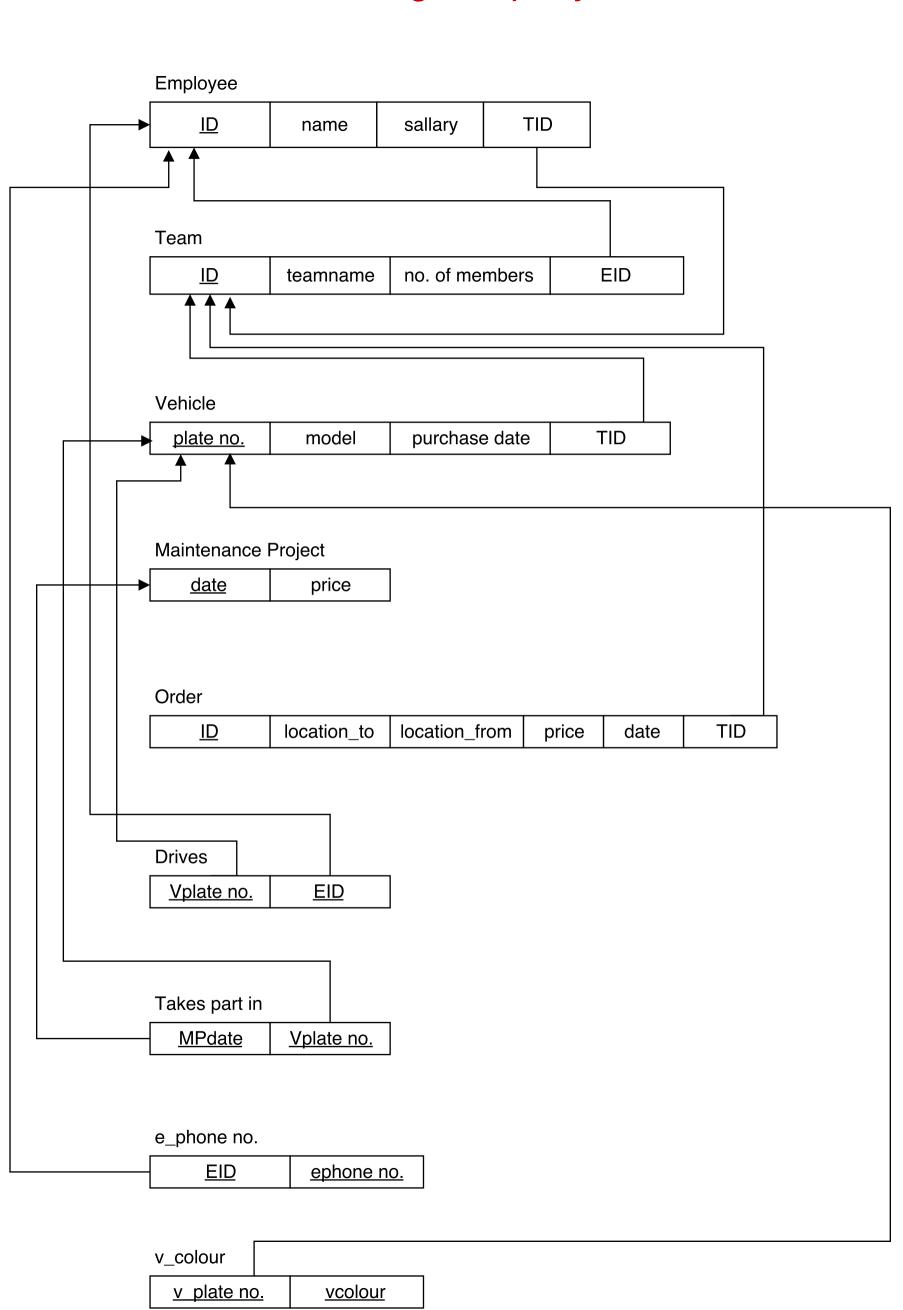


Question 2.1 - Moving company ER diagram Assumptions: location_to location_from - each employee may have more than 1 phone numbers - each vehicle may have more than 1 colour listed. e.g: white body, yellow stripe <u>ID</u> order date price Ν conducts <u>ID</u> works for phone no. name employee team name leader_of number of members sallary (owns) Ν Ν <u>date</u> M Ν M maintenance vehicle drives (takes part in) project purchase plate number model colour price date

Question 2.2: Moving company relational model



Question 3

3.1. The maximum number of superkey without duplication is $(2^n - 1)$. According to the lecture note on week 2, "A superkey is a set of attributes that uniquely determines a tuple". Therefore, each attribute in the schema R may possibly be nominated as a superkey.

```
Let's take an example of schema R(E, F, G). The possible superkeys are:
E, EG, EF, EFG,
F, FG, FE, FEG,
G, GE, GF, GFE
```

XX == duplicates

Schema R above consists of 3 attributes, hence the maximum number of possible superkeys is $(2^3 - 1)$, which is 7.

3.2. The maximum number of candidate key is *n*. Let's use an example of schema R(E, F, G, H).

Assuming that the functional dependencies are:

E -> F

 $F \rightarrow G$

G -> H

H -> A

By using the closure of attributes for each of the attribute, it all contains EFGH, which is 4.