

**Kingdom of Saudi Arabia**

**Ministry of Higher Education**

**King Faisal University**

**College of Computer Sciences & Information Technology**

Restaurant Order System

**Database Concepts and Design Course Project**

Year: 21-22 Semester: I

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# Introduction (case description)

(for samples refer to textbook pages 197 or 252) Moreover, sample cases provided with the template.

We have redesigned and reimagined our system and went to a more familiar route.

This is a restaurant order system. It is a form/variation from a restaurant management/order system, that has the ability to order at walk in or by phone, and pick up or dine in.

# System Analysis

## A. List of users

Employee e.g

Cashier, chef, manager

## B. List of main functions (at least three)

- e.g.

Students will be able to register a course

The instructor will be able to enter grades

Customer can place orders.

Employees can add categories and menu itmes, ex. Chef adding a new burger.

The order Totals are updated automatically from orderitems. It takes the price of the menuitem and multiplies it by the quantity to generate the item total. Then it sums up total of all items and update the order total.

## C. List of main reports (at least three)

- e.g., Student can generate his/her schedule

- Student can generate a transcript

- The instructor can generate a list of students in a given section

Item wise sales report.

Customer wise sales, top customers, and their favorite items.

Employee performance sales report.

# Database Conceptual Design (ERD)

Please use yED (<http://www.yworks.com/en/products/yfiles/yed/>) to draw your model using Chen’s notation.

Or

SQL Developer Data Modeler (<http://www.oracle.com/technetwork/developer-tools/datamodeler/overview/index.html> ) to draw the data model

# Logical Design (Relational Schema)

*Convert the E-R schema to a relational database schema. Be sure to include appropriate constraints. Be sure your relational schema conforms to your E-R schema. If you change your design later in the project don’t forget to update the E-R schema.*

Diagram

Description automatically generated

# Physical Design

*Create a database for your application using the SQL-DDL command in oracle application express. You should provide code for all tables and constraints in this section.*

Diagram

Description automatically generated

# Populate Database

*Populate each table of your database with enough data (records) to answers certain queries.*

*insert into ordermode*

*( ModeID, ModeDesc ) with temp as (*

*select 1,'WALKIN' from dual union all*

*select 2,'PHONE' from dual )*

*select \* from temp;*

*insert into servicemode*

*( ModeID, ModeDesc ) with temp as (*

*select 1,'DINEIN' from dual union all*

*select 2,'PICKUP' from dual )*

*select \* from temp;*

*insert into customer*

*( CustomerID , FirstName , LastName , Phone , Address, Email) with temp as (*

*select 1,'Francis ','Baker','078 1166 4100','80 Main Rd, FOGO, TD11 2ZG','FrancisTBaker@armyspy.com' from dual union all*

*select 2,'Terina ','Travis','077 8218 9397','34 Lairg Road, NEWBIGGING, DD5 8YQ','TerinaJTravis@teleworm.us' from dual union all*

*select 3,'Mario','Grow','070 6389 4992','22 Clasper Way, HETT, DH6 6LN','MarioYGrow@armyspy.com' from dual union all*

*select 4,'Rosann','Yoder','078 4934 9955','11 Annfield Rd, BECKERMET, CA21 3RN','RosannMYoder@dayrep.com' from dual union all*

*select 5,'Bobbie','Poynter','070 3375 1897','97 Front St, HEMINGFORD ABBOTS, PE18 7GQ','BobbieNPoynter@dayrep.com' from dual union all*

*select 6,'Roy','McDonald','077 2737 2321','65 City Walls Rd, CLUTTON, BS18 1UY','RoyFMcDonald@jourrapide.com' from dual union all*

*select 7,'Margarita','Chalker','078 0620 9935','90 Long Street, MILLHOUSE, PA21 6HU','MargaritaRChalker@rhyta.com' from dual union all*

*select 8,'Brian','Guzman','078 2039 5926','71 Kent Street, CROSS INN, SY23 7DN','BrianJGuzman@dayrep.com' from dual )*

*select \* from temp;*

*insert into employee*

*( EmployeeID , FirstName , LastName , Phone , Email , Designation ) with temp as (*

*select 1,'William','Jones','078 4188 6767','WilliamTJones@burger.shop','General Manager' from dual union all*

*select 2,'Melissa','Norris','079 7042 6311','MelissaJNorris@burger.shop','Cashier' from dual union all*

*select 3,'Edna','Morris','077 5651 1457','EdnaRMorris@burger.shop','Cashier' from dual union all*

*select 4,'Christopher','Perea','070 6526 7795','ChristopherSPerea@burger.shop','Line Cook' from dual union all*

*select 5,'Patricia','Jackson','078 8810 6354','PatriciaSJackson@burger.shop','Line Cook' from dual union all*

*select 6,'Anthony','Lamantia','070 7615 2837','AnthonyJLamantia@burger.shop','Waiter' from dual union all*

*select 7,'Sara','Nugent','070 3457 1635','SaraJNugent@burger.shop','Waiter' from dual union all*

*select 8,'Jerry','Reid','077 3765 1305','JerryMReid@burger.shop','Cleaner' from dual )*

*select \* from temp;*

*insert into category*

*( CategoryID , CategoryName ) with temp as (*

*select 1,'Classic Burger' from dual union all*

*select 2,'Premium Burgers' from dual union all*

*select 3,'Chef Special' from dual )*

*select \* from temp;*

*insert into menuitem*

*( ItemID , CategoryID, ItemName , Description , Price ) with temp as (*

*select 1,2,'Classic Cheeseburger','Lettuce, tomato, raw or sauteed onions, mayo, pickles ' || chr(38) || ' American cheese on a fresh baked deli bun',7.75 from dual union all*

*select 2,1,'Bullseye BBQ Burger','Crispy onion straws, bacon, Bullseye BBQ Sauce, cheddar cheese, lettuce, tomato ' || chr(38) || ' mayo on a toasted Miami onion bun',8.25 from dual union all*

*select 3,3,'Bacon Cheeseburger','Bacon, American cheese, lettuce, tomato ' || chr(38) || ' mayo on a fresh baked deli bun',8.25 from dual union all*

*select 4,1,'Mushroom Swiss Burger','Sautéed mushrooms ' || chr(38) || ' melted swiss on a fresh baked deli bun brushed with a hint of garlic parmesan butter',8.75 from dual union all*

*select 5,2,'Bleu Burger','Bleu cheese crumbles, A-1 Steak Sauce, crispy onion straws, lettuce, tomato ' || chr(38) || ' chipolte mayo on a fresh baked Miami onion bun',8.5 from dual union all*

*select 6,3,'El Paso Burger','Roasted poblano peppers, sautéed onions, bacon, pepper jack cheese, guacamole, lettuce ' || chr(38) || ' chipotle mayo on a toasted Miami onion bun',9 from dual union all*

*select 7,1,'Ben Burger','An Angus cheeseburger topped with friend mac ' || chr(38) || ' cheese bites on our fresh baked deli bun',9.5 from dual union all*

*select 8,2,'Spicy Chili Burger','Homemade spicy chili, crispy onions, cheddar cheese ' || chr(38) || ' sour cream on a toasted Miami onion bun',9 from dual )*

*select \* from temp;*

*insert into saleorder*

*( OrderID , EmployeeID , CustomerID , OrderDate , OrderModeID , ServiceModeID, OrderTotal ) with temp as (*

*select 1,2,3,'2020-01-01',2 om,1 sm,0 from dual union all*

*select 2,2,6,'2020-01-08',1,2,0 from dual union all*

*select 3,1,3,'2020-01-20',2,1,0 from dual union all*

*select 4,4,1,'2020-02-02',1,2,0 from dual union all*

*select 5,2,2,'2020-02-28',2,1,0 from dual union all*

*select 6,2,1,'2020-03-02',2,1,0 from dual union all*

*select 7,1,1,'2020-03-03',2,1,0 from dual union all*

*select 8,3,2,'2020-03-10',2,1,0 from dual union all*

*select 9,4,7,'2020-03-20',2,1,0 from dual union all*

*select 10,1,2,'2020-03-20',2,1,0 from dual union all*

*select 11,2,6,'2020-03-23',2,1,0 from dual union all*

*select 12,4,6,'2020-03-27',2,1,0 from dual union all*

*select 13,1,7,'2020-03-28',1,1,0 from dual union all*

*select 14,2,5,'2020-04-05',2,1,0 from dual union all*

*select 15,1,1,'2020-05-27',1,2,0 from dual union all*

*select 16,2,1,'2020-06-02',1,1,0 from dual union all*

*select 17,3,7,'2020-06-05',1,1,0 from dual union all*

*select 18,1,8,'2020-06-08',1,2,0 from dual union all*

*select 19,3,4,'2020-07-11',2,1,0 from dual union all*

*select 20,3,4,'2020-08-01',2,1,0 from dual union all*

*select 21,1,6,'2020-08-19',2,1,0 from dual union all*

*select 22,3,1,'2020-09-14',1,1,0 from dual union all*

*select 23,3,3,'2020-09-23',2,1,0 from dual union all*

*select 24,4,5,'2020-10-08',2,1,0 from dual union all*

*select 25,1,1,'2020-10-20',1,2,0 from dual union all*

*select 26,1,3,'2020-10-24',2,1,0 from dual union all*

*select 27,1,2,'2020-10-27',1,2,0 from dual union all*

*select 28,4,7,'2020-11-24',1,2,0 from dual union all*

*select 29,4,7,'2020-12-06',1,1,0 from dual union all*

*select 30,4,2,'2021-01-03',1,2,0 from dual union all*

*select 31,4,8,'2021-01-19',2,1,0 from dual union all*

*select 32,4,1,'2021-02-20',1,2,0 from dual union all*

*select 33,3,7,'2021-02-25',2,1,0 from dual union all*

*select 34,2,2,'2021-02-28',2,1,0 from dual union all*

*select 35,3,6,'2021-03-01',1,2,0 from dual union all*

*select 36,1,7,'2021-04-19',2,1,0 from dual union all*

*select 37,1,6,'2021-04-25',2,1,0 from dual union all*

*select 38,2,6,'2021-04-26',1,2,0 from dual union all*

*select 39,4,8,'2021-05-09',2,1,0 from dual union all*

*select 40,4,5,'2021-05-10',2,1,0 from dual union all*

*select 41,3,4,'2021-06-03',2,1,0 from dual union all*

*select 42,4,6,'2021-06-24',2,1,0 from dual union all*

*select 43,2,5,'2021-07-16',1,2,0 from dual union all*

*select 44,4,8,'2021-07-19',1,2,0 from dual union all*

*select 45,3,5,'2021-07-20',1,2,0 from dual union all*

*select 46,1,2,'2021-07-20',2,1,0 from dual union all*

*select 47,2,7,'2021-07-21',1,1,0 from dual union all*

*select 48,4,8,'2021-09-14',2,1,0 from dual union all*

*select 49,2,5,'2021-10-23',2,1,0 from dual union all*

*select 50,2,5,'2021-12-20',1,2,0 from dual )*

*select \* from temp;*

*insert into orderitem ( OrderID , ItemID , Quantity ) with temp as (*

*select 1 a,1 b,3 c from dual union all*

*select 1,5,9 from dual union all*

*select 1,7,8 from dual union all*

*select 2,3,1 from dual union all*

*select 2,4,7 from dual union all*

*select 2,5,4 from dual union all*

*select 3,6,5 from dual union all*

*select 3,8,4 from dual union all*

*select 4,2,8 from dual union all*

*select 4,6,9 from dual union all*

*select 4,8,1 from dual union all*

*select 5,3,4 from dual union all*

*select 5,6,1 from dual union all*

*select 5,7,7 from dual union all*

*select 6,2,1 from dual union all*

*select 6,3,2 from dual union all*

*select 6,8,10 from dual union all*

*select 7,5,1 from dual union all*

*select 7,8,2 from dual union all*

*select 8,3,1 from dual union all*

*select 8,4,9 from dual union all*

*select 8,5,1 from dual union all*

*select 8,8,5 from dual union all*

*select 9,3,3 from dual union all*

*select 9,4,4 from dual union all*

*select 9,8,10 from dual union all*

*select 10,1,7 from dual union all*

*select 10,2,1 from dual union all*

*select 11,2,7 from dual union all*

*select 11,7,8 from dual union all*

*select 12,1,3 from dual union all*

*select 12,5,2 from dual union all*

*select 12,7,10 from dual union all*

*select 12,8,2 from dual union all*

*select 13,1,10 from dual union all*

*select 13,7,3 from dual union all*

*select 14,2,6 from dual union all*

*select 14,3,2 from dual union all*

*select 14,4,10 from dual union all*

*select 14,6,7 from dual union all*

*select 14,8,8 from dual union all*

*select 15,1,9 from dual union all*

*select 15,2,10 from dual union all*

*select 15,6,2 from dual union all*

*select 16,1,5 from dual union all*

*select 16,2,6 from dual union all*

*select 16,5,1 from dual union all*

*select 17,5,5 from dual union all*

*select 17,6,4 from dual union all*

*select 17,8,9 from dual union all*

*select 18,7,8 from dual union all*

*select 19,3,1 from dual union all*

*select 19,6,4 from dual union all*

*select 20,5,3 from dual union all*

*select 20,8,3 from dual union all*

*select 21,1,8 from dual union all*

*select 21,3,3 from dual union all*

*select 21,4,1 from dual union all*

*select 21,5,5 from dual union all*

*select 22,4,8 from dual union all*

*select 22,8,9 from dual union all*

*select 23,1,9 from dual union all*

*select 23,4,10 from dual union all*

*select 23,8,4 from dual union all*

*select 24,4,6 from dual union all*

*select 24,5,3 from dual union all*

*select 24,6,8 from dual union all*

*select 24,7,2 from dual union all*

*select 24,8,3 from dual union all*

*select 25,4,6 from dual union all*

*select 25,5,9 from dual union all*

*select 25,6,6 from dual union all*

*select 25,7,9 from dual union all*

*select 26,3,4 from dual union all*

*select 26,7,7 from dual union all*

*select 27,1,4 from dual union all*

*select 27,3,7 from dual union all*

*select 27,7,1 from dual union all*

*select 27,8,3 from dual union all*

*select 28,2,3 from dual union all*

*select 28,3,4 from dual union all*

*select 28,5,1 from dual union all*

*select 29,4,5 from dual union all*

*select 29,5,10 from dual union all*

*select 29,6,6 from dual union all*

*select 29,7,8 from dual union all*

*select 30,1,9 from dual union all*

*select 30,7,2 from dual union all*

*select 30,8,6 from dual union all*

*select 31,6,9 from dual union all*

*select 32,1,4 from dual union all*

*select 32,3,6 from dual union all*

*select 32,6,5 from dual union all*

*select 32,7,2 from dual union all*

*select 33,1,2 from dual union all*

*select 33,2,9 from dual union all*

*select 33,4,5 from dual union all*

*select 33,8,4 from dual union all*

*select 34,1,6 from dual union all*

*select 34,2,6 from dual union all*

*select 34,3,1 from dual union all*

*select 34,4,6 from dual union all*

*select 34,6,1 from dual union all*

*select 35,1,10 from dual union all*

*select 35,6,4 from dual union all*

*select 35,7,8 from dual union all*

*select 35,8,8 from dual union all*

*select 36,2,5 from dual union all*

*select 36,5,8 from dual union all*

*select 36,8,1 from dual union all*

*select 37,4,10 from dual union all*

*select 37,5,7 from dual union all*

*select 38,3,6 from dual union all*

*select 38,5,4 from dual union all*

*select 38,6,4 from dual union all*

*select 38,7,1 from dual union all*

*select 38,8,6 from dual union all*

*select 39,4,6 from dual union all*

*select 40,5,9 from dual union all*

*select 40,7,3 from dual union all*

*select 41,1,7 from dual union all*

*select 41,2,5 from dual union all*

*select 41,3,10 from dual union all*

*select 41,5,5 from dual union all*

*select 42,3,10 from dual union all*

*select 42,5,7 from dual union all*

*select 42,6,4 from dual union all*

*select 42,8,1 from dual union all*

*select 43,1,10 from dual union all*

*select 43,7,1 from dual union all*

*select 44,1,10 from dual union all*

*select 44,3,6 from dual union all*

*select 44,4,7 from dual union all*

*select 44,5,10 from dual union all*

*select 44,8,3 from dual union all*

*select 45,7,9 from dual union all*

*select 46,1,1 from dual union all*

*select 46,2,3 from dual union all*

*select 46,5,7 from dual union all*

*select 46,6,10 from dual union all*

*select 46,7,7 from dual union all*

*select 47,3,5 from dual union all*

*select 48,2,5 from dual union all*

*select 48,5,5 from dual union all*

*select 48,6,1 from dual union all*

*select 49,2,7 from dual union all*

*select 49,3,4 from dual union all*

*select 49,4,1 from dual union all*

*select 49,5,3 from dual union all*

*select 49,6,8 from dual union all*

*select 49,8,10 from dual union all*

*select 50,3,3 from dual union all*

*select 50,8,3 from dual )*

*select \* from temp;*

# Application Development

*Develop the application which will be used by users to access data and perform the certain business operation. The application should have the following minimum interfaces:*

1. Every table should have main **FORM** where we can perform the following tasks:
   1. Add new data to tables using forms. Apply validation on each field (e.g. if Primary key is duplicate It should display an error message)
   2. Delete/ update record from each table
   3. If a record which refers to another table is deleted or updated; apply CASCADE Update and Cascade Delete (Primary foreign key relationship)
   4. Navigation between records (e.g. MoveFirst, MoveLast, Next, Previous etc..)
2. Implement each business functions for different users listed under sect 2-B
3. Implement all reports which you have listed under 2-C, where the user should able to select few parameters and the system should provide a result summary.

*You should provide screenshots of the application in your report with a proper description of each functionality in the order it has been performed. Each figure should be labeled and cited in the text.*

