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Kingdom of Saudi Arabia

Ministry of Education

Imam Abdulrahman bin Faisal University

College of Science and Humanities

Computer Science department

**BLACK PLATE RESTURANT**

*“*DATABASE CONCEPTS AND DESIGN*”*

**By:**

Bushra Alshehri – 2200004242

Jumana Aljassim –2200006296

Renad Alshahrani – 2200002949

Asma Alshehri – 2200000484

Manar Alenzi – 2200006162

**Supervised by:**

Dr. Thowiba Awad

L.Sameerah Albahareth

TA. Maha Alghamdi

## Project title

**BLACK PLATE RESTURANT**

## Description

Restaurant management is the profession of managing a restaurant. It includes the principles of OOP and using Java function of planning, organizing, staffing, directing, developing an attitude in food and beverage control systems and to efficiently and effectively plan menus at profitable prices, taking into consideration constraints and others.

The advantage of our new system provides accuracy with order’s bill and speed compared to the traditional way and increases productivity.

The Cashier can work on the program and select the items which the customer wants to order.

## Scenario

It makes it easier for us to deal with customers and reduces the amount of work we must do. as well as less time spent in use for the customer, there are no delays. There is a main screen that contains a list of foods from which the customer can select and show he/she will be informed of the total cost of the order and will be able to connect to the main program.

It would be easier for the cashier to register the items and display the total prices automatically.

It would be easier for the customer to order as he/she will not be entering any inputs, and the cashier will register the items and display the total prices automatically which will increase the efficiency of the system.

## Functionalities

▪It increases operational efficiency.

▪ It helps the restaurant manager to manage the restaurant more effectively and efficiently by computerizing Meal Ordering, Cart, and Restaurant Management Accounting.

▪ It increases the security.

▪ It avoids paperwork.

▪ It is Simple to learn and easy to use.

▪ It is portable Application.

## Constraints

Oname , item, id ,name, orderid ‏unique, primary key and string type.

All data must be not null.

## Relationship

* The resturant has many cashiers working on
* The resturant has many cashiers working on
* Every cashier is working for on Resturant Management
* Every cashier has taken more then one recepit for the orders
* Many cashier takes many receipt
* The manager manages more than one chef
* The chefs has only one manager
* More than one chef works for the resturant
* The restaurant has many chefs
* The chefs prepares more than one order
* One recepit can be prepared by many chefs
* One manager manages the restaurant
* The restaurant is managed by one manager
* The recepits contains many items (1:M)
* every recepit contains more than one item
* Every cashier is working for on Resturant Management
* Every cashier has taken more then one recepit for the orders
* Many cashier takes many receipt
* The manager manages more than one chef
* The chefs has only one manager
* More than one chef works for the restaurant
* The restaurant has many chefs
* The chefs prepares more than one item
* One receipt can be prepared by many chefs
* One manager manages the restaurant
* The restaurant is managed by one manager
* The recepits contains many items (1:M)
* every recepit contains more than one item
* The chief dependent of many dependents
* The cashier dependent of many dependents
* The manager dependent of many dependents

## Clarification of important information

A system between customer and waiter in the restaurant and it’s not virtual system. the waiter takes orders from customers. Our system will facilitate the process of taking orders.

***Diagram

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Diagram

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create database blackPlate;

use blackPlate;

#1

create table RestaurantManagement(

Restaurant\_id numeric (10) primary key,

Restaurant\_name varchar (30),

Restaurant\_address varchar (30),

Manager\_id numeric (10) references Manager (Manager\_id)

);

#2

create table Manager(

Manager\_id numeric (10) primary key,

Manager\_Fname varchar (30),

Manager\_Mname varchar (30),

Manager\_Lname varchar (30),

Manager\_number numeric(10),

Manager\_salary numeric (5)

);

#3

create table Item(

Item\_food varchar (30),

food\_price numeric(4),

food\_id numeric (5),#PK

Item\_appetizers varchar (30),

appetizers\_price numeric(4),

appetizers\_id numeric (5),#PK

Item\_drinks varchar (30),

drinks\_price numeric(4),

drinks\_id numeric (5),#PK

Receipt\_id numeric (10) references Receipt (Receipt\_id),

primary key (food\_id, appetizers\_id, drinks\_id)

);

#4

create table Chef(

Chef\_id numeric (10) primary key,

Chef\_name varchar (30),

Chef\_manager varchar (30),

Chef\_salary numeric (5),

Manager\_id numeric (10) references Manager (Manager\_id)

);

#5

create table Cashier(

Cashier\_id numeric (10) primary key,

Cashier\_name varchar (30),

Cashier\_salary numeric (5)

);

#6

create table Receipt(

Receipt\_id numeric (10) primary key,

Receipt\_time time,

Receipt\_date date,

Receipt\_total numeric (10)

);

#7

create table Dependent\_Manager(

Dependent\_name varchar (30) primary key,

Dependent\_relation varchar (30),

Dependent\_sex enum ('M','F'),# specify M or F only

Manager\_id numeric (10) references Manager (Manager\_id)

);

#8

create table Dependent\_chef(

Dependent\_name varchar (30) primary key,

Dependent\_relation varchar (30),

Dependent\_sex enum ('M','F'),# specify M or F only

Chef\_id numeric (10) references Chef (Chef\_id )

);

#9

create table Dependent\_Cashier(

Dependent\_name varchar (30) primary key,

Dependent\_relation varchar (30),

Dependent\_sex enum ('M','F'),# specify M or F only

Cashier\_id numeric (10) references Cashier (Cashier\_id )

);

#10

create table Restaurant\_address(

Restaurant\_address varchar (30)primary key,

Restaurant\_id numeric (10) references Restaurant (Restaurant\_id)

);

#11

create table Chef\_Prepare\_item(

Chef\_id numeric (10) references Chef (Chef\_id),

food\_id numeric (5) references Item (food\_id),

sweet\_id numeric (5) references Item (sweet\_id),

drinks\_id numeric (5) references Item (drinks\_id)

);

#12

create table Receipt\_takenBy\_Cashier(

Receipt\_id numeric (10) references Receipt (Receipt\_id),

Cashier\_id numeric (10) references Cashier (Cashier\_id)

);

insert into RestaurantManagement (Restaurant\_id ,Restaurant\_name ,Restaurant\_address,Manager\_id)values(56471,'project\_resturant','khobar',3214);

insert into Manager (Manager\_id,Manager\_Fname,Manager\_Mname ,Manager\_Lname ,Manager\_number ,Manager\_salary ) values (3214,'ahmed','khalid','alfahad',053276488,7000);

#Chef1

insert into Chef (Chef\_id ,Chef\_name ,Chef\_manager ,Chef\_salary ,Manager\_id ) values(2561,'abduallah','ahmed',6000,3214);

#Chef2

insert into Chef (Chef\_id ,Chef\_name ,Chef\_manager ,Chef\_salary ,Manager\_id ) values(2562,'saleh','ahmed',6000,3214);

#Chef3

insert into Chef (Chef\_id ,Chef\_name ,Chef\_manager ,Chef\_salary ,Manager\_id ) values(2563,'mohammad','ahmed',6000,3214);

#Chef4

insert into Chef (Chef\_id ,Chef\_name ,Chef\_manager ,Chef\_salary ,Manager\_id ) values(2564,'khalid','ahmed',6000,3214);

#Cashier1

insert into Cashier (Cashier\_id ,Cashier\_name ,Cashier\_salary )values (4231,'abdualmajeed',7000);

#Cashier2

insert into Cashier (Cashier\_id ,Cashier\_name ,Cashier\_salary )values (4232,'abdualrahman',7000);

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total ) values (1,'12:45:56','2022-01-23',300);

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total ) values (2,'12:44:32','2022-01-23',200);

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total ) values (3,'1:30:50','2022-01-24',300);

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total ) values (4,'3:30:55','2022-01-24',360);

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total ) values (5,'3:00:50','2022-01-25',400);

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total ) values (6,'2:00:00','2022-01-25',200);

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total ) values (7,'3:00:00','2022-01-26',150);

insert into Dependent\_Manager (Dependent\_name ,Dependent\_relation ,Dependent\_sex ,Manager\_id ) values ('maram','wife','f',3214);

insert into Dependent\_Manager (Dependent\_name ,Dependent\_relation ,Dependent\_sex ,Manager\_id ) values ('marwa','child','f',3214);

insert into Dependent\_chef (Dependent\_name ,Dependent\_relation ,Dependent\_sex ,Chef\_id ) values ('saad','son','m',2562);

insert into Dependent\_chef (Dependent\_name ,Dependent\_relation ,Dependent\_sex ,Chef\_id ) values ('sara','wife','f',2563);

insert into Dependent\_chef (Dependent\_name ,Dependent\_relation ,Dependent\_sex ,Chef\_id ) values ('norah','wife','f',2561);

insert into Dependent\_Cashier (Dependent\_name ,Dependent\_relation ,Dependent\_sex ,Cashier\_id ) values ('sara','daughter','f',4231);

insert into Dependent\_Cashier (Dependent\_name ,Dependent\_relation ,Dependent\_sex ,Cashier\_id ) values ('lama','daughter','f',4232);

insert into Item (Item\_food ,food\_price ,food\_id ,Item\_appetizers ,appetizers\_price ,appetizers\_id ,Item\_drinks ,drinks\_price ,drinks\_id ,Receipt\_id ) values ('buratta pizza',56.0,1,'Dynamite shrimp',39.0,1,'cola',5.0,1,1);

insert into Item (Item\_food ,food\_price ,food\_id ,Item\_appetizers ,appetizers\_price ,appetizers\_id ,Item\_drinks ,drinks\_price ,drinks\_id ,Receipt\_id ) values ('pink pasta',37.0,2,'mac&cheese balls',45.0,2,'7up',5.0,2,2);

insert into Item (Item\_food ,food\_price ,food\_id ,Item\_appetizers ,appetizers\_price ,appetizers\_id ,Item\_drinks ,drinks\_price ,drinks\_id ,Receipt\_id ) values ('spaghetti',40.0,3,'tiramisu',42.0,3,'orang juice',15.0,3,3);

insert into Item (Item\_food ,food\_price ,food\_id ,Item\_appetizers ,appetizers\_price ,appetizers\_id ,Item\_drinks ,drinks\_price ,drinks\_id ,Receipt\_id ) values ('rosemary salmon',87.0,4,'molten chocolate',19.0,4,'mojito',25.0,4,4);

insert into Chef\_Prepare\_item (Chef\_id ,food\_id ,sweet\_id ,drinks\_id ) values (2561,1,1,1);

insert into Chef\_Prepare\_item (Chef\_id ,food\_id ,sweet\_id ,drinks\_id ) values (2562,2,2,2);

insert into Chef\_Prepare\_item (Chef\_id ,food\_id ,sweet\_id ,drinks\_id ) values (2563,3,3,3);

insert into Chef\_Prepare\_item (Chef\_id ,food\_id ,sweet\_id ,drinks\_id ) values (2564,4,4,4);

insert into Receipt\_takenBy\_Cashier (Receipt\_id ,Cashier\_id )values(1,1);

insert into Receipt\_takenBy\_Cashier (Receipt\_id ,Cashier\_id )values (2,1);

insert into Receipt\_takenBy\_Cashier (Receipt\_id ,Cashier\_id )values (3,1);

insert into Receipt\_takenBy\_Cashier (Receipt\_id ,Cashier\_id )values (4,1);

insert into Receipt\_takenBy\_Cashier (Receipt\_id ,Cashier\_id )values (5,2);

insert into Receipt\_takenBy\_Cashier (Receipt\_id ,Cashier\_id )values (6,2);

insert into Receipt\_takenBy\_Cashier (Receipt\_id ,Cashier\_id )values (7,2);

#Union

select Cashier\_name from Cashier union select Dependent\_name from Dependent\_Cashier;

#Intersect error

SELECT DISTINCT Manager\_salary FROM Manager INNER JOIN Cashier USING (Cashier\_salary);

#DISTINCT

SELECT DISTINCT Receipt\_total FROM Receipt;

#aggregate

SELECT AVG(Receipt\_total) average\_Receipt\_total\_price FROM Receipt;

SELECT max(Receipt\_total) average\_Receipt\_total\_price FROM Receipt;

SELECT min(Receipt\_total) average\_Receipt\_total\_price FROM Receipt;

#not

SELECT \* FROM Chef WHERE NOT Chef\_name='khalid';

#like

SELECT \* FROM Chef WHERE Chef\_name LIKE 'k%';

#ORDER BY

SELECT \* FROM Item ORDER BY Item\_food DESC;

SELECT \* FROM Item ORDER BY Item\_food ASC;

#GROUP BY,HAVING,count null

SELECT COUNT(Chef\_id ),Chef\_name FROM Chef GROUP BY Chef\_name HAVING COUNT(Chef\_id ) > 2561;

#in

SELECT \* FROM Receipt WHERE Receipt\_date IN ('2022-01-24', '2022-01-25');

#BETWEEN

SELECT \* FROM Receipt WHERE Receipt\_total BETWEEN 300 AND 400;

#GROUP BY

SELECT COUNT(Chef\_id),Chef\_name FROM Chef GROUP BY Chef\_name;

#having

SELECT COUNT(Receipt\_id), Receipt\_total FROM Receipt GROUP BY Receipt\_total HAVING COUNT(Receipt\_id) < 5;

#case

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date,Receipt\_total ) values (10,'13:46:51','2022-02-23',650);

select Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total,case when Receipt\_total between 600 and 700 then 'salary increasing' else 'normal'end as 'salary' from Receipt;

#insert

insert into Receipt (Receipt\_id ,Receipt\_time ,Receipt\_date,Receipt\_total ) values (8,'12:45:51','2022-01-23',300);

create table Receipt\_copy (

Receipt\_id numeric (10) primary key,

Receipt\_time time,

Receipt\_date date,

Receipt\_total numeric (10)

);

insert into Receipt\_copy (Receipt\_id ,Receipt\_time ,Receipt\_date ,Receipt\_total ) values (1,'12:45:51','2022-01-23',300);

DELETE FROM Receipt\_copy WHERE Receipt\_id=1;

#index

create index Itemindex on Item (Item\_food);

#assertion

create assertion salary\_constraint check ( not exists ( select \* from cashier ,Manager where Cashier\_salary > Manager\_salary));

#procedure

delimiter $$

create procedure Chefname (in Cheffname varchar (10))

begin

select \*

from chef

where Chef\_name = Cheffname;

end $$

delimiter ;

call Chefname('mohammad');

call Chefname('abduallah');

# trigger

Create trigger uppercase before insert on manager

for each row

Set NEW.Manager\_Fname = UPPER(NEW.Manager\_Fname);

insert into Manager (Manager\_id,Manager\_Fname,Manager\_Mname ,Manager\_Lname ,Manager\_number ,Manager\_salary ) values (3217,'Yazeed','fahad','alahmad',053276488,7000);

Select \* from Manager ;