Practice Problem – keys

**Problem Description:**
A national rental car company wants to keep track of the cars it has and the lots the cars are on. Each car has a unique ID assigned by the company. They also want to keep track of the vehicle identification number, color, make, model, and the number of miles at the last service.

They also keep information about the lots they have. For each lot there is a street address (number and street name), city, state, zipcode, and number of parking spaces.

Each lot has many cars but each car is only kept at a single lot. That is, there are no dropoffs with this rental company. A customer rents a car from a lot and must return the car to the same lot.

**Business Rule 1**: The company will never have two cars (make and model) of the same color.

**Business Rule 2**: The company currently only has a one lot in each of the cities it does business in, but it plans to build multiple lots in some of the cities soon.

List 5 superkeys for CAR:

1. 
2. 
3. 
4. 
5. 

List the 3 candidate keys for CAR:

1. 
2. 
3. 

Which of those candidate keys will you choose for the primary key and why?
Assuming that all attributes for lot are in one entity (LOT), list 3 superkeys for LOT:

1. 

2. 

3. 

List the 2 candidate keys for LOT:

1. 

2. 

What would you choose for the primary key and why?

What are the effects on the model if you add a surrogate key, LOT_ID, to LOT and make that the primary key? Is this a good time to use a surrogate key? Explain.

Draw the model in IDEF1X with and without a surrogate key for lot.