- Uber is a transportation network company that provides ride services through its mobile application
- Uber operates in over 900 areas worldwide and offers a variety of ride types (uberx,uber x saver,uber comfort)
- User can request many_rides of any type they select then they are connected to nearby drivers who use a vehicles to provide transportation.
- Users have their own rate no. according to their behaviours during rides
- User and drivers can give ratings for ride

Payment is made using a credit card or cash or other digital payment method.
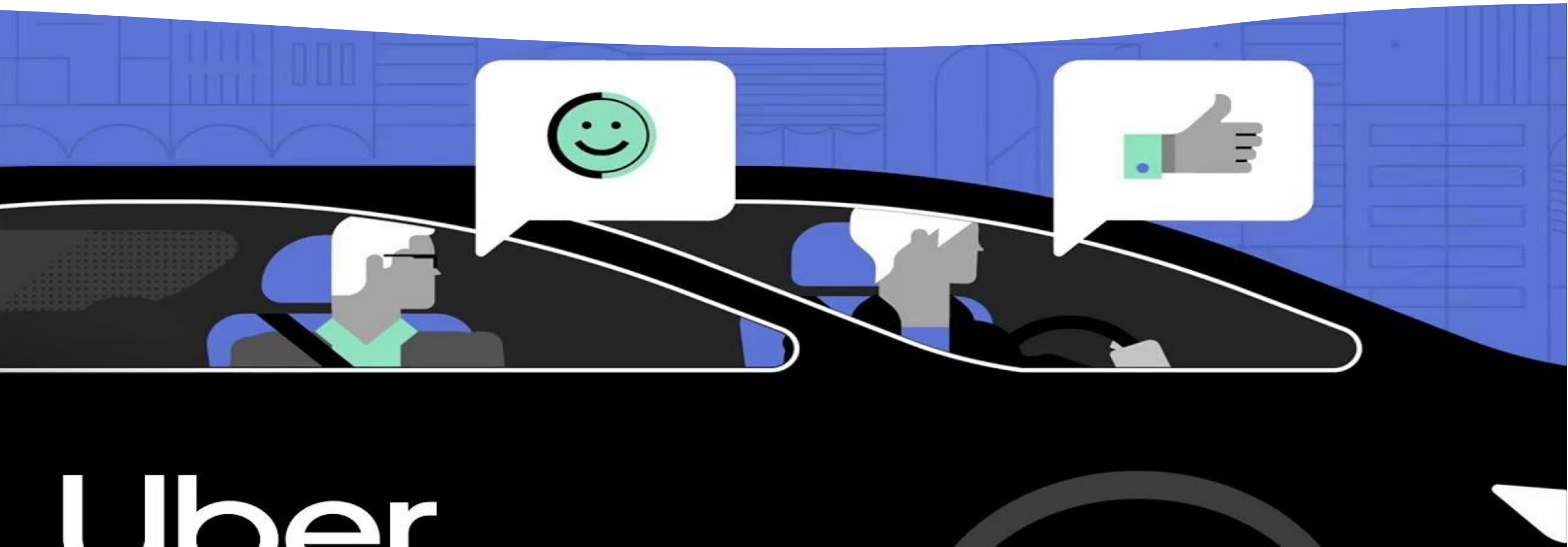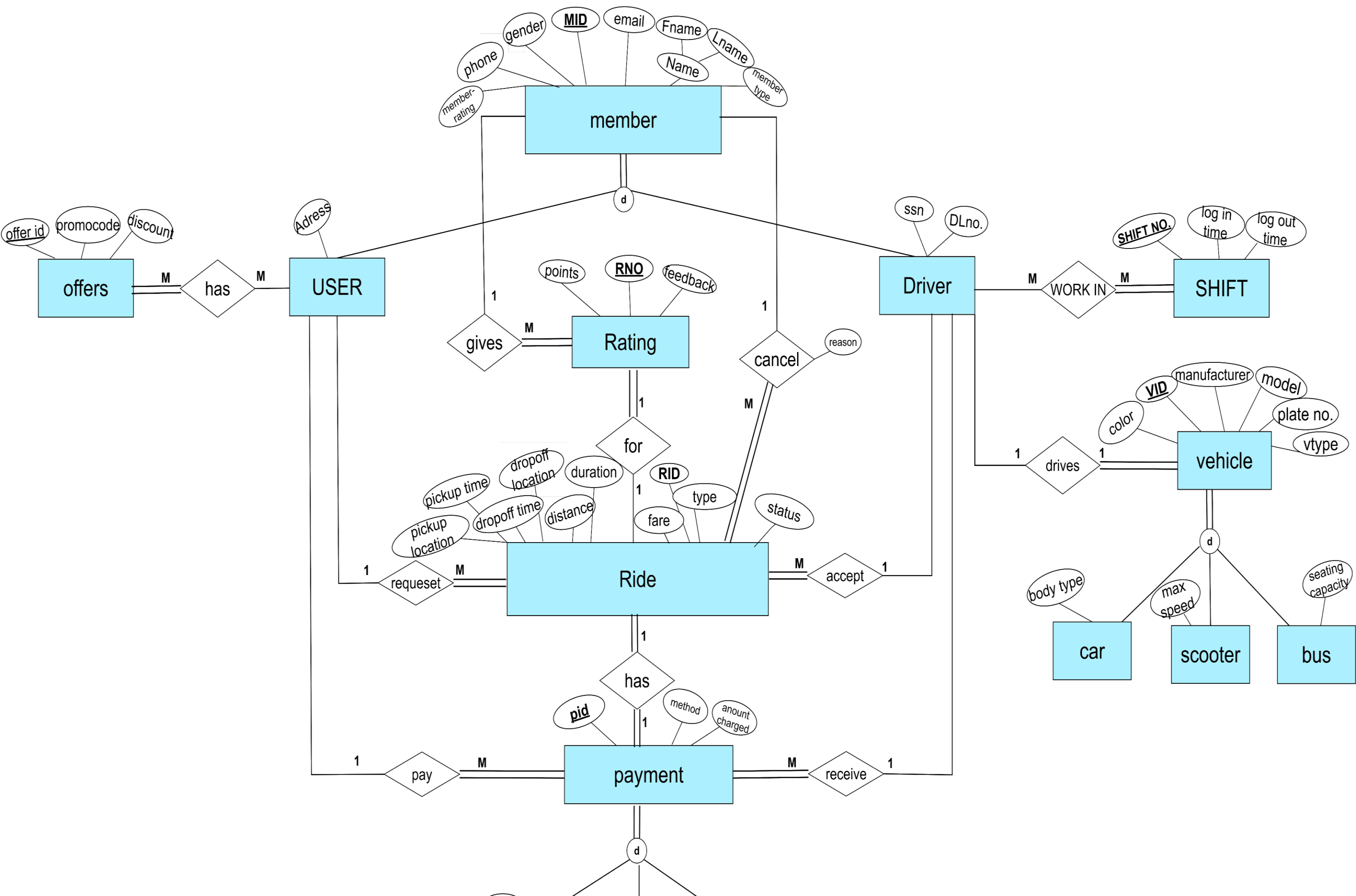
Uber entities

Uber has 8 main entities and relationships revolves around it

Member : member is identified by **MID** and have additional attributes (Name,email,gender,phone,member type,member-rating)

Member entity is classified into just one of two types (user,driver)

User has address attribute

Driver has attributes(ssn.Dlno.)

Ride : is identfied by **RID** and has additional attributes (distance ,duration,fare,type,status classified to(pending,cancel,complete),pickup location,drop off location,pickup time,drop off time)

Payment: is identified by **PID** and have (amount charged,method)

Payment is classified into just one of the three types (card,cash,wallet)

Card _have attributes cvv,cardinfo

cash has attributes currency

wallet has wallet balance

Rating is identified by **RNO** and has attributes points,feedback

offers identified **Offer no.** and have attributes (promocode,discount)

Shift is identified by **shiftno** and has attributes (logintime,logouttime)

Vehicle is identified by **VID** and has attributes (color,manufacturer,fuel type, model,plate no.,vtype)

Vehicle is classified into one of the three types

 car has body type

Scooter has max speed

Bus has seating capacity

Reationships

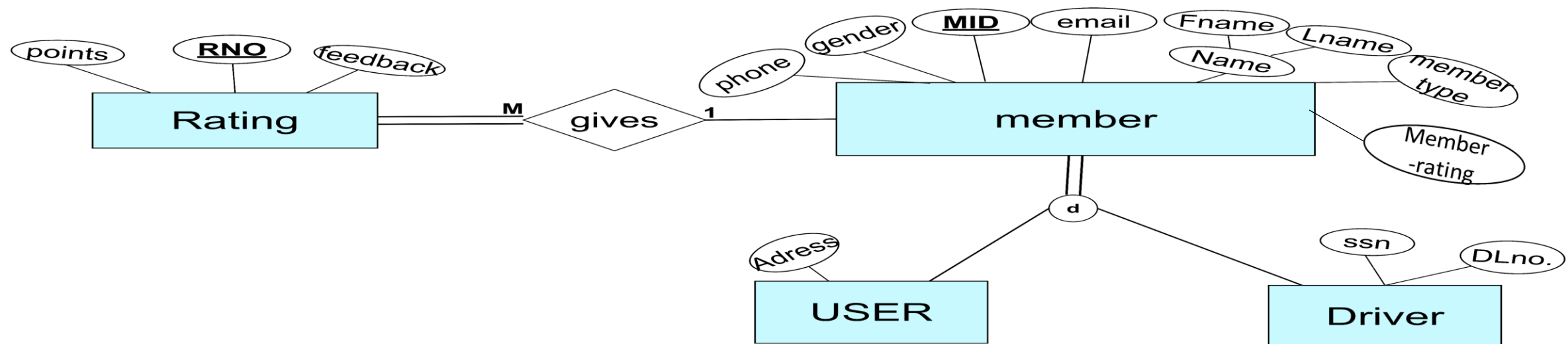## -Member relationships

Member-ride:any users and drivers can cancel many rides

Ride must be canceled by one member
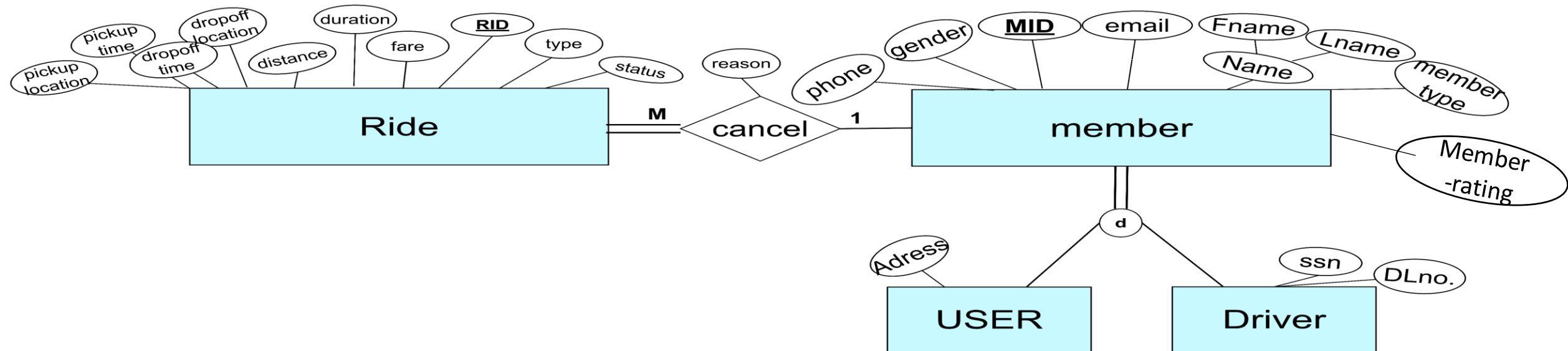
Member-rating: User and driver both can give points out of 5 and write his/her feedback about the ride when the ride is completed

user-ride :user may request many rides of any type he/she wants and the request is sent to many drivers ,ride is requested by a user
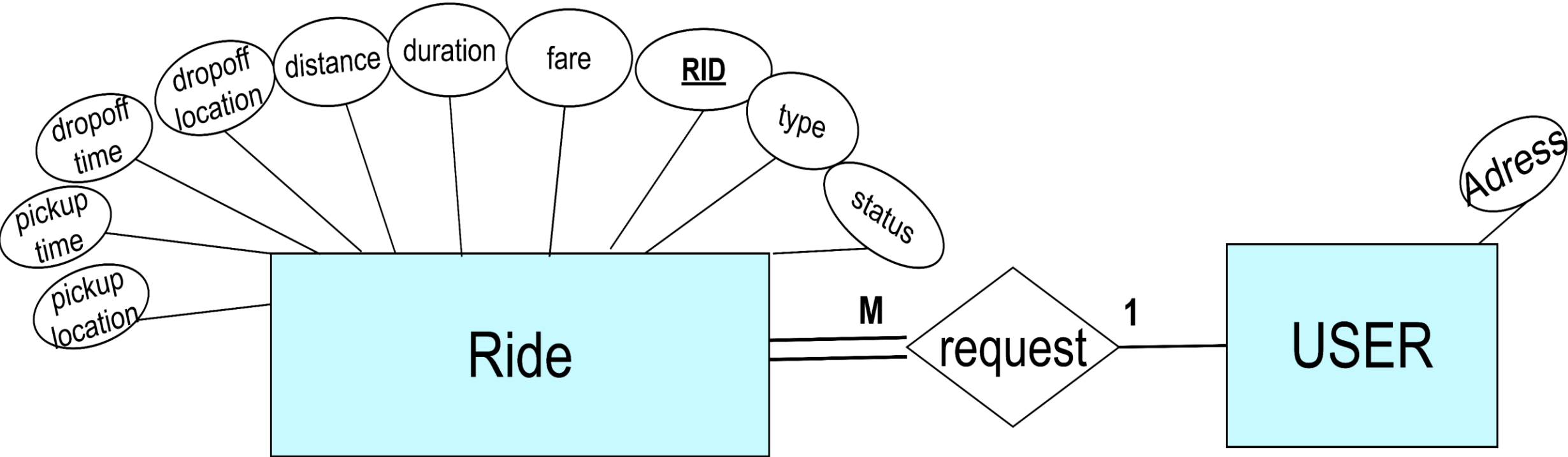
user-payment user pay payments for his rides when ride is completed reached their targeted dropoff location they can use any payment method (card,cash,wallet) he/she likes A payment amount charged must be paid by one user.
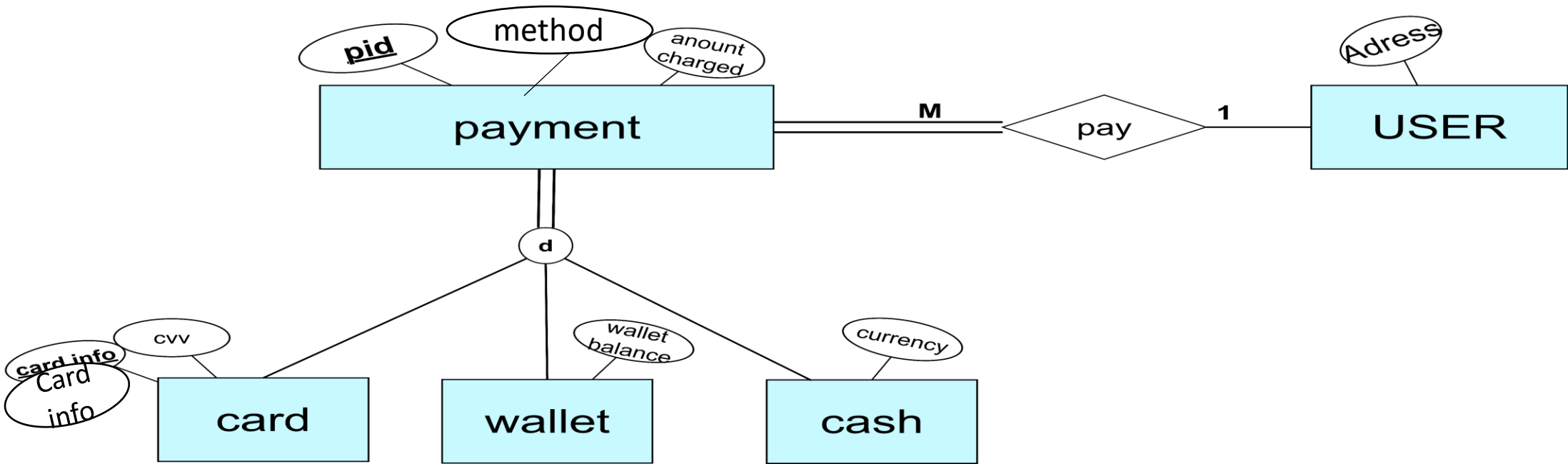
user-offers User may has many offers allocated to him/her by uber company each offer has its promocode and it's discount percentage

Offers discounts,promocodes   are allocated to many users
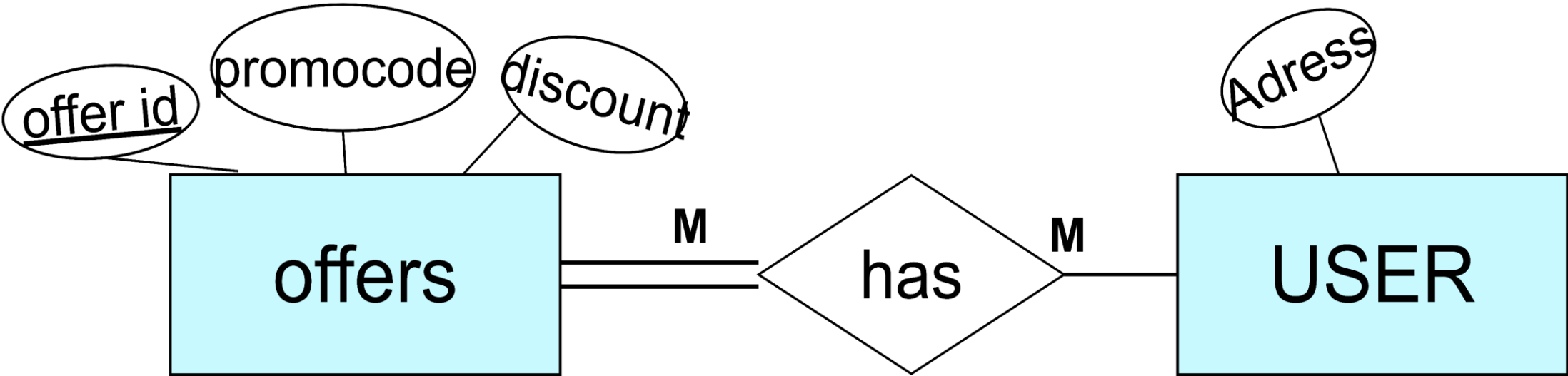
Driver relationships

driver-ride :Driver may get many rides requests from many user and he has choice to accept or not

A ride must be accepted by a driver
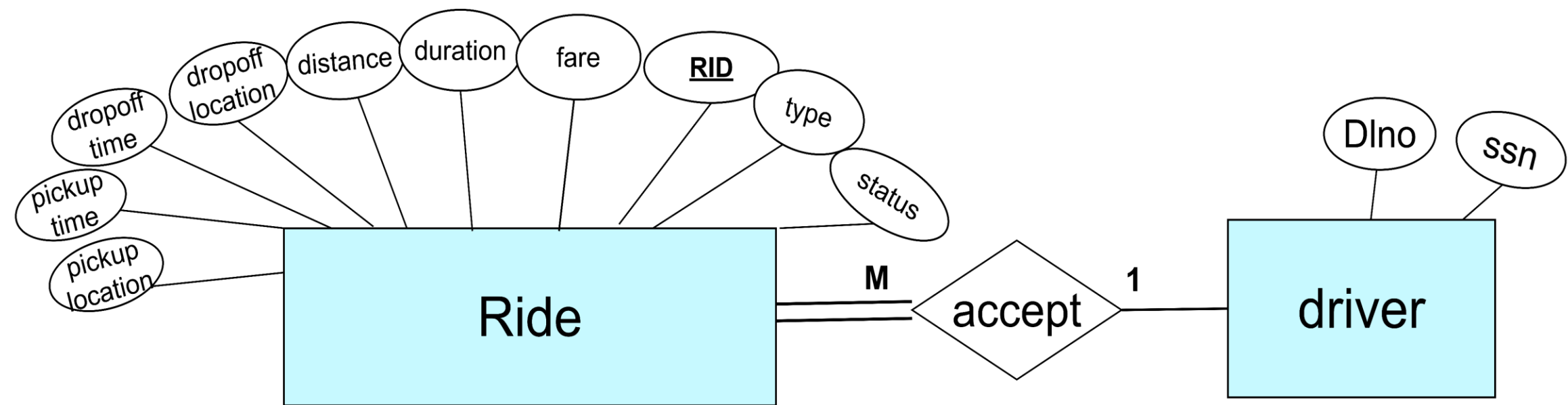
driver-payment Driver receive the amount charged only when he/she drop off user to his targeted dropoff location

 a Payment amount charged must be received by one driver
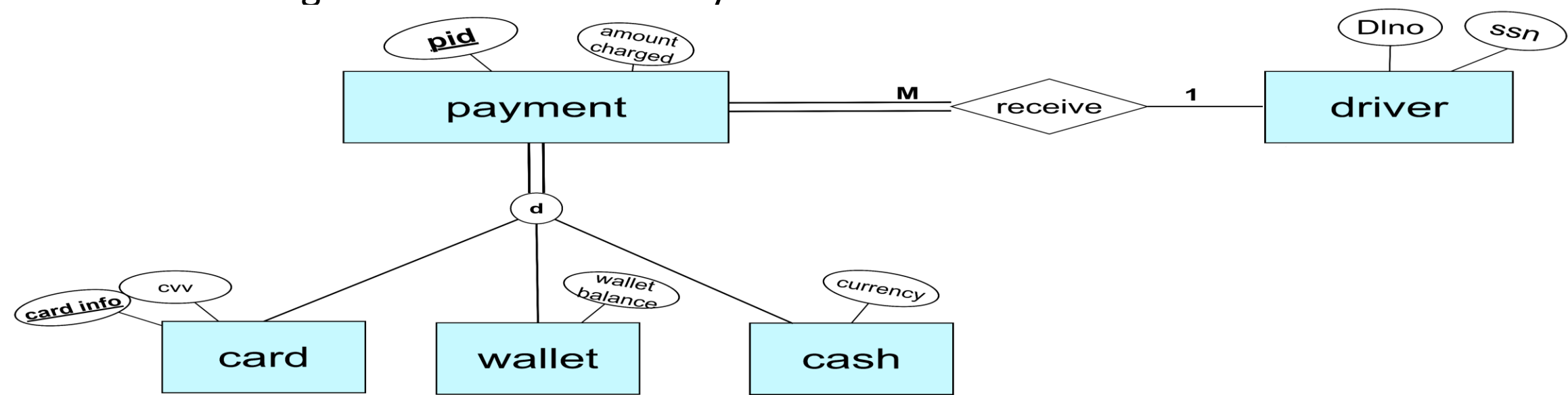
Driver-vehicle : driver drives a vehicle to drive users to their destination,Vehicle must be driven by one driver
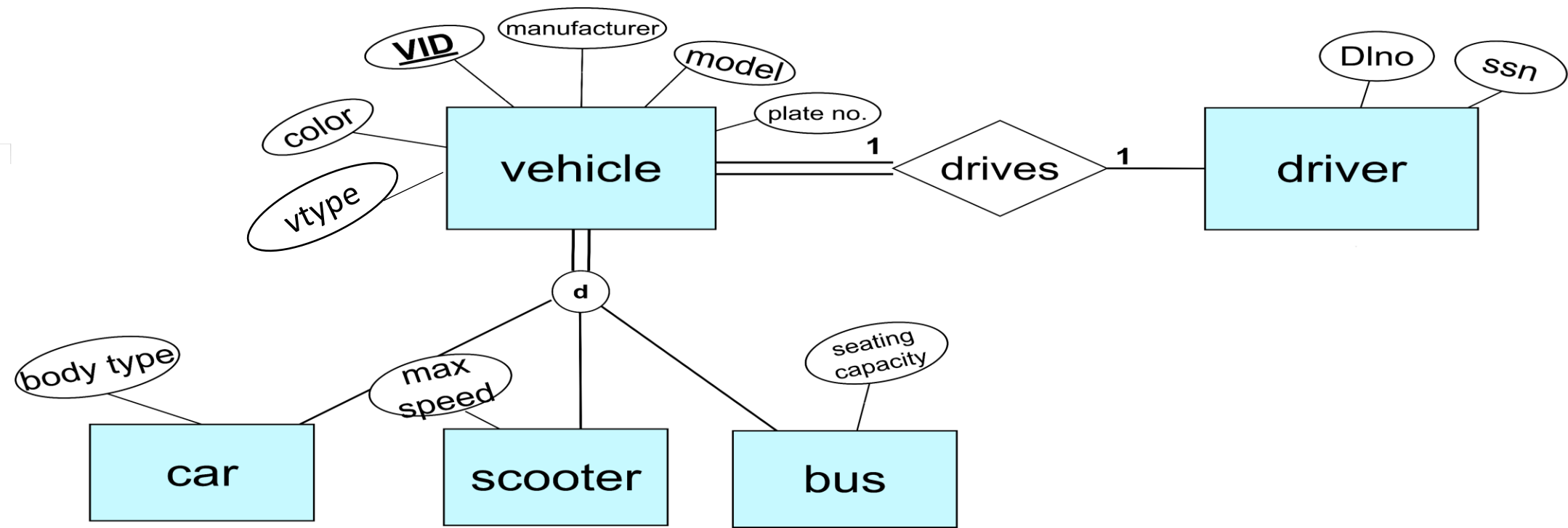
Driver-shift: driver can work in many shifts as much as he/she likes in one day

 he can login and accept many rides requests ,and logout when he is not available and login again when he finds himself available , Shift must have many drivers works in it
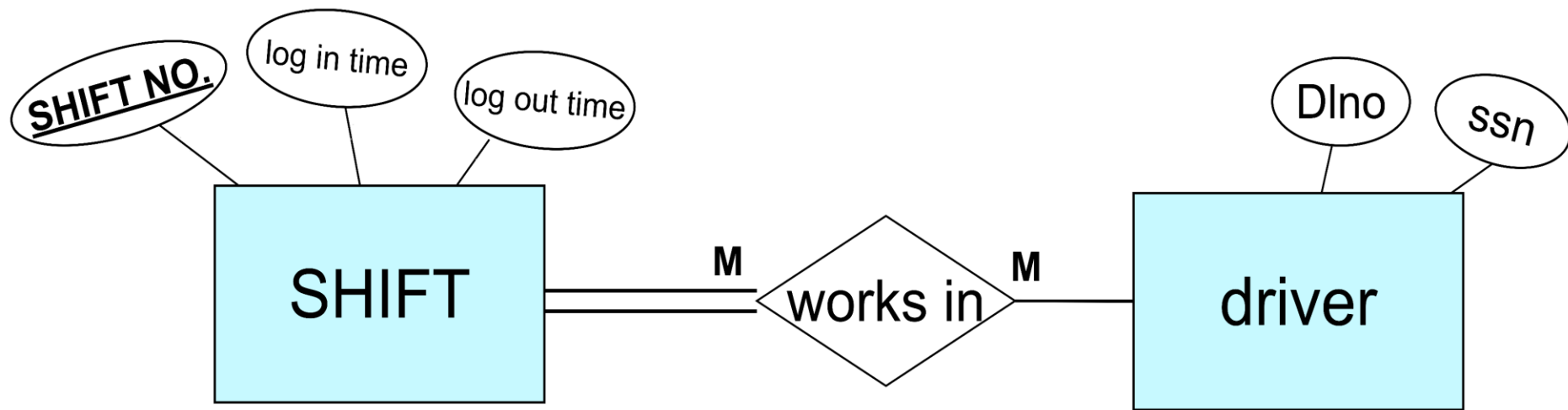
Ride-rating: Each ride may have rating if uber members rated the ride, a rating must be for one ride
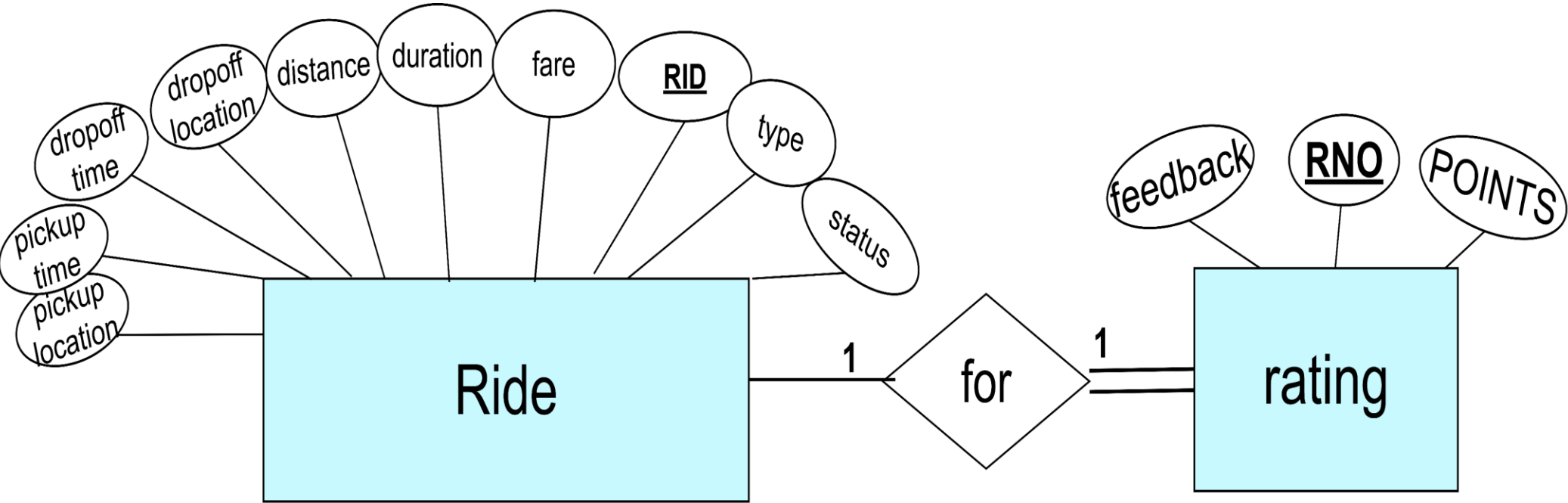
Ride-payment :each ride must must be paid by any payment method the user choose (card,cash,wallet)
And each payment mus be for one ride

Member

MID	Gender	Phone	Email	Fname	Lname	Member type	Member rating

Cancellation

Reason	MID	RID

Ratings

RID	MID	RNO	Points	Feedback

Ride

RID	Pickup loc.	Pickup time.	Dropoff loc.	Dropoff time.	Distance	Duration	Fare	Type	Status	MID	PID	User ID	Driver ID

Payment

PID	Amount charged	Payment method	User ID	Driver ID

Card

PID	Card info.	Cvv

User

User ID	Address

Driver

Driver ID	SSN	DLno

Cash

PID	Currency

User Offers

Offers ID	User ID

Driver Shift

Driver ID	Shift no.	Working hours

Wallet

PID	Wallet balance

Offers

Offer ID	Promocode	Discount

Shift

Shift no	Login time	Logout time

Vehicle

Driver ID	VID	Color	Manufacturer	Model	Plate no.	Vehicle type

Bus

Seating	VID

Car

VID	Body type

Scooter

VID	Max

Uber Mapping :

-Member: has an attributes (<u>MID</u>, Gender, phone, email, Fname, Lname, Member type , Member_Rating) **primary key** (<u>MID</u>)

- User: has an attributes(Address), primary key and Foreign key (<u>User**ID**</u>) Reference (Member).

- Offers Has an attributes(**<u>Offers ID</u>** , Promocode , Discount). **primary key** (**<u>Offers id</u>**)

- User offers it's a (M.M) relation between user and offers
composite key,foreign key(UserID,<u>Offer Id</u>) Reference (Member, offers).

-Driver: It has an attributes (SSN,DLno) Primary and Foreign Key (<u>Driver**ID**</u>) Reference (Member).

-Ride: It has an attributes(**<u>RID</u>**, Distance, Pickup time, Pickup location, Dropoff location, Dropoff time, Time, Fare, Duration, Completed, Canceled, Pending) **primary key** (<u>RID</u>)
Foreign keys (**<u>PID</u>**, **<u>MID,UserID,DriverID</u>**) **Reference** (payment , Member,User,Driver)

-Cancellation: It's a relation between Driver and Ride , User and Ride It has an attribute (Reason)
composite key (<u>RID , MID</u>)
Foreign keys (<u>RID</u> , <u>MID</u>) Reference (Ride, Member)

-Ratings it has an attributes (**<u>RNO</u>**, Points, Feedback) and it's
primary key (<u>RNO</u>)
Foreign key (RID, MID) Reference (Ride , Member).

Shift it has an attributes (**Shiftno**., Login time, Logout time). **Primary key**(shiftno.)

-Driver Shifts: It's a relation between driver and shifts it has an attribute(Working Hours), it has w foreign keys(**Shiftno**., **DriverID**) Reference (Shift, Driver).

-Payment: It has an attributes (Amount charged , Payment method,) **Primary key**(pid.)
Foreign keys (**UserID**, **DriverID**) Reference (User , Driver).

-Cash: it has an attribute (Currency) and **Foreign key** (**PID**) Reference (Payment).

-Card: it has an attributes (Cvv , Cardinfo) **Primary key**(**cardinfo**.)
 Foreign key (**PID**) Reference (Payment).

-Wallet: it has an attribute (Wallet Balance) and **Foreign Key** (**PID**) Reference (Payment).

-vehicle: it has an attributes(VID , Manufacturer, Color, Model, Fuel type,plate no. , Vehicle Type) and , primary key (VID) Forign key(**DriverID**) **Reference** (Driver).

-Car: it has an attribute (Body type) and **Foreign key** (**VID**) Reference (Vehicle).

-Scooter: it has an attribute (Max Speed) and **Foreign key** (**VID**) Reference (Vehicle).

-Bus: it has an attribute (Seating Capacity) and **Foreign key** (**VID**) Reference (Vehicle).

members
- mid (PK)
- gende
- phone
- email
- fname
- lname
- member_type
- member_rating

car
- vid (PK)
- bodytype

vehicle
- vid (PK)
- color
- manufacturer
- model
- plate_no
- vtype
- driverid

(seatingcapacity) — vid (PK), seatingcapacity

scooter
- vid (PK)
- maxspeed

driver_shift
- shiftno (PK)
- driverid (PK)
- working_hours

shifts
- shiftno (PK)
- login_time
- logout_time

driver
- driverid (PK)
- ssn
- DLno

offers
- offerid (PK)
- promocode
- discount

user_offer
- offerid (PK)
- userid (PK)

cancellation
- reason
- mid (PK)
- rid (PK)

ratings
- Rno (PK)
- points
- feedback
- mid
- rid

rides
- rid (PK)
- pickup_location
- pickup_time
- dropoff_time
- dropoff_location
- distance
- duration
- fare
- Rtype
- rstatus
- mid
- userid
- driverid
- pid

payments
- pid (PK)
- amount_charged
- method
- userid
- driverid

card
- pid (PK)
- cardinfo
- cvv

wallet
- pid (PK)
- wallet_balance

cash
- pid (PK)
- currency

users
- userid (PK)
- adress

User rides history Each user has his own ride history including all info abut his ride

```sql
select fname as ' user first name',lname as ' user last name' ,
rides.userid,rides.driverid,pickup_location,Dropoff_location,pickup_time,dropoff_time, rstatus , rtype as
'ride type'  ,amount_charged ,Method,vtype as 'veichle type',color,model,plate_no  from  members join users
on members.mid=users.userid

join rides on rides.userid=users.userid

join driver on rides.driverid=driver.driverid

join vehicle on vehicle.driverid=driver.driverid

join payments on payments.userid=users.userid
```

	user first name	user last name	userid	driverid	pickup_location	Dropoff_location	pickup_time	dropoff_time	rstatus	ride type	amount_charged	Method	veichle ty...	color	model	plate_no
1	mohamed	aly	201	205	17th ahmed samir st. shobra	helwan university	2023-05-24 03:12:00.000	2023-05-24 03:42:00.000	completed	uber shuttle	50	cash	car	Red	sportage	٩٢٣ ن ب
2	aly	omar	202	206	15th ahmed mohsen st,waterway	pyramids	2023-05-24 03:00:00.000	2023-05-24 07:00:00.000	completed	uber comfort	75.5	wallet	car	black	verna	٦١١ ب ب
3	doaa	rashad	203	212	9th gamal mahmoud st bolaq	cairo tower	2023-05-24 04:00:00.000	2023-05-24 06:00:00.000	completed	uberX	30.4	card	bus	silver	9400	٨٧٠ ز ف
4	mariam	ezz	204	207	3th mazen tawfik st. maadi	cairo university	2023-05-24 05:30:00.000	2023-05-24 07:30:00.000	completed	uber comfort	100.2	cash	car	silver	accent	٤٥٣ ن ا
5	ahmed	ibrahim	209	208	6th hazem ragheb st. zamalek	ain shams univ...	2023-05-24 13:00:00.000	2023-05-24 18:00:00.000	pending	uber shuttle	200.1	cash	bus	white	turbine	٢ ح ب ب
6	sara	sayed	210	213	2th ali ahmed st .khalafaw	ahmed rateb st..	2023-05-24 12:00:00.000	2023-05-24 16:00:00.000	completed	uber shuttle	80	wallet	scooter	black	activa	٩٢٥ ب ب
7	maram	mostafa	211	214	5th essam bahr st, nasr city	3th makram ebi...	2023-05-24 02:00:00.000	2023-05-24 02:45:00.000	completed	uber comfort	55	card	scooter	white	2000	٥٢٢ ب ب
8	fateema	ussama	216	215	9st .nafoura,mokattem	cairo university	2023-05-24 20:00:00.000	2023-05-24 20:30:00.000	completed	uberX	35	wallet	car	blue	octavia	٣٦٨ ف ل
9	fateema	ussama	216	215	9st .nafoura,mokattem	cairo university	2023-05-24 20:00:00.000	2023-05-24 20:30:00.000	completed	uberX	55	wallet	car	blue	octavia	٣٦٨ ف ل
10	selim	salem	218	217	9st. maadi	17 ahmed mah...	2023-05-24 09:00:00.000	2023-05-24 19:50:00.000	completed	uber comfort	40.5	cash	car	red	cerato	٧١٢ ف ز

User getting offers :The higher member rating a user gets the higher he/she got a chance to get more offers and promocodes to apply on rides ,only members who have 4.65 or higher   member rating got offers

```sql
select fname as 'first name',lname as 'last name ',user_offer.userid as'user id',member_rating
,promocode,discount,rides.rid as 'ride number'
from members  inner join users on members.mid=users.userid
inner join user_offer on user_offer.userid=users.userid
inner join offers on offers.offerid=user_offer.offerid
inner join rides on users.userid=rides.userid
where member_rating >= 4.65
```

	first name	last na...	user:...	member_rati...	promocode	disco...	ride num...
1	mohamed	aly	201	5	DO7A20	20%	1
2	mohamed	aly	201	5	NULL	20%	1
3	dosa	rashad	203	4.7	MARIAM30	30%	3
4	sara	sayed	210	5		40%	6
5	maram	mostafa	211	4.8	ASMAA50		7
6	abdelrahman	yousef	225	4.66	MENNA30	30%	13
7	mariam	amer	224	4.9	MARAM60	60%	15
8	mariam	amer	224	4.9	MENNA30	30%	15
9	shahd	samer	229	4.75	MARAM60	60%	17

User ride cancellation
User has right to cancel ride for various reasons as (choosing wrong address, waiting time too long, driver not responding) or any other reason

```sql
select member_type as 'member', fname as 'first name',lname as 'last name',cancellation.mid
as'member id',rides.rid as 'ride number',reason as'cancelation reason'
from members  join cancellation on cancellation.mid=members.mid
 join rides on cancellation.rid=rides.rid
where member_type='user'
```

	member	first name	last na...	member...	ride num...	cancelation reason
1	user	mohamed	aly	201	10	wrong address
2	user	mariam	ezz	204	11	waiting time too long
3	user	lola	salem	221	14	Waiting time long
4	user	selim	salem	218	20	wrong address
5	user	suzan	salem	219	21	waiting time too long
6	user	jesica	john	220	22	user not responding
7	user	lola	salem	221	23	user not responding
8	user	salma	amr	222	24	wrong address

User rate rides user can give rating and write his feedback about ride and driver

```sql
select members.mid,member_type,Rno as'rating no.',points,feedback,rides.driverid as 'driver
id',ratings.rid as 'ride id'  from members

join ratings on members.mid=ratings.mid

 join rides on rides.rid=ratings.rid

 where member_type='user'
```

100 %   ▾

Results Messages

	mid	member_type	rating no.	points	feedback	driver id	ride...
1	201	user	50	5	driver was decent and polite and the car was clean	205	1
2	203	user	52	5	ride was good i reached dropoff location on time'	212	3
3	209	user	54	3	ride was good	208	5
4	211	user	56	4	car was clean driver was professional	214	7
5	218	user	58	5	ride was good i reached dropoff location on time'	217	9

<u>Driver working history</u> *includes all info about driver's shift including all rides he accepted amount charged he received ,vehicle and shift no.,working hours*

```sql
select driver.driverid ,fname as 'first name',lname as 'last name',Dlno as'driver license
number',shifts.shiftno as 'shift number',working_hours,vtype as 'veichle
type',plate_no,model,color,amount_charged as'amount paid',method

from members inner join driver on members.mid=driver.driverid

inner join driver_shift on driver_shift.driverid=driver.driverid

inner join shifts on shifts.shiftno=driver_shift.shiftno

join vehicle on vehicle.driverid=driver.driverid

inner join payments on payments.driverid=driver.driverid
```

	driverid	first name	last name	driver license number	shift number	working_hours	veichle type	plate_no	model	color	amount paid	method
1	205	mohamed	mamdouh	7788	501	8 hours	car	من ب ٩٦٣	sportage	Red	50	cash
2	206	mazen	khaled	3456	502	5 hours	car	م ب ب ٢١١	verna	black	75.5	wallet
3	212	laila	mohamed	543387	505	12 hours	bus	ط ش ز ل ٨٧٥	9400	silver	30.4	card
4	207	marina	magdy	2943	503	3 hours	car	أ ت ن ٤٥٦	accent	silver	100.2	cash
5	208	mohamed	nasr	4387	504	6 hours	bus	ح ت س ٢٨٩	turbine	white	200.1	cash
6	213	nadine	mohsen	943287	506	2 hours	scooter	م ب ب ٩٢٥	active	black	80	wallet
7	214	tamara	tamer	123087	507	9 hours	scooter	ت س ٥٦٣	2000	white	55	card
8	215	malek	mohamed	455387	508	7 hours	car	ل ف ر ٣٧٨	octavia	blue	35	wallet
9	212	laila	mohamed	543387	505	12 hours	bus	ط ش ز ل ٨٧٥	9400	silver	41	cash
10	214	tamara	tamer	123087	507	9 hours	scooter	ت س ٥٦٣	2000	white	55	wallet
11	205	mohamed	mamdouh	7788	501	8 hours	car	من ب ٩٦٣	sportage	Red	65	cash
12	207	marina	magdy	2943	503	3 hours	car	أ ت ن ٤٥٦	accent	silver	22	wallet

driver ride cancellation driver has right to cancel ride for various reasons as (waiting time too long,user not responding) or any other reason

```sql
select member_type as 'member', fname as 'first name',lname as 'last name',members.mid as'member id',cancellation.rid as 'ride number',reason as'cancelation reason'

from members inner join cancellation on cancellation.mid=members.mid

where member_type='driver'
```

	member	first name	last name	member...	ride num...	cancelation reason
1	driver	mohamed	nasr	208	12	user not responding
2	driver	amr	mohamed	227	16	waiting time long
3	driver	samir	amer	226	18	wrong address
4	driver	youssef	hamdy	217	19	user not responding

Driver rate rides driver can give rating and write his feedback about ride and user

```sql
select members.mid,member_type,Rno as'rating no.',points,feedback,rides.userid as 'user id',
ratings.rid as 'ride id'  from members
join ratings on members.mid=ratings.mid
 join rides on rides.rid=ratings.rid
 where member_type='driver'
```

Results / Messages

	mid	member_type	rating no.	points	feedback	user id	ride id
1	206	driver	51	4	user was decent and polite'	202	2
2	207	driver	53	5	user was decent and polite'	204	4
3	213	driver	55	5	user was decent and polite'	210	6
4	215	driver	57	3	user didnt pay the amount charged	216	8
5	205	driver	59	1	user didnt pay the amount charged	229	17