
# DATABASE (PROJECT)

**Course Name:** Introduction to Database
**Course Instructor:** Rifat Tasnim Anannya
**Semester:** Summer (2018-2019)
**Department: CSE**
**Section: O**
**Project Name:** RESTAURANT MANAGEMENT SYSTEM
**Group Members:**

| NO | NAME | ID |
|---|---|---|
| 01 | MD. Shahidullah Rakib | 18-38258-2 |
| 02 | Mahiul Alam Saad | 18-37864-2 |
| 03 | Fahim Faisal | 18-38252-2 |

# Contents

# Scenario

The project is a database management project that deals with managing a restaurant. The project is primarily focused on the chef, meal, customer and supplies.
The database collects information about the following things:

Chef Entity: chef_id, chef_name,chef_salary,specialization

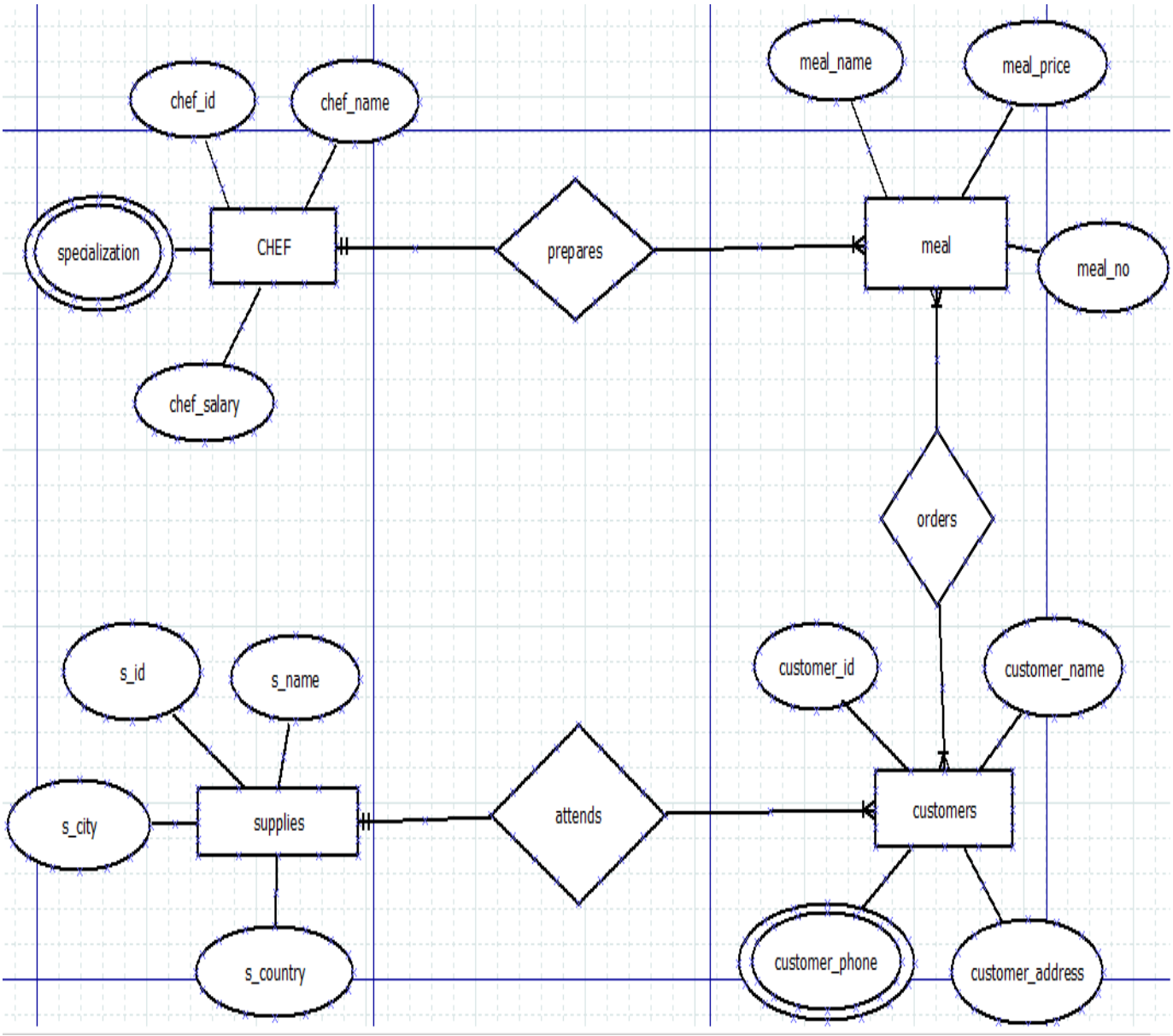
Meal Entity: meal_no, meal_name,meal_price

Customer Entity:
customer_id,customer_name,customer_address,
customer_phone

Supplies Entity: s_id, s_name, s_city, s_country.

The details of the restaurant is stored into the respective tables with all columns. Each entity contains primary key, unique key. There is one to many, many to one and many to many relationship available. All the entities are normalized. We have implemented indexing on each tables of Restaurant Management System. The queries are written in oracle SQL.

# ER-Diagram


chef_id
chef_name
specialization
CHEF
chef_salary
prepares
meal_name
meal_price
meal
meal_no
orders
s_id
s_name
s_city
supplies
s_country
attends
customer_id
customer_name
customers
customer_phone
customer_address

# NORMALIZATION

**Prepares**(chef_id,chef_name,chef_salary,specialization,meal_no,meal_name,meal_price)

1NF: specialization is a multivalued attribute.

2NF: chef_id, chef_name,chef_salary,specialization

meal_no, meal_name,meal_price

3NF: No transitive dependency

Final table:

1. chef_id, chef_name,chef_salary,specialization
2. meal_no, meal_name,meal_price, chef_id

**Orders**(meal_no,meal_name,meal_price,customer_id,customer_name,customer_address,customer_phone)

1NF: customer_phone is a multivalued attribute

2NF: meal_no, meal_name,meal_price
customer_id,customer_name,customer_address,
customer_phone

3NF: No transitive dependency

Final table:

1. meal_no, meal_name,meal_price
2. customer_id,customer_name,customer_address, customer_phone
3. R_id, meal_no, customer_id

**Attends**(customer_id,customer_name,customer_address,customer_phone,s_id,s_name,s_city,s_country)

1NF: customer_phone is a multivalued attribute

2NF: customer_id,customer_name,customer_address, customer_phone

s_id, s_name, s_city, s_country

3NF: s_id, s_name

c_id s_city, s_country

customer_id, customer_name, customer_address, customer_phone

Final table:

1. s_id, s_name, c_id
2. c_id s_city, s_country
3. customer_id, customer_name, customer_address, customer_phone, s_id

# Final Table list

1. chef_id, chef_name,chef_salary,specialization
2. meal_no, meal_name,meal_price, chef_id
3. meal_no, meal_name,meal_price
4. customer_id,customer_name,customer_address, customer_phone
5. n_id, meal_no, customer_id
6. s_id, s_name, c_id
7. c_id s_city, s_country
8. customer_id, customer_name, customer_address, customer_phone, s_id

# Table Creation

1. Chef Table:

Autocommit Display 10

```
desc chef
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **CHEF**

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---|---|---|---|---|---|---|---|---|---|
| CHEF | CHEF_ID | Number | - | 20 | 0 | 1 | - | - | - |
| | CHEF_NAME | Varchar2 | 20 | - | - | - | ✓ | - | - |
| | CHEF_SALARY | Number | - | 20 | 0 | - | ✓ | - | - |

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2. Meal Table:

Autocommit Display 10

```
desc meal
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **MEAL**

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---|---|---|---|---|---|---|---|---|---|
| MEAL | MEAL_NO | Number | - | 20 | 0 | 1 | - | - | - |
| | MEAL_NAME | Varchar2 | 20 | - | - | - | ✓ | - | - |
| | MEAL_PRICE | Number | - | 20 | 0 | - | ✓ | - | - |
| | CHEF_ID | Number | - | 20 | 0 | - | ✓ | - | - |

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3. Supplies Table:

Autocommit Display 10

```
desc supplies
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **SUPPLIES**

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---|---|---|---|---|---|---|---|---|---|
| SUPPLIES | S_ID | Number | - | 20 | 0 | 1 | - | - | - |
| | S_NAME | Varchar2 | 20 | - | - | - | ✓ | - | - |
| | C_ID | Number | - | 20 | 0 | - | ✓ | - | - |

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4. Customers Table:

Autocommit Display 30

```
desc customers
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **CUSTOMERS**

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---|---|---|---|---|---|---|---|---|---|
| CUSTOMERS | CUSTOMER_ID | Number | - | 20 | 0 | 1 | - | - | - |
| | CUSTOMER_NAME | Varchar2 | 20 | - | - | - | ✓ | - | - |
| | CUSTOMER_ADDRESS | Varchar2 | 50 | - | - | - | ✓ | - | - |
| | S_ID | Number | - | 20 | 0 | - | ✓ | - | - |

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5. New01 Table:

Autocommit Display 10

```
desc new01
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **NEW01**

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---|---|---|---|---|---|---|---|---|---|
| NEW01 | N_ID | Number | - | 20 | 0 | 1 | - | - | - |
| | MEAL_NO | Number | - | 20 | 0 | - | ✓ | - | - |
| | CUSTOMER_ID | Number | - | 20 | 0 | - | ✓ | - | - |

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## 6. New02 Table:

Autocommit Display 10

```
desc new02
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **NEW02**

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---|---|---|---|---|---|---|---|---|---|
| NEW02 | C_ID | Number | - | 20 | 0 | 1 | - | - | - |
| | S_CITY | Varchar2 | 20 | - | - | - | ✓ | - | - |
| | S_COUNTRY | Varchar2 | 20 | - | - | - | ✓ | - | - |

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## 7. Chef2 table:

Autocommit Display 30

```
desc chef2
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **CHEF2**

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---|---|---|---|---|---|---|---|---|---|
| CHEF2 | CHEF_ID | Number | - | 20 | 0 | 1 | - | - | - |
| | SPECIALIZATION | Varchar2 | 20 | - | - | - | ✓ | - | - |

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## 8. Customers2 Table:

Autocommit Display 30

```
desc customers2
```

Results Explain Describe Saved SQL History

Object Type **TABLE** Object **CUSTOMERS2**

| Table | Column | Data Type | Length | Precision | Scale | Primary Key | Nullable | Default | Comment |
|---|---|---|---|---|---|---|---|---|---|
| CUSTOMERS2 | CUSTOMER_ID | Number | - | 20 | 0 | 1 | - | - | - |
| | CUSTOMER_PHONE | Number | - | 20 | 0 | - | ✓ | - | - |

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# Insertion

## 1. Chef:

Autocommit Display 30

```
select*
from chef
```

Results Explain Describe Saved SQL History

| CHEF_ID | CHEF_NAME | CHEF_SALARY |
|---|---|---|
| 101 | Abdul | 10000 |
| 102 | Arif | 9000 |
| 103 | Rahim | 9500 |
| 104 | kader | 8000 |

## 2. Meal:

Autocommit Display 30

```
select*
from meal
```

Results Explain Describe Saved SQL History

| MEAL_NO | MEAL_NAME | MEAL_PRICE | CHEF_ID |
|---|---|---|---|
| 1 | Ricebowl | 100 | 103 |
| 2 | Bakedpasta | 250 | 104 |
| 3 | Chowmein | 250 | 102 |
| 4 | Speghetti | 250 | 101 |

## 3. Customers:

```
select*
from customers
```

Results Explain Describe Saved SQL History

| CUSTOMER_ID | CUSTOMER_NAME | CUSTOMER_ADDRESS | S_ID |
|---|---|---|---|
| 2001 | Raad | Dhanmondi | 201 |
| 2002 | Bonne | Uttara | 202 |
| 2003 | Oppi | Boshundhora | 203 |
| 2004 | Abrar | Mirpur | 204 |

## 4. **New02:**

Autocommit Display 30

```
select*
from new02
```

Results Explain Describe Saved SQL History

| C_ID | S_CITY | S_COUNTRY |
|---|---|---|
| 1001 | Dhaka | Bangladesh |
| 1002 | Dhaka | Bangladesh |
| 1003 | Dhaka | Bangladesh |
| 1004 | Dhaka | Bangladesh |

## 5. **Supplies:**

Autocommit Display 30

```
select*
from supplies
```

Results Explain Describe Saved SQL History

| S_ID | S_NAME | C_ID |
|---|---|---|
| 201 | Mabin | 1001 |
| 202 | Tamim | 1004 |
| 203 | Ehsan | 1002 |
| 204 | Shakir | 1001 |

## 6. **New01:**

Autocommit Display 30

```
select*
from new01
```

Results Explain Describe Saved SQL History

| N_ID | MEAL_NO | CUSTOMER_ID |
|---|---|---|
| 1 | 1 | 2001 |
| 2 | 2 | 2002 |
| 3 | 3 | 2003 |
| 4 | 4 | 2004 |

## 7. **Chef2:**

Autocommit Display 30

```
select*
from chef2
```

Results Explain Describe Saved SQL History

| CHEF_ID | SPECIALIZATION |
|---|---|
| 101 | Continental |
| 102 | Japaneese |
| 103 | Italian |
| 104 | Korean |

## 8. **Customers2:**

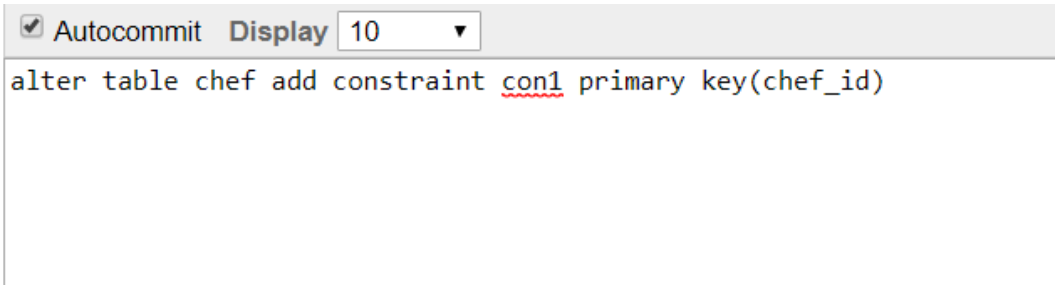
```
select*
from customers
```

Results Explain Describe Saved SQL History

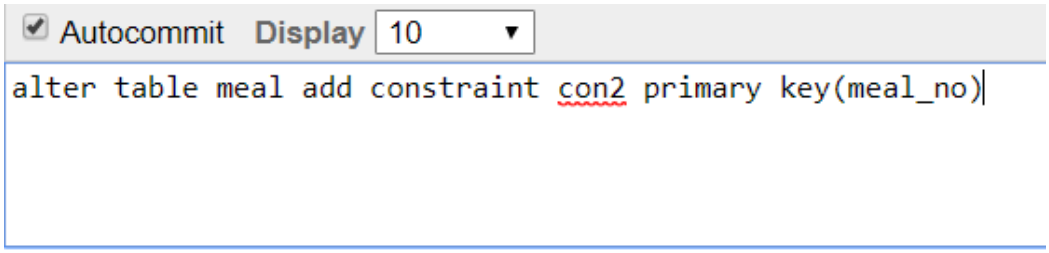
| CUSTOMER_ID | CUSTOMER_NAME | CUSTOMER_ADDRESS | S_ID |
|---|---|---|---|
| 2001 | Raad | Dhanmondi | 201 |
| 2002 | Bonne | Uttara | 202 |
| 2003 | Oppi | Boshundhora | 203 |
| 2004 | Abrar | Mirpur | 204 |

# Constraints

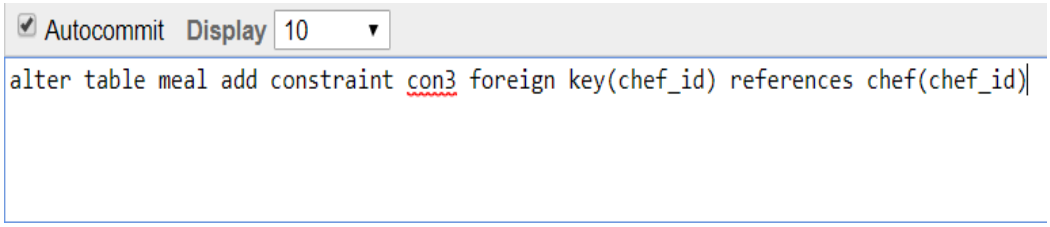
1.



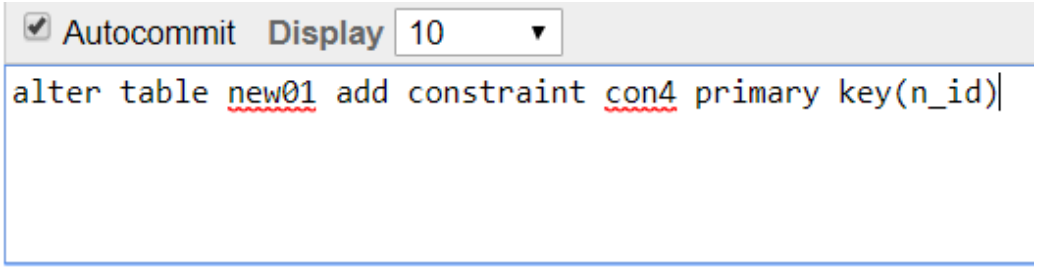

2.



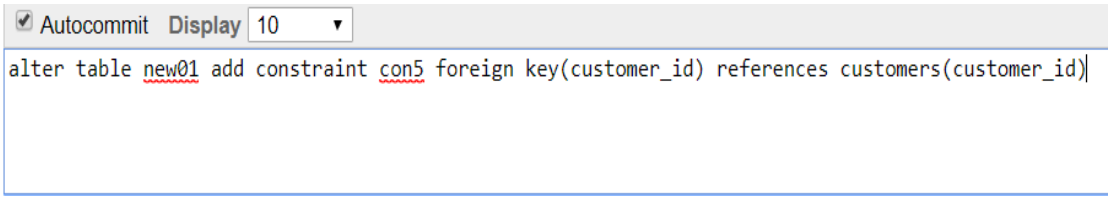

3.



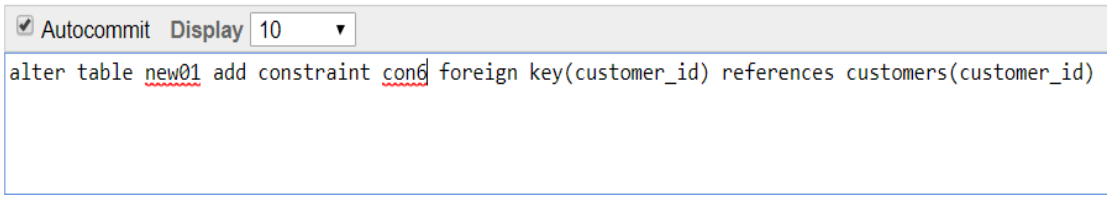

4.



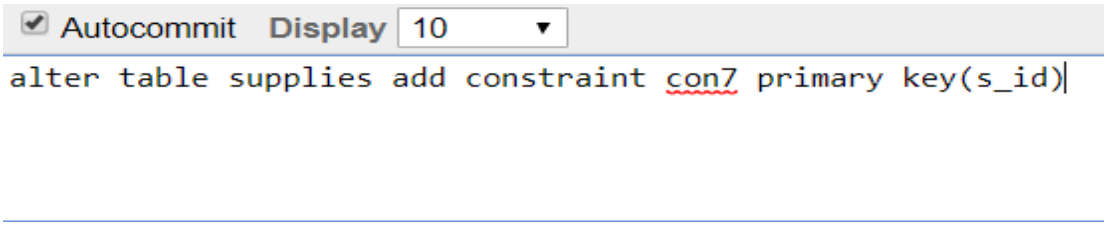
5.


Autocommit Display 10
alter table new01 add constraint con5 foreign key(customer_id) references customers(customer_id)

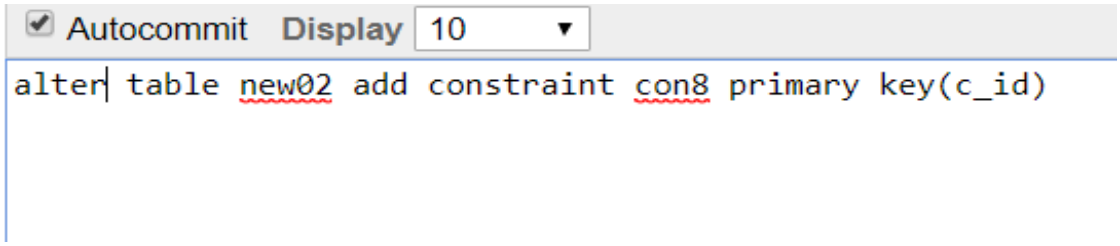
6.


Autocommit Display 10
alter table new01 add constraint con6 foreign key(customer_id) references customers(customer_id)

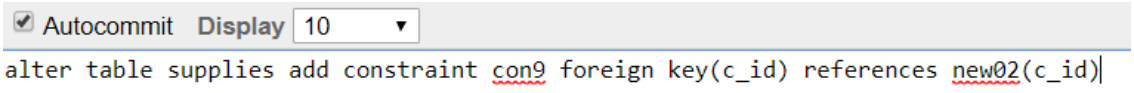
7.


Autocommit Display 10
alter table supplies add constraint con7 primary key(s_id)

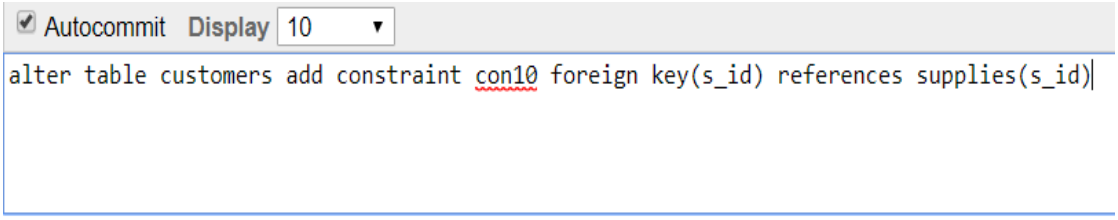
8.


Autocommit Display 10
alter table new02 add constraint con8 primary key(c_id)

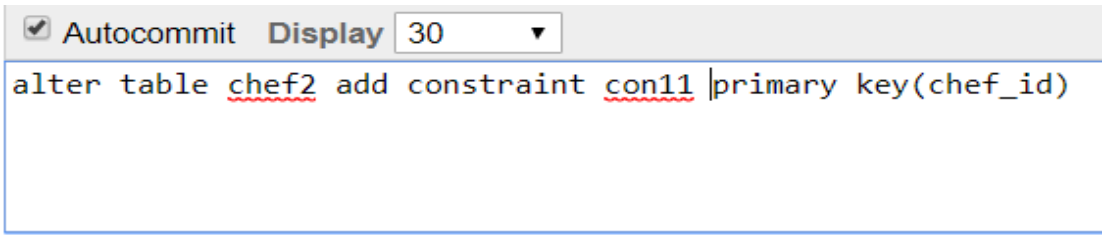
9.


Autocommit Display 10
alter table supplies add constraint con9 foreign key(c_id) references new02(c_id)

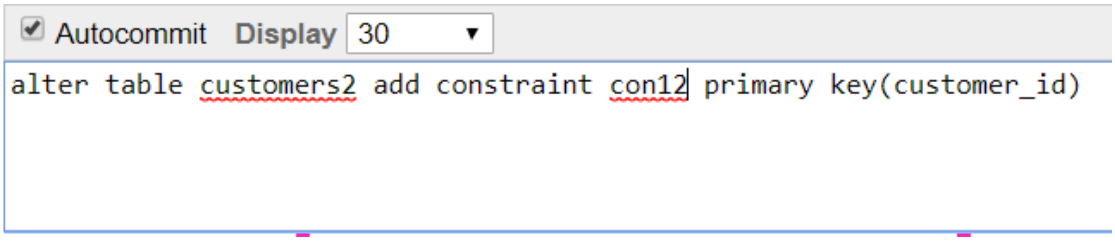
10.


Autocommit Display 10
alter table customers add constraint con10 foreign key(s_id) references supplies(s_id)

11.


Autocommit Display 30
alter table chef2 add constraint con11 primary key(chef_id)

12.


Autocommit Display 30
alter table customers2 add constraint con12 primary key(customer_id)

# Query Questions

1. Display name of the chef whose salary is greater than 9000.
2. Display name of the meal where meal price is 250.

**JOIN**

3. Display the name of the supplier of the customer whose name starts with R.

**Subquery**

4. Which chef has a salary is greater than Arif salary.

# Conclusion

During our database management course we have learned about the basics of database design. This project gave us the opportunity to try our new skills in practice. While doing this project we also gained deeper understanding on database design and how it can be implemented in real life situations. We believe we can use our database designing skills also in the future.