

Exo1:

Considering the database schema below:

Menu(MId, name, type) type means: appetizer, dessert, main dish, beverage, etc.  
Restaurant(RId, RName, TypeOfRestaurant)  
Offers(RId, MId, price)  
Customers(CId, name, address, email)  
Order(CId, MId, Date)  
Branches(RId, PhoneNumber, Location)

- a- Write down the following queries in SQL
1. Retrieve all restaurant names
  2. Retrieve the name of the customers who ordered "pizza".
  3. Retrieve the all menu names and prices of "Mama Noura"
  4. Retrieve the menu names ordered by "Majed Zahrani"
  5. Retrieve the menu names ordered by "Majed Zahrani" from "Lavash"
  6. Retrieve the number of "Pizza" ordered by "Majed Zahrani" from the restaurant "Piato".
  7. Retrieve the number of "Pizza" ordered by each customer from the restaurant "Piato".
  8. Retrieve the name of the customer who ordered "Pizza" and "Lasagne" before 20/3/2022.
  9. Retrieve the customers how ordered "Pizza" more than five times
  10. Retrieve how many branches does the restaurants "Piato" and "Lavash" have.

11. retrieve customers who didn't order pizza

$\pi, \sigma, \bowtie$

$\pi$ : retrieve name of the employees  $\Rightarrow \pi_{\text{fname}}(\text{Employees})$

$\sigma$ : retrieve name of employee working in dep 5

$\pi_{\text{fname}}(\sigma_{\text{dept}=4}(\text{Employees}))$

$\bowtie$ : retrieve menu of employees working in research dep

$\pi_{\text{fname}}(\sigma_{\text{Dept}=\text{research}}(\text{Dept}) \bowtie \text{Emp})$   
 $\text{Drinkers} = \text{PNo}$

1)  $\pi_{\text{RName}}(\text{Restaurant})$

2)  $\pi_{\text{Customer.name}}(\text{Customer} \bowtie_{\text{cid cid}} \text{order} \bowtie_{\text{Mid Mid Menu.name = pizza}} \sigma(\text{Menu}))$

3)  $\pi_{\text{name, price}}(\sigma_{\text{Rname = mana Nouira}}(\text{Restaurant}) \bowtie_{\text{rid rid}} \text{offers} \bowtie_{\text{Mid Mid}} \text{Menu})$

4)  $\pi_{\text{menu.name}}(\sigma_{\text{Customer.name = Majed}}(\text{Customer}) \bowtie_{\text{cid cid}} \text{order} \bowtie_{\text{Mid Mid}} \text{Menu})$

5)  $\pi_{\text{menu.name}}(\sigma_{\text{Rname = "Lavash"}}(\text{Restaurant}) \bowtie_{\text{rid rid}} \text{Order} \bowtie_{\text{cid cid}} \sigma_{\text{C.name = "majed"}}(\text{Customer}))$

5)  $\pi_{\text{menu.name}}(\sigma_{\text{Customer.name = "Majed"}}(\text{Customer}) \bowtie_{\text{cid cid}} \text{order} \bowtie_{\text{Mid Mid}} \text{Menu} \bowtie_{\text{rid rid}} \text{offers} \bowtie_{\text{Mid Mid}} \sigma_{\text{Rname = "Lavash"}}(\text{Restaurant}))$

6)  $\rho_{\text{count}}(\sigma_{\text{Customer.name = "Majed"}}(\text{Customer}) \bowtie_{\text{cid cid}} \text{order} \bowtie_{\text{menu.name = "pizza"}} \sigma(\text{Menu}) \bowtie_{\text{Mid Mid}} \text{offers} \bowtie_{\text{rid rid}} \sigma_{\text{Restaurant.name = "pizza"}}(\text{Restaurant}))$

7)

customer.name count(\*) (Customer  $\infty$  Order  $\infty$  Menu  $\infty$  offer  $\infty$  Restaurant)

by/per each Customer group by group

cid=Cid Mid=Mid Menu.name="pizza" Mid=Mid Rid=Rid Rname="pina"

8)

ordered pizza and Lazinger


$\pi$  (Customer  $\infty$  Order  $\infty$  Menu)

customer.name cid=Cid date < 2013 Mid=Mid Menu.name="pizza"

$\cap$ : intersect

$\pi$  (Customer  $\infty$  Order  $\infty$  Menu)

customer.name cid=Cid date < 2013 Mid=Mid Menu.name="Lazinger"



9)

customer.name count(\*) (Customer  $\infty$  Order  $\infty$  Menu)

customer.name cid=Cid Mid=Mid Menu.name="pizza"

10)

Rname count(\*) (Restaurant  $\infty$  Branch)

Rname="pina" Rid=Rid Rname="Lazinger"

11)

$\pi$  (Customer  $\infty$  Order  $\infty$  Menu)

customer.name cid=Cid Menu.name="Pizza"

ما تخرج لأن يكون الطالب وغيره في بيتنا

$\pi$  (Customer  $\infty$  Order  $\infty$  Menu) = (Customer  $\infty$  Order  $\infty$  Menu)

customer.name cid=Cid Menu.name="Pizza"

صحيح لأن بيتنا لأن بيتنا

$\pi$  (Customer) = (Customer  $\infty$  Order  $\infty$  Menu)

name cid Menu.name="Pizza"