DATABASE PROJECT

FOOD ORDERING DATABASE SYSTEM

DBMS

I) PROBLEM DEFINITION:

The system proposed here is an online food ordering system that helps customers to overcome the disadvantages of the traditional queuing system. The online food ordering system sets up a food menu online and customers can easily place the order as per their wish. This system also provides a feedback system in which user can rate the food items. The payment can be made online or pay-on-delivery system. For more secured ordering separate accounts are maintained for each user by providing them an ID and a password.

II)ASSUMPTIONS:

1. A restaurant can have many items and same item may be in many restaurants .Hence it is M:N relationship.

2. A customer can have more than one payment method and many customers can have same payment method. Hence it is an M:N relationship.

3. A customer can place many orders while an order is placed by only one customer. Hence it is a 1:N relationship and total participation from orders.

4. An order can be paid by only one payment method while a payment method can be used to pay many order. Hence

there is a N:1 relationship and there is a total participation from payment methods.

5.　　A order may have many items and same item can be involved in many orders .Hence it is a M:N relationship . Sinceevery order should have atleast one items there is total participation from orders.

6.　　Every ordered item may/may not have a rating corresponding to that order while if an ordered item has ratingit must be associated with atleast one order .Hence it is a M:N relationship with items_rating .Since every order and every ordered item may not having a rating there can't be total participation from either side.
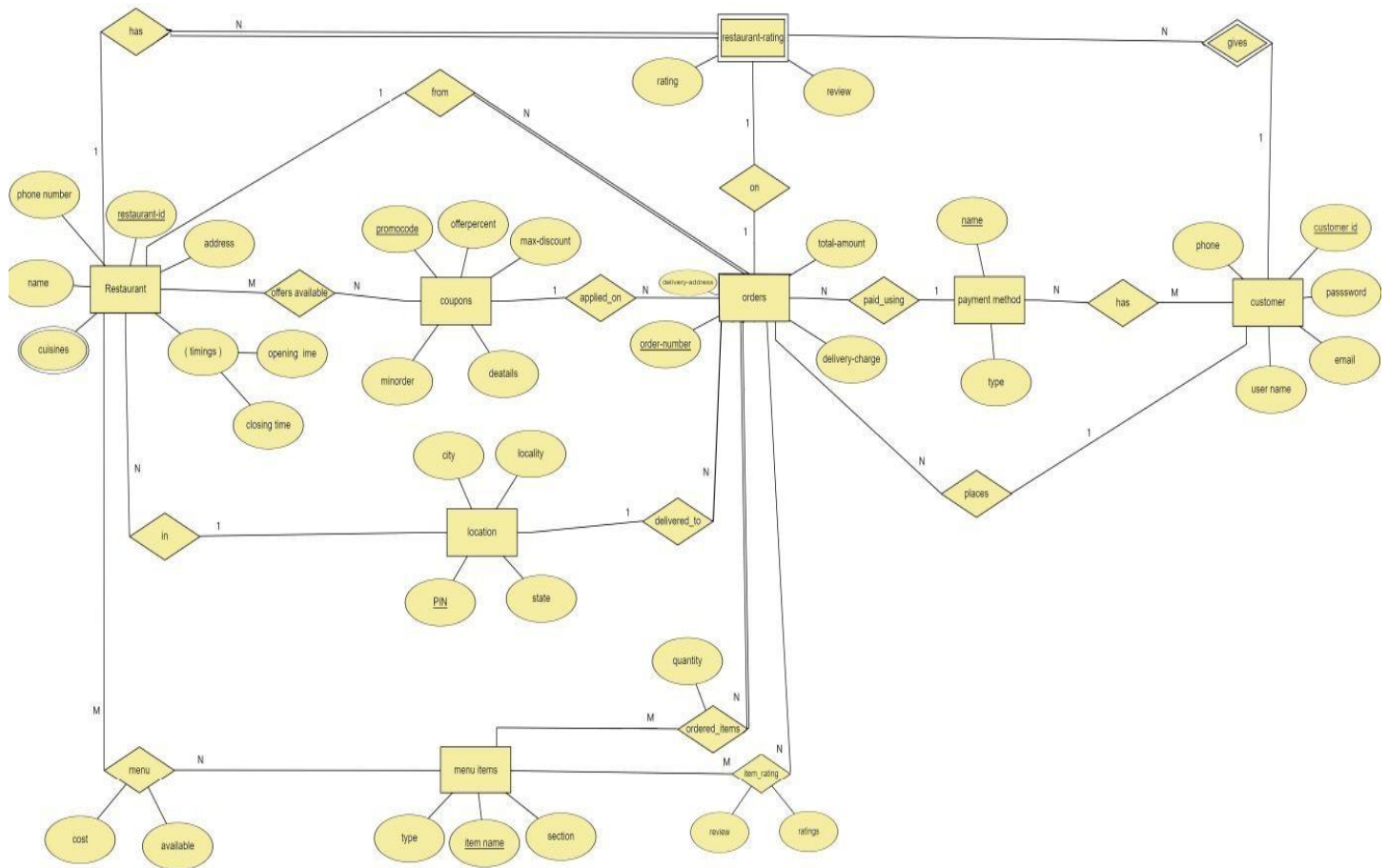
7.　　Customer can order only from one restaurant at once but each restaurant can be involved in multiple orders (N :1). Sinceevery customer may not rate the restaurant there wont be total participation from orders .

8.　　Customer can apply only one coupon per order but a coupon can be applied on multiple orders if it is applicable (1:N) . A coupon can be available for multiple restaurants and a restaurant can have multiple offers (M:N) .Since every customer may not apply a coupon there wont be total participation from coupons to orders .
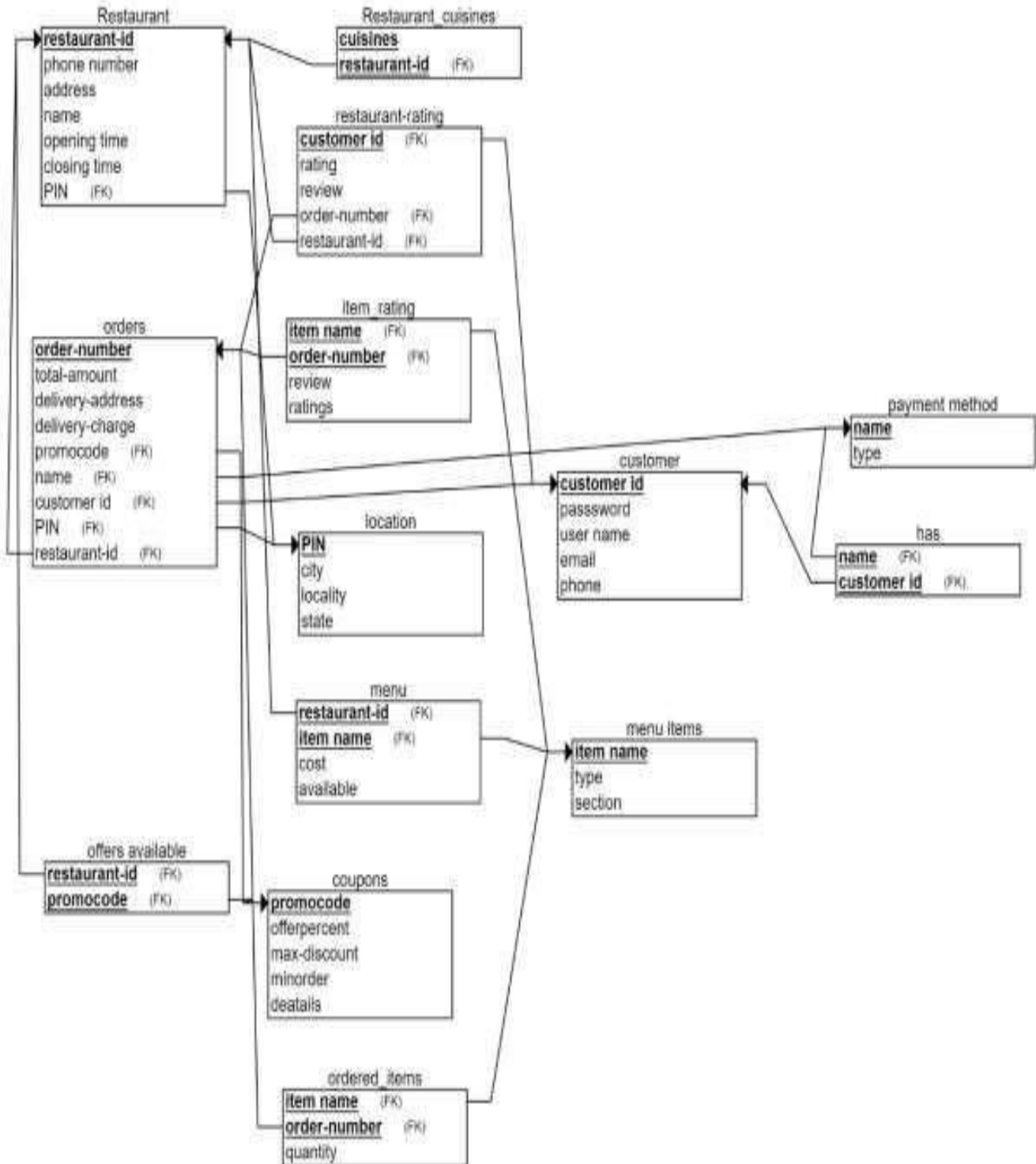
9.　　Location table stores the locality for every pincode whichwill be referenced from restaurant and orders entities . As many restaurants and delivery addresses can have same pincode it will be many to one relationship .

III) ER DIAGRAM:
a)

ER Diagram showing entities: Restaurant, coupons, orders, payment method, customer, location, menu items, menu, and relationships including has, from, on, gives, restaurant-rating, offers available, applied_on, paid_using, places, delivered_to, in, ordered_items, item_rating, delivery-address.

Restaurant attributes: phone number, restaurant-id, address, name, cuisines, (timings), opening time, closing time.

coupons attributes: promocode, offerpercent, max-discount, minorder, deatails.

orders attributes: total-amount, order-number, delivery-charge.

payment method attributes: name, type.

customer attributes: phone, customer id, passssword, email, user name.

location attributes: city, locality, PIN, state.

menu attributes: cost, available.

menu items attributes: type, item name, section.

ordered_items attributes: quantity.

item_rating attributes: review, ratings.

restaurant-rating attributes: rating, review.

III) RELATIONAL MODEL:
B)

Restaurant
- restaurant-id
- phone number
- address
- name
- opening time
- closing time
- PIN   (FK)

Restaurant_cuisines
- cuisines
- restaurant-id   (FK)

restaurant-rating
- customer id   (FK)
- rating
- review
- order-number   (FK)
- restaurant-id   (FK)

item_rating
- item name   (FK)
- order-number   (FK)
- review
- ratings

orders
- order-number
- total-amount
- delivery-address
- delivery-charge
- promocode   (FK)
- name   (FK)
- customer id   (FK)
- PIN   (FK)
- restaurant-id   (FK)

payment method
- name
- type

customer
- customer id
- passsword
- user name
- email
- phone

has
- name   (FK)
- customer id   (FK)

location
- PIN
- city
- locality
- state

menu
- restaurant-id   (FK)
- item name   (FK)
- cost
- available

menu items
- item name
- type
- section

offers available
- restaurant-id   (FK)
- promocode   (FK)

coupons
- promocode
- offerpercent
- max-discount
- minorder
- deatails

ordered_items
- item name   (FK)
- order-number   (FK)
- quantity

RELATIONS
RESTAURANT TABLE:

This restaurant table includes data restaurantID,phone number,address,name,opening time,closing time,PIN. restaurantID is the primary key.

```
Name              Null?       Type
------------      --------    ------------
RESTAURANTID  NOT NULL  NUMBER(38)
PHONENUMBER               NUMBER(38)
ADDRESS                  VARCHAR2(40)
NAME                     VARCHAR2(30)
OPENINGTIME              VARCHAR2(30)
CLOSINGTIME              VARCHAR2(30)
PIN                      NUMBER(38)
```

SQL | All Rows Fetched: 5 in 0.003 seconds

	RESTAURANTID	PHONENUMBER	ADDRESS	NAME	OPENINGTIME	CLOSINGTIME	PIN
1	101	9100357017	hyderabad	almas	8:00 AM	11:00 PM	516167
2	112	9104567817	bangalore	rajadhani	7:30 AM	10:00 PM	516347
3	123	3546729088	warangal	rians	8:30 AM	11:30 PM	530167
4	134	9102354782	kadapa	ruchulu	9:40 AM	12:30 AM	513467
5	119	9768354692	rayachoty	birla	8:00 AM	10:00 PM	513457

CUSTOMER TABLE:

The customer table includes data CustomerID, Password, Username, Email, Phone.

CustomerID is the primary key.

	CUSTOMERID	PASSWORD	USERNAME	EMAIL	PHONE
1	1101	customer@1	customer1	c1@gmail.com	9123456767
2	1102	customer@2	customer2	c2@gmail.com	9424350797
3	1103	customer@3	customer3	c3@gmail.com	9946573892
4	1104	customer@4	customer4	c4@gmail.com	8187645674
5	1105	customer@5	customer5	c5@gmail.com	8736452718

```
Name          Null?       Type
----------    ---------   ------------
CUSTOMERID    NOT NULL    NUMBER(38)
PASSWORD                  VARCHAR2(10)
USERNAME                  VARCHAR2(10)
EMAIL                     VARCHAR2(30)
PHONE                     NUMBER(38)
```

COUPONS TABLE:

The coupon table includes data promo code,offerpercent,max-discount,minorder,details.

Promo code is the primary key.

```
Name            Null?     Type
-----------     --------- -------------
PROMOCODE       NOT NULL  NUMBER(38)
OFFERPERCENT              NUMBER(38)
MAXDISCOUNT              NUMBER(38)
MINORDER                 NUMBER(38)
DETAILS                  VARCHAR2(30)
```

	PROMOCODE	OFFERPERCENT	MAXDISCOUNT	MINORDER	DETAILS
1	11123	30	10	1000	summeroffer
2	11124	20	15	1300	cooloffer
3	11125	35	20	1500	summerspecial
4	11126	40	16	5000	summerstuff
5	11127	30	19	1400	summercool

MENU ITEMS TABLE:

The menuitems table include data item name,type,section.

Item name is the primary key.

```
Name       Null?      Type
--------   --------   -------------
ITEMNAME   NOT NULL   VARCHAR2(20)
TYPE                  VARCHAR2(20)
SECTION               VARCHAR2(20)
```

	ITEMNAME	TYPE	SECTION
1	hyderabadibiryani	non-veg	Biryani
2	paneermasala	veg	Biryani
3	idly-sambar	veg	tiffins
4	butterchicken	non-veg	starters
5	masladosa-chutney	veg	tiffins

OFFERS AVAILABLE TABLE:

The offers available table includes data restaurantid,promocode.

	RESTAURANTID	PROMOCODE
1	101	11123
2	123	11124
3	112	11125
4	134	11126
5	119	11127

	RESTAURANTID	PROMOCODE
1	101	11123
2	123	11124
3	112	11125
4	134	11126
5	119	11127

MENU TABLE:

Menu table includes data restaurant-id,item name,cost,available.

	RESTAURANTID	ITEMNAME	COST	AVAILABLE
1	101	hyderabadibiryani	500	20
2	123	masladosa-chutney	450	12
3	112	idly-sambar	1250	13
4	134	butterchicken	1500	12
5	119	paneermasala	583	15

```
Name            Null? Type
------------- ----- -------------
RESTAURANTID          NUMBER(38)
ITEMNAME              VARCHAR2(20)
COST                  NUMBER(38)
AVAILABLE             NUMBER(38)
```

PAYMENT METHOD TABLE:

Payment method table includes data name,type.

Name is the primary key.

	NAME	TYPE
1	almas	phonepe
2	rajadhani	cashondelivery
3	ruchulu	gpay
4	rians	paytm
5	birla	phonepe

```
Name Null?     Type
---- --------- -------------
NAME NOT NULL VARCHAR2(30)
TYPE          VARCHAR2(30)
```

ITEM_RATING TABLE:

Item_rating table includes item_name, order_number, review, ratings.

	ITEMNAME	ORDERNUMBER	REVIEW	RATINGS
1	hyderabadibiryani	1	good	8
2	idly-sambar	2	notbad	7
3	masladosa-chutney	3	best	9
4	paneermasala	4	good	8
5	butterchicken	5	ultimate	10

Name	Null?	Type
ITEMNAME		VARCHAR2(30)
ORDERNUMBER	NOT NULL	NUMBER(38)
REVIEW		VARCHAR2(20)
RATINGS		NUMBER(38)

V. FD's & NORMALIZATION :

NOTE : Below mentioned dependencies are not the only functional dependencies possible i.e by considering Reflexivity rule X→X dependency ispossible and by using Decomposition Rule
(if X→YZ then X→Y and X→Z) several other dependencies are possible for each table

RESTAURANT :

(Restaurant_id) → (Name, Phone_no, Address, PIN, Opening_time, Closing_time)(Phone_no) → (Name, Restaurant_id, Address, PIN, Opening_time, Closing_time)

(Address, PIN) → (Name, Phone, Opening_time, Closing_time)
- Candidate keys are Restaurant_id , Phone_no , (Address, PIN)
- Primary key is Restaurant_id
- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.
- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

RESTAURANT_CUISINES :

(Restaurant_id,Cuisines) → (Restaurant_id,Cuisines)
- Primary key is (Restaurant_id,Cuisines)
- Since there are no non-prime attributes , table will be in 3NF .
- All the determinants are candidate keys.Hence the table is in BCNF.

RESTAURANT_RATING :

(Customer_id, Time_stamp) → (Restaurant_id, Order_number, Rating, Review)(Order_number) → (Restaurant_id, Customer_id, Time_stamp, Rating, Review)
- Candidate keys are (Customer_id, Time_stamp) , Order_number
- Primary key is Order_number
- All the non-prime attributes are completely dependent on candidate keys .Hence the relation is in 2NF.

- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

CUSTOMER :

(Customer_id) → (Username, Email_id, Password, Phone_no)

(Email_id) → (Username, Customer_id, Password, Phone_no) (Phone_no)

→ (Username, Email_id, Password, Customer_id)

- Candidate key are Customer_id , Phone_no , Email_id
- Primary key is Customer_id
- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.
- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

COUPONS :

(Promo_Code) → (Offer_percentage, Minimum_Order, Max_Discount, Details)

- Primary key is Promo_Code
- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.
- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

MENU_ITEMS :

(Dish_name) → (Type,Section)

- Primary key is Dish_name
- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.
- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

ORDERS :

(Order_number) → (Restaurant_id, Customer_id, Delivery_boy_id,
　　　　　　　　　Delivery_Charge , Tax, Promo_Code,
　　　　　　　　　Payment_name,Transaction_id, Total, Description,
　　　　　　　　　Address, Pin)

- Primary key is Order Number
- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.
- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

LOCATION :

(Pin) → (Locality , City , State)

- Primary key is Pin
- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.
- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

ORDERED_ITEMS :

(Order_number, Dish_name) → (Quantity)

- Primary key is (Order_number, Dish_name)
- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.
- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

MENU :

(Restaurant_id, Dish_name) → (Cost , Available)

- Primary key is (Restaurant_id, Dish_name)

- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.

- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys. Hence the table is in BCNF.

OFFERS_AVAILABLE :

(Restaurant_id, Promo_Code) → (Restaurant_id, Promo_Code)
- Since there are no non-prime attributes , table will be in 3NF .
- All the determinants are candidate keys.Hence the table is in BCNF .

PAYMENT METHODS : (Name)

→ (Type)
- Primary key is Name
- All the non-prime attributes completely depend on candidate keys .Hence the relation is in 2NF.
- All the non-prime attributes are not transitively dependent on any key of thetable. Hence the relation is in 3NF.
- All the determinants are candidate keys.Hence the table is in BCNF .

· HAS :

(Customer_id,Payment_name) → (Customer_id,Payment_name)
- Since there are no non-prime attributes , table will be in 3NF .
- All the determinants are candidate keys. Hence the table is in BCNF .

SQL CODE:

```sql
create table Restaurant(
restaurantid int not null primary
key,phonenumber int,
address varchar(40),
name varchar(30),
openingtime varchar(30),
closingtime varchar(30),
pin int
);


create table customer(


customerid int not null primary
key,password varchar(10),
username varchar(10),
email varchar(30),
phone int
);


create table coupons(


promocode int not null primary
key,offerpercent int ,S
maxdiscount int,
minorder int,
details varchar(30)
);


create table  menuitems( itemname
varchar(20) primary key,type
varchar(20),
section varchar(20)
);


create table location1(
pin int primary key,
city varchar(20),
locality varchar(20),
```

```
state varchar(20)
);


create table menu(


restaurantid int references Restaurant(restaurantid),
itemname varchar(20) references menuitems(itemname),
cost int,
available int


);


create table offersavailable(
restaurantid int references Restaurant(restaurantid),
promocode int references coupons(promocode)
);


create table paymentmethod(
name varchar(30) not null primary
key,type varchar(30)
);


create table restaurantcuisines(
cuisines varchar(20) not null primary key,
restaurantid int references Restaurant(restaurantid)
);


create table ordereditems(
quantity int primary key,
itemname varchar(20) references menuitems(itemname),
ordernumber int references itemrating(ordernumber)
);


create table orders4(
ordernumber int not null primary
key,totalamount int,
deliveryaddress varchar(40),
deliverycharge int,
promocode int references coupons(promocode), name
varchar(30) references paymentmethod(name),
```

```sql
restaurantid int references Restaurant(restaurantid),
customerid int references customer(customerid),
pin int references location1(pin)
);


create table itemrating1(itemname varchar(30) references menuitems(itemname),
ordernumber int primary key references orders4(ordernumber),review varchar(20),
ratings int
);

select * from itemrating1;
describe itemrating1;
insert into restaurant values(101,9100357017,'hyderabad','almas','8:00
AM','11:00 PM',516167);


insert into restaurant values(112,9104567817,'bangalore','rajadhani','7:30
AM','10:00 PM',516347);


insert into restaurant values(123,3546729088,'warangal','rians','8:30
AM','11:30 PM',530167);


insert into restaurant values(134,9102354782,'kadapa','ruchulu','9:40
AM','12:30 AM',513467);
insert into restaurant values(119,9768354692,'rayachoty','birla','8:00
AM','10:00 PM',513457);


insert into coupons values(11123,30,10,1000,'summeroffer');
insert into coupons values(11124,20,15,1300,'cooloffer'); insert
into coupons values(11125,35,20,1500,'summerspecial');insert
into coupons values(11126,40,16,5000,'summerstuff'); insert
into coupons values(11127,30,19,1400,'summercool');


insert into offersavailable values(101,11123);
insert into offersavailable values(123,11124);
insert into offersavailable values(112,11125);
insert into offersavailable values(134,11126);
insert into offersavailable values(119,11127);


insert into restaurantcuisines values('hyderabadibiryani',101);
insert into restaurantcuisines values('masladosa-chutney',123); insert into
restaurantcuisines values('idly-sambar',112);
```

```sql
insert into restaurantcuisines values('butterchicken',134);
insert into restaurantcuisines values('paneermasala',119);


insert into menu values (101,'hyderabadibiryani',500,20);
insert into menu values (123,'masladosa-chutney',450,12);
insert into menu values (112,'idly-sambar',1250,13);
insert into menu values (134,'butterchicken',1500,12);
insert into menu values (119,'paneermasala',583,15);



insert into ordereditems values(3,'hyderabadibiryani',1);
insert into ordereditems values(4,'masladosa-chutney',3);
insert into ordereditems values(2,'idly-sambar',2);
insert into ordereditems values(5,'butterchicken',5);
insert into ordereditems values(6,'paneermasala',4);



insert into itemrating1 values('hyderabadibiryani',1,'good',8);
insert into itemrating1 values('idly-sambar',2,'notbad',7);
insert into itemrating1 values('masladosa-chutney',3,'best',9);
insert into itemrating1 values('paneermasala',4,'good',8);
insert into itemrating1 values('butterchicken',5,'ultimate',10);



insert into menuitems values('hyderabadibiryani','non-veg','Biryani');
insert into menuitems values('paneermasala','veg','Biryani');
insert into menuitems values('idly-sambar','veg','tiffins');
insert into menuitems values('butterchicken','non-veg','starters');
insert into menuitems values('masladosa-chutney','veg','tiffins');


insert intocustomer
values(1101,'customer@1','customer1','c1@gmail.com',9123456767)
insert into customer
values(1102,'customer@2','customer2','c2@gmail.com',9424350797);
insert into customer
values(1103,'customer@3','customer3','c3@gmail.com',9946573892);
insert into customer
values(1104,'customer@4','customer4','c4@gmail.com',8187645674);
insert into customer
values(1105,'customer@5','customer5','c5@gmail.com',8736452718)


insert into location1 values(516167,'hyderabad','hyderabad','telangana');
```

```sql
insert into location1 values(516347,'bangalore','bangalore','karanataka');
insert into location1 values(530167,'warangal','warangal','telangana');
insert into location1 values(513467,'kadapa','kadapa','andhrapradesh');
insert into location1
values(513457,'rayachoty','rayachoty','andhrapradesh');



insert into paymentmethod values('almas','phonepe');
insert into paymentmethod values('rajadhani','cashondelivery');
insert into paymentmethod values('ruchulu','gpay');
insert into paymentmethod values('rians','paytm');
insert into paymentmethod values('birla','phonepe');



insert into orders4
values(1,1500,'lbnagar,hyderabad',100,11123,'almas',101,1101,516167);
insert into orders4
values(2,1800,'nitcollege,warangal',50,11124,'rians',123,1102,530167);
insert into orders4
values(3,2500,'whitefiel,bangalore',110,11125,'rajadhani',112,1103,516347
);
insert into orders4
values(4,7500,'kotireddycircle,kadapa',120,11126,'ruchulu',134,1104,51346
7);
insert into orders4 values(5,3500,'kphb
colony,rayachoty',80,11127,'birla',119,1105,513457);
```
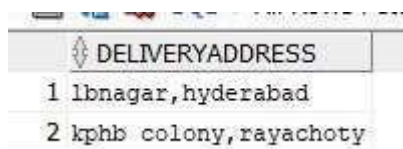
QUERIES:

Question 1:
Write command to get delivery address that was done throughphone pe payment method.

Ans)
select deliveryaddress from orders4 where name in (select name from   paymentmethod where type='phonepe') ;

DELIVERYADDRESS
1 lbnagar,hyderabad
2 kphb colony,rayachoty

Question 2:
Write command to get restaurantid whose details issummerspecial.

Ans)

select restaurantid from offersavailable where promocode in (select promocode from coupons where details='summerspecial');
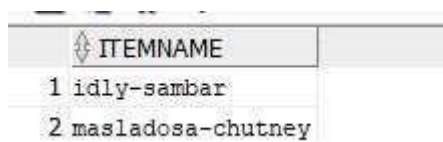
RESTAURANTID
1   112

Question 3:
Write command to find all the items present in the section oftiffins.
Ans)
select itemname from menuitems where section='tiffins';output:

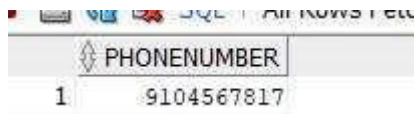| ITEMNAME |
|---|
| 1 idly-sambar |
| 2 masladosa-chutney |

Question 4:
Write command to get phone number of a restaurant which open and closes in the given time(7:30 am to 10:00pm) Query:
Ans)
select phonenumber from restaurant where openingtime='7:30AM' and CLOSINGTIME='10:00 PM';

Output:
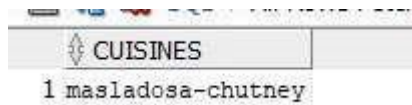
	PHONENUMBER
1	9104567817

Question 5:
Write command to get cuisines which has offer percentage 20
Ans)
select cuisines from restaurantcuisines where restaurantid in
(select restaurantid from offersavailable where promocode in
(select promocode from coupons where offerpercent=20));

Output:

	CUISINES
1	masladosa-chutney

THANK YOU
Done By

K. Venkata Siva Kalyan
D.Satvik Reddy