**DATABASE MANAGEMENT SYSTEMS**

**PROJECT ASSIGNMENT**

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**INTRODUCTION OF THE PROBLEM**

In today’s standards and needs requires online environment adaptation and internet integrity for this business to survive and grow.

As the business and system grows, other requirements occur, such as data analysis, data security, data management etc.

To provide these requirements, having the benefits of a database management system becomes a must and standard.

As a result, with the assistance of a database management system some problems such as data integrity, maintenance, data traceability etc. will be solved.

**BUSINESS RULES**

Kitchen

* + Each kitchen has sectionID, and orderID. Kitchens are distinguished from each other by their sectionID.
  + Each kitchen has at least zero order or could be many orders and each order comes from only one kitchen.

Tables

* + Each table has sectionID, waiterID, orderID. Tables are distinguished from each other by their sectionID.
  + Each table has only one waiter and a waiter can be interested one or many tables.
  + Each table has only one order and an order belongs to only one table.

Checkout

* + Each checkout has sectionID, CashierID, OrderID. Checkouts are distinguished from each other by their sectionID.
  + Each checkout has only one cashier and each cashier is just responsible for one checkout.

Staff

* + In the system, a staff can exist in some categories: a cashier, a waiter, a courier. A staff can't be just itself.
  + Each staff has staffID, staffType, name, surname, phone number. Staffs are distinguished from each other by their staffID.
  + Each staff has at least one order or many order and each order only belongs to one staff.
  + A staff can't be another staff at the same time.
  + Each cashier has staffID. Cashiers are distinguished from each other by their staffID.
  + Each waiter has staffID. Waiters are distinguished from each other by their staffID.
  + Each courier has staffID. Couriers are distinguished from each other by their staffID.
  + Each waiter can be attending to one table or many table. Each table has only one waiter.

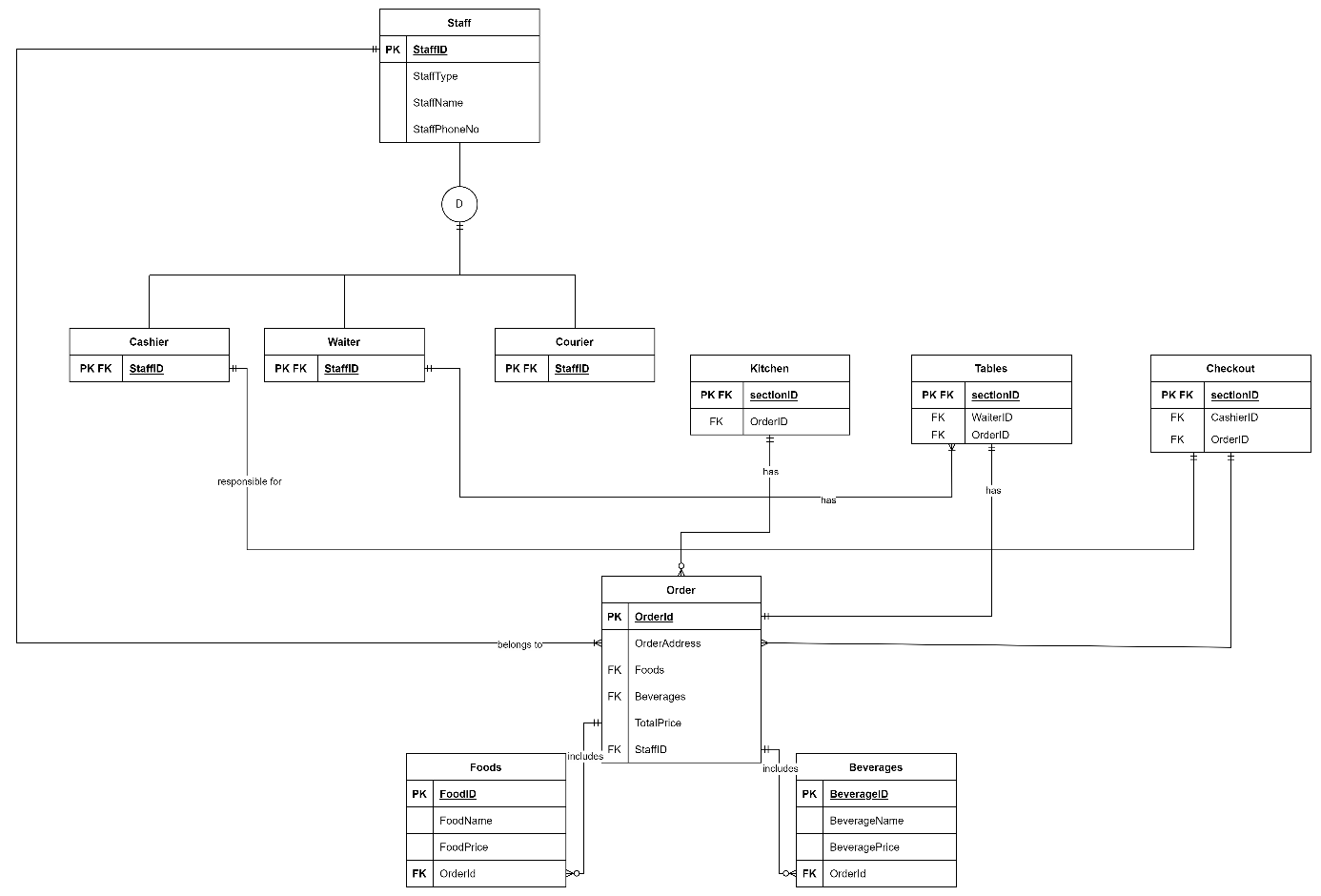
Order

* + Each order has orderID, foodID, beverageID, address, totalPrice, staffID. Orders are distinguished from each other by their orderID.
  + Each order includes zero or many foods and each food could be in zero or many order.
  + Each order includes zero or many beverages and each beverage could be in zero or many order.

Lists

* Food List contains Food Id, Food Price and Food Name. Foods are distinguished from each other by their Food Id.
* Beverage List contains Beverage Id, Beverage Price and Beverage Name. Beverages are distinguished from each other by their Beverage Id.

**ENTITY RELATIONSHIP MODEL**



**RELATIONAL MODEL**

Kitchen(SectionID:int, OrderID:int)

Tables(SectionID:int, WaiterID:int, OrderID:int)

Checkout(SectionID:int, CashierID:int, OrderID:int)

Order(OrderID:int, OrderAddress:varchar, TotalPrice:real, StaffID:int)

Staff(StaffID:int, StaffType:varchar, StaffName:varchar, StaffPhoneNo:char(11))

Cashier(StaffID:int)

Waiter(StaffID:int)

Courier(StaffID:int)

Foods(FoodID:int, FoodName:varchar, FoodPrice:real, OrderId:int)

Beverages(BeverageID:int, BeverageName:varchar, BeveragePrice:real, OrderId:int)

FoodList(FoodId:int, FoodName:varchar, FoodPrice:real)

BeverageList(BeverageId:int ,BeverageName:varchar, BeveragePrice:real)

**SQL STATEMENTS**

CREATE TABLE "section"(

"sectionid" SERIAL not NULL,

"sectiontype" CHARACTER VARYING(50) not NULL,

CONSTRAINT "sectionpk" PRIMARY key ("sectionid")

);

CREATE table "staff"(

"staffid" SERIAL not NULL,

"stafftype" CHARACTER VARYING(50) not null,

CONSTRAINT "staffpk" PRIMARY KEY ("staffid")

);

CREATE TABLE "restaurant"(

"restaurantid" SERIAL NOT NULL,

"restaurantname" CHARACTER VARYING(100) not NULL,

"restaurantaddress" CHARACTER VARYING(300) not NULL,

"sectionid" INT not NULL,

"staffid" int,

CONSTRAINT "restaurantpk" PRIMARY KEY ("restaurantid"),

CONSTRAINT "sectionfk" FOREIGN KEY ("sectionid") REFERENCES "section" ("sectionid"),

CONSTRAINT "stafffk" FOREIGN key ("staffid") REFERENCES "staff" ("staffiD")

);

CREATE table "cashier"(

"staffid" INT,

CONSTRAINT "cashierpk" PRIMARY key ("staffid"),

CONSTRAINT "cashierfk" FOREIGN KEY ("staffid") REFERENCES "staff" ("staffid")

);

CREATE table "waiter"(

"staffid" INT,

"waitername" CHARACTER VARYING(100),

"waiterphoneno" CHARACTER VARYING(20),

CONSTRAINT "waiterpk" PRIMARY key ("staffid"),

CONSTRAINT "waiterfk" FOREIGN KEY ("staffid") REFERENCES "staff" ("staffid")

);

CREATE table "courier"(

"staffid" INT,

"couriername" CHARACTER VARYING(100),

"courierphoneno" CHARACTER VARYING(20),

CONSTRAINT "courierpk" PRIMARY key ("staffid"),

CONSTRAINT "courierfk" FOREIGN KEY ("staffid") REFERENCES "staff" ("staffid")

);

ALTER TABLE "cashier" ADD COLUMN "cashierphoneno" CHARACTER VARYING(20);

CREATE table "order"(

"orderid" SERIAL,

"orderaddress" CHARACTER VARYING(300),

"totalprice" REAL,

"staffid" INT,

CONSTRAINT "orderpk" PRIMARY KEY ("orderid"),

CONSTRAINT "orderfk" FOREIGN key ("staffid") REFERENCES "staff" ("staffid")

);

CREATE table "kitchen"(

"sectionid" INT,

"orderid" INT,

CONSTRAINT "kitchenpk" PRIMARY KEY("sectionid"),

CONSTRAINT "kitchenfk" FOREIGN KEY("sectionid") REFERENCES "section" ("sectionid"),

CONSTRAINT "kitchenfk2" FOREIGN KEY("orderid") REFERENCES "order" ("orderid")

);

CREATE table "tables"(

"sectionid" INT,

"waiterid" INT,

"orderid" INT,

CONSTRAINT "tablepk" PRIMARY key ("sectionid"),

CONSTRAINT "tablefk" FOREIGN KEY ("waiterid") REFERENCES "waiter" ("staffid"),

CONSTRAINT "tablefk2" FOREIGN KEY ("orderid") REFERENCES "order" ("orderid"),

CONSTRAINT "tablefk3" FOREIGN key ("sectionid") REFERENCES "section" ("sectionid")

);

CREATE table "checkout"(

"sectionid" INT,

"cashierid" INT,

"orderid" int,

CONSTRAINT "checkoutpk" PRIMARY KEY ("sectionid"),

CONSTRAINT "checkoutfk" FOREIGN key ("sectionid") REFERENCES "section" ("sectionid"),

CONSTRAINT "checkoutfk2" FOREIGN key ("cashierid") REFERENCES "cashier" ("staffid"),

CONSTRAINT "checkoutfk3" FOREIGN key ("orderid") REFERENCES "order" ("orderid")

);

CREATE TABLE "foods"(

"foodid" SERIAL,

"foodname" CHARACTER VARYING(100),

CONSTRAINT "foodspk" PRIMARY key ("foodid")

);

CREATE TABLE "beverages"(

"beverageid" SERIAL,

"beveragename" CHARACTER VARYING(100),

CONSTRAINT "beveragespk" PRIMARY key ("beverageid")

);

CREATE TABLE "foodorder"(

"foodid" INT,

"orderid" INT,

CONSTRAINT "foodorderpk" PRIMARY KEY (foodid,orderid),

CONSTRAINT "foodorderfk" FOREIGN KEY ("foodid") REFERENCES "foods" ("foodid"),

CONSTRAINT "foodorderfk2" FOREIGN KEY ("orderid") REFERENCES "order" ("orderid")

);

CREATE table "beverageorder"(

"beverageid" int,

"orderid" INT,

CONSTRAINT "beverageorderpk" PRIMARY KEY (beverageid,orderid),

CONSTRAINT "beverageorderfk" FOREIGN key ("beverageid") REFERENCES "beverages" ("beverageid"),

CONSTRAINT "beverageorderfk2" FOREIGN KEY ("orderid") REFERENCES "order" ("orderid")

);