COMP 9311: Introduction to Database Systems

Assignment 1

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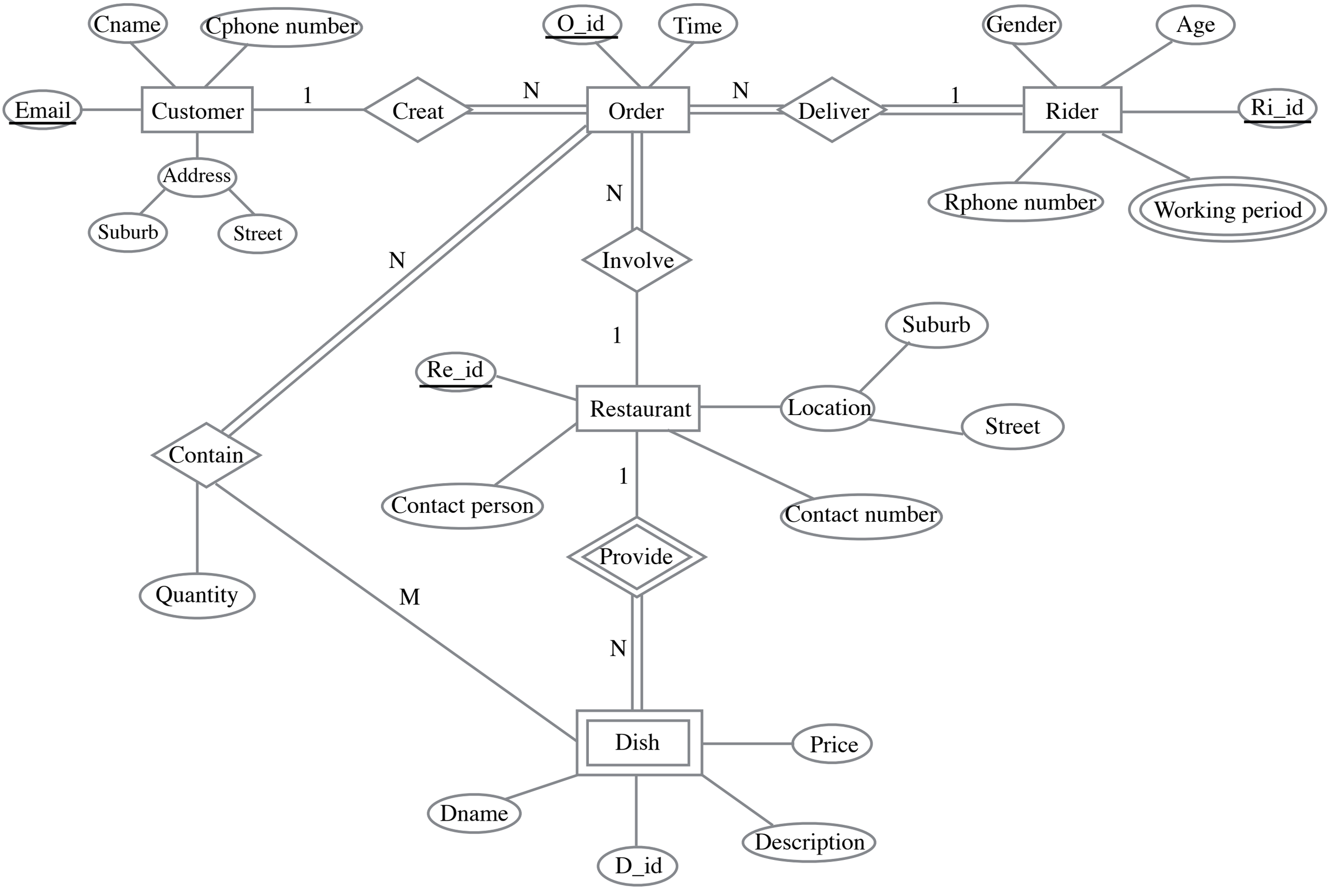
Question 1:


Cname
Cphone number
Email
Customer
1
Creat
N
O_id
Time
Order
N
Deliver
1
Gender
Age
Rider
Ri_id
Address
Suburb
Street
Rphone number
Working period
N
Involve
N
Contain
1
Re_id
Restaurant
Location
Suburb
Street
Contact person
Contact number
1
Provide
Quantity
M
N
Dish
Price
Dname
D_id
Description

Question 2:

Customer:

Email	Cname	Cphone number	Suburb address	Street address

Rider:

Ri_id	Age	Gender	Rphone number

Order:

O_id	Time	Email	Ri_id	Re_id

Restaurant:

Re_id	Contact person	Contact number	Suburb location	Street location

Dish:

Re_id	D_id	Dname	Price	Description

Contain:

O_id	D_id	Quantity

R_period:

Ri_id	Time

Question 3:

1) $$\pi_{\{title\}}(Song \bowtie \sigma < genre = 'pop\ \ songs' > (GeneOfSong) \bowtie \sigma < role = 'composer' > (SongCreating) \bowtie \sigma < name = 'Taylor\ \ Swift' > (Artist))$$

2) $$\pi_{\{title\}}(Song \bowtie \sigma < role = 'composer' > (SongCreating) \bowtie \sigma < name = 'Taylor\ Swift' \quad OR \quad name = 'Ed\ \ Sheeran' > (Artist))$$

3) $$\pi_{\{names\}}(SongCreating \bowtie \sigma < gender = 'female' > (Artist) \bowtie \sigma < name = 'Universal\ \ Music\ \ Group' > (Company) \bowtie \sigma < genre = 'pop\ songs' \quad AND\ NOT\ \ genre = 'hip-hop\ \ songs' > (GenreOfSong))$$

4) $$\pi_{\{name,aID,sID\}}(\sigma < name = 'Taylor\ \ Swift' > (Artist) \bowtie SongCreating - (\sigma < name = 'Taylor\ \ Swift' > (Artist) \bowtie GenreOfSong \div \gamma_{genre} GenreOfSong)$$