Prepare Lab Sheet of MYSQL Statements for following.

1. **Create a database named "Yourname_Roll_COMPANY" e.g.: Atiz_02_Company and then create following tables within the database. Specify proper primary keys and the needed constraints while defining the tables. Use appropriate data types for the attributes.**

-- Create the database
CREATE DATABASE RamKrishnaPudasaini_26_COMPANY;

-- Use Database
USE RamKrishnaPudasaini_26_COMPANY;
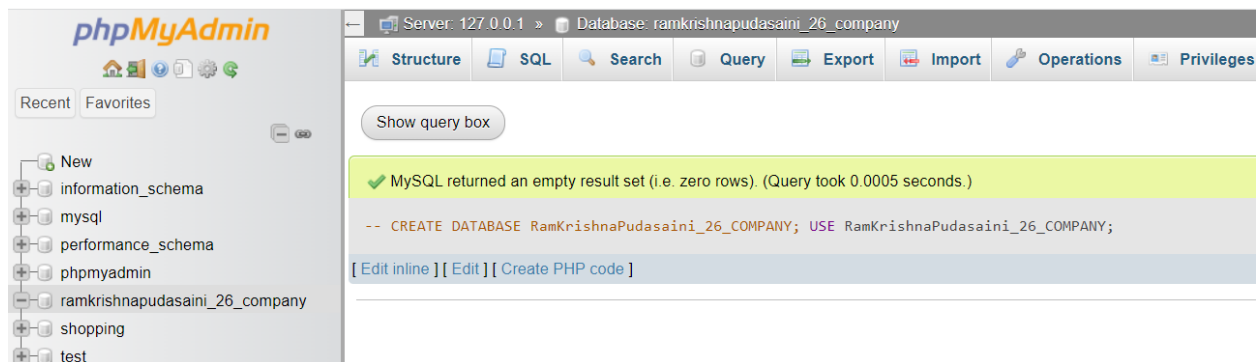
a. Employee (SSN, Ename, Gender, Bdate, Address, Salary, Ono, Years_of_experience); whereOno is a foreign key referencing the Office table. Set default value of salary to 0.00. The Ename should not be null. Set SSN to auto increment. The Ename and address should be varchar, Gender should be char(1), Bdate should be date type, Salary should be decimal type with two digits after decimal.Years_of_experience should be integer. Use Check constraint for gender as CHECK (Gender IN ('M', 'F'))

Note: First we have foreign key in the employee table which references the primary key of the office table so we need to create the office table first and create an employee table with foreign key. We can also create an employee and office table first and add the foreign key with an ALTER statement as well. IN our case we create the office table first and create the employee table with foreign key.

-- Create the Employee table
CREATE TABLE Employee (
SSN INT AUTO_INCREMENT PRIMARY KEY,
Ename VARCHAR(50) NOT NULL,
Gender CHAR(1) CHECK (Gender IN ('M', 'F')),

```
 Bdate DATE,
 Address VARCHAR(100),
 Salary DECIMAL(8, 2) DEFAULT 0.00,
 Ono INT,
 Years_of_experience INT
);

ALTER TABLE Employee
ADD FOREIGN KEY (Ono)
REFERENCES Office (Onumber);

OR
CREATE TABLE Employee (
  SSN INT AUTO_INCREMENT PRIMARY KEY,
  Ename VARCHAR(50) NOT NULL,
  Gender CHAR(1) CHECK (Gender IN ('M', 'F')),
  Bdate DATE,
  Address VARCHAR(100),
  Salary DECIMAL(8, 2) DEFAULT 0.00,
  Ono INT,
  Years_of_experience INT,
  FOREIGN KEY (Ono) REFERENCES Office(Onumber)
);
```
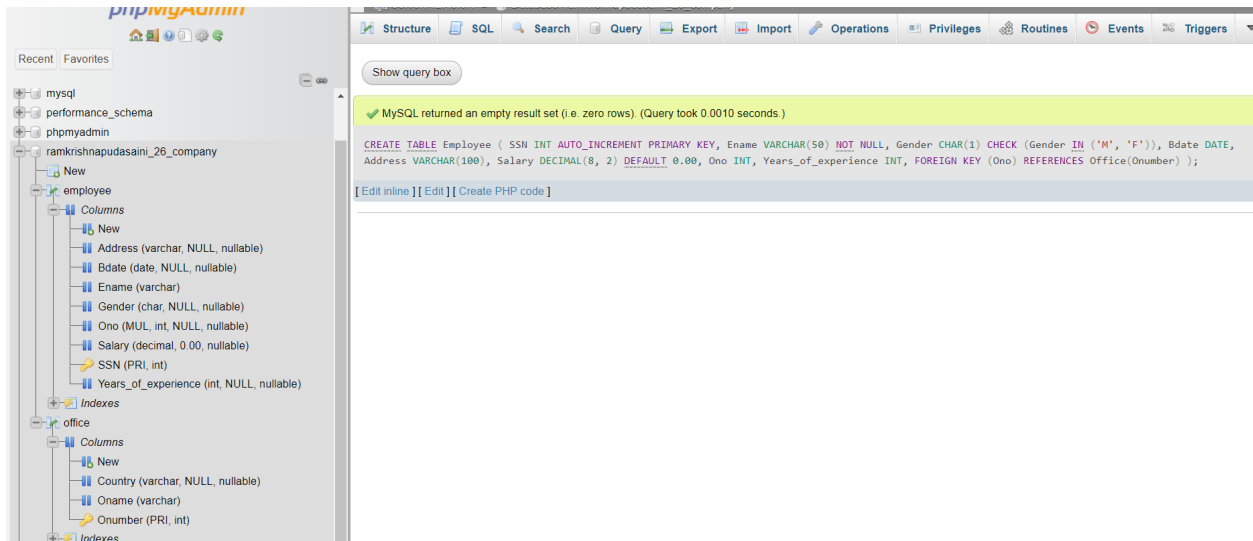
b.   Office (<u>Onumber</u>, Oname, Country); where Oname should not be NULL. Country should be varchar.

-- Create the Office table
CREATE TABLE Office (
  Onumber INT PRIMARY KEY,
  Oname VARCHAR(50) NOT NULL,
  Country VARCHAR(50)
);

c. Project (<u>Pnumber</u>, Pname, Plocation, Onumber); where Onumber is a foreign key referencing Office table. Create a constraint name fk_pro for the foreign key. Pname should be unique and should not be null. Both Pname and Plocations should be of type varchar(40).

-- Create the Project table
CREATE TABLE Project (
  Pnumber INT PRIMARY KEY,
  Pname VARCHAR(40) NOT NULL,
  Plocation VARCHAR(40),
  Onumber INT,
  CONSTRAINT fk_pro FOREIGN KEY (Onumber) REFERENCES Office(Onumber)
);
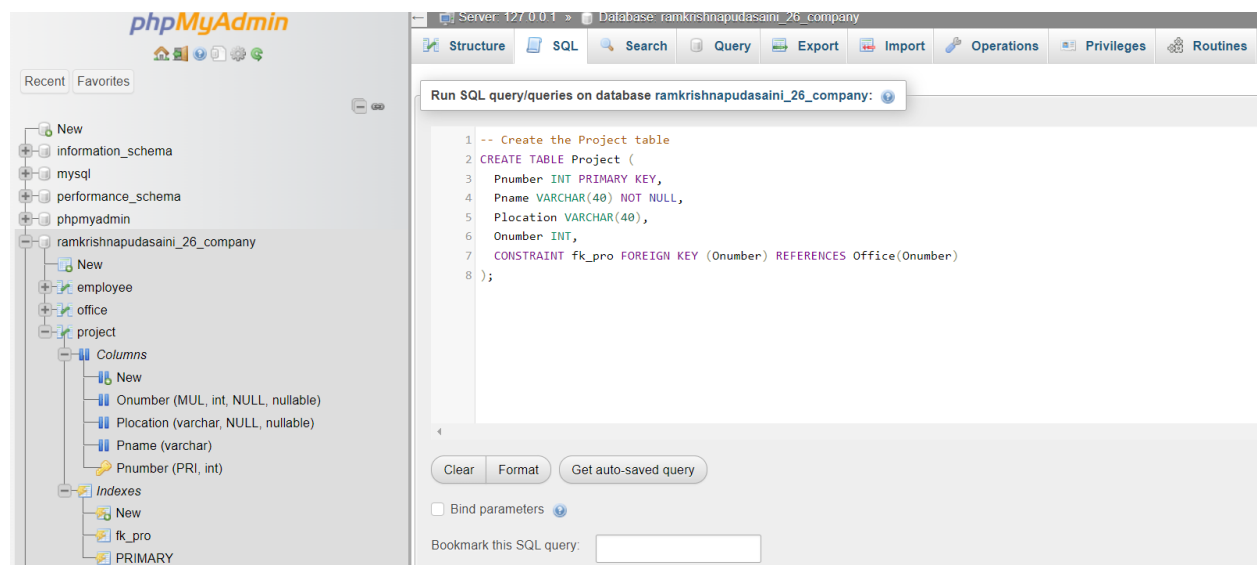
d.   Works_on(ESSN, Pno); where ESSN references Employee SSN and Pno references to Pnumber from Project . Set cascade on update and cascade on delete to both

-- Create the Works_on table
CREATE TABLE Works_on (
  ESSN INT,
  Pno INT,
  PRIMARY KEY (ESSN, Pno),
    FOREIGN KEY (ESSN) REFERENCES Employee(SSN) ON UPDATE CASCADE ON DELETE CASCADE,
 FOREIGN KEY (Pno) REFERENCES Project(Pnumber) ON UPDATE CASCADE ON DELETE CASCADE
);
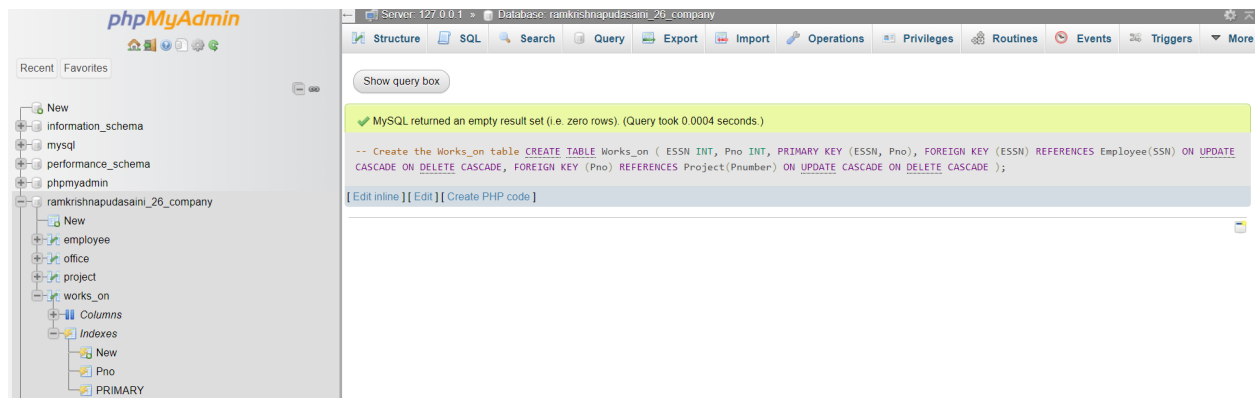
**   e. Dependents(Did, Dname, Dage, SSN); where SSN is Foreign key referencing the employee. Set NULL on delete and on update to the foreign key. Add constraint age_constraint using CHECK(Dage<16).**

-- Create the Dependents table
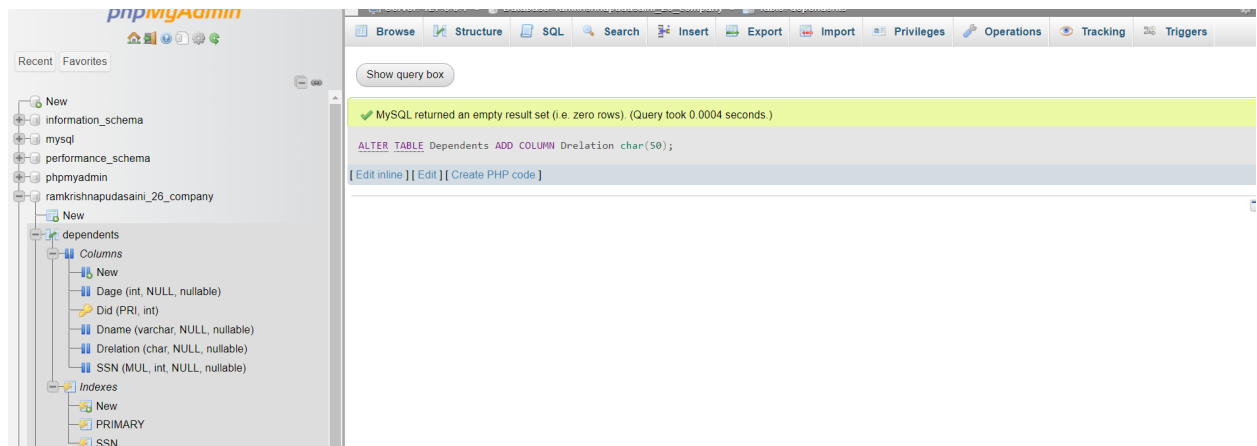   CREATE TABLE Dependents (
              Did INT PRIMARY KEY,
              Dname VARCHAR(50),
              Dage INT,
              SSN INT,
              FOREIGN KEY (SSN) REFERENCES Employee(SSN) ON DELETE SET NULL
            ON UPDATE SET NULL,
              CONSTRAINT age_constraint check(Dage<16));
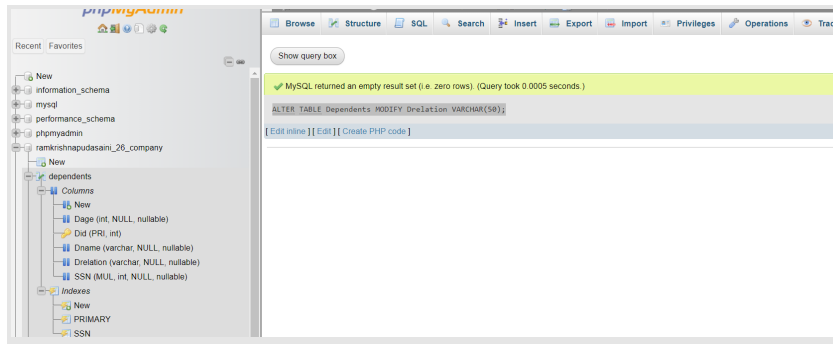
We can also create constraint using alter statement:
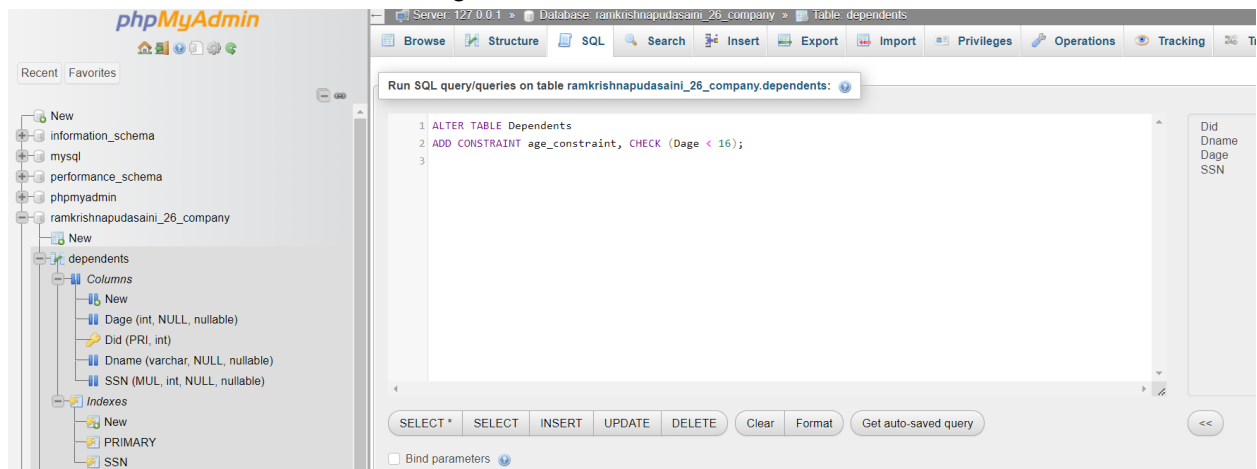
2. Alter table Dependent and add an attribute Drelation of type Char(50)

```
ALTER TABLE Dependents ADD COLUMN Drelation char(50);
```


3. Alter table Dependent and modify the attribute Drelation of type Char(50) to Varchar(50)

```
ALTER TABLE Dependents MODIFY Drelation VARCHAR(50);
```

4. Insert at least five tuples into the tables. (Illustrate insertion of single tuple and multiple tuples both). During insertion insert following as well.

There should be one record in the Employee table having Ename "Your name" i. e. Deric and SSN "Your roll number" e.g. 6.

*There should be one record in the Project table having Pname ="Your name_ProjMDS" and Pnumber = 2*Your Roll number.*

One of the tuple in Office table should have office name "Yourname_Office_Roll" i.e. Deric_Office_06. Similarly one of the tuple in employee should have salary 30000.

In addition, there should be one tuple in office table having office name Yourname_Ncell_Roll.

In the dependents table insert the rows with Dname and Drelation having values from your family. For example, Deric has his elder brother and mother as his dependents. So the table will have records with values Dname=Denish and Drelation=Brother and Dname=Gayatri and Drelation=Mother. Take assumptions based on your family members while inserting the values.

```
-- Insert tuples into the Office table
INSERT INTO Office (Onumber, Oname, Country)
VALUES (1, 'RamKrishna_Office_26', 'Nepal'),
    (2, 'Office2', 'USA'),
    (3, 'Office3', 'USA'),
    (4, 'Office4', 'USA'),
    (5, 'Office5', 'USA'),
    (6, 'RamKrishna_9801123456_26', 'Nepal');
```

Insert into Employee Table single value insertion

```sql
-- Insert tuples into the Employee table
INSERT INTO Employee (SSN, Ename, Gender, Bdate, Address, Salary, Ono,
Years_of_experience) VALUES (26, 'RamKrishnaPudasaini', 'M', '1990-01-01',
'Kathmandu', 30000, 1, 5);



Multiple Value Insertion

-- Insert tuples into the Employee table
INSERT INTO Employee (Ename, Gender, Bdate, Address, Salary, Ono,
Years_of_experience)
VALUES ('Deric', 'M', '1990-01-01', '123 Main St', 30000, 1, 5),
        ('John', 'M', '1985-05-10', '456 Elm St', 25000, 2, 3),
        ('Jane', 'F', '1992-12-15', '789 Oak St', 28000, 1, 2),
        ('David', 'M', '1988-08-20', '321 Pine St', 35000, 2, 7),
        ('Emily', 'F', '1995-04-25', '987 Cedar St', 26000, 1, 1);
```

Insert into Project

```
-- Insert a tuple into the Project table INSERT INTO Project (Pnumber, Pname,
Plocation, Onumber) VALUES (52, 'RamkrishnaPudasaini_ProjMDS', 'Nepal', 1), (2,
'Project2', 'Los Angeles', 2), (3, 'Project3', 'Chicago', 1), (4, 'Project4',
'San Francisco', 2), (5, 'Project5', 'Miami', 1);
```


Insert into dependents

```
 -- Insert tuples into the Dependents table
INSERT INTO Dependents (Did, Dname, Drelation, Dage, SSN)
VALUES (1, 'Denish', 'Brother', 10, 26),
       (2, 'Gayatri', 'Sister', 15, 26),
       (3, 'Dependent1', 'SomeRelation', 3, 27),
       (4, 'Dependent2', '', 4, 28),
       (5, 'Dependent3', NULL, 8, 29);
```

5. Update the name of office having office name "Yourname_Ncell_Roll" to "Yourname_Ntc_Roll".

Initially

-- Update the name of office having office name "Yourname_Ncell_Roll" to "Yourname_Ntc_Roll".

UPDATE office SET Oname = 'RamKrishna_9843342697_26' WHERE Oname = 'RamKrishna_9801123456_26';

After update

			Onumber	Oname	Country
☐	✏ Edit	⁝ Copy	⊖ Delete	1	RamKrishna_Office_26	Nepal
☐	✏ Edit	⁝ Copy	⊖ Delete	2	Office2	USA
☐	✏ Edit	⁝ Copy	⊖ Delete	3	Office3	USA
☐	✏ Edit	⁝ Copy	⊖ Delete	4	Office4	USA
☐	✏ Edit	⁝ Copy	⊖ Delete	5	Office5	USA
☐	✏ Edit	⁝ Copy	⊖ Delete	6	RamKrishna_9843342697_26	Nepal

6. Delete those employee whose SSN is 1.

Note: Since we have employees details starting from 26 roll number ssn we will be deleting the employee with the ssn as 28.

Selecting the details with Select * from employee;

Show query box

✔ Showing rows 0 - 5 (6 total, Query took 0.0002 seconds.)

```sql
select * from employee;
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ⌄ | Filter rows: Search this table | Sort by key: None ⌄

Extra options

				SSN	Ename	Gender	Bdate	Address	Salary	Ono	Years_of_experience
☐	✎ Edit	⥥ Copy	⊖ Delete	26	RamKrishnaPudasaini	M	1990-01-01	Kathmandu	30000.00	1	5
☐	✎ Edit	⥥ Copy	⊖ Delete	27	Deric	M	1990-01-01	123 Main St	30000.00	3	5
☐	✎ Edit	⥥ Copy	⊖ Delete	28	John	M	1985-05-10	456 Elm St	25000.00	2	3
☐	✎ Edit	⥥ Copy	⊖ Delete	29	Jane	F	1992-12-15	789 Oak St	28000.00	1	2
☐	✎ Edit	⥥ Copy	⊖ Delete	30	David	M	1988-08-20	321 Pine St	35000.00	2	7
☐	✎ Edit	⥥ Copy	⊖ Delete	31	Emily	F	1995-04-25	987 Cedar St	26000.00	1	1

↑ ☐ Check all With selected: ✎ Edit ⥥ Copy ⊖ Delete 📥 Export

☐ Show all | Number of rows: 25 ⌄ | Filter rows: Search this table | Sort by key: None ⌄

Delecting ssn = 30

DELETE FROM Employee where SSN = 30;

After

☐ Show all | Number of rows: 25 ⌄ | Filter rows: Search this table | Sort by key: None ⌄

Extra options

|				SSN	Ename	Gender	Bdate	Address	Salary	Ono	Years_of_experience
☐	✎ Edit	⥥ Copy	⊖ Delete	26	RamKrishnaPudasaini	M	1990-01-01	Kathmandu	30000.00	1	5
☐	✎ Edit	⥥ Copy	⊖ Delete	27	Deric	M	1990-01-01	123 Main St	30000.00	3	5
☐	✎ Edit	⥥ Copy	⊖ Delete	28	John	M	1985-05-10	456 Elm St	25000.00	2	3
☐	✎ Edit	⥥ Copy	⊖ Delete	29	Jane	F	1992-12-15	789 Oak St	28000.00	1	2
☐	✎ Edit	⥥ Copy	⊖ Delete	31	Emily	F	1995-04-25	987 Cedar St	26000.00	1	1

↑ ☐ Check all With selected: ✎ Edit ⥥ Copy ⊖ Delete 📥 Export

☐ Show all | Number of rows: 25 ⌄ | Filter rows: Search this table | Sort by key: None ⌄

7 .Alter table Project to rename the attribute in Plcoation to Proj_location

Previously ,

```
SELECT * from project;
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ⌄ | Filter rows: Search this table | Sort by key: None ⌄

Extra options

←T→				Pnumber	Pname	Plocation	Onumber
☐	🖊 Edit	📋 Copy	⊖ Delete	2	Project2	Los Angeles	2
☐	🖊 Edit	📋 Copy	⊖ Delete	3	Project3	Chicago	1
☐	🖊 Edit	📋 Copy	⊖ Delete	4	Project4	San Francisco	2
☐	🖊 Edit	📋 Copy	⊖ Delete	5	Project5	Miami	1
☐	🖊 Edit	📋 Copy	⊖ Delete	52	RamkrishnaPudasaini_ProjMDS	Nepal	1

```
ALTER TABLE project CHANGE COLUMN Plocation Proj_location VARCHAR(40);
```

✔ Showing rows 0 - 4 (5 total, Query took 0.0005 seconds.)

```
select * from project;
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ⌄ | Filter rows: Search this table | Sort by key: None ⌄

Extra options

←T→				Pnumber	Pname	Proj_location	Onumber
☐	🖊 Edit	📋 Copy	⊖ Delete	2	Project2	Los Angeles	2
☐	🖊 Edit	📋 Copy	⊖ Delete	3	Project3	Chicago	1
☐	🖊 Edit	📋 Copy	⊖ Delete	4	Project4	San Francisco	2
☐	🖊 Edit	📋 Copy	⊖ Delete	5	Project5	Miami	1
☐	🖊 Edit	📋 Copy	⊖ Delete	52	RamkrishnaPudasaini_ProjMDS	Nepal	1

↑ ☐ Check all With selected: 🖊 Edit 📋 Copy ⊖ Delete 📄 Export

☐ Show all | Number of rows: 25 ⌄ | Filter rows: Search this table | Sort by key: None ⌄

Query results operations

8. Select tuples from all of the tables individually.

Show query box

✔ Showing rows 0 - 4 (5 total, Query took 0.0006 seconds.)

select * from employee;

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ▾   Filter rows: Search this table   Sort by key: None ▾

Extra options

				SSN	Ename	Gender	Bdate	Address	Salary	Ono	Years_of_experience
☐	🖉 Edit	Copy	⊖ Delete	26	RamKrishnaPudasaini	M	1990-01-01	Kathmandu	30000.00	1	5
☐	🖉 Edit	Copy	⊖ Delete	27	Deric	M	1990-01-01	123 Main St	30000.00	3	5
☐	🖉 Edit	Copy	⊖ Delete	28	John	M	1985-05-10	456 Elm St	25000.00	2	3
☐	🖉 Edit	Copy	⊖ Delete	29	Jane	F	1992-12-15	789 Oak St	28000.00	1	2
☐	🖉 Edit	Copy	⊖ Delete	31	Emily	F	1995-04-25	987 Cedar St	26000.00	1	1

↑ ☐ Check all   With selected: 🖉 Edit   Copy   ⊖ Delete   Export

☐ Show all | Number of rows: 25 ▾   Filter rows: Search this table   Sort by key: None ▾

Select from office table

✔ Showing rows 0 - 5 (6 total, Query took 0.0006 seconds.)

select * from office;

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ▾   Filter rows: Search this table   Sort by key: None ▾

Extra options

				Onumber	Oname	Country
☐	🖉 Edit	Copy	⊖ Delete	1	RamKrishna_Office_26	Nepal
☐	🖉 Edit	Copy	⊖ Delete	2	Office2	USA
☐	🖉 Edit	Copy	⊖ Delete	3	Office3	USA
☐	🖉 Edit	Copy	⊖ Delete	4	Office4	USA
☐	🖉 Edit	Copy	⊖ Delete	5	Office5	USA
☐	🖉 Edit	Copy	⊖ Delete	6	RamKrishna_9843342697_26	Nepal

↑ ☐ Check all   With selected: 🖉 Edit   Copy   ⊖ Delete   Export

Select from project table

```sql
select * from project;
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ▾   Filter rows: Search this table   Sort by key: None ▾

Extra options

				▾	Pnumber	Pname	Proj_location	Onumber
☐	🖊 Edit	Copy	⊖ Delete		2	Project2	Los Angeles	2
☐	🖊 Edit	Copy	⊖ Delete		3	Project3	Chicago	1
☐	🖊 Edit	Copy	⊖ Delete		4	Project4	San Francisco	2
☐	🖊 Edit	Copy	⊖ Delete		5	Project5	Miami	1
☐	🖊 Edit	Copy	⊖ Delete		52	RamkrishnaPudasaini_ProjMDS	Nepal	1

↑ ☐ Check all   With selected: 🖊 Edit   Copy   ⊖ Delete   Export

Select from works on

Select from dependant table

✔ Showing rows 0 - 4 (5 total, Query took 0.0003 seconds.)

```
select * from dependents;
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ▾   Filter rows: Search this table   Sort by key: None ▾

Extra options

			Did	Dname	Dage	SSN	Drelation
☐	✏ Edit	⊒ Copy	⊖ Delete	1	Denish	10	26	Brother
☐	✏ Edit	⊒ Copy	⊖ Delete	2	Gayatri	15	26	Sister
☐	✏ Edit	⊒ Copy	⊖ Delete	3	Dependent1	3	27	SomeRelation
☐	✏ Edit	⊒ Copy	⊖ Delete	4	Dependent2	4	28	
☐	✏ Edit	⊒ Copy	⊖ Delete	5	Dependent3	8	29	*NULL*

↑ ☐ Check all   With selected: ✏ Edit   ⊒ Copy   ⊖ Delete   ▤ Export

9. Drop the table Works_on. Make sure to export your database before you drop it so that you can recover.

COMMAND: DROP TABLE works_on;

AFTER
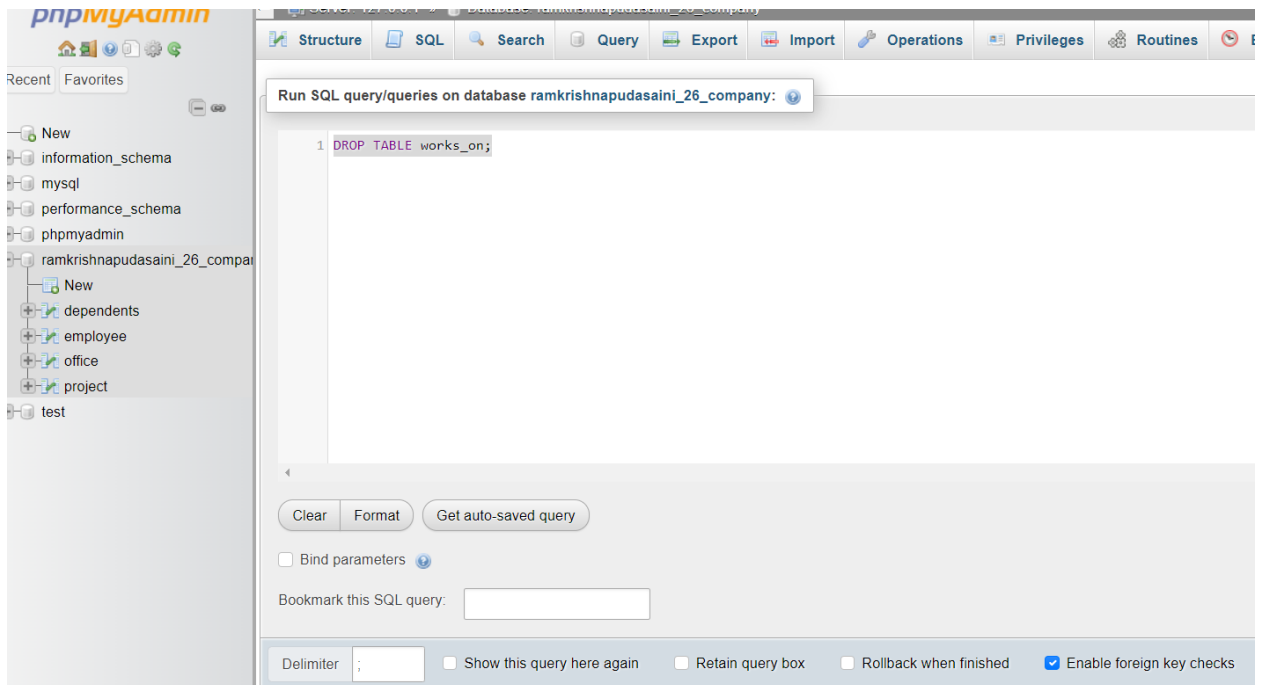
10. Drop the constraint age_constraint from dependent table

ALTER TABLE dependents
DROP CONSTRAINT age_constraint;

Show query box

✔ MySQL returned an empty result set (i.e. zero rows). (Query took 0.0136 seconds.)

ALTER TABLE dependents DROP CONSTRAINT age_constraint;

[Edit inline] [Edit] [Create PHP code]

When running the same query we get error as the check constraint is removed from the table.

Hide query box

Error

SQL query: Copy

```
ALTER TABLE dependents
DROP CONSTRAINT age_constraint;
```

MySQL said: ⓘ

#1091 - Can't DROP CONSTRAINT `age_constraint`; check that it exists

11. Drop the database COMPANY. Make sure to export your database before you drop it so that you can recover.

DROP DATABASE ramkrishnapudasaini_26_company;