Problem 1 (Car-Race Database)

Car Race Database

Jonathan Duran | April 27, 2021

Make

Engine Type   Color

VINnumber   Model

Cars

AccidentID

Accidents

Uses

involved

Participation

Enters

includes

ParticipationID

Drivers

Winner

Races

name   ID

Race Number   NumberOfRounds

DoB   DoB

Winning time

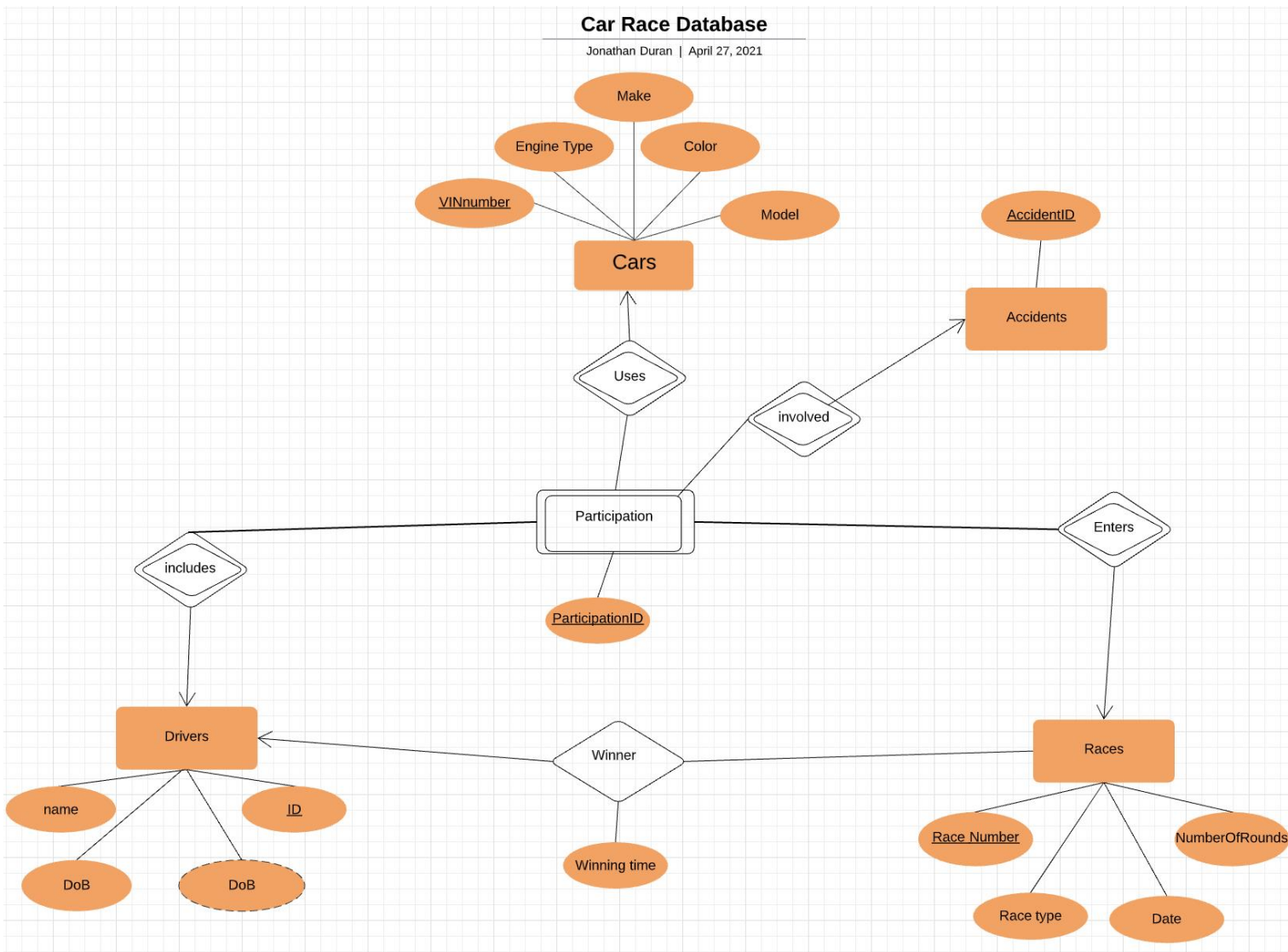Race type   Date

- For the relationship between all 3 initial entity sets, Drivers, Cars, and Races we can create a weak entity that has weak relationship with the other entities. This was we break up the potential many to many relationships into multiple 1-to-many relations.
    - 1 driver can be included in many participations.
    - 1 car can be used in many participations.
    - 1 race can have many participations enter it.
    - The participation ID can be used to capture which car is used by which driver and in which race. Since they can be linked to a specific participation.

- When an accident happens, we can relate it to the participation in which the entities involved participated in. This way we can easily know which driver, car, and what race are involved. This too is a one-to-many relationship, since
- Last relationship is the Winner relation this is a one-to-many relationship because 1 driver can be a winner in many races. But every race only has 1 winner.

Problem 2 (Mini-Store Database)

Mini-Store Database
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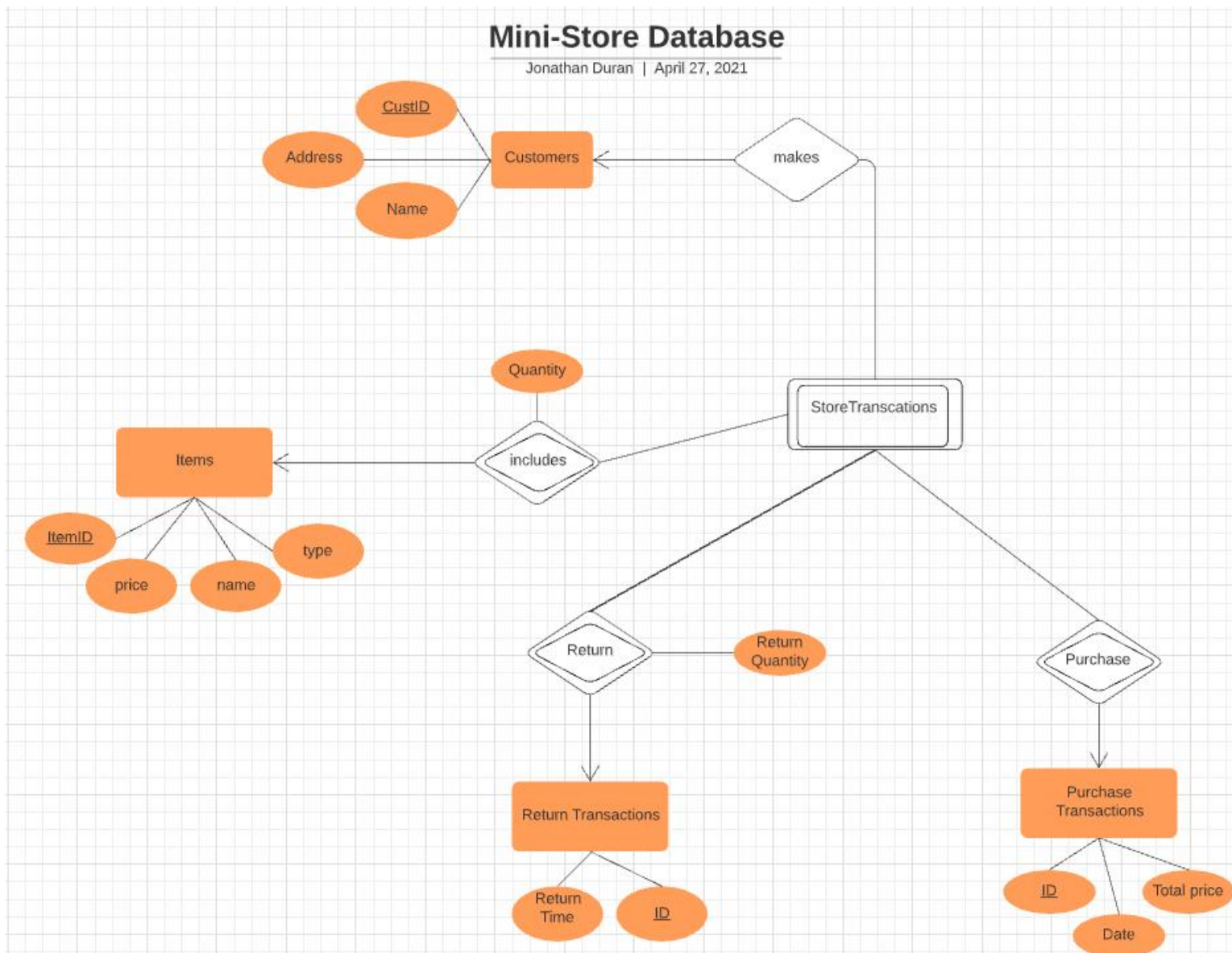
- For the relations between each entity set:
  - o 1 customer can make many store transactions. (1-to-many)

- o 1 buying transaction can be part of many store transactions. (1-to-many)
- o 1 item can be included in many store transactions. The quantity is an attribute only related to the relation between them. (1-to-many)
- o 1 return transaction can be part of many store transactions. (1-to-many)
- o The return quantity is an attribute only related to the relation between the relation it has with the store transaction.

- This weak entity of store transactions is used to keep track of which item has been returned in a specific return transaction, the return quantity and return time, this also is linked to the specific original buying transaction and customer who is making the store transaction.