handID int primary key not null,  
FingerNumbers int not null,  
HandShpae varchar (10) not null,  
FingerPrints varchar (3) not null,  
HandNumber int not null  
);
```

```
create table Feet (  
feetID int primary key not null,  
FingerNumbers int not null,  
FootShape varchar (10) not null,  
FootSize int not null,  
FeetNumber int not null  
);
```

```
create table Body (  
BodyID int primary key not null,  
Height decimal (3,2) not null,  
Weight decimal (3,3) not null,  
BodyShape varchar (20) not null,  
HandID int not null,
```

```
FeetID int not null,  
FaceID int not null,  
foreign key(handId) references Hands  
(HandID),  
foreign key (FeetId) references Feet  
(FeetID),  
foreign key (faceID) references Face  
(FaceID)  
);
```

```
create table Building (  
BuildingID int primary key not null,  
FloorNb int not null  
);
```

```
create table Apartment (  
ApartmentNb int not null,  
BuildingID int not null,  
ApartmentPhoneNb varchar (10) not null,  
primary key (ApartmentNb, BuildingID),  
foreign key (BuildingId) references building  
(BuildingID)  
);
```

```
create table Location (  
LocationId int primary key not null,  
City varchar (25) not null,  
Country varchar (25) not null,  
Address varchar (25) not null,  
BuildingID int not null,  
foreign key (buildingId) references Building  
(BuildingID)  
);
```

```
create table Doctor (  
DoctorId int primary key not null,  
FirstName varchar (25) not null,  
LastName varchar (25) not null,  
Specailty varchar (25) not null  
);
```

```
Create table HospitalRecord (  
HospitalID int primary key not null,  
Record varchar (3)  
);
```

```

create table Working (
    HospitalID int not null,
    DoctorID int not null,
    primary key (HospitalID, DoctorID),
    foreign key (HospitalID) references
    HospitalRecord (HospitalID),
    foreign key (DoctorID) references Doctor
    (DoctorID)
);
create table Examination (
    hospitalID int not null,
    TypeOfExamination varchar (25),
    foreign key (hospitalID) references
    hospitalRecord (HospitalID)
);

create table Victim (
    VictimId int primary key not null,
    FirstName varchar (250) not null,
    LastName varchar (20) not null,
    Gender varchar (10) not null,
    Age int not null
);
create table CriminalRecord (
    CrimeID int primary key not null,
    Record varchar (3),
    CrimeType varchar (25),
    DateOfCrime date,
    LocationOfCrime varchar (25),
    VictimID int not null,
    HospitalId int not null,
    foreign key (VictimID) references Victim
    (VictimId),
    foreign key (HospitalId) references
    hospitalRecord (HospitalId)
);

create table MotherInfo (
    MotherID int primary key not null,
    FirstName varchar (25) not null,
    MiddleName varchar (25) not null,
    LastName varchar (25) not null,
    PhoneNumber varchar (8) not null
);
create table WifeInfo (
    WifeID int primary key not null,
    firstName varchar (25) not null,
    LastName varchar (25) not null,
    PhoneNumber varchar (8) not null
);
create table Suspect (
    SuspectID int primary key not null,
    FirstName varchar (25) not null,
    MiddleName varchar (25) not null,
    LastName varchar (25) not null,
    Gender varchar (3) not null,
    DateOfBirth date not null,
    BodyID int not null,
    LocationID int not null,
    CrimeID int not null,
    MotherID int not null,
    WifeID int not null
);
create table SuspectPhoneNb (
    PersonalPhoneNb int not null,
    suspectID int not null,
    primary key (PersonalPhoneNb, SuspectID),
    foreign key (suspectId) references suspect
    (suspectID)
);
create table Witness (
    witness int not null,
    acclaimed int not null,
    foreign key (witness) references suspect
    (suspectId),
    foreign key (acclaimed) references suspect
    (suspectId)
);

```

The screenshot shows the MySQL Workbench interface. In the top left, the connection is set to "Local instance MySQL80". The main area displays a SQL file named "SQL1.FLT" containing several CREATE TABLE statements. The "Output" tab shows the results of these queries, including the creation of the database and the individual tables. The "Action Output" table provides detailed information for each query, including the number of rows affected and execution time.

```

1 * create database if not exists suspect
2 * use suspect
3 2029-01 create table Hair(hairID int primary key not null, Color varchar(15), HairHeight varchar(10), HairStyle varchar(15), Sex varchar(10))
4 2029-02 create table Face(faceID int primary key not null, foreward varchar(10) not null, eyebeve varchar(10) not null, mouth varchar(10) not null, nose varchar(10) not null)
5 2029-03 create table Hands(handID int primary key not null, FingerNumbers int not null, HandShape varchar(15), Sex varchar(10))
6 2029-04 create table Feet(feetID int primary key not null, FingerNumbers int not null, FootShape varchar(10), Sex varchar(10))
7 2029-05 create table Body(bodyID int primary key not null, Height decimal(13,2) not null, Weight decimal(5,2) not null)
8 2029-06 create table Building(BuildingID int primary key not null, RoomID int not null)
9 2029-07 create table Apartment(ApartmentID int not null, BuildingID int not null, ApartmentName varchar(25) not null)
10 2029-08 create table Location(LocationID int primary key not null, City varchar(25) not null, County varchar(25) not null)
11 2029-09 create table Doctor(DoctorID int primary key not null, FirstName varchar(25) not null, LastName varchar(25) not null)
12 2029-10 create table Hospital(HospitalID int primary key not null, HospitalName varchar(25) not null)
13 2029-11 create table HospitalRecord(HospitalID int primary key not null, DoctorID int not null, RecordID int not null)
14 2029-12 create table Patient(PatientID int primary key not null, BirthDate varchar(10) not null, LastName varchar(25) not null, FirstName varchar(25) not null)
15 2029-13 create table ClinicalRecord(ClinicID int primary key not null, Record varchar(50) not null, ClinicType varchar(25) not null)
16 2029-14 create table MedicInfo(MedicID int primary key not null, Facility varchar(25) not null, MiddleName varchar(25) not null)
17 2029-15 create table Suspense(SuspenseID int primary key not null, FirstName varchar(25) not null, LastName varchar(25) not null, MiddleName varchar(25) not null)
18 2029-16 create table SuperPhone(SuperPhoneID int primary key not null, associatedID int not null, primarykeyID int not null)
19 2029-17 create table Wine(wineID int not null, accoladeID int not null, foreign key (accoladeID) references accoladeID)

```

Inserting data to tables:

- Hair table:

insert into Hair values (1,"Brown", "Tall", "Straight");

insert into Hair values (2,"Brown", "Short", "Wavy");

insert into Hair values (3,"Black", "HalfCut", "Straight");

insert into Hair values (4,"Red", "Short", "Curly");

insert into Hair values (5,"Black", "Tall", "Straight");

insert into Hair values (6,"Black", "Tall", "Wavy");

insert into Hair values (7,"Blond", "Tall", "Straight");

insert into Hair values (8,"Blond", "Short", "Curly");

The screenshot shows the MySQL Workbench interface with the "suspect" schema selected. A query window is open with the command "SELECT * FROM suspect.hair;". The results are displayed in a grid, showing eight rows of data inserted into the "hair" table. Below the results, the "Action Output" table shows the individual insert statements and their execution details.

| hairID | Color | HairHeight | HairStyle |
|--------|-------|------------|-----------|
| 1 | Brown | Tall | Straight |
| 2 | Brown | Short | Wavy |
| 3 | Black | HalfCut | Curly |
| 4 | Red | Tall | Straight |
| 5 | Black | Short | Straight |
| 6 | Black | Tall | Curly |
| 7 | Blond | Short | Curly |
| 8 | Blond | Short | Straight |

```

1 * insert into hair values (1,"Brown", "Tall", "Straight")
2 * insert into hair values (2,"Brown", "Short", "Wavy")
3 * insert into hair values (3,"Black", "HalfCut", "Curly")
4 * insert into hair values (4,"Red", "Tall", "Straight")
5 * insert into hair values (5,"Black", "Short", "Straight")
6 * insert into hair values (6,"Black", "Tall", "Curly")
7 * insert into hair values (7,"Blond", "Tall", "Straight")
8 * insert into hair values (8,"Blond", "Short", "Curly")

```

- Hands table:

```
insert into Hands values (1, 10, "Big", "Yes", 2);
insert into Hands values (2, 10, "Normal", "Yes", 2);
insert into Hands values (3, 9, "Normal", "No", 2);
insert into Hands values (4, 10, "Small", "Yes", 2);
insert into Hands values (5, 5, "Normal", "Yes", 1);
insert into Hands values (6, 10, "Normal", "Yes", 2);
insert into Hands values (7, 10, "Small", "Yes", 2);
insert into Hands values (8, 7, "Small", "No", 2);
insert into Hands values (9, 4, "Normal", "No", 1);
```

The screenshot shows the MySQL Workbench interface with the 'hands' table selected. The table has columns: handID, FingerNumbers, HandShape, FingerPrints, and HandNumber. The data grid shows 6 rows of data. Below the table, the 'Action Output' pane displays 25 insert statements, each with a timestamp and the specific values inserted. The 'Message' column indicates that each insert affected 1 row.

| handID | FingerNumbers | HandShape | FingerPrints | HandNumber |
|--------|---------------|-----------|--------------|------------|
| 1 | 10 | Big | Yes | 2 |
| 2 | 10 | Normal | No | 2 |
| 3 | 9 | Normal | Yes | 2 |
| 4 | 10 | Small | Yes | 1 |
| 5 | 5 | Normal | Yes | 1 |
| 6 | 10 | Normal | Yes | 2 |

- Feet Table:

```
insert into feet values (1, 9, "Big", "43", 2);
insert into feet values (2, 10, "Medium", "39", 2);
insert into feet values (3, 10, "Big", "46", 2);
insert into feet values (4, 10, "Small", "35", 2);
insert into feet values (5, 5, "Medium", "41", 1);
insert into feet values (6, 9, "Medium", "43", 2);
insert into feet values (7, 8, "Big", "42", 2);
insert into feet values (8, 10, "Medium", "40", 10);
insert into feet values (9, 10, "Medium", "41", 10);
```

The screenshot shows the MySQL Workbench interface with the 'feet' table selected. The table has columns: feetID, FingerNumbers, FootShape, FootSize, and FeetNumber. The data grid shows 6 rows of data. Below the table, the 'Action Output' pane displays 14 insert statements, each with a timestamp and the specific values inserted. The 'Message' column indicates that each insert affected 1 row.

| feetID | FingerNumbers | FootShape | FootSize | FeetNumber |
|--------|---------------|-----------|----------|------------|
| 1 | 9 | Big | 43 | 10 |
| 2 | 10 | Medium | 39 | 2 |
| 3 | 10 | Big | 46 | 2 |
| 4 | 10 | Small | 35 | 2 |
| 5 | 5 | Medium | 41 | 1 |
| 6 | 9 | Medium | 43 | 2 |

- Face table:

```
insert into face values (1,"Broad", "Thick","Brown",
"Straight", "Small", "Long", "Circular", 1);
insert into face values (2, "Broad", "Thick", "Brown",
"Curved", "Normal", "long", "triangular", 2);
insert into face values (3, "Broad", "Thick", "Green",
"Straight", "Small", "Narrow", "Square", 1);
insert into face values (4, "Curved", "Thin",
"OliveGreen", "Convex", "Normal", "short", "Circular", 1);
insert into face values (5, "Curved", "Thin",
"OliveGreen", "Convex", "Normal", "short", "Circular", 2);
insert into face values (6, "Heron", "Broad", "Blue",
"Concave", "Large", "Keeling", "Circular", 1);
insert into face values (7, "Widemouth", "Broad", "Blue",
"Concave", "Large", "Keeling", "Circular", 2);
insert into face values (8, "Humpback", "Broad", "Blue",
"Concave", "Large", "Keeling", "Circular", 3);
insert into face values (9, "Humpback", "Broad", "Blue",
"Concave", "Large", "Keeling", "Circular", 4);
insert into face values (10, "Humpback", "Broad", "Blue",
"Concave", "Large", "Keeling", "Circular", 5);
```

The screenshot shows the MySQL Workbench interface with the 'face' table selected. The table has columns: faceID, forehead, eyebrows, eyeColor, nose, mouth, chin, faceShape, and hairID. The data grid shows 10 rows of data. Below the table, the 'Action Output' pane displays 10 insert statements, each with a timestamp and the specific values inserted. The 'Message' column indicates that each insert affected 1 row.

| faceID | forehead | eyebrows | eyeColor | nose | mouth | chin | faceShape | hairID |
|--------|-----------|----------|------------|----------|--------|---------|------------|--------|
| 1 | Broad | Thick | Brown | Straight | Small | Long | Circular | |
| 2 | Broad | Thick | Green | Straight | Normal | long | Square | 1 |
| 3 | Broad | Thin | OliveGreen | Straight | Normal | short | Square | 2 |
| 4 | Curved | Thin | OliveGreen | Straight | Normal | short | Convex | 3 |
| 5 | Curved | Thin | OliveGreen | Straight | Normal | short | Convex | 4 |
| 6 | Heron | Broad | Blue | Concave | Large | Keeling | Circular | 1 |
| 7 | Widemouth | Broad | Blue | Concave | Large | Keeling | Triangular | 2 |
| 8 | Humpback | Broad | Blue | Concave | Large | Keeling | Triangular | 3 |
| 9 | Humpback | Broad | Blue | Concave | Large | Keeling | Triangular | 4 |
| 10 | Humpback | Broad | Blue | Concave | Large | Keeling | Triangular | 5 |

```

insert into face values (5, "Sharp", "Thin", "HoneyBrown", "Lowered", "Normal", "Square", "Rectangular", 4);
insert into face values (6, "Narrow", "Triangular", "Black", "Straight", "Normal", "Narrow", "Circular", 4);
insert into face values (7, "M-Shaped", "Straight", "Blue", "Concave", "Normal", "Receding", "Circular", 7);
insert into face values (8, "M-Shaped", "Straight", "Grey", "Concave", "Small", "Receding", "Triangular", 8);
insert into face values (9, "Fuzi-Mount", "Triangular", "LightBlue", "Lowered", "Small", "Normal", "Triangular", 5);

```

- **Body table:**

alter table Body modify Weight decimal (5,2) not null;

insert into Body values (1, 1.60, 63.0, "Pear", 1, 3, 1);

insert into body values (2, 1.67, 73.4, "Apple", 1, 2, 3);

insert into body values (3, 1.68, 70.7, "Muscular", 3, 2, 5);

insert into body values (4, 1.50, 40.0, "Traingular", 5, 6, 9);

insert into body values (5, 1.56, 66.4, "Round", 7, 3, 9);

insert into body values (6, 1.88, 83.2, "Muscular", 6, 8, 2);

insert into body values (7, 1.85, 68.7, "Pear", 9, 4, 9);

insert into body values (8, 1.71, 86.8, "Round", 5, 3, 8);

insert into body values (9, 1.59, 80.5, "Round", 4, 2, 6);

update body set Bodyshape = "Muscular" where bodyId in (3,6);

update body set Bodyshape = "Triangular" where bodyid = 4;

| BodyID | Weight | Height | BodyShape | HeadID | FaceID |
|--------|--------|--------|------------|--------|--------|
| 1 | 1.60 | 63.0 | Pear | 1 | 1 |
| 2 | 1.67 | 73.4 | Muscular | 3 | 2 |
| 3 | 1.68 | 70.7 | Muscular | 3 | 5 |
| 4 | 1.50 | 40.0 | Triangular | 5 | 6 |
| 5 | 1.56 | 66.4 | Round | 7 | 3 |
| 6 | 1.88 | 83.2 | Muscular | 6 | 2 |
| 7 | 1.85 | 68.7 | Pear | 9 | 4 |
| 8 | 1.71 | 86.8 | Round | 5 | 3 |
| 9 | 1.59 | 80.5 | Round | 4 | 2 |

| BodyID | Weight | Height | BodyShape | HeadID | FaceID |
|--------|--------|--------|------------|--------|--------|
| 1 | 1.60 | 63.0 | Pear | 1 | 1 |
| 2 | 1.67 | 73.4 | Muscular | 3 | 2 |
| 3 | 1.68 | 70.7 | Muscular | 3 | 5 |
| 4 | 1.50 | 40.0 | Triangular | 5 | 6 |
| 5 | 1.56 | 66.4 | Round | 7 | 3 |
| 6 | 1.88 | 83.2 | Muscular | 6 | 2 |
| 7 | 1.85 | 68.7 | Pear | 9 | 4 |
| 8 | 1.71 | 86.8 | Round | 5 | 3 |
| 9 | 1.59 | 80.5 | Round | 4 | 2 |

- Building

insert into Building values (1, 3);

insert into Building values (2, 1);

insert into Building values (3, 4);

insert into Building values (4, 15);

insert into Building values (5, 6);

insert into Building values (6, 10);

insert into Building values (7, 11);

insert into Building values (8, 12);

insert into Building values (9, 13);

insert into Building values (10,5);

Result Grid | Filter Rows: | Edit | Export/Import | Wrap Cell Content: |

Building

| BuildingID | Floors |
|------------|--------|
| 1 | 3 |
| 2 | 1 |
| 3 | 4 |
| 4 | 15 |
| 5 | 6 |
| 6 | 10 |
| 7 | 11 |
| 8 | 12 |
| 9 | 13 |
| 10 | 5 |

Action Output

| Time | Action | Message |
|-------------|-------------------------------------|-------------------|
| 28 17:50:18 | insert into Building values (4, 15) | 1 row(s) affected |
| 29 17:50:19 | insert into Building values (5, 6) | 1 row(s) affected |
| 30 17:50:20 | insert into Building values (6, 10) | 1 row(s) affected |
| 31 17:50:21 | insert into Building values (7, 11) | 1 row(s) affected |
| 32 17:50:22 | insert into Building values (8, 12) | 1 row(s) affected |

- Apartment

insert into Apartment values (101, 1, "01-875953");

insert into Apartment values (205, 8, "03-875453");

insert into Apartment values (310, 2, "05-235953");

insert into Apartment values (415, 7, "01-736457");

insert into Apartment values (506, 3, "08-546187");

insert into Apartment values (626, 5, "01-983456");

insert into Apartment values (719, 4, "06-875953");

insert into Apartment values (821, 6, "01-984563");

insert into Apartment values (930, 10, "01-653847");

insert into Apartment values (107, 9, "03-345627");

insert into Apartment values (104, 1, "01-647536");

insert into Apartment values (302, 4, "03-867454");

insert into Apartment values (616, 5, "03-635478");

insert into Apartment values (526, 3, "05-411564");

Result Grid | Filter Rows: | Edit | Export/Import | Wrap Cell Content: |

Apartment

| ApartmentID | BuildingID | ApartmentPhone |
|-------------|------------|----------------|
| 415 | 7 | 01-736457 |
| 506 | 3 | 08-546187 |
| 526 | 3 | 05-411564 |
| 616 | 5 | 03-635478 |
| 679 | 5 | 01-984563 |

Action Output

| Time | Action | Message |
|-------------|--|-------------------|
| 39 18:00:00 | insert into Apartment values (415, 7, "01-736457") | 1 row(s) affected |
| 40 18:00:01 | insert into Apartment values (506, 3, "08-546187") | 1 row(s) affected |
| 41 18:00:02 | insert into Apartment values (526, 3, "05-411564") | 1 row(s) affected |
| 42 18:00:03 | insert into Apartment values (616, 5, "03-635478") | 1 row(s) affected |
| 43 18:00:04 | insert into Apartment values (679, 5, "01-984563") | 1 row(s) affected |
| 44 18:00:05 | insert into Apartment values (302, 4, "03-867454") | 1 row(s) affected |
| 45 18:00:06 | insert into Apartment values (107, 9, "03-345627") | 1 row(s) affected |
| 46 18:00:07 | insert into Apartment values (104, 1, "01-647536") | 1 row(s) affected |
| 47 18:00:08 | insert into Apartment values (310, 2, "05-235953") | 1 row(s) affected |
| 48 18:00:09 | insert into Apartment values (415, 7, "01-736457") | 1 row(s) affected |

- Location

insert into Location values (1, "Akkar", "Lebanon", "Jouma",2);

insert into Location values (2, "Baalbak", "Lebanon", "Wadi",4);

insert into Location values (3, "Beirut", "Lebanon", "Ain El-Mreisse",6);

insert into Location values (4, "Beirut", "Lebanon", "Snoubra",1);

insert into Location values (5, "Akkar", "Lebanon", "Qaitea",1);

insert into Location values (6, "Beirut", "Lebanon", "Hamra",6);

insert into Location values (7, "Nabatieh", "Lebanon","Raoucheh",7);

insert into Location values (8, "Beirut", "Lebanon", "Ain El-Tine",5);

insert into Location values (9, "Beirut", "Lebanon", "Ras Beirut",10);

insert into Location values (10, "Baalbak", "Lebanon", "Brazil Street",3);

Result Grid | Filter Rows: BuildingID

| LocationID | City | Country | Address | BuildingID |
|------------|----------|---------|----------------|------------|
| 1 | Akkar | Lebanon | Jouma | 2 |
| 2 | Baalbak | Lebanon | Wadi | 4 |
| 3 | Beirut | Lebanon | Ain El-Mreisse | 6 |
| 4 | Beirut | Lebanon | Snoubra | 1 |
| 5 | Akkar | Lebanon | Qaitea | 5 |
| 6 | Beirut | Lebanon | Hamra | 6 |
| 7 | Nabatieh | Lebanon | Raoucheh | 7 |
| 8 | Beirut | Lebanon | Ain El-Tine | 5 |
| 9 | Rashid | Lebanon | Ras Beirut | 10 |

Action Output

- Time Action
 - 55 18:17:15 insert into Location values (4, "Baalbak", "Lebanon", "Snoubra",1)
 - 56 18:17:16 insert into Location values (5, "Akkar", "Lebanon", "Qaitea",1)
 - 57 18:17:16 insert into Location values (6, "Beirut", "Lebanon", "Hamra",6)
 - 58 18:17:17 insert into Location values (7, "Nabatieh", "Lebanon","Raoucheh",7)
 - 59 18:17:18 insert into Location values (8, "Beirut", "Lebanon", "Ain El-Tine",5)
 - 60 18:17:19 insert into Location values (9, "Rashid", "Lebanon", "Ras Beirut",10)

Message

- 1 row(s) affected

- Doctor

insert into Doctor values (1, "Ali", "Mohammad", "Surgery");

insert into Doctor values (2, "Ahmad", "Asi", "Psychiatry");

insert into Doctor values (3, "Joe", "Rida", "Surgery");

insert into Doctor values (4, "Ali", "Hussein", "Neurology");

insert into Doctor values (5, "Mortada", "Mozanar", "Nursing");

insert into Doctor values (6, "Abbass", "Mortada", "Cardiology");

insert into Doctor values (7, "Nour", "Jouni", "Emergency");

insert into Doctor values (8, "Cristine", "Awela", "Dermatology");

Result Grid | Filter Rows: Specialty

| DoctorID | FirstName | LastName | Specialty |
|----------|-----------|----------|-------------|
| 1 | Ali | Mohammad | Surgery |
| 2 | Ahmed | Asi | Psychiatry |
| 3 | Joe | Rida | Surgery |
| 4 | Ali | Hussein | Neurology |
| 5 | Mortada | Mozanar | Nursing |
| 6 | Abbass | Mortada | Cardiology |
| 7 | Nour | Jouni | Emergency |
| 8 | Cristine | Awela | Dermatology |

Action Output

- Time Action
 - 65 18:28:07 insert into Doctor values (2, "Ahmad", "Asi", "Psychiatry")
 - 66 18:28:08 insert into Doctor values (3, "Joe", "Rida", "Surgery")
 - 67 18:28:09 insert into Doctor values (4, "Ali", "Hussein", "Neurology")
 - 68 18:28:10 insert into Doctor values (5, "Mortada", "Mozanar", "Nursing")
 - 69 18:28:11 insert into Doctor values (6, "Abbass", "Mortada", "Cardiology")
 - 70 18:28:11 insert into Doctor values (7, "Nour", "Jouni", "Emergency")

Message

- 1 row(s) affected

```

insert into Doctor values (9, "Fatima", "Ahmad", "Surgery");
insert into Doctor values (10, "Rami", "Sherbel", "Cardiology");

```

- Hospital Record:

```

insert into hospitalrecord values (1, "Yes");
insert into hospitalrecord values (2, "No");
insert into hospitalrecord values (3, "Yes");
insert into hospitalrecord values (4, "No");
insert into hospitalrecord values (5, "No");
insert into hospitalrecord values (6, "No");
insert into hospitalrecord values (7, "Yes");
insert into hospitalrecord values (8, "Yes");
insert into hospitalrecord values (9, "Yes");
insert into hospitalrecord values (10, "Yes");
insert into hospitalrecord values (11, "Yes");
insert into hospitalrecord values (12, "No");
insert into hospitalrecord values (13, "Yes");

```

SQL File 9: creating_database*

1 • SELECT * FROM suspect.hospitalrecords

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Contents: 13

| HospitalID | Record |
|------------|--------|
| 7 | Yes |
| 8 | Yes |
| 9 | Yes |
| 10 | Yes |
| 11 | Yes |
| 12 | No |
| 13 | Yes |

Output

Action Output

- Time Action
 - 77 18:34:36 insert into hospitalrecord values (3, "Yes") 1 row(s) affected
 - 78 18:34:36 insert into hospitalrecord values (4, "No") 1 row(s) affected
 - 79 18:34:37 insert into hospitalrecord values (5, "No") 1 row(s) affected
 - 80 18:34:38 insert into hospitalrecord values (6, "No") 1 row(s) affected
 - 81 18:34:39 insert into hospitalrecord values (7, "Yes") 1 row(s) affected
 - 82 18:34:39 insert into hospitalrecord values (8, "Yes") 1 row(s) affected
 - 83 18:34:40 insert into hospitalrecord values (9, "Yes") 1 row(s) affected

- Examination:

```

insert into Examination values (1, "Hand Surgery");
insert into Examination values (3, "Brain Surgery");
insert into Examination values (7, "Heart Attack");
insert into Examination values (8, "Hand Movement");
insert into Examination values (9, "Heart Surgery");
insert into Examination values (13, "Bullet Removing");
insert into Examination values (10, "Signs of Schizophrenia");
insert into Examination values (11, "Heart Checking");
insert into Examination values (10, "Signs for Narcissism");

```

SQL File 9: creating_database*

1 • SELECT * FROM suspect.examination

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Contents: 11

| hospitalID | TypeOfExamination |
|------------|------------------------|
| 1 | Hand Surgery |
| 3 | Brain Surgery |
| 7 | Heart Attack |
| 8 | Hand Movement |
| 9 | Heart Surgery |
| 13 | Bullet Removing |
| 10 | Signs of Schizophrenia |
| 11 | Heart Checking |
| 10 | Signs for Narcissism |

Output

Action Output

- Time Action
 - 106 18:55:43 insert into Examination values (3, "Brain Surgery") 1 row(s) affected
 - 107 18:55:44 insert into Examination values (7, "Heart Attack") 1 row(s) affected
 - 108 18:55:45 insert into Examination values (8, "Hand Movement") 1 row(s) affected
 - 109 18:55:45 insert into Examination values (9, "Heart Surgery") 1 row(s) affected
 - 110 18:55:45 insert into Examination values (13, "Bullet Removing") 1 row(s) affected
 - 111 18:55:47 insert into Examination values (10, "Signs of Schizophrenia") 1 row(s) affected

- Working

insert into working values (1,1);

insert into working values (3,1);

insert into working values (5,8);

insert into working values (1,7);

insert into working values (8,4);

insert into working values (9,9);

insert into working values (10,2);

insert into working values (11,6);

insert into working values (4,5);

insert into working values (2,10);

insert into working values (13,2);

insert into working values (13,1);

- Victim:

insert into Victim values (1, "Nour", "Gani", "Female", 32);

insert into Victim values (2, "Shadi", "Mohsen", "Male", 28);

insert into Victim values (3, "Lamar", "Sherri", "Female", 17);

insert into Victim values (4, "Elena", "Tawil", "Female", 25);

insert into Victim values (5, "Ali", "Makki", "Male", 55);

insert into Victim values (6, "Joseph", "Bardi", "Male", 27);

insert into Victim values (7, "Silia", "Yaakoub", "Female", 44);

insert into Victim values (8, "Shaza", "Harisi", "Female", 23);

insert into Victim values (9, "Ayman", "Jondi", "Male", 19);

- Criminal Record:

Alter table CriminalRecord Modify VictimId int;

insert into CriminalRecord values (1, "Yes", "Killed Teenager", "2015-01-11", "Beirut", 3, 2);

insert into CriminalRecord values (2, "Yes", "Killed Adult", "2009-05-23", "Beirut", 5, 10);

insert into CriminalRecord values (3, "Yes", "Drug Dealing", "2006-10-15", "Sour", null, 13);

insert into CriminalRecord values (4, "No", null, null, null, null, 12);

insert into CriminalRecord values (5, "No", null, null, null, null, 4);

insert into CriminalRecord values (6, "Yes", "Drug Dealing", "2019-03-23", "Syda", 9, 10);

insert into CriminalRecord values (7, "No", null, null, null, null, 2);

insert into CriminalRecord values (8, "Yes", "Killed Adult", "2022-11-11", "Nabatiyeh", 4, 6);

insert into CriminalRecord values (9, "No", null, null, null, null, 2);

insert into CriminalRecord values (10, "Yes", "Assault", "2010-08-17", "Beirut", 8, 5);

insert into CriminalRecord values (11, "Yes", "Killed Adult", "2023-06-15", "Baalbak", 1, 3);

insert into CriminalRecord values (12, "No", null, null, null, null, 7);

- Mother Info:

alter table MotherInfo modify phoneNumber varchar (10) not null;

insert into MotherInfo values (1, "Maha", "Ismail", "Mohammad", "76-123765");

insert into MotherInfo values (2, "Mariam", "Noah", "Alaweyeh ", "76-763544");

insert into MotherInfo values (3, "Aliyeh", "Liam", "Nour ElDine", "81-983546");

insert into MotherInfo values (4, "Sara", "Joseph", "Hasan", "70-635472");

insert into MotherInfo values (5, "Hiba", "Henry", "Fakih", "71-924536");

insert into MotherInfo values (6, "Jasmine", "Abbass", "Halal", "80-963447");

insert into MotherInfo values (7, "Clara", "Mahdi", "Shebaa", "30-025647");

insert into MotherInfo values (8, "Emily", "Yasin", "Mostafa", "81-564785");

The screenshot shows the MySQL Workbench interface with the 'suspect.criminalrecords' table selected. The table has columns: CrimeID, Record, CrmType, DateOfCrime, LocationOfCrime, VctMld, and HospitalId. The data consists of 11 rows with various values for each column. Below the table, the 'Action Output' pane shows three successful insert operations:

- 131 20:07:31 Action insert into CriminalRecord values (4,"No",null,null,null,12)
- 132 20:07:32 Action insert into CriminalRecord values (5,"No",null,null,null,4)
- 133 20:07:33 Action insert into CriminalRecord values (5,"Yes","Drug Dealing","2019-03-23","Syda",9,10)

The screenshot shows the MySQL Workbench interface with the 'suspect.motherinfos' table selected. The table has columns: MotherID, FirstName, MiddleName, LastName, and phoneNumber. The data consists of 8 rows with various names and phone numbers. Below the table, the 'Action Output' pane shows eight successful insert operations:

- 143 20:19:01 Action * Table MotherInfo modify phoneNumber varchar(10) not null
- 144 20:19:05 Action insert into MotherInfo values (1,"Maha","Ismail","Mohammad","76-123765")
- 145 20:19:06 Action insert into MotherInfo values (2,"Mariam","Noah","Alaweyeh","76-763544")
- 146 20:19:07 Action insert into MotherInfo values (3,"Aliyeh","Liam","Nour ElDine","81-983546")
- 147 20:19:08 Action insert into MotherInfo values (4,"Sara","Joseph","Hasan","70-635472")
- 148 20:19:08 Action insert into MotherInfo values (5,"Hiba","Henry","Fakih","71-924536")
- 149 20:19:08 Action insert into MotherInfo values (6,"Jasmine","Abbass","Halal","80-963447")
- 150 20:19:08 Action insert into MotherInfo values (7,"Clara","Mahdi","Shebaa","30-025647")

- Wife Info:

```
alter table wifeinfo modify phoneNumber varchar (10)
not null;
```

```
insert into WifelInfo values (1, "Jana", "Mortadah", "76-256748");
```

```
insert into WifelInfo values (2, "Emily", "James", "71-973456");
```

```
insert into WifelInfo values (3, "Mariam", "Hammoud", "32-639254");
```

```
insert into WifelInfo values (4, "Clara", "Smeaa", "03-276482");
```

```
insert into WifelInfo values (5, "Lara", "Srour", "81-368946");
```

- Suspect:

```
alter table suspect modify MotherId int;
```

```
alter table suspect modify wifeid int;
```

```
alter table suspect modify gender varchar (10) not null;
```

```
insert into Suspect values (1, "Anas", "Mahdi", "Ballout", "Male", "2001-01-03", 3, 10, 1, null, null);
```

```
insert into Suspect values (2, "Amir", "Mostafa", "Baidar", "Male", "1998-06-25", 5, 9, 7, 8,5);
```

```
insert into Suspect values (3, "Elie", "Saleh", "Marjeh", "Male", "1964-12-12", 6, 3, 3, 3,1);
```

```
insert into Suspect values (4, "Liza", "Leonardo", "Tawil", "Female", "1996-03-01", 9, 2, 6, 7, null);
```

```
insert into Suspect values (5, "Ghofran", "Rasoul", "Hashem", "Male", "1999-12-15", 1, 6, 5, 4, 4);
```

```
insert into Suspect values (6, "Jousef", "Levi", "Yaakoub", "Male", "1992-10-09", 3, 7, 8, 6, null);
```

```
insert into Suspect values (7, "Meriam", "William", "Kansou", "Female", "2000-02-02", 4, 1, 2, null, null);
```

```
insert into Suspect values (8, "Yasin", "Alexander", "Lakis", "Male", "1999-01-22", 6, 4, 4, 5, 2);
```

```
insert into Suspect values (9, "Mohammad", "Hassan", "Mohsen", "Male", "1964-11-23", 7, 5, 10, 2, 3);
```

```

insert into Suspect values (10, "Yousef", "Michael", "Yousef", "Male", "2000-04-30", 2, 8, 1, null, null);
insert into Suspect values (11, "Gamila", "Mostfah", "Baidar", "Female", "1960-05-07", 8, 8, 12, 8, null);
insert into Suspect values (12, "Tony", "Issa", "Khalil", "Male", "1999-03-12", 2, 7, 11, null, null);

```

- **Suspect Phone Number:**

```
alter table suspectPhonenb modify personalPhoneNb varchar (10) not null;
```

```

insert into SuspectPhoneNb values ("76-984567", 2);
insert into SuspectPhoneNb values ("76-875345", 1);
insert into SuspectPhoneNb values ("81-287425", 2);
insert into SuspectPhoneNb values ("03-532297", 4);
insert into SuspectPhoneNb values ("81-395427", 6);
insert into SuspectPhoneNb values ("71-356743", 7);
insert into SuspectPhoneNb values ("76-338812", 8);
insert into SuspectPhoneNb values ("32-220054", 12);
insert into SuspectPhoneNb values ("80-100423", 12);

```

Result Grid

| personalPhoneNb | SuspectID |
|-----------------|-----------|
| 76-984567 | 1 |
| 80-100423 | 2 |
| 81-287425 | 3 |
| 03-532297 | 4 |
| 81-395427 | 5 |
| 76-338812 | 6 |
| 32-220054 | 7 |
| 80-100423 | 8 |
| 71-356743 | 9 |
| 76-338812 | 10 |
| 32-220054 | 11 |
| 80-100423 | 12 |

Action Output

| Time | Action | Message |
|--------------|---|-------------------|
| 100 21:25:35 | insert into SuspectPhoneNb values ('76-984567', 2) | 1 row(s) affected |
| 131 21:25:36 | insert into SuspectPhoneNb values ('81-287425', 3) | 1 row(s) affected |
| 132 21:25:36 | insert into SuspectPhoneNb values ('03-532297', 4) | 1 row(s) affected |
| 182 21:25:37 | insert into SuspectPhoneNb values ('81-395427', 5) | 1 row(s) affected |
| 183 21:25:37 | insert into SuspectPhoneNb values ('76-338812', 6) | 1 row(s) affected |
| 184 21:25:38 | insert into SuspectPhoneNb values ('32-220054', 7) | 1 row(s) affected |
| 185 21:25:38 | insert into SuspectPhoneNb values ('71-356743', 8) | 1 row(s) affected |
| 186 21:25:38 | insert into SuspectPhoneNb values ('76-338812', 9) | 1 row(s) affected |
| 187 21:25:38 | insert into SuspectPhoneNb values ('32-220054', 10) | 1 row(s) affected |
| 188 21:25:38 | insert into SuspectPhoneNb values ('80-100423', 11) | 1 row(s) affected |
| 189 21:25:38 | insert into SuspectPhoneNb values ('76-338812', 12) | 1 row(s) affected |

- **Witness:**

```

insert into Witness values (1, 12);
insert into Witness values (11, 9);
insert into Witness values (2, 10);
insert into Witness values (12, 4);
insert into Witness values (6, 7);
insert into Witness values (8, 2);

```

Result Grid

| witness | Acquainted |
|---------|------------|
| 1 | 12 |
| 11 | 9 |
| 2 | 10 |
| 12 | 4 |
| 6 | 7 |
| 8 | 2 |

Action Output

| Time | Action | Message |
|--------------|------------------------------------|-------------------|
| 190 21:30:19 | insert into Witness values (1, 12) | 1 row(s) affected |
| 191 21:30:20 | insert into Witness values (2, 10) | 1 row(s) affected |
| 192 21:30:20 | insert into Witness values (12, 4) | 1 row(s) affected |
| 193 21:30:21 | insert into Witness values (6, 7) | 1 row(s) affected |
| 194 21:30:21 | insert into Witness values (8, 2) | 1 row(s) affected |

Queries Done on this Project:

a) 10 Select, Insert, Update, and Delete queries.

1. select * from suspect limit 5;
selects first 5 suspects.

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

- Query Editor:** Contains the SQL command: `366 • #1 367 • select * from suspect limit 5;`
- Result Grid:** Shows the results of the query, displaying 5 rows of suspect information. The columns include SuspectID, FirstName, MiddleName, LastName, gender, DateOfBirth, BodyID, LocationID, Criminal, MotherID, and infid.
- Action Output:** Shows the history of actions taken on the database, including insertions into Witness values and SELECT statements.

2. select FirstName, LastName from suspect order by firstName;
selects name of the suspect in descending order.

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

- Query Editor:** Contains the SQL command: `367 • select * from suspect limit 5;`
- Result Grid:** Shows the results of the query, displaying 5 rows of suspect information. The columns include FirstName, LastName, and witness.
- Action Output:** Shows the history of actions taken on the database.

3. insert into Witness values (1,10);
insert new value into witness table

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

- Query Editor:** Contains the SQL command: `368 • insert into witness values (1,10);`
- Result Grid:** Shows the results of the query, displaying 1 row of witness information. The columns include witness and acclaimed.
- Action Output:** Shows the history of actions taken on the database, including the insertion of witness values.

4. delete from witness where witness = 1;
delete row having witness id equals to 1

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

- Query Editor:** Contains the SQL command: `369 • delete from witness where witness = 1;`
- Result Grid:** Shows the results of the query, displaying 1 row of witness information. The columns include witness and acclaimed.
- Action Output:** Shows the history of actions taken on the database, including the deletion of witness values.

5. select * from motherinfo order by firstname desc;
select all info of the mother ordered by firstname.

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

- Query Editor:** Contains the SQL command: `370 • select * from motherinfo order by firstname desc;`
- Result Grid:** Shows the results of the query, displaying 10 rows of motherinfo information. The columns include MotherID, FirstName, MiddleName, LastName, and phoneNUmber.
- Action Output:** Shows the history of actions taken on the database.

6. select * from wifeinfo where firstName like '%a%';

select all wife info whose first name contain an s in it.

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

- Result Grid:** Shows a table with columns WifeID, firstName, LastName, and phoneNumber. The data includes rows for Jana Mortadah, Mariam Hammoud, Clara Smeaa, and Lara Srour.
- Action Output:** Displays two log entries:
 - # 209 22:13:06 select * from wifeinfo where firstName like '%a%' LIMIT 0, 1000
 - # 210 22:13:17 select * from wifeinfo where firstName like '%s%' LIMIT 0, 1000

7. select City, country from location where city = "Beirut";

Retrieves cities equal to Beirut and their country.

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

- Result Grid:** Shows a table with columns City and country. The data includes multiple rows for Beirut, Lebanon.
- Action Output:** Displays two log entries:
 - # 210 22:13:17 select * from wifeinfo where firstName like '%a%' LIMIT 0, 1000
 - # 211 22:14:51 select City, country from location where city = "Beirut" LIMIT 0, 1000

8. select * from hands where fingerprints = "yes";

selects hands who have fingerprints inserted to the table.

| handID | FingerNumbers | HandShape | FingerPrints | HandNumber |
|--------|---------------|-----------|--------------|------------|
| 1 | 10 | Big | Yes | 2 |
| 2 | 10 | Normal | Yes | 2 |
| 4 | 10 | Small | Yes | 2 |
| 5 | 5 | Normal | Yes | 1 |
| 6 | 10 | Normal | Yes | 2 |
| 7 | 10 | Small | Yes | 2 |

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

- Result Grid:** Shows a table with columns handID, FingerNumbers, HandShape, FingerPrints, and HandNumber. The data includes rows for handID 1 through 7.
- Action Output:** Displays two log entries:
 - # 212 22:16:57 select * from feet where fingerprints = "yes" LIMIT 0, 1000
 - # 213 22:17:18 select * from hands where fingerprints = "yes" LIMIT 0, 1000

9. select * from face where eyecolor = "Blue" and faceshape = "circular";
selects all info about a face who have blue eyes and circular face shape.

| faceID | forehead | eyebrows | eyeColor | nose | mouth | chin | faceShape | HairId |
|--------|----------|----------|----------|---------|--------|----------|-----------|--------|
| 7 | M-Shaped | Straight | Blue | Concave | Normal | Receding | Circular | 7 |

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

- Result Grid:** Shows a table with columns faceID, forehead, eyebrows, eyeColor, nose, mouth, chin, faceShape, and HairId. The data includes one row for faceID 7.
- Action Output:** Displays two log entries:
 - # 213 22:17:18 select * from hands where fingerprints = "yes" LIMIT 0, 1000
 - # 214 22:18:12 select * from face where eyecolor = "Blue" and faceShape = "circular" LIMIT 0, 1000

10. update witness set witness = 9 where acclaimed = 2;

select * from witness;

updates witness to be 9 whose acclaimed is 2.

| witness | acclaimed |
|---------|-----------|
| 11 | 9 |
| 12 | 10 |
| 12 | 4 |
| 6 | 7 |
| 9 | 2 |

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

- Result Grid:** Shows a table with columns witness and acclaimed. The data includes rows for witness 11, 12, 6, and 9.
- Action Output:** Displays two log entries:
 - # 217 22:29:05 update witness set witness = 9 where acclaimed = 2
 - # 218 22:29:28 select * from witness LIMIT 0, 1000

b) 5 sub-queries.

11. Select FirstName, lastName from doctor where doctorId = (select HospitalID from working where hospitalId = 3);
Selects the first name and last name of the Doctor who works in the hospital having id equals to 3.

The screenshot shows the MySQL Workbench interface. At the top, there is a 'Result Grid' window titled 'doctor 10' with the following data:

| Firstname | lastName |
|-----------|----------|
| Joe | Rida |

Below this is an 'Output' window titled 'Action Output' showing the following log:

| # | Time | Action |
|---|----------|--|
| 1 | 22:39:45 | Select FirstName, lastName from doctor where doctorId = (select HospitalID from working where ...) |

12. Select * from suspectPhoneNb where suspectId = (select suspectID from suspect where Wifeld = (select wifeld from wifeInfo where FirstName = "Emily" and LastName = "James"));
selects all suspect's phone numbers whose wife is named Emily James.

The screenshot shows the MySQL Workbench interface. At the top, there is a 'Result Grid' window titled 'suspectPhoneNb 11' with the following data:

| personalPhoneNb | suspectID |
|-----------------|-----------|
| 76-338812 | 8 |
| * | NULL |

Below this is an 'Output' window titled 'Action Output' showing the following log:

| # | Time | Action |
|---|----------|--|
| 1 | 22:39:45 | Select FirstName, lastName from doctor where doctorId = (select HospitalID from working where ...) |
| 2 | 22:42:21 | Select * from suspectPhoneNb where suspectId = (select suspectID from suspect where Wifeld...) |

13. select firstName, middleName, lastName from suspect where locationId in (select locationId from location where City = "Nabatieh");
selects full name of the suspects who lives in the city Nabatiyeh.

The screenshot shows the MySQL Workbench interface. At the top, there is a 'Result Grid' window titled 'suspect 12' with the following data:

| firstName | middleName | lastName |
|-----------|------------|----------|
| Jousef | Levi | Yaaikoub |
| Tony | Issa | Khalli |

Below this is an 'Output' window titled 'Action Output' showing the following log:

| # | Time | Action |
|---|----------|--|
| 2 | 22:42:21 | Select * from suspectPhoneNb where suspectId = (select suspectID from suspect where Wifeld...) |
| 3 | 22:44:14 | select firstName, middleName, lastName from suspect where locationId in (select locationId fr... |

14. select firstname, lastname from wifeinfo where wifeid = (select wifeid from suspect where suspectid = 5);
selects full name of the wife who's married to suspect having id 5.

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: | |
|-------------|----------|--------------|---------|--------------------|--|
| firstname | lastname | | | | |
| Clara | Smeaa | | | | |

| wifeinfo 16 x | | |
|--|---|----------|
| Output | | |
| Action Output | # | Time |
| 8 22:47:04 select firstname, lastname from wifeinfo where wifeid = (select wifeid from suspect where susp... | 8 | 22:47:04 |
| 9 22:47:39 select firstname, lastname from wifeinfo where wifeid = (select wifeid from suspect where susp... | 9 | 22:47:39 |

15. select firstname, lastname, Specailty from doctor where doctorid in (select DoctorId from working where hospitalId = (select hospitalId from hospitalRecord where hospitalId = 3)); selects the full name and specialty od the doctor who works the hospital having id 3;

| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: | |
|-------------|----------|--------------|---------|--------------------|--|
| firstname | lastname | | | | |
| All | Mohammad | Specialty | | | |

| doctor 19 x | | |
|--|----|----------|
| Output | | |
| Action Output | # | Time |
| 12 22:50:22 select * from doctor where doctorid in (select DoctorId from working where hospitalId = (sele... | 12 | 22:50:22 |
| 13 22:50:36 select firstname, lastname, Specialty from doctor where doctorid in (select DoctorId from worki... | 13 | 22:50:36 |

c) 5 Join queries.

16. Select v.firstName, v.lastName from victim as v

```
inner join criminalRecord as c on v.victimID = c.victimID
inner join suspect as s on s.crimID = c.CrimID where s.FirstName = "Liza" and s.lastNAme =
"Tawil";
selects victims' full name who has been killed by Liza Tawil.
```

| Result 20 x | |
|-------------|----------|
| firstname | lastname |
| Ayman | Jondi |

| Result 20 x | | |
|--|----|----------|
| Output | | |
| Action Output | # | Time |
| 14 23:00:56 Select v.firstName, v.lastName from victim as v inner join criminalRecord as c on v.victimID = ... | 14 | 23:00:56 |
| 15 23:01:29 Select v.firstName, v.lastName from victim as v inner join criminalRecord as c on v.victimID = ... | 15 | 23:01:29 |

17. Select s.firstName, s.LastName from suspect as s

```
inner join body as b on b.bodyid = s.bodyid
inner join face as f on f.FaceID = b.FaceID where f.eyeColor = "Green" or f.faceShape =
"Rectangular" or f.mouth = "small";
selects suspect's first name and last name whose eyes are green, face shape rectangular and
mouth small.
```

| firstName | LastName |
|-----------|----------|
| Anas | Balout |
| Amir | Baadar |
| Ghofran | Hashem |
| Jousef | Yaakoub |
| Mariam | Kansou |
| Mohammad | Mohsen |
| Youssef | Yousef |
| Gamilia | Baadar |
| Tony | Khall |

Result 21 x

Output

Action Output

- # Time Action
- 16 23:05:16 Select s.firstName, s.LastName from suspect as s inner join face as f on f.FaceID = s.FaceID ... E
- 17 23:06:00 Select s.firstName, s.LastName from suspect as s inner join body as b on b.bodyid = s.bodyid ... E

18. Select firstName, middleName, lastName, c.dateOfCrime from suspect as s
inner join criminalRecord as c on c.crimelID = s.CrimelID where c.dateOfCrime = "2022-11-11";
selects suspect's full name who made a crime in 2022-11-11.

| firstName | middleName | lastName | dateOfCrime |
|-----------|------------|----------|-------------|
| Jousef | Levi | Yaakoub | 2022-11-11 |

Result 22 x

Output

Action Output

- # Time Action
- 17 23:06:00 Select s.firstName, s.LastName from suspect as s inner join body as b on b.bodyid = s.bodyid ... E
- 18 23:07:29 Select firstName, middleName, lastName, c.dateOfCrime from suspect as s inner join criminal... E

19. Select s.firstName, s.middleName, s.lastName from suspect as s
inner join location as l on l.LocationID = s.locationID
inner join building as b on b.buildingid = l.buildingid where b.floorNB = 10;
selects full name of the suspects who lives in floor number 10.

| firstName | middleName | lastName |
|-----------|------------|----------|
| Ele | Saleh | Marjeh |
| Ghofran | Rasoul | Hashem |

Result 23 x

Output

Action Output

- # Time Action
- 23 23:09:30 Select s.firstName, s.middleName, s.lastName from suspect as s inner join location as l on l.LocationID = s.locationID ... Erc M4
- 24 23:09:40 Select s.firstName, s.middleName, s.lastName from suspect as s inner join location as l on l.LocationID = s.locationID ... 2 rc

20. Select s.firstName, s.MiddleName, s.LastName, m.FirstName as motherFirstName, m.LastName as MotherLastName from suspect as s
left join motherinfo as m on m.motherId = s.motherID;
selects suspects name and his mother's name.

Result Grid | Filter Rows: Export: Wrap Cell Content: TA

| firstName | MiddleName | LastName | motherFirstName | MotherLastName |
|-----------|------------|----------|-----------------|----------------|
| Anas | Mahdi | Ballout | NULL | NULL |
| Amir | Mostafa | Baidar | Emily | Mostafa |
| Elie | Saleh | Marjeh | Aliyeh | Nour ElDine |
| Liza | Leonardo | Tawil | Clara | Shebaa |
| Ghofran | Rasoul | Hashem | Sara | Hasan |
| Jousef | Levi | Yaakoub | Jasmine | Halal |
| Meriam | William | Kansou | NULL | NULL |
| Yasin | Alexander | Lakis | Hiba | Fakh |
| Mohammad | Hassan | Mohsen | Mariam | Aliweyeh |
| Yousef | Michael | Yousef | NULL | NULL |
| Gamilia | Mostfah | Baidar | Emily | Mostafa |
| Tony | Issa | Khalil | NULL | NULL |

Result 27 x

Output:

Action Output

| # | Time | Action | Message |
|----|----------|---|---------------------|
| 28 | 23:11:03 | Select s.firstName, s.MiddleName, s.LastName, m.FirstName, m.LastName from suspect as s ... | 12 rows(s) affected |
| 29 | 23:11:38 | Select s.firstName, s.MiddleName, s.LastName, m.FirstName as motherFirstName, m.LastName as ... | 12 rows(s) affected |

d) 5 Views.

21. Create view Suspects_With_CriminalRecord as

```
select s.FirstName, s.Middlename, s.lastname, s.gender, s.DateOfBirth, c.CrimeType from
suspect as s inner join CriminalRecord as c on c.CrimelD = s.CrimelD where c.Record = "Yes";
select * from Suspects_With_CriminalRecord;
```

Result Grid | Filter Rows: Export: Wrap Cell Content: TA

| FirstName | Middlename | lastname | gender | DateOfBirth | CrimeType |
|-----------|------------|----------|--------|-------------|-----------------|
| Anas | Mahdi | Ballout | Male | 2001-01-03 | Killed Teenager |
| Elie | Saleh | Marjeh | Male | 1964-12-12 | Drug Dealing |
| Liza | Leonardo | Tawil | Female | 1996-03-01 | Drug Dealing |
| Jousef | Levi | Yaakoub | Male | 1992-10-09 | Killed Adult |
| Meriam | William | Kansou | Female | 2000-02-02 | Killed Adult |

Suspects_With_CriminalRecord28 x

Output:

Action Output

| # | Time | Action | Message |
|----|----------|---|-------------------|
| 31 | 23:32:26 | Create view Suspects_With_CriminalRecord as select s.FirstName, s.Middlename, s.lastname, ... | 0 row(s) affected |
| 32 | 23:32:43 | select * from Suspects_With_CriminalRecord LIMIT 0, 1000 | 8 row(s) returned |

22. create view Mother_whose_Kid_did_Crime as

```
select m.FirstName, m.lastname, m.phoneNumber from motherinfo as m inner join suspect as
s on m.MotherID = s.MotherId inner join criminalrecord as c on c.CrimelD = s.CrimelD where
c.record = "Yes";
select * from Mother_whose_Kid_did_Crime;
```

Result Grid | Filter Rows: Export: Wrap Cell Content: TA

| FirstName | lastname | phoneNumber |
|-----------|-------------|-------------|
| Aliyeh | Nour ElDine | 81-983546 |
| Clara | Shebaa | 30-025647 |
| Jasmine | Halal | 80-963447 |
| Mariam | Aliweyeh | 76-763544 |

Mother_whose_Kid_did_Crime29 x

Output:

Action Output

| # | Time | Action | Message |
|----|----------|---|---------|
| 34 | 23:40:29 | create view Mother_whose_Kid_did_Crime as select m.FirstName, m.lastname, m.phoneNumber ... | |
| 35 | 23:40:46 | select * from Mother_whose_Kid_did_Crime LIMIT 0, 1000 | |

23. create view Wife_Married_To_Criminal as

```
select w.FirstName, w.lastname, w.phoneNumber from wifeinfo as winner join suspect as s on
w.wifeid = s.wifeid inner join criminalrecord as c on c.CrimelD = s.CrimelD where c.record =
"Yes";
select * from Wife_Married_To_Criminal;
```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

| FirstName | lastname | phoneNumber |
|-----------|----------|-------------|
| Jana | Mortadah | 76-256748 |
| Mariam | Hammoud | 32-639254 |

Wife_Married_To_Criminal 30 ×

Output

Action Output

- # Time Action
 - 36 23:42:15 create view Wife_Married_To_Criminal as select w.FirstName, w.lastname, w.phoneNumber ...
 - 37 23:42:18 select * from Wife_Married_To_Criminal LIMIT 0, 1000

24. create view Suspects_With_Multiple_PhoneNb as

```
select s.firstname, s.middlename, s.lastname from suspect as sinner join suspectphonenb as sp
on sp.suspectID = s.SuspectIDgroup by sp.suspectID having count(personalPhoneNb) > 1;
select * from Suspects_With_Multiple_PhoneNb;
```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

| firstname | middlename | lastname |
|-----------|------------|----------|
| Amir | Mostafa | Bairdar |
| Tony | Issa | Khalil |
| Gamila | Mostfah | Bairdar |
| Liza | Leonardo | Tawil |

Suspects_With_Multiple_Phone... ×

Output

Action Output

- # Time Action
 - 43 23:46:58 create view Suspects_With_Multiple_PhoneNb as select s.firstname, s.middlename, s.lastname ...
 - 44 23:47:01 select * from Suspects_With_Multiple_PhoneNb LIMIT 0, 1000

25. create view Suspects_with_Round_Body as

```
select s.firstName, s.middlename, s.lastName, b.height, b.weight from suspect as s inner join
body as b on b.bodyId = s.BodyID where b.bodyshape = "Round" order by s.FirstName asc;
select * from Suspects_with_Round_Body;
```

Result Grid | Filter Rows: Export: Wrap Cell Content: □

| firstName | middlename | lastName | height | weight |
|-----------|------------|----------|--------|--------|
| Amir | Mostafa | Bairdar | 1.56 | 66.40 |
| Gamila | Mostfah | Bairdar | 1.71 | 86.80 |
| Liza | Leonardo | Tawil | 1.59 | 80.50 |

Suspects_with_Round_Body 32 ×

Output

Action Output

- # Time Action
 - 46 23:52:47 create view Suspects_with_Round_Body as select s.firstName, s.middlename, s.lastName, b....
 - 47 23:53:03 select * from Suspects_with_Round_Body LIMIT 0, 1000

e) 5 Stored procedures

26. Procedure that stores all suspects' full names having multiple phone numbers.

DELIMITER \$\$

```
create Procedure getSuspects() begin
select firstName, Middlename, lastName, personalPhoneNb
from suspect as s inner join suspectphonenb as sp
on sp.suspectID = s.SuspectID
order by firstname;
```

```
end $$  
delimiter ;  
call getSuspects();
```

| firstName | MiddleName | lastName | personalPhoneNb |
|-----------|------------|----------|-----------------|
| Amir | Mostafa | Baida | 76-984567 |
| Amir | Mostafa | Baida | 81-287425 |
| Anas | Mahdi | Ballout | 76-875245 |
| Jousef | Levi | Yaakoub | 81-395427 |
| Liza | Leonardo | Tawil | 03-532297 |
| Meriam | William | Kansou | 71-356743 |
| Tony | Issa | Khall | 32-220054 |
| Tony | Issa | Khall | 80-100423 |
| Yasin | Alexander | Lakis | 76-338812 |

Result 1 x

Output

Action Output

Time Action

1 00:25:27 call getSuspects()

27. Procedure that stores locations of all suspects and their full names.

DELIMITER //

```
create procedure getLocation() begin  
select s.firstname, s.middlename, s.lastname, l.city, l.country, l.address, b.floornb,  
a.apartmentnb  
from suspect as s inner join location as l on l.LocationID = s.LocationID  
inner join building as b on b.BuildingID = l.BuildingID  
inner join apartment as a on a.BuildingID = b.BuildingID;  
end //
```

DELIMITER ;

```
call getLocation();
```

| firstname | middlename | lastname | city | country | address | floornb | apartmentnb |
|-----------|------------|----------|----------|---------|----------------|---------|-------------|
| Meriam | William | Kansou | Akkar | Lebanon | Jouna | 1 | 310 |
| Liza | Leonardo | Tawil | Baibak | Lebanon | Wadi | 15 | 302 |
| Liza | Leonardo | Tawil | Baibak | Lebanon | Wadi | 15 | 719 |
| Eli | Saleh | Marjeh | Berut | Lebanon | Ain El-Mreisse | 10 | 821 |
| Yasin | Alexander | Lakis | Berut | Lebanon | Snoubra | 3 | 101 |
| Yasin | Alexander | Lakis | Berut | Lebanon | Snoubra | 3 | 104 |
| Mohammad | Hassan | Mohsen | Akkar | Lebanon | Qaitea | 3 | 101 |
| Mohammad | Hassan | Mohsen | Akkar | Lebanon | Qaitea | 3 | 104 |
| Ghafari | Rasoul | Hashem | Berut | Lebanon | Hamra | 10 | 821 |
| Tony | Issa | Khall | Nabatiéh | Lebanon | Raoucheh | 11 | 415 |
| Jousef | Levi | Yaakoub | Nabatiéh | Lebanon | Raoucheh | 11 | 415 |
| Gamilia | Mostfali | Baidar | Berut | Lebanon | Ain El-Tine | 6 | 616 |
| Gamilia | Mostfali | Baidar | Berut | Lebanon | Ain El-Tine | 6 | 626 |
| Yousef | Michael | Yousef | Berut | Lebanon | Ain El-Tine | 6 | 616 |
| Yousef | Michael | Yousef | Berut | Lebanon | Ain El-Tine | 6 | 626 |
| Amir | Mostafa | Raidar | Painit | Lebanon | Dar Painit | 5 | 030 |

Result 2 x

Output

Action Output

Time Action Message Duration /

1 00:25:27 call getLocations() 9 row(s) returned 0.000 sec.

28. Procedure that stores number of all crimes.

DELIMITER //

```
create procedure getNumberOfEachCrime() begin  
Declare nbOfCrime int default 0;  
select count(crimeType) into nbOfCrime  
from criminalrecord;  
select nbOfCrime;  
end //
```

```

DELIMITER ;
call getNumberOfEachCrime();

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 15

| |
|-----------|
| nbofcrime |
| 7 |

Result 3 x

Output

Action Output

| # | Time | Action | Message |
|----|----------|---|-------------------|
| 30 | 00:48:41 | create procedure getNumberOfEachCrime() begin De... | 0 row(s) affected |
| 31 | 00:48:44 | call getNumberOfEachCrime() | 1 row(s) returned |

29. Procedure that stores Mother and Wife info of the suspect.

```

DELIMITER //
create procedure getMother_Wife_Info() begin
select s.firstname as SFirstName, s.LastName as SLastName,
m.FirstName as MFirstName, m.lastName as MLastName,
w.FirstName as WFirstName, w.LastName as WLastName
from suspect as s
inner join wifeinfo as w on s.wifeld = w.WifeID
inner join motherinfo as m on m.MotherID= s.MotherId;
end //
DELIMITER ;
call getMother_Wife_Info();

```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: 15

| SFirstName | SLastName | MFirstName | MLastName | WFirstName | WLastName |
|------------|-----------|------------|-------------|------------|-----------|
| Amir | Baidar | Emily | Mostafa | Lara | Srour |
| Ele | Marjeh | Aliveh | Nour ElDine | Jana | Mortadah |
| Ghofran | Hashem | Sara | Hasan | Clara | Smeaa |
| Yasin | Lakis | Hiba | Fakih | Emily | James |
| Mohammad | Mohsen | Mariam | Aliweyeh | Mariam | Hammoud |

Result 5 x

Output

Action Output

| # | Time | Action | Message |
|----|----------|---|-------------------|
| 38 | 01:01:01 | create procedure getMother_Wife_Info() begin select s.firstname as SFirstName, s.LastName as... | 0 row(s) affected |
| 39 | 01:01:04 | call getMother_Wife_Info() | 5 row(s) returned |

30. Procedure that stores suspects with one hand.

```

DELIMITER $$ 
create procedure getSupectWithOneHand() begin
select firstname, lastname from suspect as s
inner join body as b on s.bodyId = b.BodyID
inner join hands as h on h.handID = b.HandID
where h.HandNumber = 1;
end $$ 
DELIMITER ;
call getSupectWithOneHand();

```

The screenshot shows a MySQL Workbench interface. At the top, there's a 'Result Grid' with columns 'firstname' and 'lastname'. The data is as follows:

| firstname | lastname |
|-----------|----------|
| Meriam | Kansou |
| Mohammad | Mohsen |
| Gamila | Baidar |

Below the grid is a 'Result 6' section with an 'Output' tab. The output shows two log entries:

- # 43 01:08:38 create procedure getSuSpectWithOneHand() begin select firstname, lastname from suspect as ... 0
- # 44 01:08:40 call getSuSpectWithOneHand() 3

At the bottom, there's a log window with the following entries:

- 158 03:13:48 create trigger before_insert_Suspect after insert on suspect for each row begin if new.wifield < 4 then SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Wife Id must be less than 4'; end if; end // DELIMITER ;
- 159 03:13:51 insert into suspect values (13, "Hadi", "Dawoud", "Nororozi", "Male", "1994-02-03", 2, 3, 4, 5, 3); Error Code: 1644. Wife Id must be less than 4

f) 5 Triggers

31. A trigger that triggers a message if wife id is less than 4.

DELIMITER //

```
create trigger After_insert_Suspect
after insert on suspect
for each row begin
if new.wifield < 4
then SIGNAL SQLSTATE '45000' SET MESSAGE_TEXT = 'Wife Id must be less than 4';
end if;
end //
```

DELIMITER ;

```
insert into suspect values (13, "Hadi", "Dawoud", "Nororozi", "Male", "1994-02-03", 2, 3, 4, 5, 3);
```

Creating Users:

```
create user nour@"localhost" identified by
"admin" with max_connections_per_hour 100
max_queries_per_hour 1000
max_updates_per_hour 200
max_user_connections 5;
```

```
create user ali@"localhost" identified by
"ali1234" with
max_connections_per_hour 80
max_queries_per_hour 1100
max_updates_per_hour 230
max_user_connections 12;
```

```
create user mahdi@ '%' identified by "@3412$"
with max_connections_per_hour 90
max_queries_per_hour 500
max_updates_per_hour 20
max_user_connections 5;
```

```
create user zeinab@ '%' identified by
'zizi@345$' with
max_connections_per_hour 30
max_queries_per_hour 800
max_updates_per_hour 130
max_user_connections 9
```

```

create user nano@'localhost' identified by
'n8n0'with

max_connections_per_hour 200

max_queries_per_hour 3000

max_updates_per_hour 500

max_user_connections 8

```

```

527 max_user_connections 123
528 • create user mahdi@'%' identified by "034125" with
529   max_connections_per_hour 90
530   max_queries_per_hour 500
531   max_updates_per_hour 20
532   max_user_connections 51
533
534 • create user zeinab@'%' identified by 'zizi@3455' with
535   max_connections_per_hour 30
536   max_queries_per_hour 600
537   max_updates_per_hour 130
538   max_user_connections 91
539
540

Output
# Time Action Message Duration / Fetch
43 01:08:38 create procedure getSu(SpecWebOneHand) begin ... 0 row(s) affected 0.015 sec / 0.000 sec
44 01:08:40 call getSu(SpecWebOneHand) 3 row(s) returned 0.015 sec
45 01:35:45 create user nour@'localhost' identified by "admin" ... 0 row(s) affected 0.031 sec
46 01:35:48 create user ali@'localhost' identified by "al1234" wi... 0 row(s) affected 0.031 sec
47 01:35:51 create user mahdi@'%' identified by "034125" with ... 0 row(s) affected

```

Giving permission for users:

- Giving user Nour to select, update, and delete from database suspect.

```
grant select, update, delete on suspect.* to nour@'localhost';
```

- Giving permission for user Mahdi with no privileges.

```
grant usage on suspect.* to mahdi@'%';
```

- Giving permission for user Ali to select only from table suspect in the database suspect.

```
grant select on suspect.suspect to ali@'localhost';
```

- Giving permission for user zeinab to select, update and create from the table body in the suspect database.

```
grant select, update, create on suspect.body to zeinab@'%';
```

- Giving user Nano all permissions to use all databases.

```
grant all on *.* to nano@'localhost';
```

```

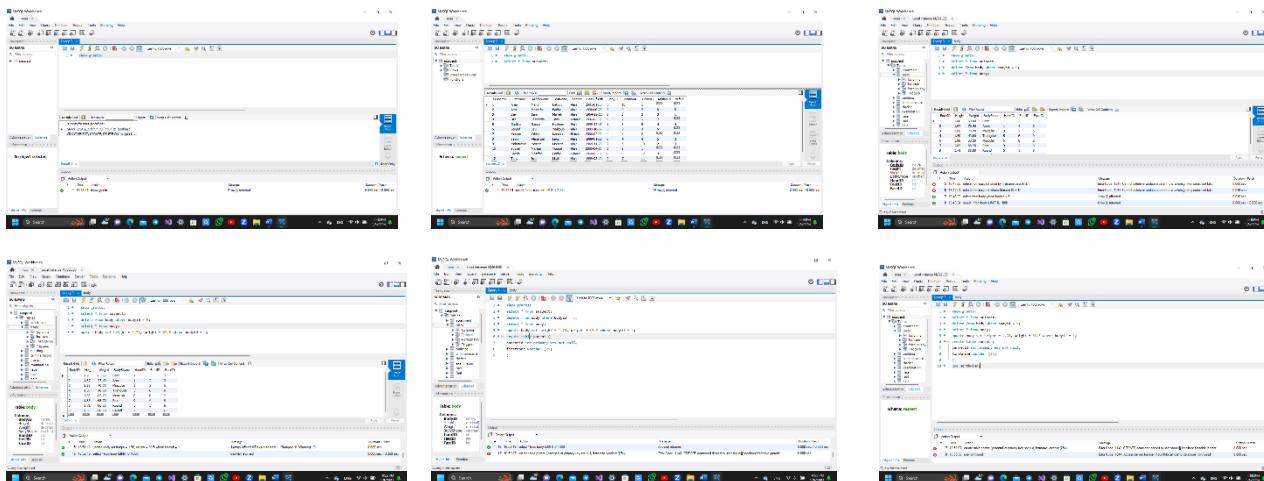
538 max_updates_per_hour 130
539 max_user_connections 9;
540
541 • create user nano@'localhost' identified by 'n8n0'with
542   max_connections_per_hour 200
543   max_queries_per_hour 3000
544   max_updates_per_hour 500
545   max_user_connections 8;
546
547 • grant select, update, delete on suspect.* to nour@'localhost';
548 • grant usage on suspect.* to mahdi@'%';
549 • grant select on suspect.suspect to ali@'localhost';
550 • grant select, update, create on suspect.body to zeinab@'%';

Output
# Time Action Message Duration / Fetch
49 01:35:56 create user nano@'localhost' identified by 'n8n0'with max_connections_per_hour 200 max_qu... 0 row(s) affected 0.015 sec
50 01:44:54 grant select, update, delete on suspect.* to nour@'localhost' 0 row(s) affected 0.016 sec
51 01:44:57 grant usage on suspect.* to mahdi@'%'; 0 row(s) affected 0.000 sec
52 01:44:58 grant select on suspect.suspect to ali@'localhost' Error Code: 1146. Table 'suspect.suspect' doesn't exist 0.000 sec
53 01:45:06 grant select on suspect.body to zeinab@'%'; 0 row(s) affected 0.015 sec
54 01:45:08 grant select, update, create on suspect.body to zeinab@'%'; 0 row(s) affected 0.000 sec
55 01:45:10 grant all on *.* to nano@'localhost'; 0 row(s) affected 0.016 sec

```

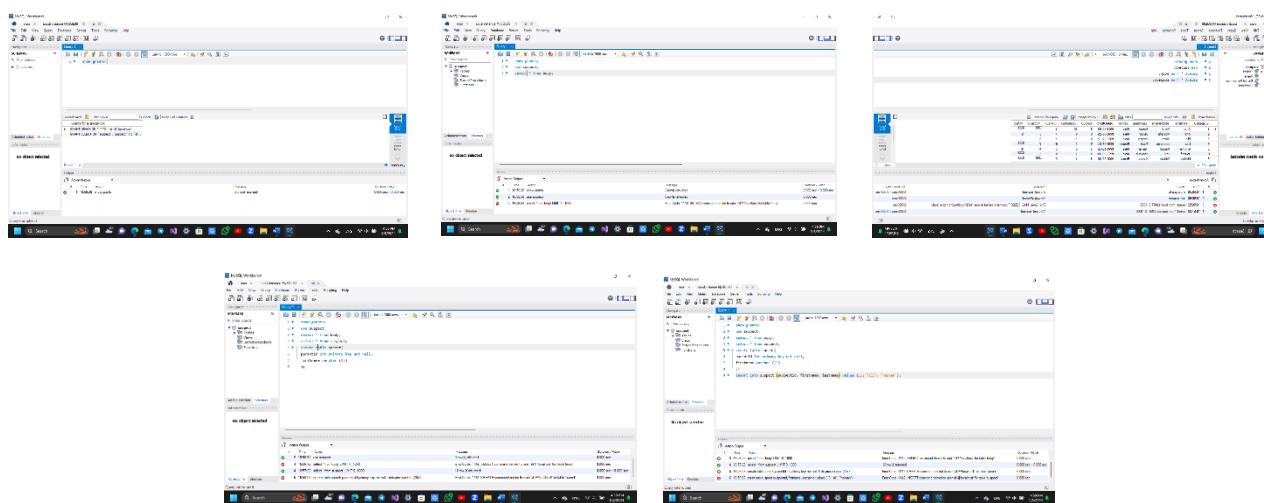
User Nour:

Can perform select, update and delete in suspect database but can't do anything else.

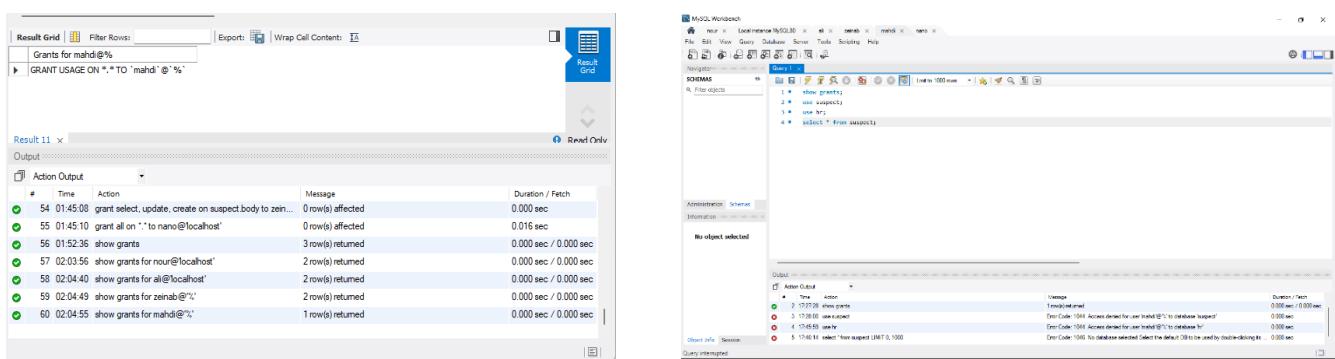


User Ali:

Can select only with table suspect in suspect database and can't perform any other actions.

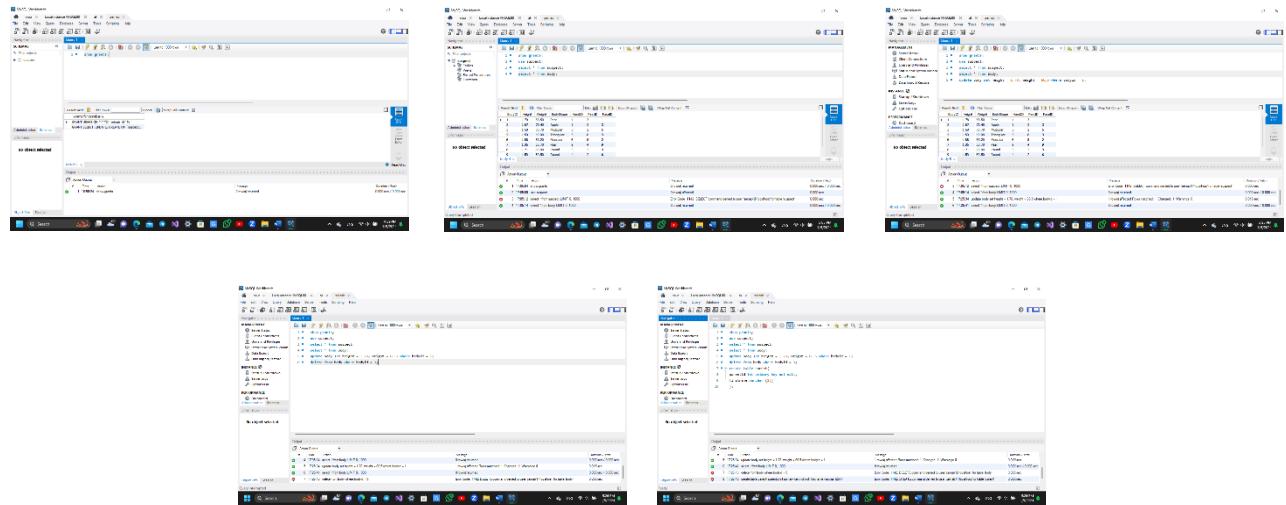


User Mahdi:



User Zeinab:

can select, update and create on the body table in suspect database and can't do anything else.



User Nano:

user nano can perform any action like using suspect, hr or Northwind database and select, delete or create etc. on any database.

