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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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Introduction

For the second assignment of the course Introduction to information system, we have been given a coursework to create a database about an organization or company of our own choice and in the database, it must contain at least five relation (tables) with at least five different values for each table and five different relationship with each other and each relation must be identified using a suitable primary key and the relations must contains a suitable attributes and for the attributes it constrained using suitable constraints (i.e., unique, not null, auto increment, etc.) and relations must be interlinked using suitable pairing of foreign keys. I have created a database of a restaurant and the procedures of restaurant from manager till to the invoice. By the help of interaction with teachers, friends and from some website I have created ER diagram of the restaurant in which it contains six entity where each of the entity contains at least five attributes which involve in the restaurant, they are listed below;

1. Manager
2. Employee
3. Customer
4. Order
5. Item
6. Invoice

1) Manager: Normally, we understand the manager are those persons of the organization who manages or handle all their staff and the management system of an organization and same as here in my scenario manager is the one who manages all the employee of a restaurant. This entity manager contains five attributes like as name, contact no, manager id, address and email. In the attributes of manager id, it stores the id of manager for unique identification of each manager. So, in the attributes name it stores the name of manager Similarly in the attributes contact no it stores the contact no of manager to contact the manager to call them at the time when the are required. And in the attributes address it stores the address of manager like

city, country etc. and at last the attributes email in which it stores the email of an managers so that we can mail the manager when we required.

2) Employee: Employee are those people who works in the organization. So, in the entity employee there are six attributes which are employee id, address, name, manager id, contact no and email. An attributes employee id of entity employee stores the unique id of an employee which is called primary key and the attributes address stores the address of the employee and in the attributes name it stores the name of an employee in the name column and Similarly in the attributes contact no it stores the contact no of employee to contact the employee to call them at the time when they are required. the attributes email in which it stores the email of an employee so that we can mail the manager when we required. Manager id is an attribute of an employee which is the foreign key of table manager which can identify manager of restaurant.

3) Customer: customer is those persons of any organization who buys goods or item. So, in the entity there are five attributes they are employee id, address, name, customer id, contact no and email. An attributes customer id of entity customer stores the unique id of a customer which is called primary key. and the attributes address stores the address of the customer and in the attributes name it stores the name of an customer in the name column and Similarly in the attributes contact no it stores the contact no of customer to contact the customer to call them at the time when they are required. the attributes email in which it stores the email of a customer so that we can mail the customer when we required. Employee id is an attribute of a customer which is the foreign key of table employee which can identify employee of restaurant.

4) order: order can be defined as those item or goods that are generally requested by the customer so as the scenario I had made. So, the entity order also has five attributes they are order id, name, quantity, date, customer id. An attribute order id of entity order stores the unique id of an order which is called primary key and the attributes order name it stores the name of an order in the order name column. The attributes date stores the date of an orders. The attributes quantity stores the quantity of an order in the order column. Customer id is an attribute of a order which is the foreign key of table customer which can identify order of restaurant.

5)item: an item is generally known as the group of any things so in my scenario items in the restaurant. So, the entity item also has five attributes they are item name, item price, item id, quantity, customer id. An attributes item id of entity item stores the unique id of a item which is called primary key. and the attributes item name it stores the name of an item in the item name column and the attributes item price stores the price of an item in the item price column. The attributes quantity stores the quantity of an item in the item column. Customer id is an attribute of a item which is the foreign key of table customer which can identify item of restaurant.

6) invoice: invoice, I can be defined as a receipt of bill generally which are provided whenever we make any purchase either online or in physical presence of customer. So, the entity invoice also has five attributes they are invoice id, price, amount, quantity, customer id. An attributes invoice id of entity invoice stores the unique id of a invoice which is called primary key. The attributes amount stores the amount in the invoice column. the attributes

price stores the price of an invoice in the item invoice column. The attributes quantity stores the quantity of an invoice in the invoice column. Customer id is an attribute of an invoice which is the foreign key of table customer which can identify invoice of restaurant.Customer is those persons of any organization who buys goods or item. So, in the entity there are five attributes they are employee id, address, name, customer id, contact no and email. An attributes customer id of entity customer stores the unique id of a customer which is called primary key. and the attributes address stores the address of the customer and in the attributes name it stores the name of an customer in the name column and Similarly in the attributes contact no it stores the contact no of customer to contact the customer to call them at the time when they are required. the attributes email in which it stores the email of a customer so that we can mail the customer when we required. Employee id is an attribute of a customer which is the foreign key of table employee which can identify employee of restaurant.

Information system

= Information system, it is the organized system or the collection of human resources and technical which provides the storage, computing, communication, distribution for providing meaningful information. It helps in to analyze the raw data. The collection of hardware, software and some procedure which helps in the collection of data and store them in the meaningful information.

The component of information system are as follows:

1) Hardware: the physical technology that works with information system which we can see feel and touch. E.g.: output devices: printer, monitor etc. and input devices: keyboard, mouse etc.
2) Software it is the set of programs and the instruction in which it instructs a system to perform task. E.g.: operating system (OS), User interface etc.
3) Telecommunication: It is the transmission of sign, signals, information data of any nature by wire, radio, optical fiber, electromagnetic system. It occurs while the exchange of information between communication participants includes the uses of technology.
4) Network: It is the network of naming and administration system for smaller another network. It consists of hubs, network devices, and communication media.
5) People: It helps to includes tasks such as strategic planning, and budgeting and personnel decision for the information system. It consists of network administrator, devices operator and system specialist.

The classification of information system are as follows:

1) Operation support system
2) Transaction processing system (TPS)
3) Process control system
4) Enterprise collaboration system
5) Management support system (Zwass, 2013) (Gregersen, 2013)

Database

= Database, it is a collection of tables and information that is organized and also it is an electronic system so that data can be easily accessed, managed and updated. Modern database uses a language called SQL (structured Query Language) which allows user to work with the database. Most well-known database software program are ADABAS, IBM DB2 Microsoft access, Microsoft excel, Microsoft SQL server, MySQL, quick Base. The role of a database in an organization are, it plays an important role in an organization, A maintained database system can run a rapid progress in the organization. It protects the organization data security, because by the use of Login and password for each data it

keeps the organization's data protected. It helps in presentation of data in organization by transforming raw data into information. It helps in the distribution of information and data to the right people at the right time.

Advantage of database are as follows:

1. Independence in data

2. Data sharing.

3. Multiple user can use.

4. User friendly easy to excess.

5. Data about person/product is stored only on time

In my understanding, database is systematic collection of data which helps to reduce time and also makes data management easy to use. It is used to store phone number, contact details and etc. It is the data structure that store information. It contains multiple of table, which includes several different fields. Database management system (DBMS), it is the collection of the programs to access the database in it. It stores the data in the form of column and row so that we can easily see and update the data and access it easily. Database helps to see the detail of the product about the particular things. It helps the organization to see the data of selling the products of their day to day products. (Rouse, 2015) (Anon., 2015)

Relational diagram

(Anon., n.d.)

Database model

We were given to do the database of our own scenario. So, I had made the database of my own scenario which is restaurant. So in the databases there is a six entity in each and they have at least five attributes in each. So the first entity is manager which has five entities they are name,

contact no, manager id, address, email. So in the attributes of manager, manager id is the primary key which gives the unique identification of the manager its data type is in int and it is an auto increment which increases the manager id automatically and it is not null, and in the attributes name of manger it store the name of manager in the datatype varchar which is in null, and in the attributes contact no it stores the contact no of the manger to contact manager when then are required and its datatype varchar and is not null, and the attributes address stores the address of manger when they are required and its datatype is varchar and is not null, and the attributes email stores the email of manager then they are required to mail them whose datatype is varchar which is not null and the manager manages the attributes employee which has six attributes they are employee id, name, address, contact no, email, manager id in which employee id is the primary key of the entity employee which is auto increment which increases the employee id automatically whose datatype is int and it value is not null, and the attributes name of entity employee it stores the name of an employee whose datatype is varchar whose value in null where I don't want to put any value of value null. and the attributes address of entity employee it stores the address of an employee whose datatype is varchar whose value in null where I don't want to put any value of value null. and the attributes contact no of entity employee it stores the contact of an employee whose datatype is varchar whose value in null where I don't want to put any value of value null. and the attributes email of entity employee it stores the mail of an employee whose datatype is varchar whose value in null where I don't want to put any value of value null. and the attributes manager id of entity employee it stores the id of manager in employee attributes whose datatype is varchar whose value in null where I don't want to put any value of value null. The manager id is the foreign key of the attributes manager which refrences the manager id of the attributes manager table. Customer is those persons of any organization who buys goods or item. So, in the entity there are five attributes they are employee id, address, name, customer id, contact no and email. An attributes customer id of entity customer stores the unique id of a customer which is called primary key whose datatype is int which is not null. and the attributes address stores the address of the customer whose datatype is in varchar which datatype is int and its value is always null and in the attributes name it stores the name of an customer in the name column whose datatype is varchar and its value is always in not null and Similarly in the attributes contact no it stores the

customer no of customer to contact the customer to call them at the time when they are required its datatype is varchar. the attributes email in which it stores the email of a customer so that we can mail the customer when we required and its datatype is varchar and its value is not null. Employee id is an attribute of a customer which is the foreign key of table employee which can identify employee of restaurant and . order can be defined as those item or goods that are generally requested by the customer so as the scenario I had made. So, the entity order also has five attributes they are order id, name, quantity, date, customer id. An attribute order id of entity order stores the unique id of an order which is called primary key and the attributes order name it stores the name of an order in the order name column. The attributes date stores the date of an orders. The attributes quantity stores the quantity of an order in the order column. Customer id is an attribute of a order which is the foreign key of table customer which can identify order of restaurant. item is generally known as the group of any things so in my scenario items in the restaurant. So, the entity item also has five attributes they are item name, item price, item id, quantity, customer id. An attributes item id of entity item stores the unique id of a item which is called primary key. and the attributes item name it stores the name of an item in the item name column and the attributes item price stores the price of an item in the item price column. The attributes quantity stores the quantity of an item in the item column. Customer id is an attribute of a item which is the foreign key of table customer which can identify item of restaurant. : invoice, It can be defined as a receipt of bill generally which are provided whenever we make any purchase either online or in physical presence of customer. So, the entity invoice also has five attributes they are invoice id, price, amount, quantity,

customer id. An attributes invoice id of entity invoice stores the unique id of a invoice which is called primary key. The attributes amount stores the amount in the invoice column. the attributes price stores the price of an invoice in the item invoice column. The attributes quantity stores the quantity of an invoice in the invoice column. Customer id is an attribute of an invoice which is the foreign key of table customer which can identify invoice of restaurant. Customer is those persons of any organization who buys goods or item. So, in the entity there are five attributes they are employee id, address, name, customer id, contact no and email. An attributes customer id of entity customer stores the unique id of a customer which is called primary key. and the attributes address stores the address of the customer and in the attributes name it stores the name of an customer in the name column and Similarly in the attributes contact no it stores the contact no of customer to contact the customer to call them at the time when they are required. the attributes email in which it stores the email of a customer so that we can mail the customer when we required. Employee id is an attribute of a customer which is the foreign key of table employee which can identify employee of restaurant.

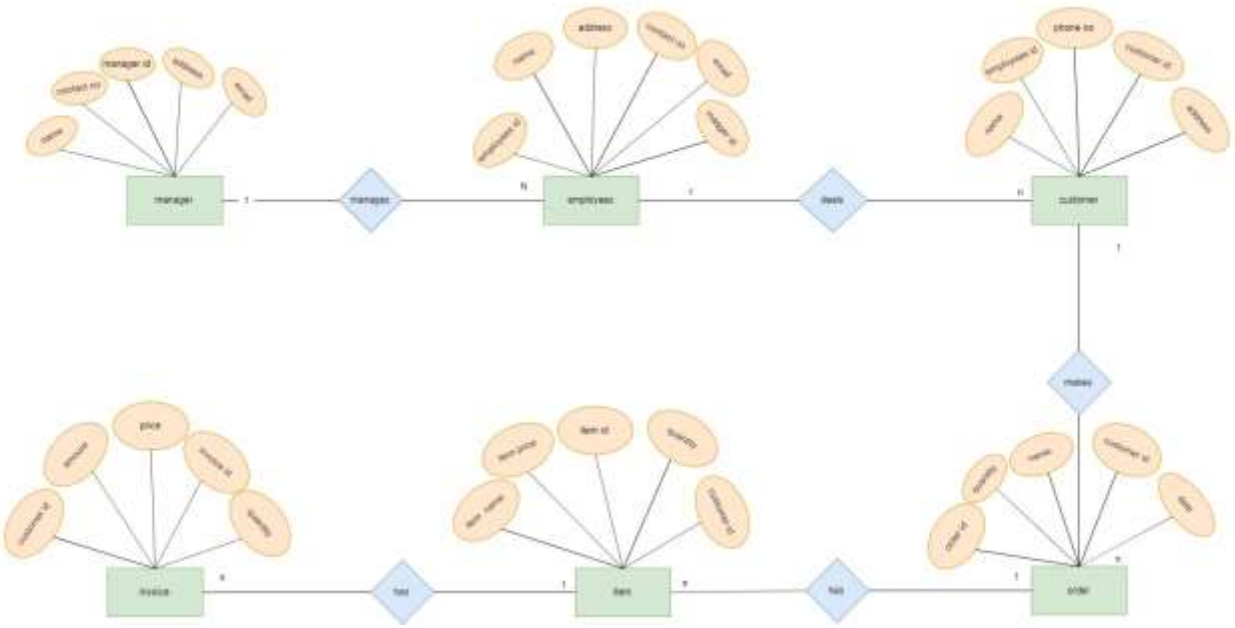

Figure 1entity relation diagram

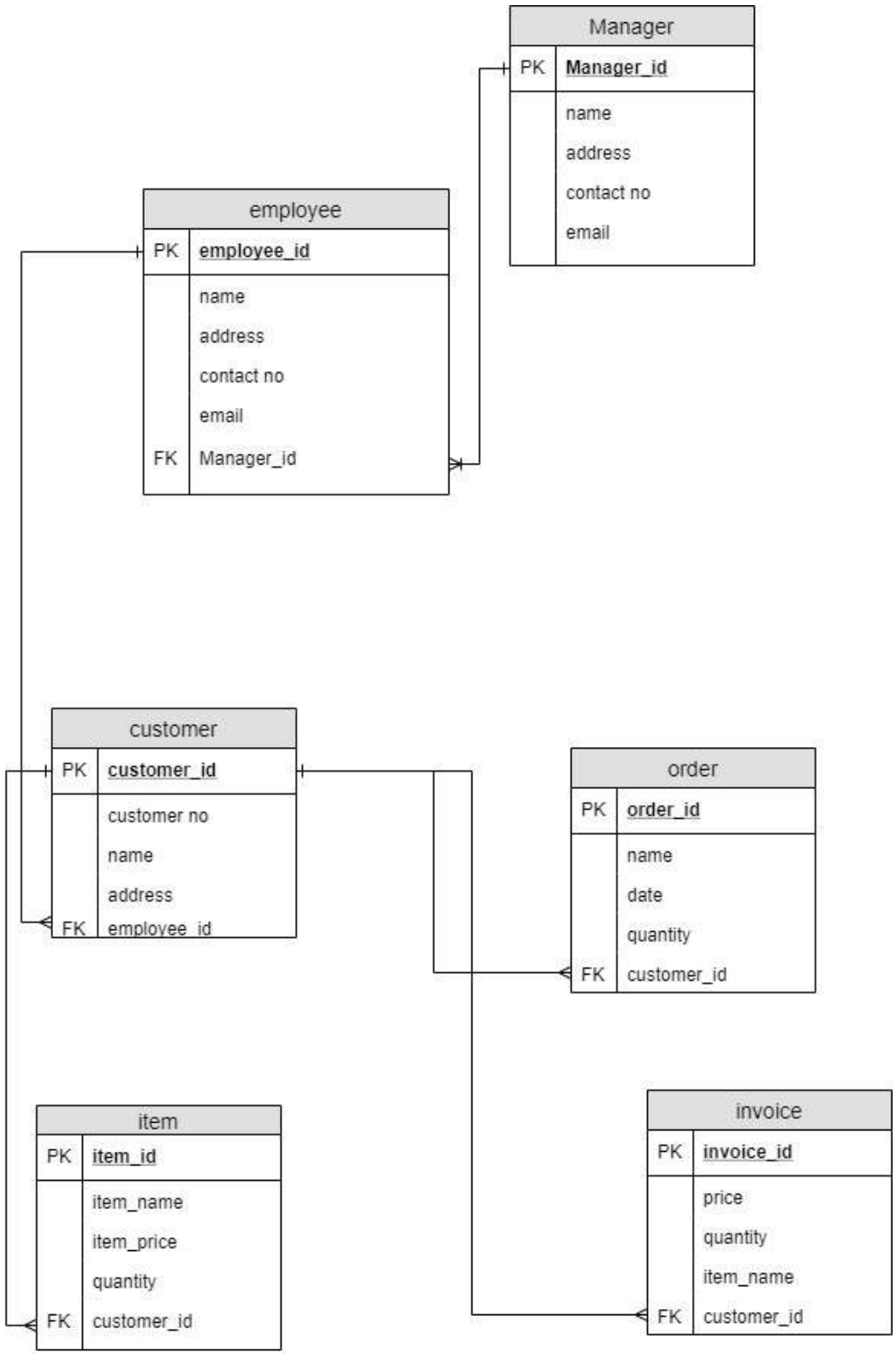

Figure 2relational diagram

1) Manager:

a) Create table manager(manager_id int primary key auto_increment not null, name varchar(255),address varchar(255),contact_no varchar(255),email varchar(255));

```
MariaDB [restaurant]> create table Manager( manager_id int primary key AUTO_INCREMENT ,name varchar(255),address varchar(255), contact_no varchar(255),email varchar(255));
Query OK, 0 rows affected (0.137 sec)
```

Figure 3create table manager

```
MariaDB [restaurant]> desc manager;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| manager_id | int(11)      | NO   | PRI | NULL    | auto_increment |
| name       | varchar(255) | YES  |     | NULL    |                |
| address    | varchar(255) | YES  |     | NULL    |                |
| contact_no | varchar(255) | YES  |     | NULL    |                |
| email      | varchar(255) | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
5 rows in set (0.006 sec)
```

Figure 4manager SQL

Inserting the value of manager table.

Insert into manager values (11,”ram”,”sinamangal”,9812356756,ram.gurung1@gmail.com)

```
MariaDB [restaurant]> insert into Manager values(12,"gita","baneshower","9812354556","gita.gurung1@gmail.com");
Query OK, 1 row affected (0.004 sec)

MariaDB [restaurant]> insert into Manager values(13,"shyam","lalitpur","9812354558","shyam1@gmail.com");
Query OK, 1 row affected (0.003 sec)

MariaDB [restaurant]> insert into Manager values(14,"ishan","patan","9862354558","ishan1@gmail.com");
Query OK, 1 row affected (0.003 sec)
```

Figure 5insert values in manager

```
MariaDB [restaurant]> select *from manager;;
+------------+-------+------------+------------+-----------------------+
| manager_id | name  | address    | contact_no | email                 |
+------------+-------+------------+------------+-----------------------+
|         11 | Ram   | Sinamangal | 9812356756 | ram.gurung1@gmail.com |
|         12 | gita  | baneshower | 9812354556 | gita.gurung1@gmail.com |
|         13 | shyam | lalitpur   | 9812354558 | shyam1@gmail.com      |
|         14 | ishan | patan      | 9862354558 | ishan1@gmail.com      |
|         15 | mune  | maitidevi  | 9842354585 | mune1@gmail.com       |
+------------+-------+------------+------------+-----------------------+
5 rows in set (0.003 sec)
```

Figure 6manager value table

Inserting the value of manager

Employee

Creating the table of employee:

a) create table employee(employee_id int primary key auto_increment not null,name varchar(255),address varchar(255),contact_no varchar(255),email varchar(255),manager_id int, foreign key(manager_id) refrences manager(manager_id));

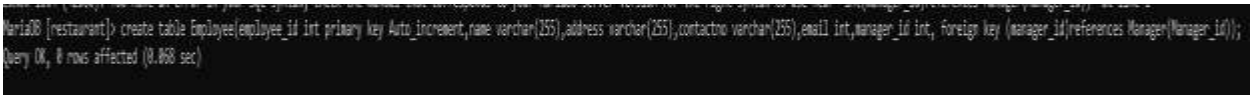

Figure 7create table employee

```
MariaDB [restaurant]> desc employee;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| employee_id | int(11)      | NO   | PRI | NULL    | auto_increment |
| name        | varchar(255) | YES  |     | NULL    |                |
| address     | varchar(255) | YES  |     | NULL    |                |
| contactno   | varchar(255) | YES  |     | NULL    |                |
| email       | int(11)      | YES  |     | NULL    |                |
| manager_id  | int(11)      | YES  | MUL | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
6 rows in set (0.009 sec)
```

Figure 8employee SQL

Table of employee

Inserting the value of employee table

Insert into employee values(101,”suraj”,”Biratnagar”,9842563112,suraj@gmail.com,11);

```
MariaDB [restaurant]> insert into employee values(101,"suraj","biratnagar",9842563112,"suraj@gmail.com",11);
Query OK, 1 row affected, 1 warning (0.061 sec)

MariaDB [restaurant]> insert into employee values(102,"sulav","ithari",9864563112,"sulav@gmail.com",12);
Query OK, 1 row affected, 1 warning (0.006 sec)

MariaDB [restaurant]> insert into employee values(103,"biraj","dharan",9864563987,"biraj@gmail.com",13);
Query OK, 1 row affected, 1 warning (0.004 sec)

MariaDB [restaurant]> insert into employee values(104,"babin","pathri",9840563987,"babin@gmail.com",14);
Query OK, 1 row affected, 1 warning (0.006 sec)

MariaDB [restaurant]> insert into employee values(104,"anish","damak",9840563257,"anish@gmail.com",15);
ERROR 1062 (23000): Duplicate entry '104' for key 'PRIMARY'
MariaDB [restaurant]> insert into employee values(105,"anish","damak",9840563257,"anish@gmail.com",15);
Query OK, 1 row affected, 1 warning (0.006 sec)
```

Figure 9insert values in employee

```
MariaDB [restaurant]> select *from employee;
+-------------+-------+------------+------------+-------+------------+
| employee_id | name  | address    | contactno  | email | manager_id |
+-------------+-------+------------+------------+-------+------------+
|         101 | suraj | biratnagar | 9842563112 |     0 |         11 |
|         102 | sulav | ithari     | 9864563112 |     0 |         12 |
|         103 | biraj | dharan     | 9864563987 |     0 |         13 |
|         104 | babin | pathri     | 9840563987 |     0 |         14 |
|         105 | anish | damak      | 9840563257 |     0 |         15 |
+-------------+-------+------------+------------+-------+------------+
5 rows in set (0.002 sec)
```

Figure 10employee value table

3) customer:

Create table customer(customer_id int primary key auto_increment, customer_no varchar(255),name varchar(255),address varchar(255),employee_id int,foreign key(employee_id)refrences employee(employee_id));

Figure 11create table customer

```
MariaDB [restaurant]> desc customer;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| customer_id | int(11)      | NO   | PRI | NULL    | auto_increment |
| customer_no | varchar(255) | NO   |     | NULL    |                |
| name        | varchar(255) | NO   |     | NULL    |                |
| address     | varchar(255) | YES  |     | NULL    |                |
| employee_id | int(11)      | YES  | MUL | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
5 rows in set (0.021 sec)
```

Figure 12customer SQL

Create table customer

Inserting values in customer table

Insert into customer values (111,001,” Alina”,” Kathmandu”,101);

```
MariaDB [restaurant]> select *from customer;
+-------------+-------------+---------+-----------+-------------+
| customer_id | customer_no | name    | address   | employee_id |
+-------------+-------------+---------+-----------+-------------+
|         111 | 1           | alina   | kathmandu |         101 |
|         112 | 2           | babita  | hetauda   |         102 |
|         113 | 3           | dikshya | dharan    |         103 |
|         114 | 4           | ashmita | ithari    |         104 |
|         115 | 5           | aroma   | bhaktapur |         105 |
+-------------+-------------+---------+-----------+-------------+
5 rows in set (0.010 sec)
```

Figure 13insert values in customer


```
MariaDB [restaurant]> select *from customer;
+-------------+-------------+---------+-----------+-------------+
| customer_id | customer_no | name    | address   | employee_id |
+-------------+-------------+---------+-----------+-------------+
|         111 | 1           | alina   | kathmandu |         101 |
|         112 | 2           | babita  | hetauda   |         102 |
|         113 | 3           | dikshya | dharan    |         103 |
|         114 | 4           | ashmita | ithari    |         104 |
|         115 | 5           | aroma   | bhaktapur |         105 |
+-------------+-------------+---------+-----------+-------------+
5 rows in set (0.010 sec)
```


Figure 14customer value table

Inserting value of customer

4)order

Creating orders table:

Create table order(order_id int primary key auto_increment,name varchar(255),date int, quantity int,customer_id int, foreign key(customer_id)refrences customer (customer_id));

```
MariaDB [restaurant]> create table Orders(order_id int primary key Auto_increment,name varchar(255),date int, quantity int,customer_id int,foreign key(customer_id)references Customer(customer_id));
Query OK, 0 rows affected (0.032 sec)
```

Figure 15create table orders

```
MariaDB [restaurant]> desc orders;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| order_id    | int(11)      | NO   | PRI | NULL    | auto_increment |
| name        | varchar(255) | YES  |     | NULL    |                |
| date        | int(11)      | YES  |     | NULL    |                |
| quantity    | int(11)      | YES  |     | NULL    |                |
| customer_id | int(11)      | YES  | MUL | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
5 rows in set (0.030 sec)
```

Figure 16orders SQL

Inserting value of orders

Insert into order values(201,” breakfast”,2019/11/08,4,111);

```
MariaDB [restaurant]> insert into orders value(201,"breakfast",2019/11/08,4,111);
Query OK, 1 row affected (0.084 sec)

MariaDB [restaurant]> insert into orders value(202,"breakfast",2019/11/04,6,112);
Query OK, 1 row affected (0.007 sec)

MariaDB [restaurant]> insert into orders value(203,"dinner",2019/11/06,6,113);
Query OK, 1 row affected (0.004 sec)

MariaDB [restaurant]> insert into orders value(204,"dinner",2019/11/09,4,114);
Query OK, 1 row affected (0.005 sec)

MariaDB [restaurant]> insert into orders value(205,"dinner",2019/11/28,4,115);
Query OK, 1 row affected (0.004 sec)
```

Figure 17insert value in orders table

```
MariaDB [restaurant]> select *from orders;
+----------+-----------+------+----------+-------------+
| order_id | name      | date | quantity | customer_id |
+----------+-----------+------+----------+-------------+
|      201 | breakfast |   23 |        4 |         111 |
|      202 | breakfast |   46 |        6 |         112 |
|      203 | dinner    |   31 |        6 |         113 |
|      204 | dinner    |   20 |        4 |         114 |
|      205 | dinner    |    7 |        4 |         115 |
+----------+-----------+------+----------+-------------+
5 rows in set (0.012 sec)
```

Figure 18order value table

Inserting value in order table

5) Item

Create item table

Create table item (item_id int primary key auto_increment, item_name varchar(255),item_price int,quantity int,customer_id int,foreign key(customer_id)refrences order (customer_id));

Figure 19create table item

```
MariaDB [restaurant]> desc item;
+-------------+--------------+------+-----+---------+----------------+
| Field       | Type         | Null | Key | Default | Extra          |
+-------------+--------------+------+-----+---------+----------------+
| item_id     | int(11)      | NO   | PRI | NULL    | auto_increment |
| item_name   | varchar(255) | YES  |     | NULL    |                |
| item_price  | int(11)      | YES  |     | NULL    |                |
| quantity    | int(11)      | YES  |     | NULL    |                |
| customer_id | int(11)      | YES  | MUL | NULL    |                |
+-------------+--------------+------+-----+---------+----------------+
5 rows in set (0.033 sec)
```

Figure 20item SQL

Creating table item

Inserting values in item table

Insert into item values(51,”egg bread”,300,5,111);

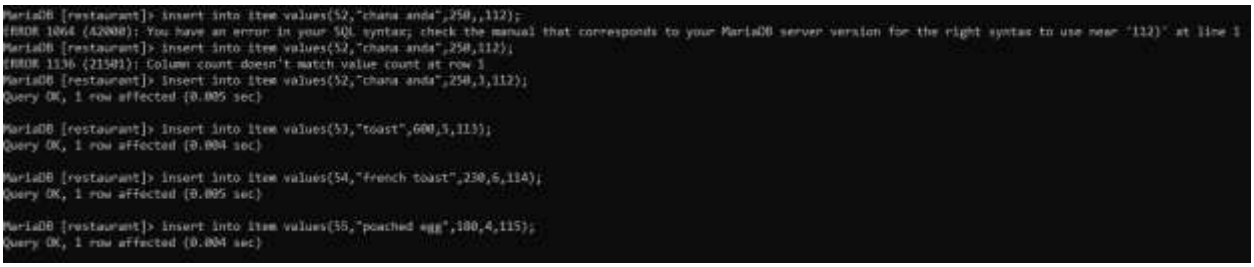

Figure 21insert values in item

```
MariaDB [restaurant]> select *from item;
+---------+--------------+------------+----------+-------------+
| item_id | item_name    | item_price | quantity | customer_id |
+---------+--------------+------------+----------+-------------+
|      51 | egg bread    |        300 |        5 |         111 |
|      52 | chana anda   |        250 |        3 |         112 |
|      53 | toast        |        600 |        5 |         113 |
|      54 | french toast |        230 |        6 |         114 |
|      55 | poached egg  |        180 |        4 |         115 |
+---------+--------------+------------+----------+-------------+
5 rows in set (0.001 sec)
```

Figure 22item value table

6)invoice

Creating table invoice

Create table invoice(invoice_id int primary key auto_increment,price int,quantity int,item_name varchar(255), ,customer_id int,foreign key(customer_id)refrences order (customer_id));

Figure 23create table invoice

```
MariaDB [restaurant]> insert into invoice values(00100,300,5,"egg bread",111);
Query OK, 1 row affected (0.006 sec)

MariaDB [restaurant]> insert into invoice values(00101,250,3,"chana anda",112);
Query OK, 1 row affected (0.006 sec)

MariaDB [restaurant]> insert into invoice values(00102,600,5,"toast",113);
Query OK, 1 row affected (0.004 sec)

MariaDB [restaurant]> insert into invoice values(00103,230,6,"french toast",114);
Query OK, 1 row affected (0.004 sec)

MariaDB [restaurant]> insert into invoice values(00104,180,4,"poached egg",115);
Query OK, 1 row affected (0.005 sec)
```

Figure 24insert values invoice

```
MariaDB [restaurant]> desc invoice;
+-------------+---------------+------+-----+---------+----------------+
| Field       | Type          | Null | Key | Default | Extra          |
+-------------+---------------+------+-----+---------+----------------+
| invoice_id  | int(11)       | NO   | PRI | NULL    | auto_increment |
| price       | decimal(11,0) | NO   |     | NULL    |                |
| quantity    | int(11)       | YES  |     | NULL    |                |
| item_name   | varchar(255)  | YES  |     | NULL    |                |
| customer_id | int(11)       | YES  | MUL | NULL    |                |
+-------------+---------------+------+-----+---------+----------------+
5 rows in set (0.005 sec)
```

Figure 25invoice SQL

Creating table invoice

Inserting value into invoice table

Insert into invoice values (00100,300,5,”egg bread”,111);

```
MariaDB [restaurant]> select *from invoice;
+------------+-------+----------+--------------+-------------+
| invoice_id | price | quantity | item_name    | customer_id |
+------------+-------+----------+--------------+-------------+
|        100 |   300 |        5 | egg bread    |         111 |
|        101 |   250 |        3 | chana anda   |         112 |
|        102 |   600 |        5 | toast        |         113 |
|        103 |   230 |        6 | french toast |         114 |
|        104 |   180 |        4 | poached egg  |         115 |
+------------+-------+----------+--------------+-------------+
5 rows in set (0.000 sec)
```

Figure 26invoice values table

Inserting value in invoice.

Data dictionary

Manager

Entity name	Entity description	Column name	Column description	Data type	Length	Primary key	Foreign key	Nullable	Unique	notes
Manager	A manager is someone who manages the resources in the restaurant.	Manager id	This column store id of manager for unique identification of each manager	int		True	false	false	True	Auto increment increases the number of manager id automatically
		Name	This column stores name of the manager	varchar	255	False	false	False	False	
		address	This column stores address of manager	varchar	255	False	False	False	False	
		Contact no	This column stores contact no of manager	varchar	255	False	False	False	False	
		email	This column store email of the manager	varchar	255	False	false	false	false	

Table 1MANAGER

Table 2 EMPLOYEE

Entity name	Entity description	Column name	Column description	Data type	length	Primary key	Foreign key	Nullable	Unique	notes
Employee	An employee is one who deals with the customer	Employee id	This column stores id of employee for uniquely identification of each employee	Int		true	False	False	true	Auto increment increases the number of employee id automatically
		Name	This column stores name of an employee	Varchar	255	False	False	False	False	
		Address	This column stores address of an employee	Varchar	255	False	False	False	False	
		Contact no	This column stores contact no of an employee	Varchar	255	False	False	False	False	
		Email	This column stores email of an employee	int		False	false	False	False	
		Manager id	This column stores manager id	int		false	true	False	true	It is references of manager if from

			of an employee							manager table in employee column

Entity name	Entity description	Column name	Column description	Data type	Length	Primary key	Foreign key	Nullable	Unique	notes
Customer	A customer is one who makes different order to the restaurant	Customer id	This column stores the id of customer in it.	Int		True	false	False	True	An au increment increases the numb of custom id automatica
		Customer no	This column stores no of the customer in it.	Varchar	255	False	False	False	False	
		Name	This column stores name of the customer in it.	Varchar	255	False	False	False	False	
		Address	This column stores the address of	Varchar	255	False	False	False	False	

			the customer in it.							
		Employee id	This column stores the id of employee in the customer table	int		false	True	False	false	It references employee from employee table customer column

Table 3CUSTOMER

Table 4ORDER

Entity name	Entity description	Column name	Column description	Datatype	Length	Primary key	Foreign key	Nullable	Unique	notes
Orders	an order is one where the customer gives the order to the restaurant	Order id	This column stores the order's in it.	Int		True	False	False	True	An auto increment increases the number of order id automatically
		Name	This column stores the name of order in it.	Varchar	255	False	false	False	False	
		Date	This column stores the date of order in it.	Int		False	False	False	False	
		Quantity	This column stores the quantity of orders in it.	Int		False	False	False	False	
		Customer id	This column stores the id of customer	Int		false	True	False	False	It is references of customer id from orders table in

			in orders table.							employee column

Figure 27orders data dictonary

Table 5ITEM

Entity name	Entity description	Column name	Column description	Data type	Length	Primary key	Foreign key	Nullable	Unique	notes
Item	An item is one who has the invoice of item in the restaurant	Item id	This column stores the id of an item in the table.	Int		True	False	False	true	An auto increment increases the number of item id automatically
		Item name	This column stores the name of an item in the table.	Varchar	255	False	False	False	False	
		Item price	This column stores the price of an item in the table.	Int		False	False	False	False	
		Quantity	This column stores the quantity of an item in the table.	Int		False	False	False	False	
		Customer id	This column	Int		False	True	False	False	It is references of

			stores the id of a customer in the table.							customer id from customer table in item column

item

Table 6INVOICE

Entity name	Entity description	Column name	Column description	Data type	Length	Primary key	Foreign key	Nullable	Unique	notes
Invoice	An invoice is the bill of the order or item.	Invoice id	This column stores the id of an invoice in the table.	Int		true	False	False	True	An auto increment increases the number of invoice id automatically
		Price	This column stores the price of an item.	Int		False	False	False	False	
		Quantity	This column stores the quantity of an items.	Int		False	False	False	False	
		Item name	This column stores the name of an item.	Varchar	255	False	False	False	False	
		Customer id	This column stores the id of a customer.	int		False	True	False	False	It is references of customer id from customer table in

										invoice column

Invoice

Queries:

Order by:

Figure 28invoice data dictionary

List the table name, address of manager on the sort of descending order.

```
MariaDB [restaurant]> select *from customer;
+-------------+-------------+---------+-----------+-------------+
| customer_id | customer_no | name    | address   | employee_id |
+-------------+-------------+---------+-----------+-------------+
|         111 | 1           | alina   | kathmandu |         101 |
|         112 | 2           | babita  | hetauda   |         102 |
|         113 | 3           | dikshya | dharan    |         103 |
|         114 | 4           | ashmita | ithari    |         104 |
|         115 | 5           | aroma   | bhaktapur |         105 |
+-------------+-------------+---------+-----------+-------------+
5 rows in set (0.000 sec)

MariaDB [restaurant]> select *from customer order by name desc;
+-------------+-------------+---------+-----------+-------------+
| customer_id | customer_no | name    | address   | employee_id |
+-------------+-------------+---------+-----------+-------------+
|         113 | 3           | dikshya | dharan    |         103 |
|         112 | 2           | babita  | hetauda   |         102 |
|         114 | 4           | ashmita | ithari    |         104 |
|         115 | 5           | aroma   | bhaktapur |         105 |
|         111 | 1           | alina   | kathmandu |         101 |
+-------------+-------------+---------+-----------+-------------+
5 rows in set (0.001 sec)
```

Figure 29order by

Between :

```
MariaDB [restaurant]> select *from customer;
+-------------+-------------+---------+-----------+-------------+
| customer_id | customer_no | name    | address   | employee_id |
+-------------+-------------+---------+-----------+-------------+
|         111 | 1           | alina   | kathmandu |         101 |
|         112 | 2           | babita  | hetauda   |         102 |
|         113 | 3           | dikshya | dharan    |         103 |
|         114 | 4           | ashmita | ithari    |         104 |
|         115 | 5           | aroma   | bhaktapur |         105 |
+-------------+-------------+---------+-----------+-------------+
5 rows in set (0.001 sec)

MariaDB [restaurant]> select *from customer where address between "dharan" and "kathamandu";
+-------------+-------------+---------+---------+-------------+
| customer_id | customer_no | name    | address | employee_id |
+-------------+-------------+---------+---------+-------------+
|         112 | 2           | babita  | hetauda |         102 |
|         113 | 3           | dikshya | dharan  |         103 |
|         114 | 4           | ashmita | ithari  |         104 |
+-------------+-------------+---------+---------+-------------+
3 rows in set (0.001 sec)
```

Figure 30between

Like :

```
MariaDB [restaurant]> select *from customer;
+-------------+-------------+---------+-----------+-------------+
| customer_id | customer_no | name    | address   | employee_id |
+-------------+-------------+---------+-----------+-------------+
|         111 | 1           | alina   | kathmandu |         101 |
|         112 | 2           | babita  | hetauda   |         102 |
|         113 | 3           | dikshya | dharan    |         103 |
|         114 | 4           | ashmita | ithari    |         104 |
|         115 | 5           | aroma   | bhaktapur |         105 |
+-------------+-------------+---------+-----------+-------------+
5 rows in set (0.000 sec)

MariaDB [restaurant]> select *from customer where address like "%bh%";
+-------------+-------------+-------+-----------+-------------+
| customer_id | customer_no | name  | address   | employee_id |
+-------------+-------------+-------+-----------+-------------+
|         115 | 5           | aroma | bhaktapur |         105 |
+-------------+-------------+-------+-----------+-------------+
1 row in set (0.004 sec)
```

Figure 31Like

This query designed here is for like which will selected all the likeable values and date

Distinct

```
MariaDB [restaurant]> select *from item;
+---------+--------------+------------+----------+-------------+
| item_id | item_name    | item_price | quantity | customer_id |
+---------+--------------+------------+----------+-------------+
|      51 | egg bread    |        300 |        5 |         111 |
|      52 | chana anda   |        250 |        3 |         112 |
|      53 | toast        |        600 |        5 |         113 |
|      54 | french toast |        230 |        6 |         114 |
|      55 | poached egg  |        180 |        4 |         115 |
+---------+--------------+------------+----------+-------------+
5 rows in set (0.000 sec)

MariaDB [restaurant]> select distinct(item_price) from item;
+------------+
| item_price |
+------------+
|        300 |
|        250 |
|        600 |
|        230 |
|        180 |
+------------+
5 rows in set (0.006 sec)
```

Figure 32Distinct

Group by

```
MariaDB [restaurant]> select *from orders;
+----------+-----------+----------+----------+-------------+
| order_id | name      | date     | quantity | customer_id |
+----------+-----------+----------+----------+-------------+
|      201 | breakfast | 20191220 |        4 |         111 |
|      202 | breakfast | 20191220 |        6 |         112 |
|      203 | dinner    | 20191220 |        6 |         113 |
|      204 | dinner    | 20191220 |        4 |         114 |
|      205 | dinner    | 20191220 |        4 |         115 |
+----------+-----------+----------+----------+-------------+
5 rows in set (0.000 sec)

MariaDB [restaurant]> select customer_id,count(*) from orders group by customer_id;
+-------------+----------+
| customer_id | count(*) |
+-------------+----------+
|         111 |        1 |
|         112 |        1 |
|         113 |        1 |
|         114 |        1 |
|         115 |        1 |
+-------------+----------+
5 rows in set (0.000 sec)
```

Figure 33Group by

```
MariaDB [restaurant]> select *from orders;
+----------+-----------+----------+----------+-------------+
| order_id | name      | date     | quantity | customer_id |
+----------+-----------+----------+----------+-------------+
|      201 | breakfast | 20191220 |        4 |         111 |
|      202 | breakfast | 20191220 |        6 |         112 |
|      203 | dinner    | 20191220 |        6 |         113 |
|      204 | dinner    | 20191220 |        4 |         114 |
|      205 | dinner    | 20191220 |        4 |         115 |
+----------+-----------+----------+----------+-------------+
5 rows in set (0.001 sec)

MariaDB [restaurant]> select *from orders where month(date)="12";
+----------+-----------+----------+----------+-------------+
| order_id | name      | date     | quantity | customer_id |
+----------+-----------+----------+----------+-------------+
|      201 | breakfast | 20191220 |        4 |         111 |
|      202 | breakfast | 20191220 |        6 |         112 |
|      203 | dinner    | 20191220 |        6 |         113 |
|      204 | dinner    | 20191220 |        4 |         114 |
|      205 | dinner    | 20191220 |        4 |         115 |
+----------+-----------+----------+----------+-------------+
5 rows in set (0.004 sec)

MariaDB [restaurant]>
```

d

Figure 34Date

Limit

```
MariaDB [restaurant]> select *from item;
+---------+--------------+------------+----------+-------------+
| item_id | item_name    | item_price | quantity | customer_id |
+---------+--------------+------------+----------+-------------+
|      51 | egg bread    |        300 |        5 |         111 |
|      52 | chana anda   |        250 |        3 |         112 |
|      53 | toast        |        600 |        5 |         113 |
|      54 | french toast |        230 |        6 |         114 |
|      55 | poached egg  |        180 |        4 |         115 |
+---------+--------------+------------+----------+-------------+
5 rows in set (0.000 sec)

MariaDB [restaurant]> select *from item order by item_price desc limit 1;
+---------+-----------+------------+----------+-------------+
| item_id | item_name | item_price | quantity | customer_id |
+---------+-----------+------------+----------+-------------+
|      53 | toast     |        600 |        5 |         113 |
+---------+-----------+------------+----------+-------------+
1 row in set (0.000 sec)
```

Figure 35Limit

```
MariaDB [onlinestore]> SELECT * FROM customer JOIN orders ON customer_id=orders.customer;
+-------------+------------+-----------+---------+--------------+----------+------+----------+---------------+---------+
| customer_id | first_name | last_name | address | phone_no     | order_id | item | customer | date_of_orderd | product |
+-------------+------------+-----------+---------+--------------+----------+------+----------+---------------+---------+
|           1 | Ram        | Singh     | Naxal   | 9860-8090-78 |        1 |    9 |        1 | 2019-01-01    |       5 |
|           2 | Shyam      | Rathore   | Newroad | 9860-5555-59 |        2 |    5 |        2 | 2019-01-10    |       4 |
|           5 | Aagam      | Agrawal   | Lazimpat| 9860-8965-78 |        3 |    5 |        5 | 2019-02-05    |       4 |
|           4 | Mathew     | Vargesh   | Lazimpat| 9851-2323-96 |        4 |    8 |        4 | 2019-02-10    |       8 |
|           6 | Pulkit     | Ashar     | Balkhu  | 9841-2832-78 |        5 |    7 |        6 | 2019-01-31    |       7 |
|           3 | Tejash     | Thomas    | Naxal   | 9841-8596-23 |        6 |    6 |        3 | 2019-08-10    |       6 |
|           5 | Aagam      | Agrawal   | Lazimpat| 9860-8965-78 |        7 |    2 |        5 | 2019-09-11    |       2 |
|           6 | Pulkit     | Ashar     | Balkhu  | 9841-2832-78 |        8 |    6 |        6 | 2019-11-08    |       9 |
+-------------+------------+-----------+---------+--------------+----------+------+----------+---------------+---------+
8 rows in set (0.031 sec)
```

Figure 36join

```
MariaDB [onlinestore]> SELECT * FROM customer LEFT JOIN orders ON customer_id=orders.customer;
+-------------+------------+-----------+-----------+--------------+----------+------+----------+---------------+---------+
| customer_id | first_name | last_name | address   | phone_no     | order_id | item | customer | date_of_orderd | product |
+-------------+------------+-----------+-----------+--------------+----------+------+----------+---------------+---------+
|           1 | Ram        | Singh     | Naxal     | 9860-8090-78 |        1 |    9 |        1 | 2019-01-01     |       5 |
|           2 | Shyam      | Rathore   | Newroad   | 9860-5555-59 |        2 |    5 |        2 | 2019-01-10     |       4 |
|           3 | Tejash     | Thomas    | Naxal     | 9841-8596-23 |        6 |    6 |        3 | 2019-08-10     |       6 |
|           4 | Mathew     | Vargesh   | Lazimpat  | 9851-2323-96 |        4 |    8 |        4 | 2019-02-10     |       8 |
|           5 | Aagam      | Agrawal   | Lazimpat  | 9860-8965-78 |        3 |    5 |        5 | 2019-02-05     |       4 |
|           5 | Aagam      | Agrawal   | Lazimpat  | 9860-8965-78 |        7 |    2 |        5 | 2019-09-11     |       2 |
|           6 | Pulkit     | Ashar     | Balkhu    | 9841-2832-78 |        5 |    7 |        6 | 2019-01-31     |       7 |
|           6 | Pulkit     | Ashar     | Balkhu    | 9841-2832-78 |        8 |    6 |        6 | 2019-11-08     |       9 |
+-------------+------------+-----------+-----------+--------------+----------+------+----------+---------------+---------+
8 rows in set (0.027 sec)
```

Figure 37left join

```
MariaDB [onlinestore]> select * from orders right join item  on customer=item_id;
+----------+------+----------+---------------+---------+---------+------------+----------+----------+------+
| order_id | item | customer | date_of_orderd | product | item_id | item_name  | supplier | quantity | size |
+----------+------+----------+---------------+---------+---------+------------+----------+----------+------+
|        1 |    9 |        1 | 2019-01-01    |       5 |       1 | T-Shirt    |        2 |       10 |      |
|        2 |    5 |        2 | 2019-01-10    |       4 |       2 | Shirt      |        1 |       50 |      |
|        6 |    6 |        3 | 2019-08-10    |       6 |       3 | Pant       |        3 |       50 |      |
|        4 |    8 |        4 | 2019-02-10    |       8 |       4 | Mens Shoes |        6 |       10 |      |
|        3 |    5 |        5 | 2019-02-05    |       4 |       5 | Slipper    |        5 |       80 |      |
|        7 |    2 |        5 | 2019-09-11    |       2 |       5 | Slipper    |        5 |       80 |      |
|        5 |    7 |        6 | 2019-01-31    |       7 |       6 | Women Shoes |        4 |       40 |      |
|        8 |    6 |        6 | 2019-11-08    |       9 |       6 | Women Shoes |        4 |       40 |      |
|     NULL | NULL |     NULL | NULL          |    NULL |       7 | Boots      |        4 |       50 |      |
|     NULL | NULL |     NULL | NULL          |    NULL |       8 | Jacket     |        2 |       20 |      |
|     NULL | NULL |     NULL | NULL          |    NULL |       9 | sweater    |        1 |       15 |      |
+----------+------+----------+---------------+---------+---------+------------+----------+----------+------+
11 rows in set (0.032 sec)
```

Figure 38right join

Conclusion

After the completion of this coursework, I conclude that we have learned how an organization handles data and databases are stored organization in the business form. We have learned how to make an databases of an organization and also I have learned different databases software for creation of the data storing , modifying, and how tho relate multiple databases using single column as foreign key. I have learned to make data unique ,and how to create ER diagram, to make relational diagram and many more. Also I have learned to make data dictionary , databases queries and how to give citation, how to reserch from the online source and make the report and coursework with the help of various tools like xampp, draw.io, creatly, websites.

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