ASSIGNMENT 2

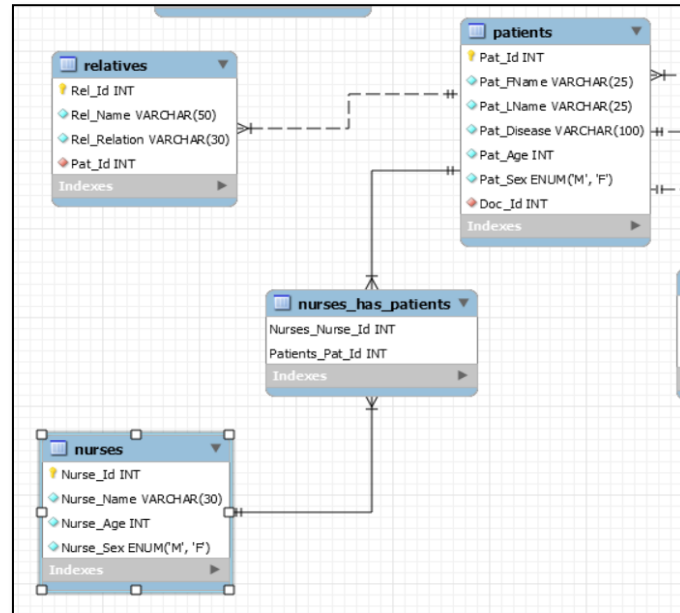## GROUP 1

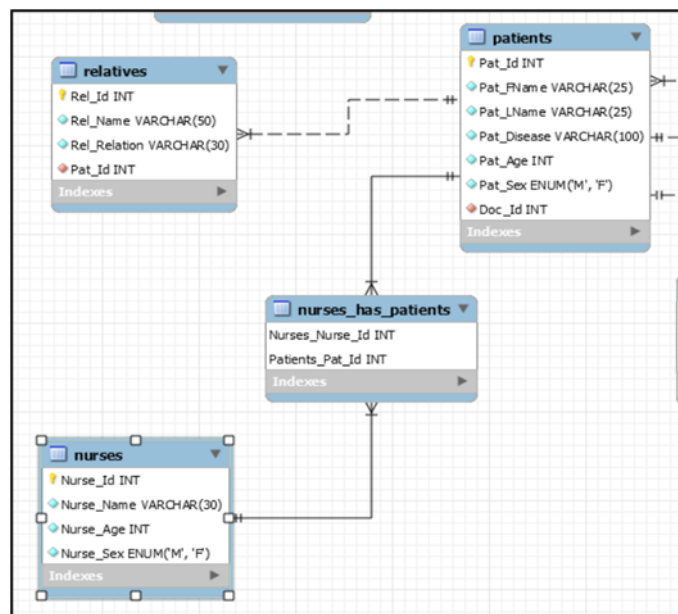### 1. One Many-to-Many Relation

The relation between Patients and Nurses is one example of Many-to-Many Relation.

2. Represent Composite Key and Weak Entity

The combination of **Nurses_Nurse_Id** and **Patients_Pat_Id** as Primary Key for the table **Nurses_has_Patients** forms the Composite Key.

The Relatives Table in the Database forms the Weak Entity as it depends on Patients Table.

3. Violation of Primary Key, Unique Key, Not Null and Default Key Constraints through Insertion

The violation of Primary and Unique key is explained in the following screenshot as comments.

The violation of Not Null is explained in the following screenshot as comments.

The violation of Default Key Constraint is explained in the following screenshot as comments.

4. One Derived Attribute

The derived attribute is achieved in the Bills table with a formula and explained in the form of comments.

5. Insert tuple into table to check how foreign key constraint works

This is done to check how the foreign key constraint works and is explained in the form of comments.

```sql
use myHospital;
/*      1. Many-to-Many relation is the relation between Patients and Nurses          */
/*      2. Composite key is the combination of (Nurses_Nurse_Id, Patients_Pat_Id) and the weak entity is Relatives Table          */
/*      3. Violation of Primary key is same as violation of Unique Key          */
/*          As the Speciality_Id is unique and Primary Key and 110 already exists in table, it doesn't accept same values          */
insert into Specialities values (110, 'Orthodontics');
/*      3. Inserting Null Value in an attribute set to Not Null should give Error          */
/*          Here Speciality_Id is set to Not Null and if Null value is inserted it must give error          */
insert into Specialities values (null, 'Orthodontics');
/*      3. Not inserting any value in an attribute not having default value must give Error          */
/*          Here Speciality_Name doesn't have any default value and if not assigned any value it must give Error          */
insert into Specialities(Speciality_Id) values (111);
/*      4. Derived Attribute          */
/*          In Bills table to calculate total bill we are adding consulation fee and room charges as 1000 rs per day          */
select Consultation_Fee + (datediff(Date_Discharged,Date_Admitted))* 1000 as Total_Fee from Bills;
/*      5. We are adding Speciality_Id in Doctors Table directly without adding in Specialities table it is violating foreign key rules          */
/*          There is no 111 Speciality_Id in Specialities Table and if we give it in Speciality_Id in Doctors Table  it must give Error          */
insert into Doctors values (221,'Nikhil',60,'M',111);
```
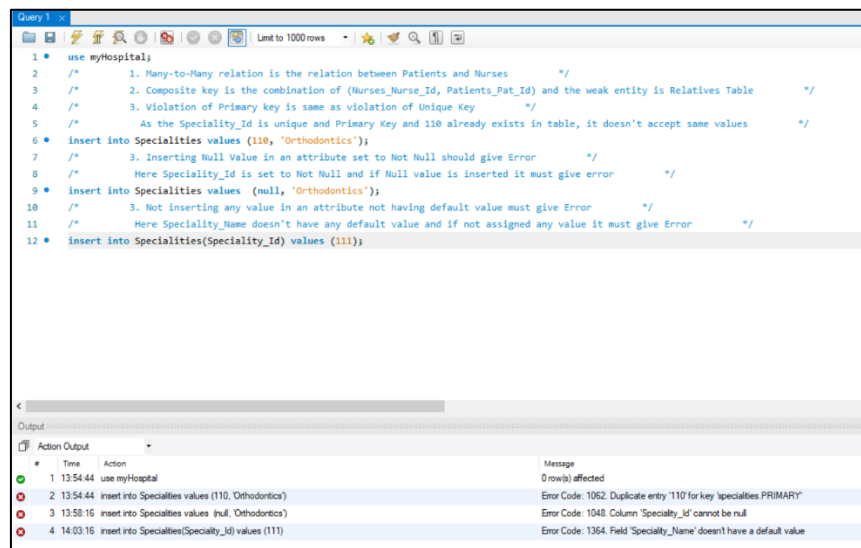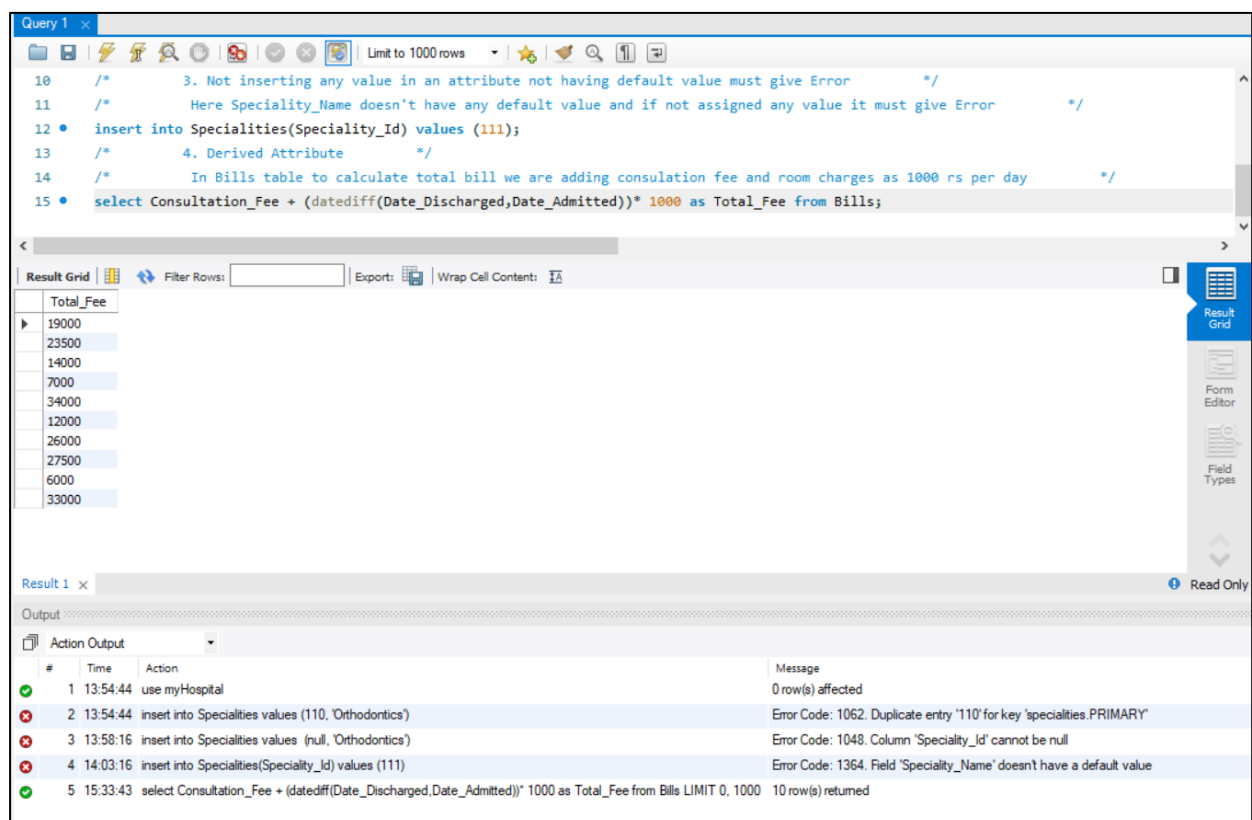
Output – Action Output

#	Time	Action	Message	Duration / Fetch
1	13:54:44	use myHospital	0 row(s) affected	0.000 sec
2	13:54:44	insert into Specialities values (110, 'Orthodontics')	Error Code: 1062. Duplicate entry '110' for key 'specialities.PRIMARY'	0.047 sec
3	13:58:16	insert into Specialities values (null, 'Orthodontics')	Error Code: 1048. Column 'Speciality_Id' cannot be null	0.016 sec
4	14:03:16	insert into Specialities(Speciality_Id) values (111)	Error Code: 1364. Field 'Speciality_Name' doesn't have a default value	0.000 sec
5	15:33:43	select Consultation_Fee + (datediff(Date_Discharged,Date_Admitted))* 1000 as Total_Fee from Bills LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec
6	15:41:53	insert into Doctors values (221,'Nikhil',60,'M',111)	Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails ('myhospital'.'doctors', CONST...	0.313 sec

NOTE: ALL THE EXPLANATION IS GIVEN IN THE SCRIPT FILE FOR EACH QUESTIONS WITH QUESTION NUMBERS IN THE COMMENTS.