Al-Maaref University

Database Suspect

Nour Merhi

Database Lab

Dr. Wael Ayoub

Friday, January 5, 2024

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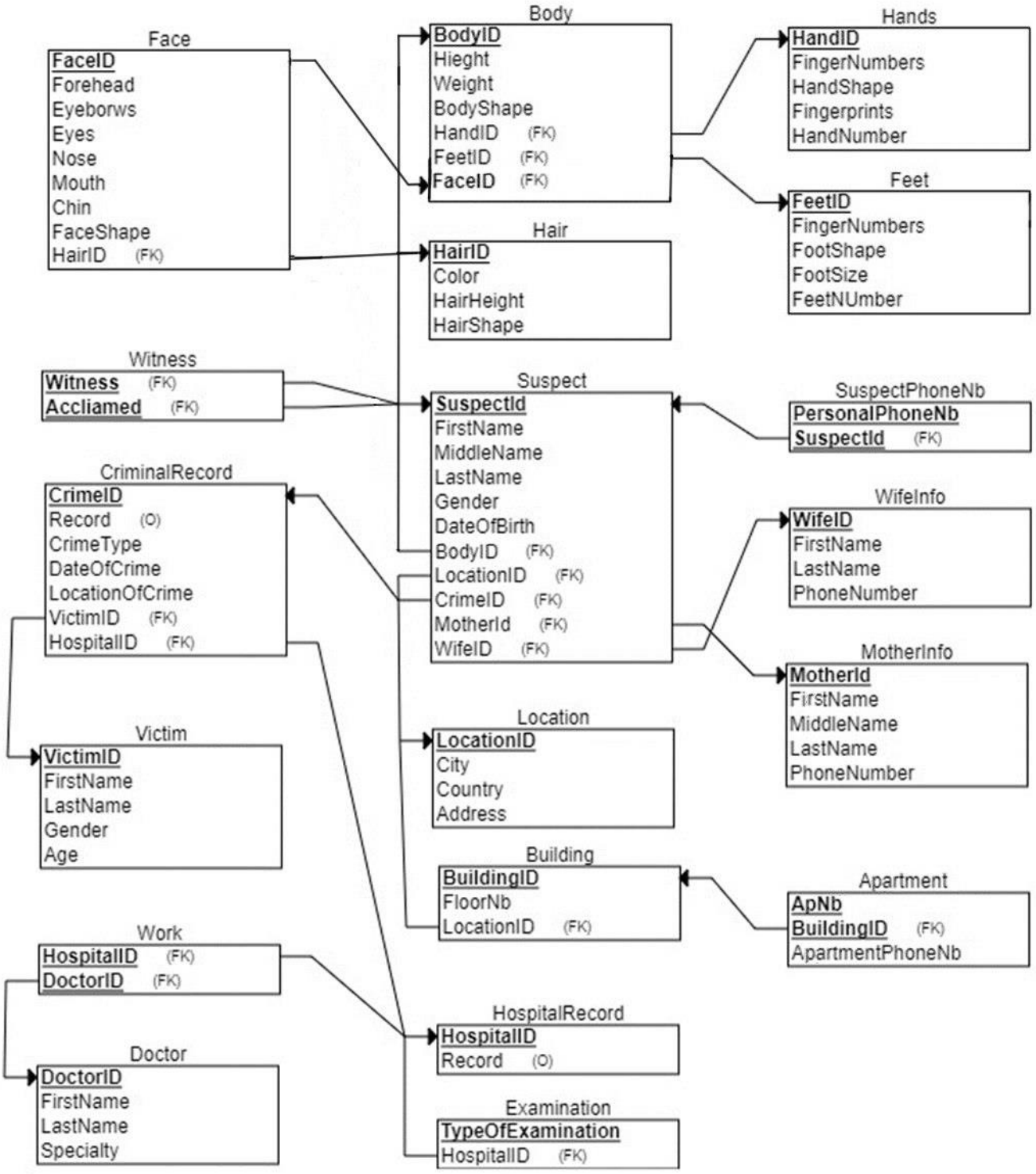
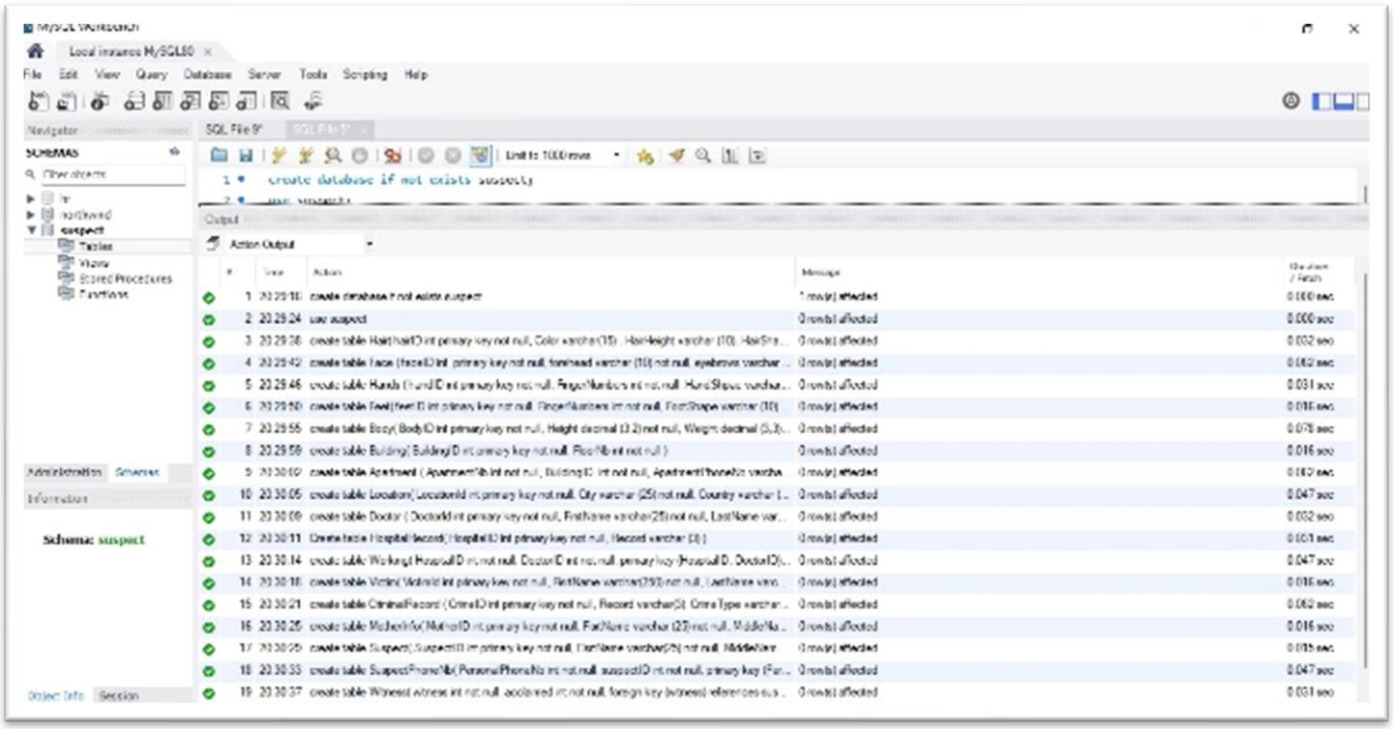
Relational Model:



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,
FisrtName 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,
FisrtName 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)
);
```



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");

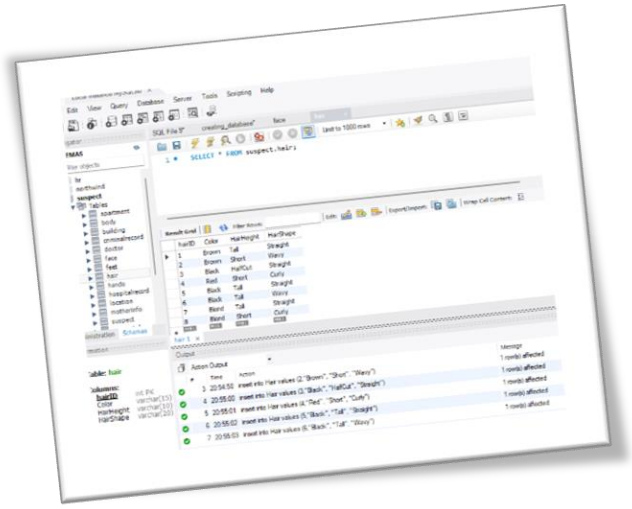
insert into Hair values (4,"Red", "Short", "Curly");

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");



- 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);

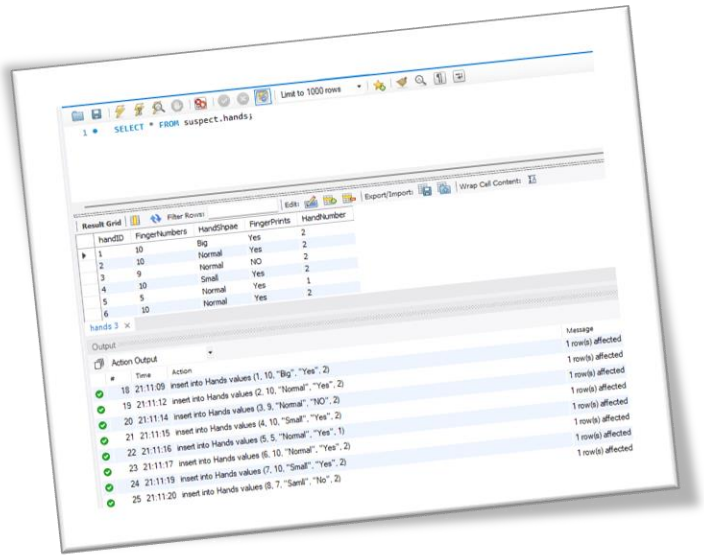
insert into Hands values (5, 5, "Normal", "Yes", 1);

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);



- 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);

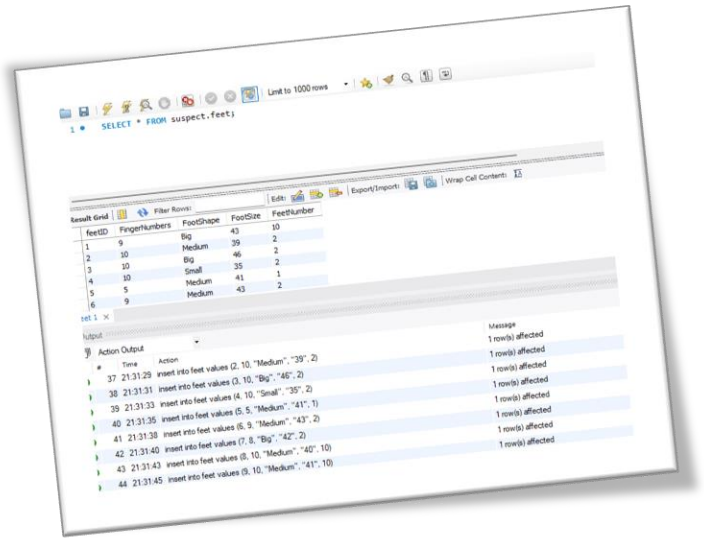
insert into feet values (5, 5, "Medium", "41", 1);

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);



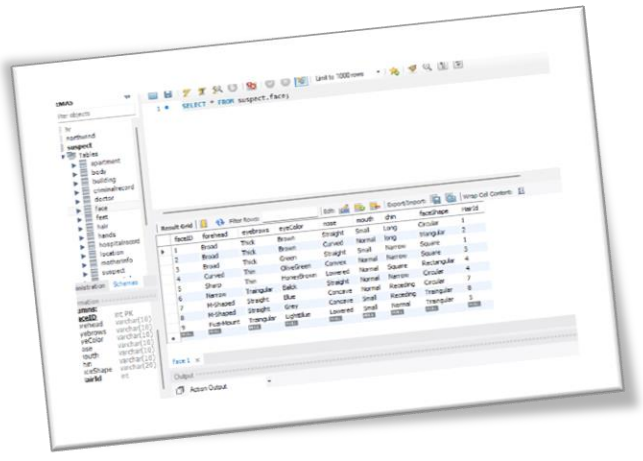
- Face table:

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", "Narrow", "Square", 3);



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, "Mascular", 3, 2, 5);

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

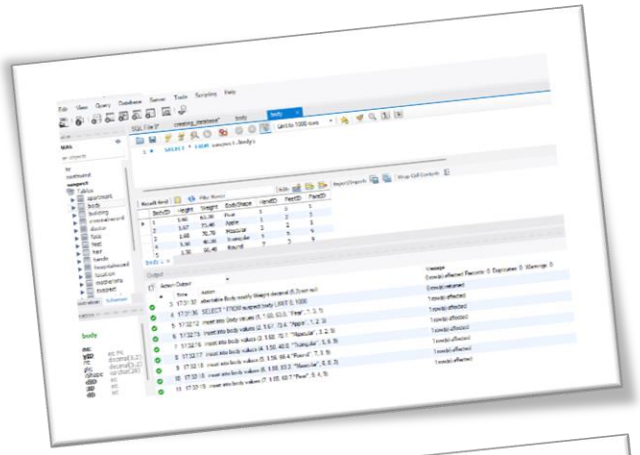
insert into body values (5, 1.56, 66.4,"Round", 7, 3, 9);

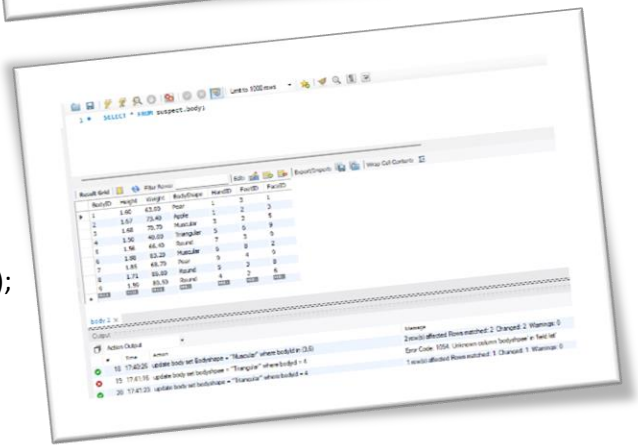
insert into body values (6, 1.88, 83.2, "Mascular", 6, 8, 2);

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);



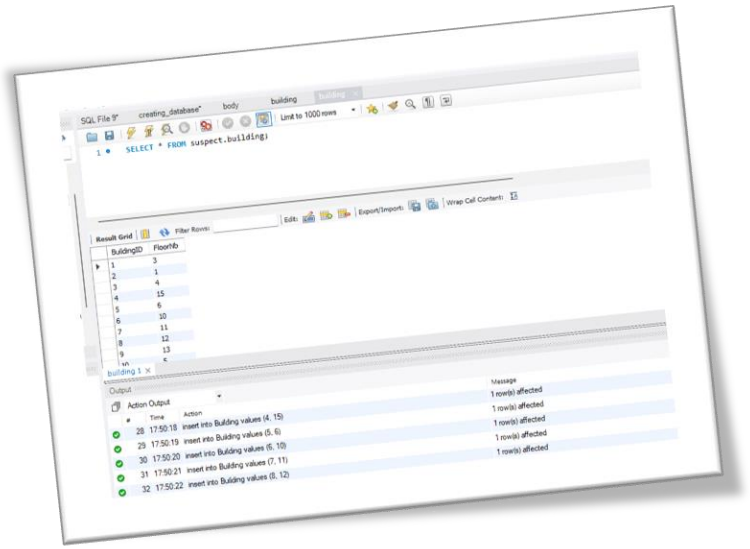


update body set Bodyshape = "Muscular" where bodyId in (3,6);

update body set **B**odyshape = "Triangular" where bodyid = 4;

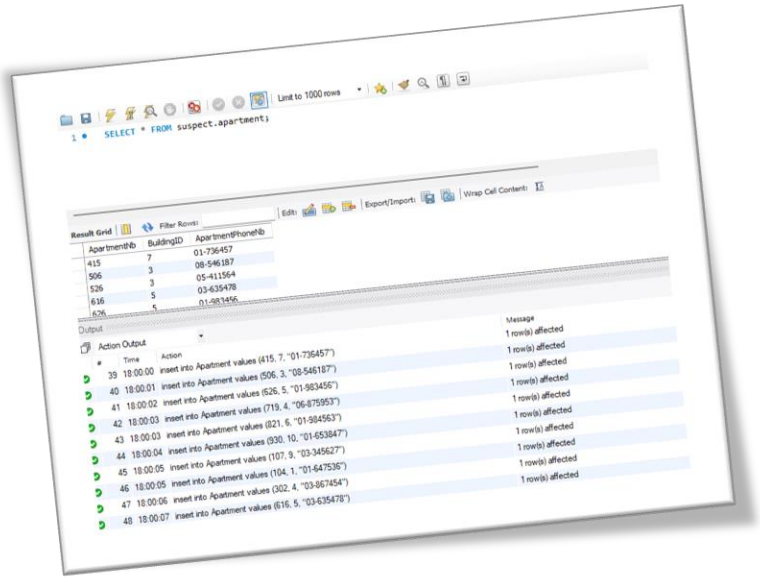
- Building

```
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);
```



- 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");
```



- 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);

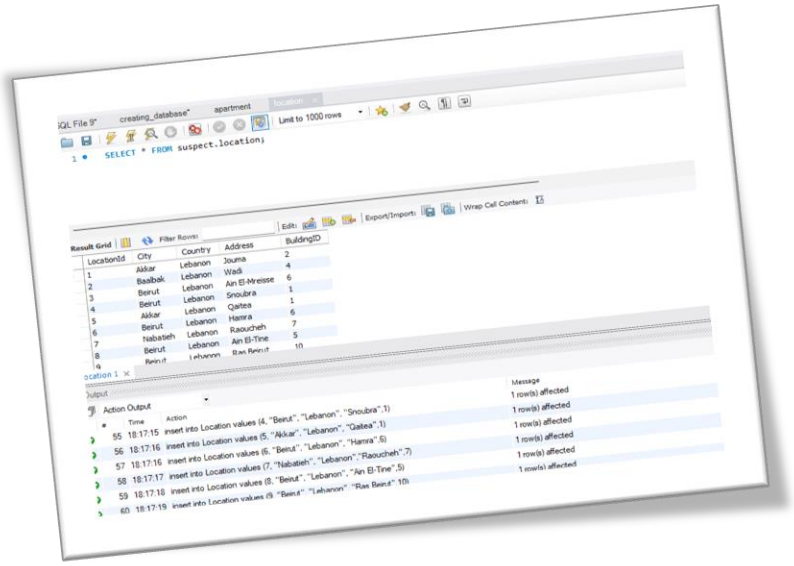
insert into Location values (4, "Beirut", "Lebanon", "Snoubra",1);

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);

- Doctor

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

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

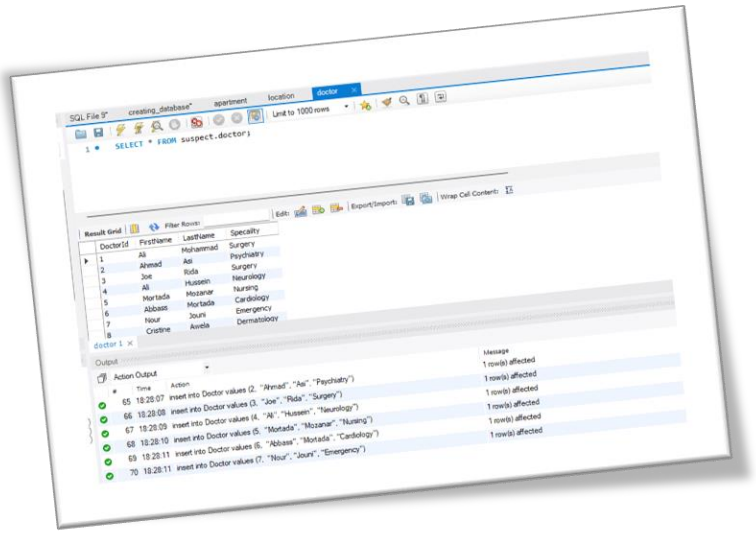
insert into Doctor values (3, "Joe", "Rida", "Surgery");

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");

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");

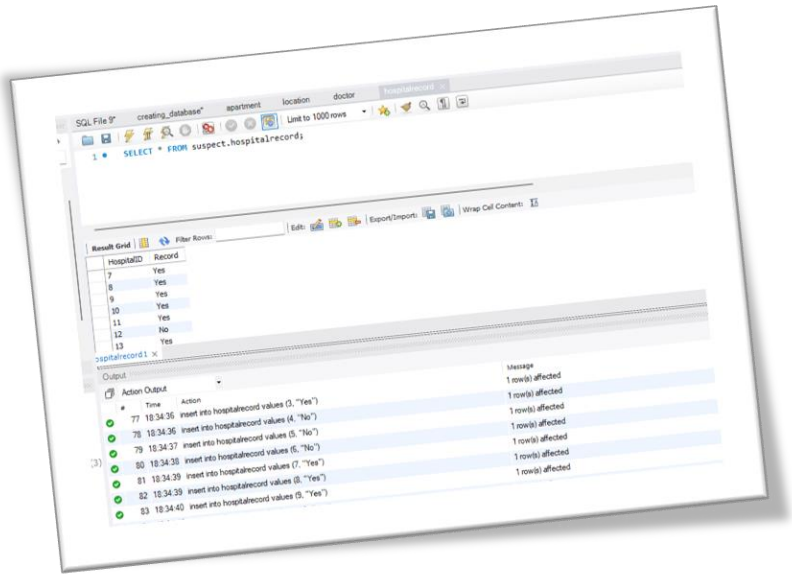
insert into hospitalrecord values (9, "Yes");

insert into hospitalrecord values (10, "Yes");

insert into hospitalrecord values (11, "Yes");

insert into hospitalrecord values (12, "No");

insert into hospitalrecord values (13, "Yes");



- 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");

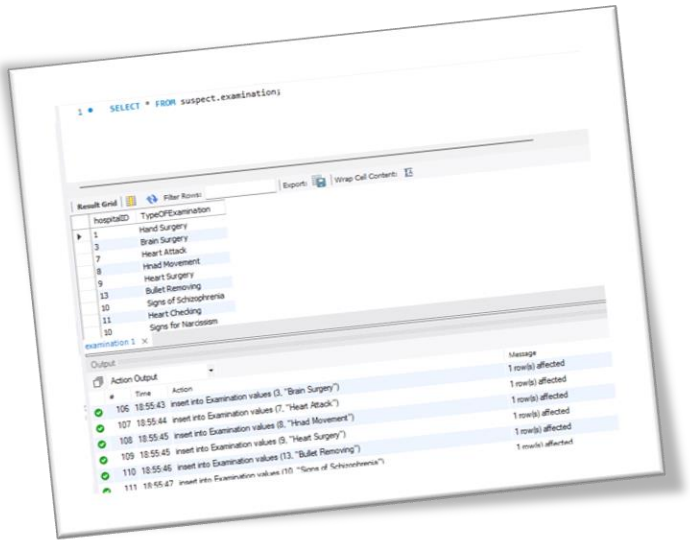
insert into Examination values (9, "Heart Surgery");

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");



- 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);

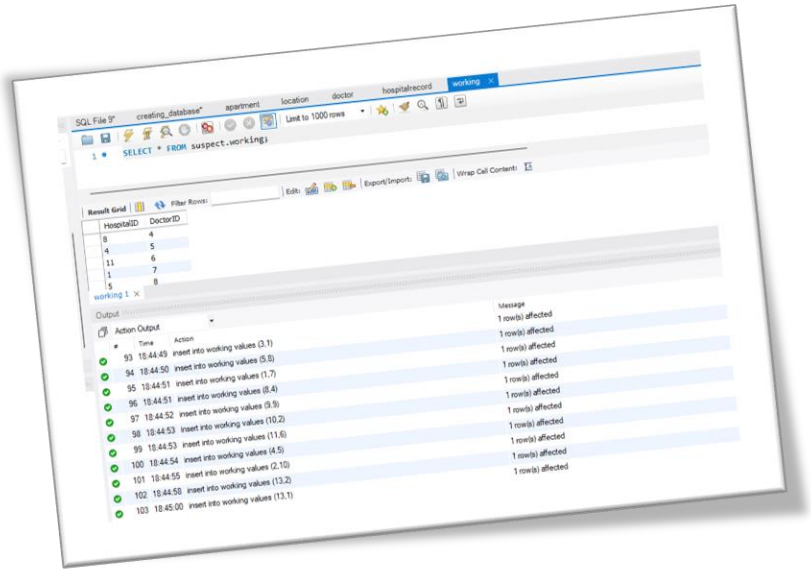
insert into working values (11,6);

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);

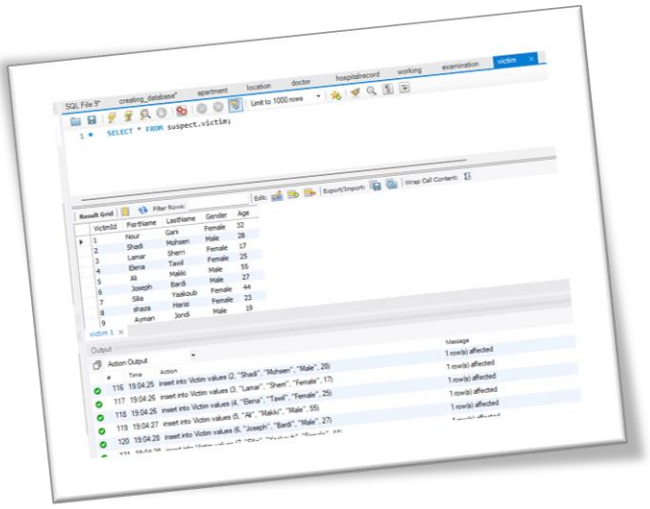
insert into Victim values (5, "Ali", "Makki", "Male", 55);

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);

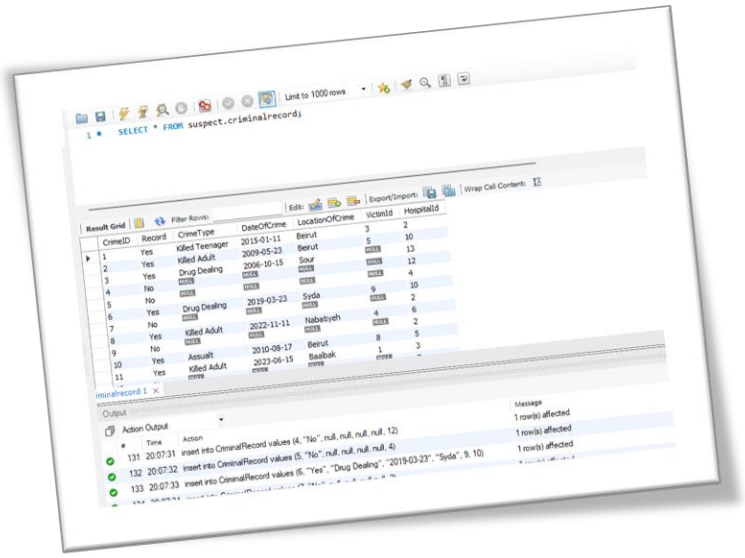
insert into CriminalRecord values (6, "Yes", "Drug Dealing", "2019-03-23", "Syda", 9, 10);

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");

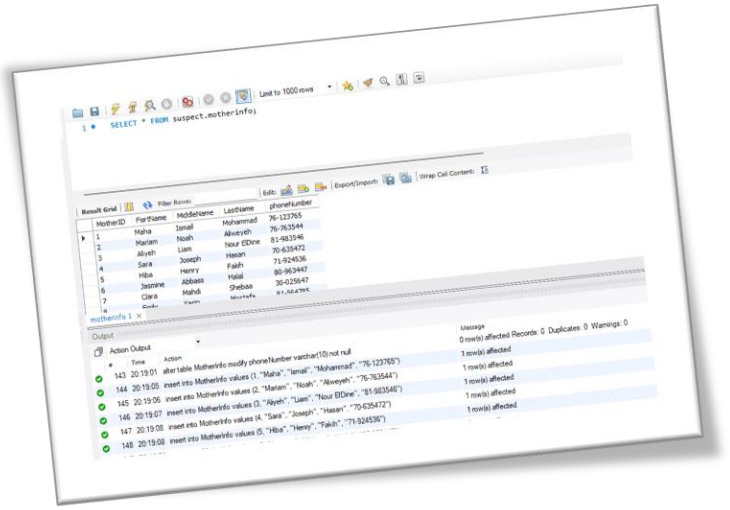
insert into MotherInfo values (2, "Mariam", "Noah", "Alaweyeh ", "76-763544");

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");

- Wife Info:

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

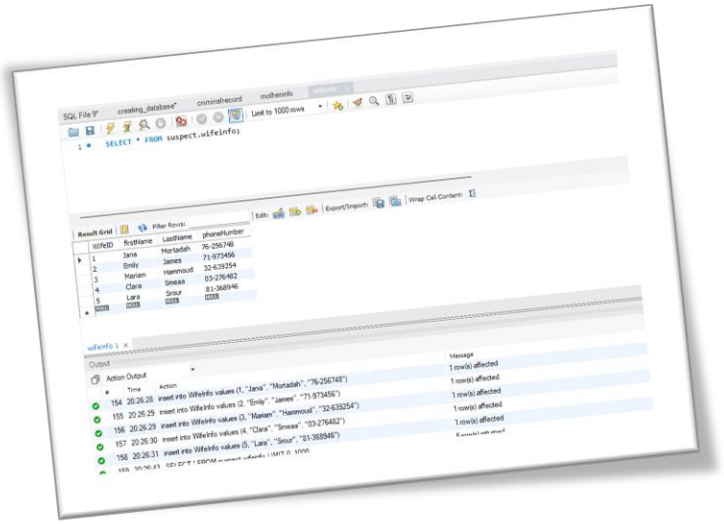
insert into WifeInfo values (1, "Jana", "Mortadah", "76-256748");

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

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

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

insert into WifeInfo 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;

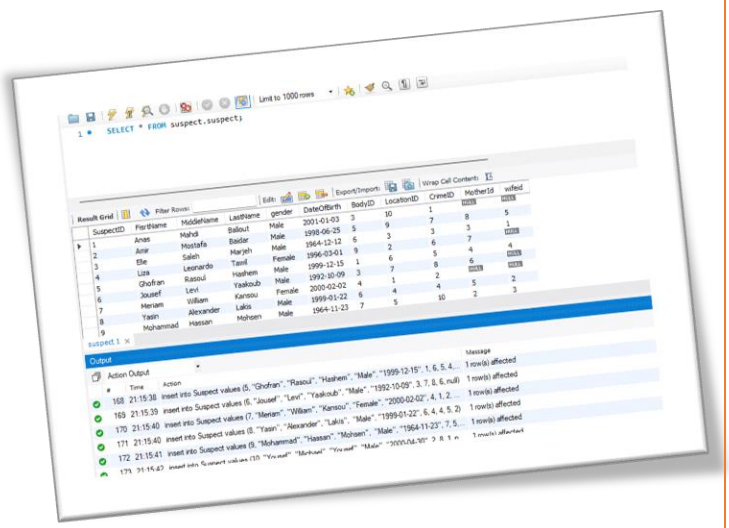
insert into Suspect values (1, "Anas", "Mahdi", "Ballout", "Male", "2001-01-03", 3, 10, 1, null, null);

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);

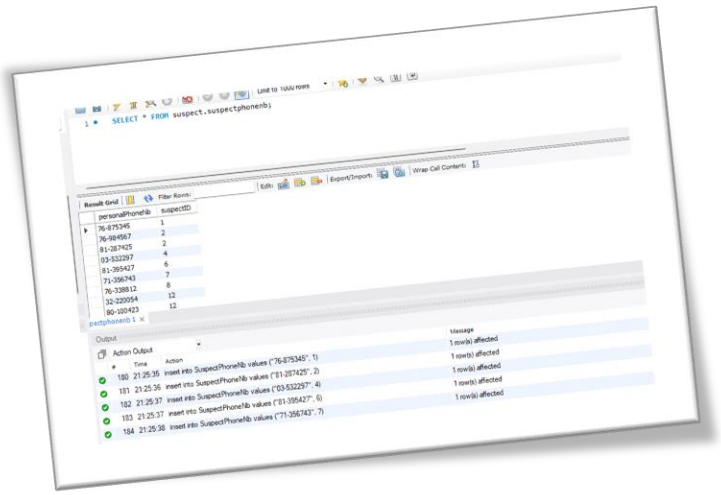
insert into SuspectPhoneNb values ("81-395427", 6);

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);



- Witness:

insert into Witness values (1, 12);

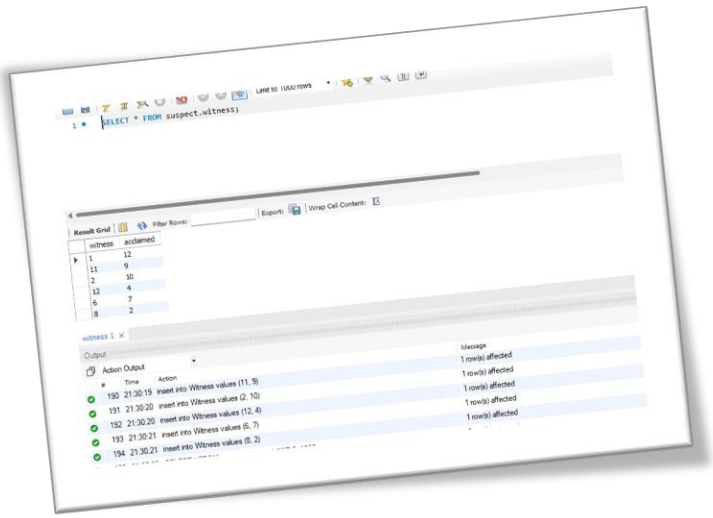
insert into Witness values (11, 9);

insert into Witness values (2, 10);

insert into Witness values (12, 4);

insert into Witness values (6, 7);

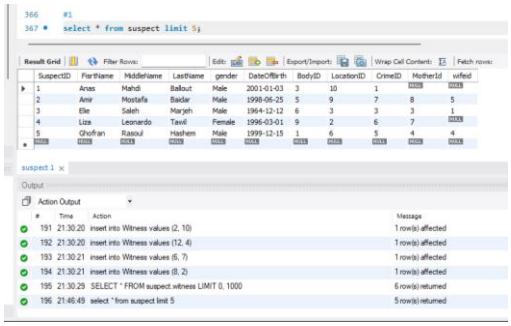
insert into Witness values (8, 2);



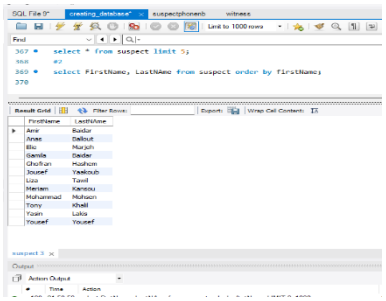
Queries Done on this Project:

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

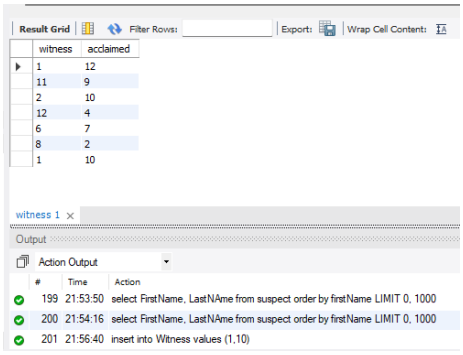
1. select * from suspect limit 5;
   selects first 5 suspects.



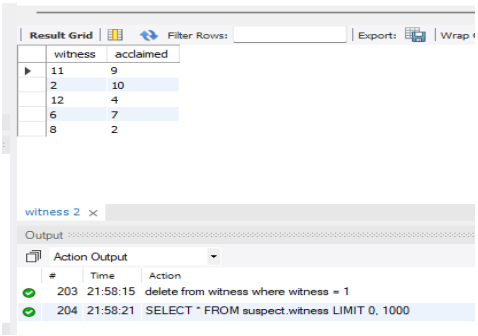
2. select FirstName, LastName from suspect order by firstName;
   selects name of the suspect in descending order.



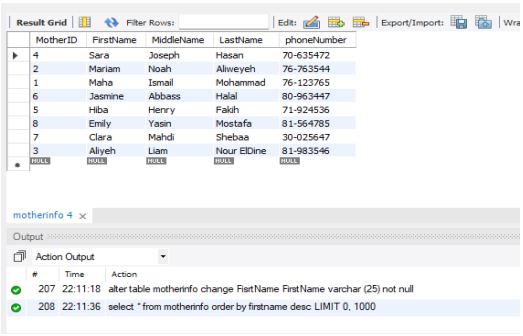
3. insert into Witness values (1,10);
   insert new value into witness table



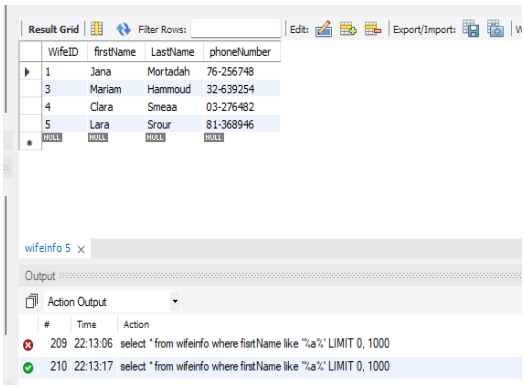
4. delete from witness where witness = 1;
   delete row having witness id equals to1



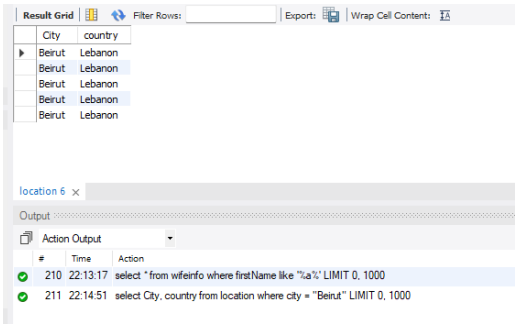
5. select * from motherinfo order by firstname desc;
   select all info of the mother ordered by firstname.



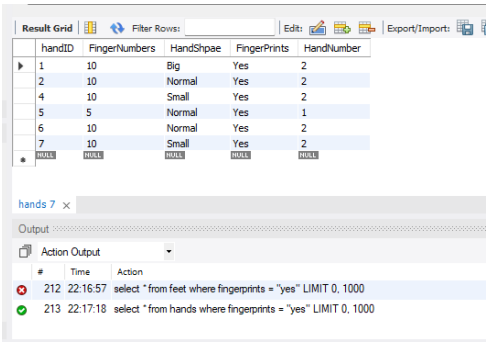
6. select * from wifeinfo where firstName like '%a%';
   select all wife info whose first name contain an s in it.



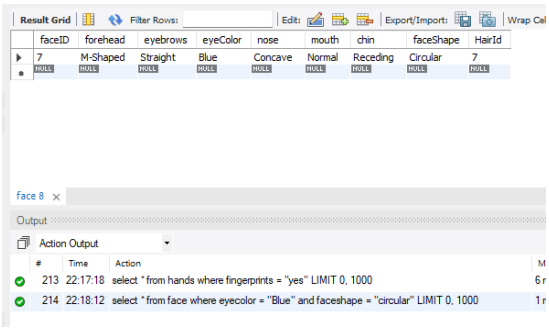
7. select City, country from location where city = "Beirut";
   Retrieves cities equal to Beirut and their country.



8. select * from hands where fingerprints = "yes";
   selects hands who have fingerprints inserted to the table.



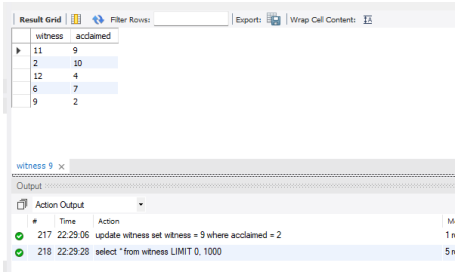
9. select * from face where eyecolor = "Blue" and faceshape = "circular";
   selects all info about a face who have blue eyes and circular face shape.



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

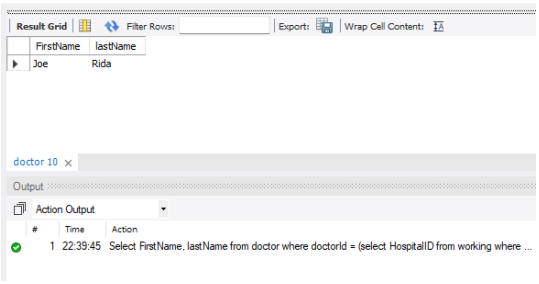
    select * from witness;

    updates witness to be 9 whose acclaimed is 2.

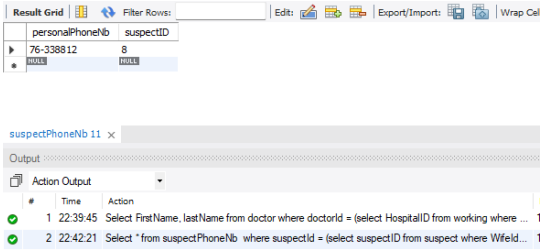


b) 5 sub-queries.

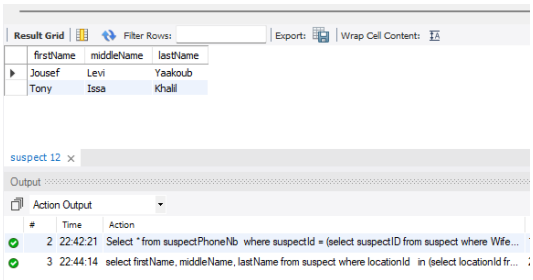
11. Select FirstName, lastName from doctor where doctorId = (select HospitalID from working where hospitalId = 3);
    Selects the first name and last name of the Doctor who works in the hospital having id equals to 3.



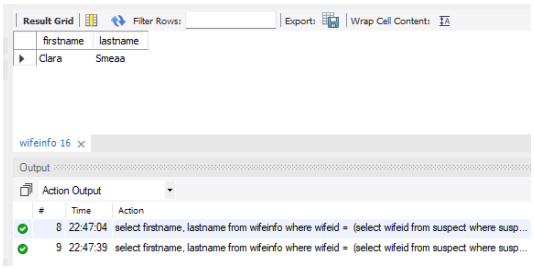
12. Select * from suspectPhoneNb where suspectId = (select suspectID from suspect where WifeId = (select wifeId from wifeInfo where FirstName = "Emily" and LastName = "James"));
    selects all suspect's phone numbers whose wife is named Emily James.



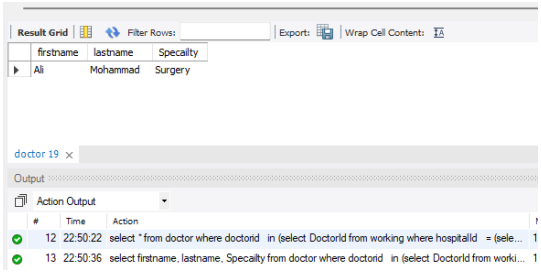
13. select firstName, middleName, lastName from suspect where locationId in (select locationId from location where City = "Nabatieh");
    selects full name of the suspects who lives in the city Nabatiyeh.



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.

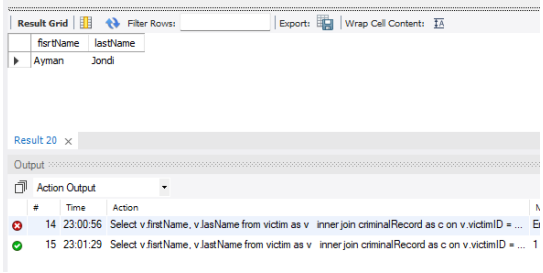


15. select firstname, lastname, Specailty from doctor where doctorid in (select DoctorId from working where hospitalId = (select hospitalId from hospitalRecord where hospitalid = 3));
    selects the full name and specialty od the doctor who works the hospital having id 3;

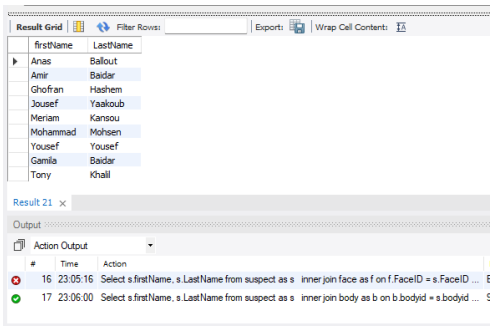


c) 5 Join queries.

16. Select v.fisrtName, v.lastName from victim as v
    inner join criminalRecord as c on v.victimID = c.victimID
    inner join suspect as s on s.crimeID = c.CrimeID where s.FirstName = "Liza" and s.lastNAme = "Tawil";
    selects victims' full name who has been killed by Liza Tawil.



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	Ballout
Amir	Baidar
Ghofran	Hashem
Jousef	Yaakoub
Meriam	Kansou
Mohammad	Mohsen
Yousef	Yousef
Gamila	Baidar
Tony	Khalil

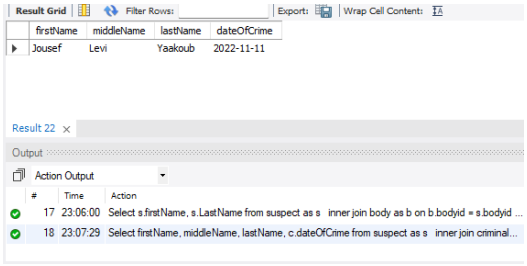
Result 21

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 ...
17	23:06:00	Select s.firstName, s.LastName from suspect as s inner join body as b on b.bodyid = s.bodyid ...

18. Select firstName, middleName, lastName, c.dateOfCrime from suspect as s
inner join criminalRecord as c on c.crimeId = s.CrimeID 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

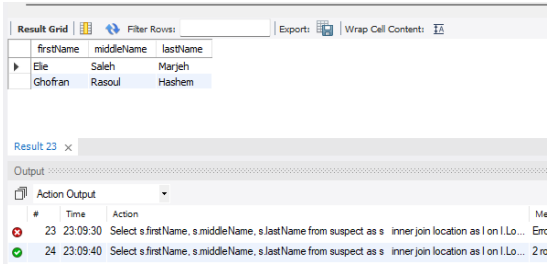
Result 22

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 ...
18	23:07:29	Select firstName, middleName, lastName, c.dateOfCrime from suspect as s inner join criminal...

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
Elie	Saleh	Marjeh
Ghofran	Rasoul	Hashem

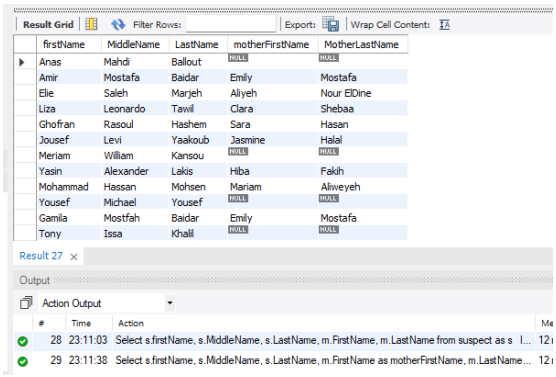
Result 23

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.Lo...
24	23:09:40	Select s.firstName, s.middleName, s.lastName from suspect as s inner join location as l on l.Lo...

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.



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	Fakih
Mohammad	Hassan	Mohsen	Mariam	Aliweyeh
Yousef	Michael	Yousef	NULL	NULL
Gamila	Mostfah	Baidar	Emily	Mostafa
Tony	Issa	Khalil	NULL	NULL

Result 27

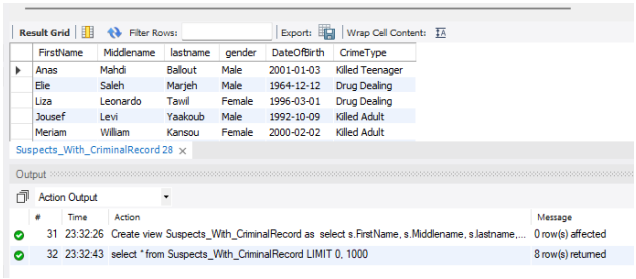
Output

Action Output

#	Time	Action
28	23:11:03	Select s.firstName, s.MiddleName, s.LastName, m.FirstName, m.LastName from suspect as s
29	23:11:38	Select s.firstName, s.MiddleName, s.LastName, m.FirstName as motherFirstName, m.LastName...

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.CrimeId = s.CrimeID where c.Record = "Yes";
select * from Suspects_With_CriminalRecord;



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

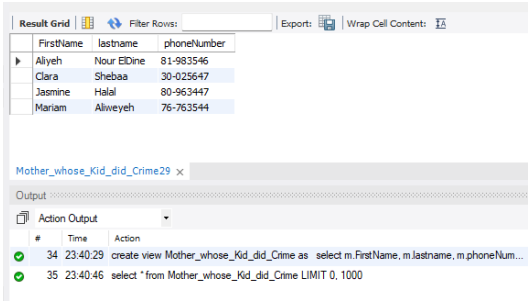
Suspects_With_CriminalRecord 28

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.CrimeID = s.CrimeID where c.record = "Yes";
select * from Mother_whose_Kid_did_Crime;



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

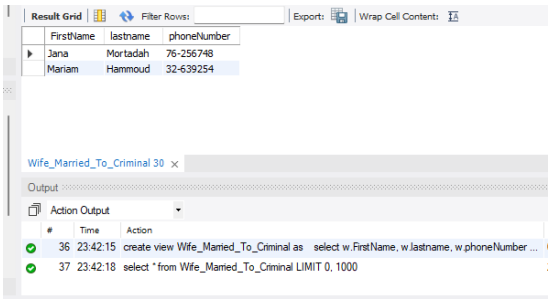
Mother_whose_Kid_did_Crime29

Output

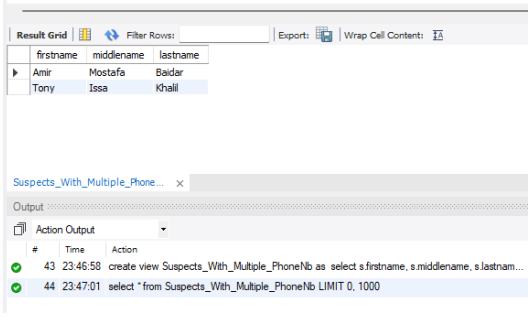
Action Output

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

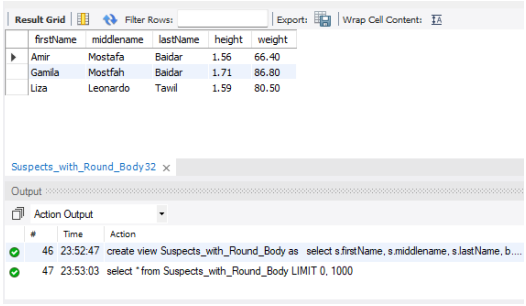
23. create view Wife_Married_To_Criminal as
select w.FirstName, w.lastname, w.phoneNumber from wifeinfo as winner join suspect as s on w.wifeid = s.wifeid inner join criminalrecord as c on c.CrimeID = s.CrimeID where c.record = "Yes";
select * from Wife_Married_To_Criminal;



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;



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;

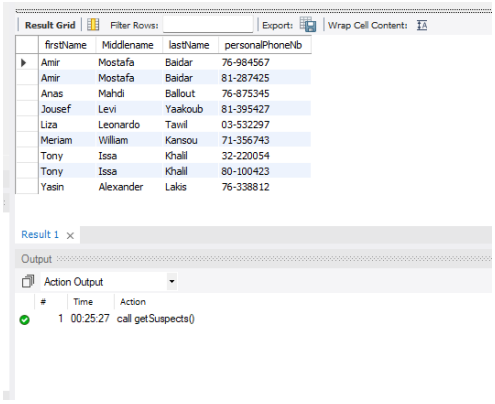


e) 5 Stored procedures

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	Baidar	76-984567
Amir	Mostafa	Baidar	81-287425
Anas	Mahdi	Ballout	76-875345
Jousef	Levi	Yaakoub	81-395427
Liza	Leonardo	Tawil	03-532297
Meriam	William	Kansou	71-356743
Tony	Issa	Khalil	32-220054
Tony	Issa	Khalil	80-100423
Yasin	Alexander	Lakis	76-338812

Result 1

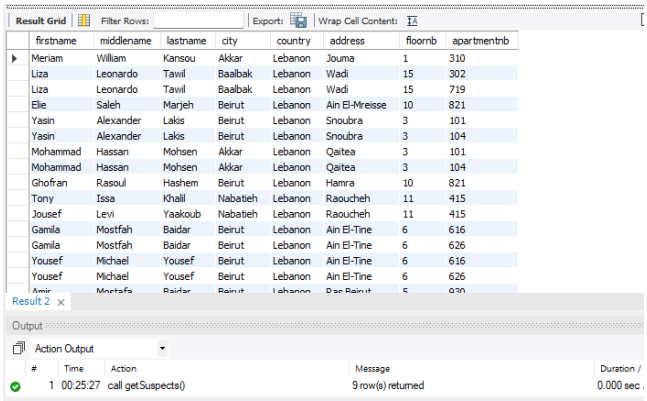
Output

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	Jouma	1	310
Liza	Leonardo	Tawil	Baalbak	Lebanon	Wadi	15	302
Liza	Leonardo	Tawil	Baalbak	Lebanon	Wadi	15	719
Elie	Saleh	Marjeh	Beirut	Lebanon	Ain El-Mreisse	10	821
Yasin	Alexander	Lakis	Beirut	Lebanon	Snoubra	3	101
Yasin	Alexander	Lakis	Beirut	Lebanon	Snoubra	3	104
Mohammad	Hassan	Mohsen	Akkar	Lebanon	Qaitea	3	101
Mohammad	Hassan	Mohsen	Akkar	Lebanon	Qaitea	3	104
Ghofran	Rasoul	Hashem	Beirut	Lebanon	Hamra	10	821
Tony	Issa	Khalil	Nabatieh	Lebanon	Raoucheh	11	415
Jousef	Levi	Yaakoub	Nabatieh	Lebanon	Raoucheh	11	415
Gamila	Mostfah	Baidar	Beirut	Lebanon	Ain El-Tine	6	616
Gamila	Mostfah	Baidar	Beirut	Lebanon	Ain El-Tine	6	626
Yousef	Michael	Yousef	Beirut	Lebanon	Ain El-Tine	6	616
Yousef	Michael	Yousef	Beirut	Lebanon	Ain El-Tine	6	626

Result 2

Output

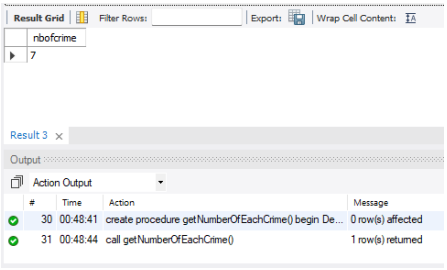
Action Output

#	Time	Action	Message	Duration /
1	00:25:27	call getSuspects()	9 row(s) returned	0.000 sec

28. Procedure that stores number of all crimes.

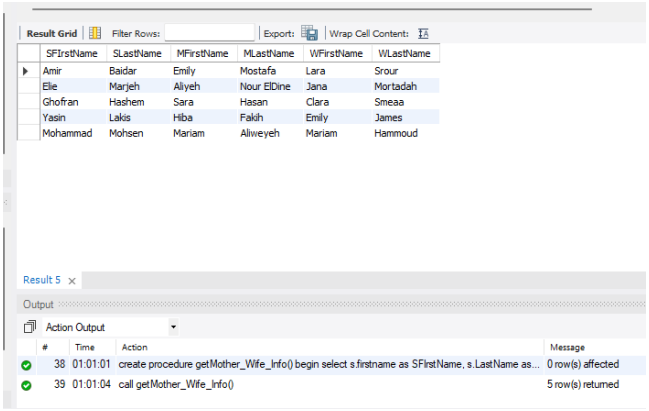
```
DELIMITER //
create procedure getNumberOfEachCrime() begin
Declare nbOfCrime int default 0;
select count(crimeType) into nbOfCrime
from criminalrecord;
select nbofcrime;
end //
```

```
DELIMITER ;
call getNumberOfEachCrime();
```



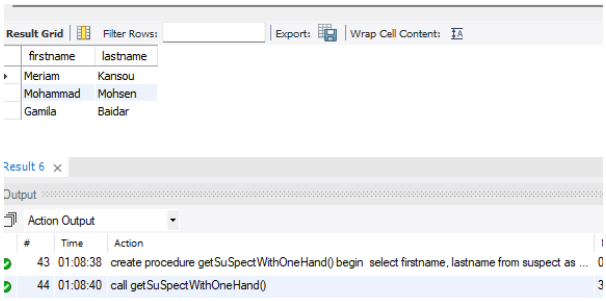
29. Procedure that stores Mother and Wife info of the suspect.

```
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.wifeId = w.WifeID
inner join motherinfo as m on m.MotherID= s.MotherId;
end //
DELIMITER ;
call getMother_Wife_Info();
```



30. Procedure that stores suspects with one hand.

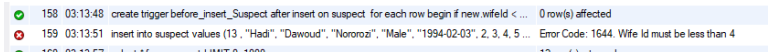
```
DELIMITER $$
create procedure getSuSpectWithOneHand() begin
select firstname, lastname from suspect as s
inner join body as b on s.bodyId = b.BodyID
inner join hands as h on h.handID = b.HandID
where h.HandNumber = 1;
end $$
DELIMITER ;
call getSuSpectWithOneHand();
```



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.wifeId < 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 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 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 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
```

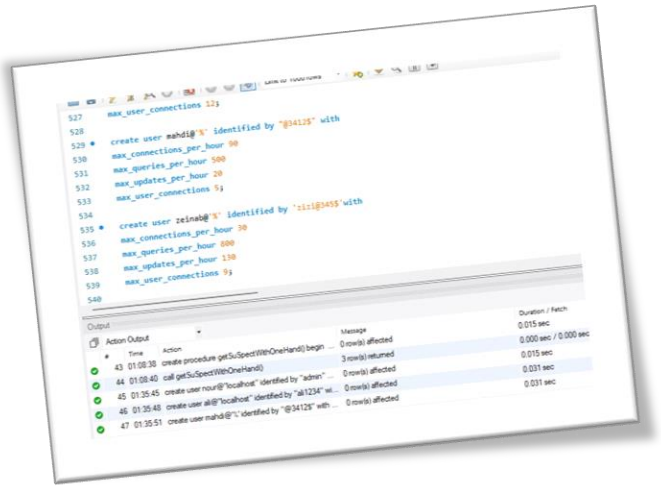
create user nano@'localhost' identified by 'n8n0'with

max_connections_per_hour 200

max_queries_per_hour 3000

max_updates_per_hour 500

max_user_connections 8



Giving permission for users:

a) Giving user Nour to select, update, and delect from database suspect.

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

b) Giving permission for user Mahdi with no privileges.

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

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

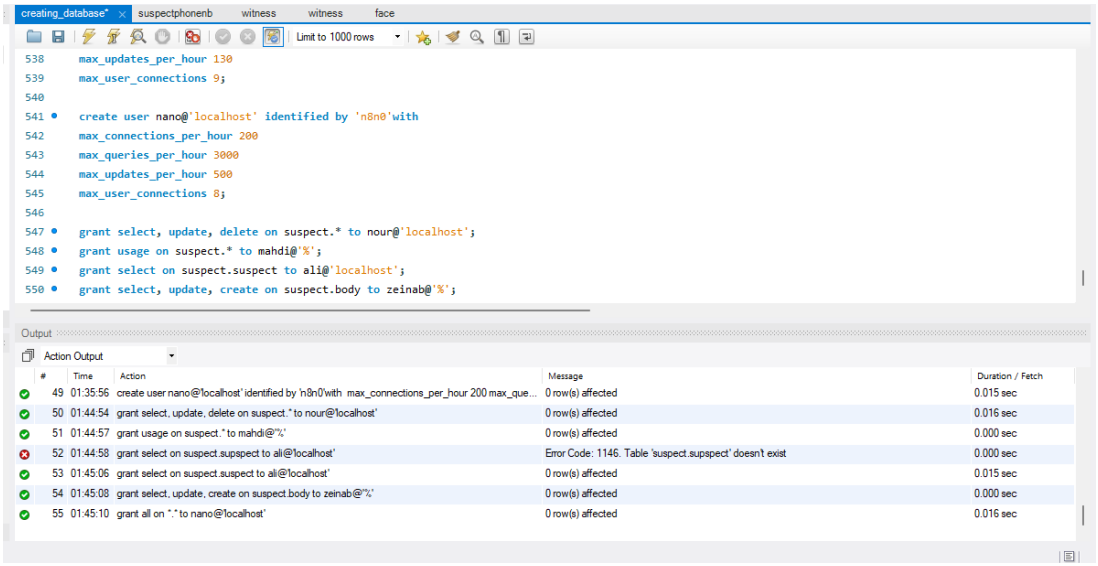
```
grant select on suspect.suspect to ali@'localhost';
```

d) 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@'%';
```

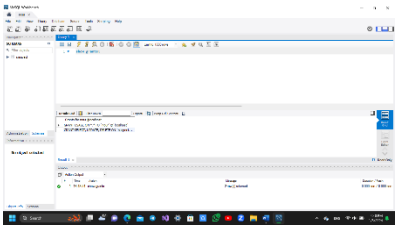
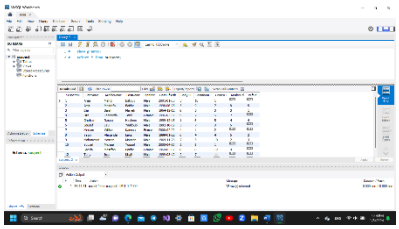
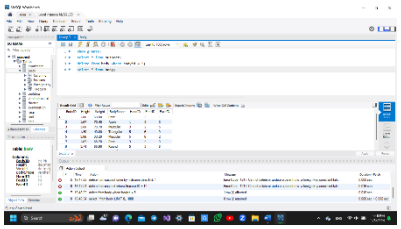
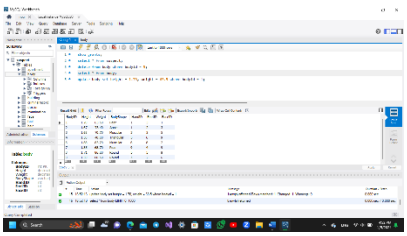
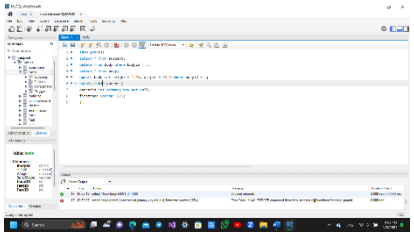
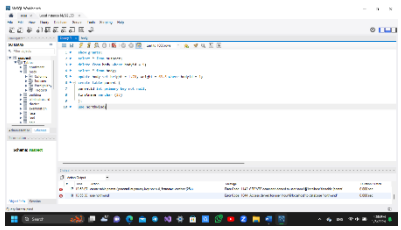
e) Giving user Nano all permissions to use all databases.

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



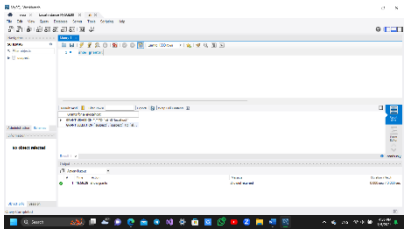
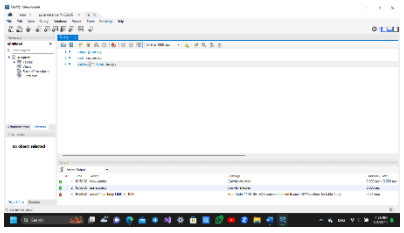
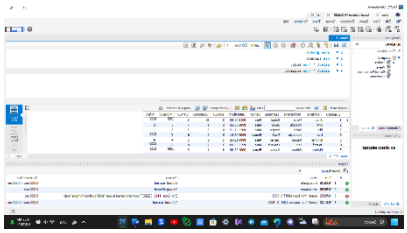
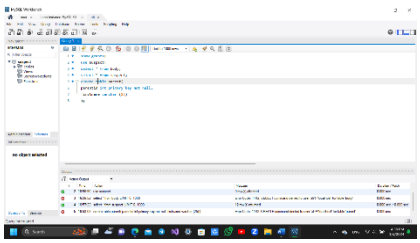
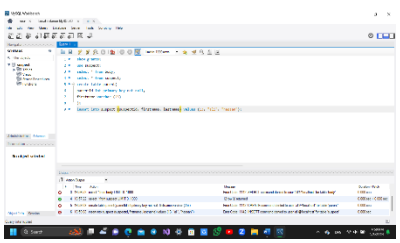
User Nour:

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

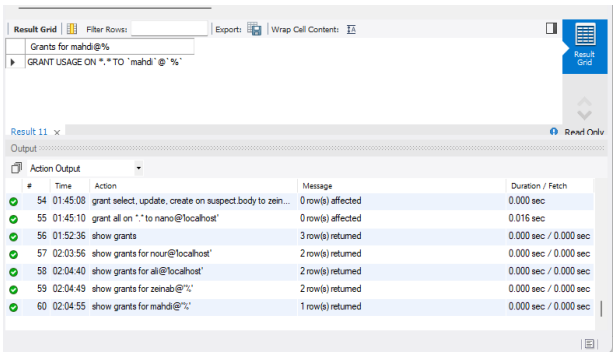







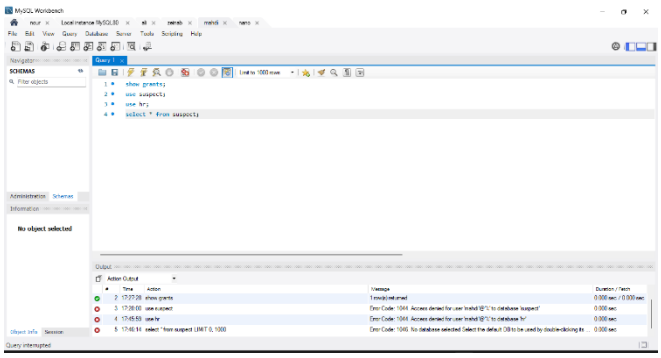
User Ali:

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

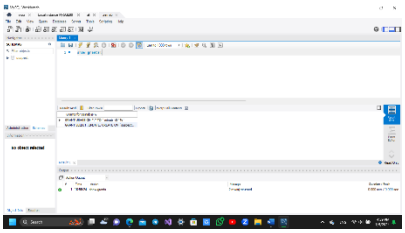
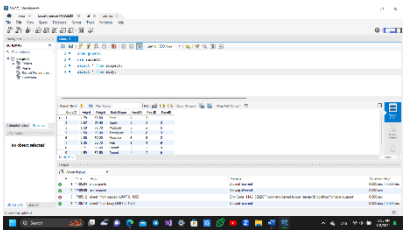
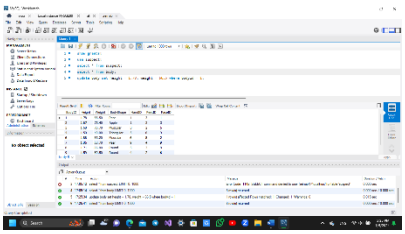
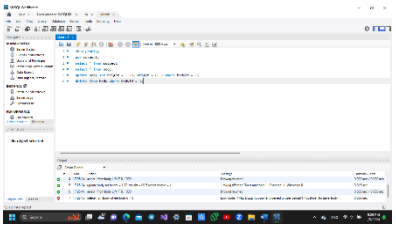
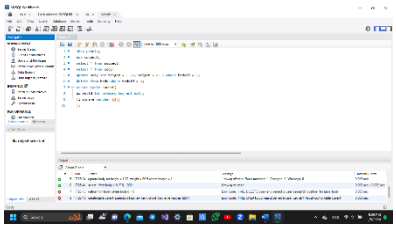
User Mahdi:





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.