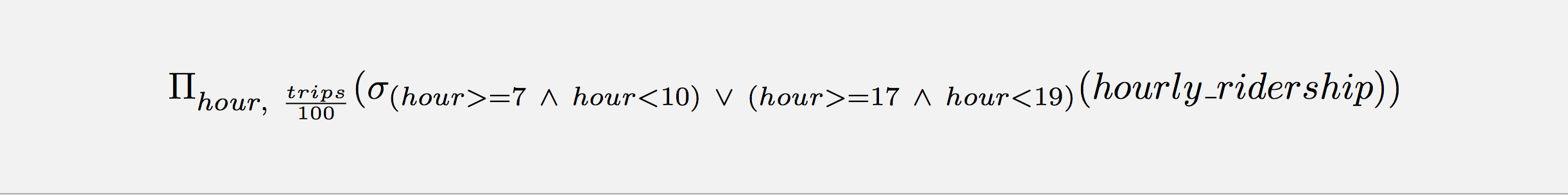
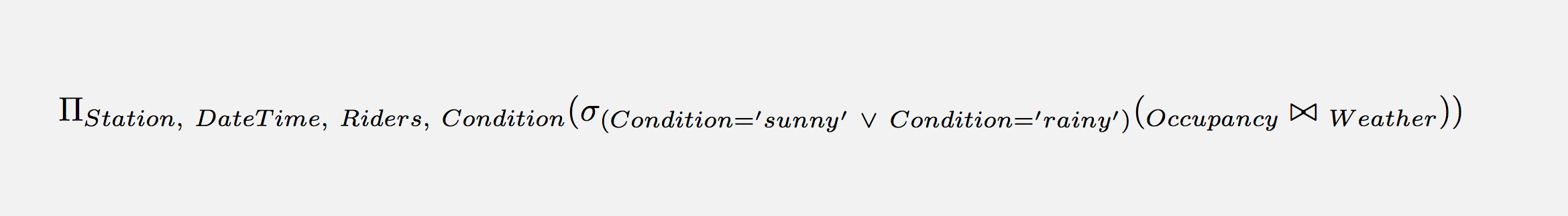
1d, 1e and Part 2

**(1d)**



**(1e)**

**(2a)**

CREATE TYPE scooter\_status AS ENUM('online','offline','lost/stolen')

CREATE TABLE Scooter(

QR\_Code integer NOT NULL,

Status scooter\_status NOT NULL,

Location point NOT NULL,

Home\_Assignment circle,

PRIMARY KEY (QR\_code)

);

CREATE TABLE User(

User\_ID varchar(6) NOT NULL,

Credit\_Num varchar(16),

Security\_Code varchar(3) CHECK (NOT(Credit\_Num NULL AND Security\_Code NULL)),

Email varchar(30) NOT NULL

);

**(2b)**

CREATE TABLE trip(

Trip\_ID varchar NOT NULL,

In\_Progress boolean,

Distance numeric(4,2) NOT NULL CHECK (Distance >= 0),

Activation\_location point,

Park\_location point,

Start\_time timestamptz,

End\_time timestamptz,

Duration interval NOT NULL CHECK (Interval >= 0)

PRIMARY KEY (Trip\_ID)

FOREIGN KEY(QR\_Code)

FOREIGN KEY(User\_ID)

);

**(2c)**

The advantage of inserting the row and modifying the row is that you bypass dealing with phone issues (if it dies or doesn't have service mid-ride, what happens to your data?). However, caching data on the phone and then uploading to DB makes it so that your actual DB requires less modification. I would prefer to risk losing some user data (and in the case of issues, just lose that money) than the insert+modify b/c I would imagine the "cost" of perpetually modifying the DB would be greater.

Would you include the number of minutes the trip lasted in the Trip table? why or why not?

- Yes b/c you need that info to charge the user; although you can always EXTRACT the number of minutes (duration) from the records of start\_time & end\_time, you would need to perform this function for every single trip, so makes sense to store it as an attribute

What are the advantages/disadvantages of including charge to user in the Trip table?

- disadvantage: would need to store user ID as a foreign key, wasteful b/c can always compute from duration of trip

- advantage: wouldn't have to use a join trip & user tables in a query to figure out how much a user was charged for a given trip