

FIT3171 Databases  
Week 6 Tutorial Suggested Solution  
LOGICAL MODELLING  
FIT Database Teaching Team

**FIT3171 2022 S1**

*FIT3171 Databases*

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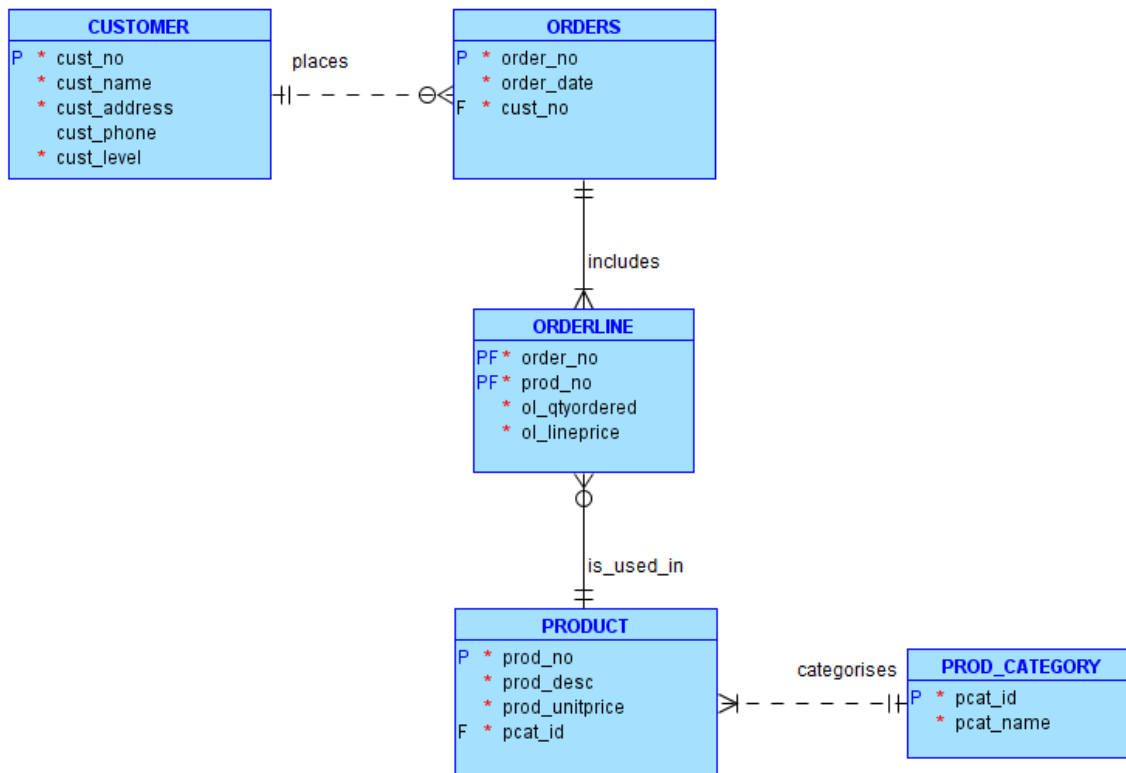
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## 6.3 Building Relational Tables via Data Modeler

### 6.3.1 Stage 1 - Build the the Logical Model

#### Customer Orders Case Study

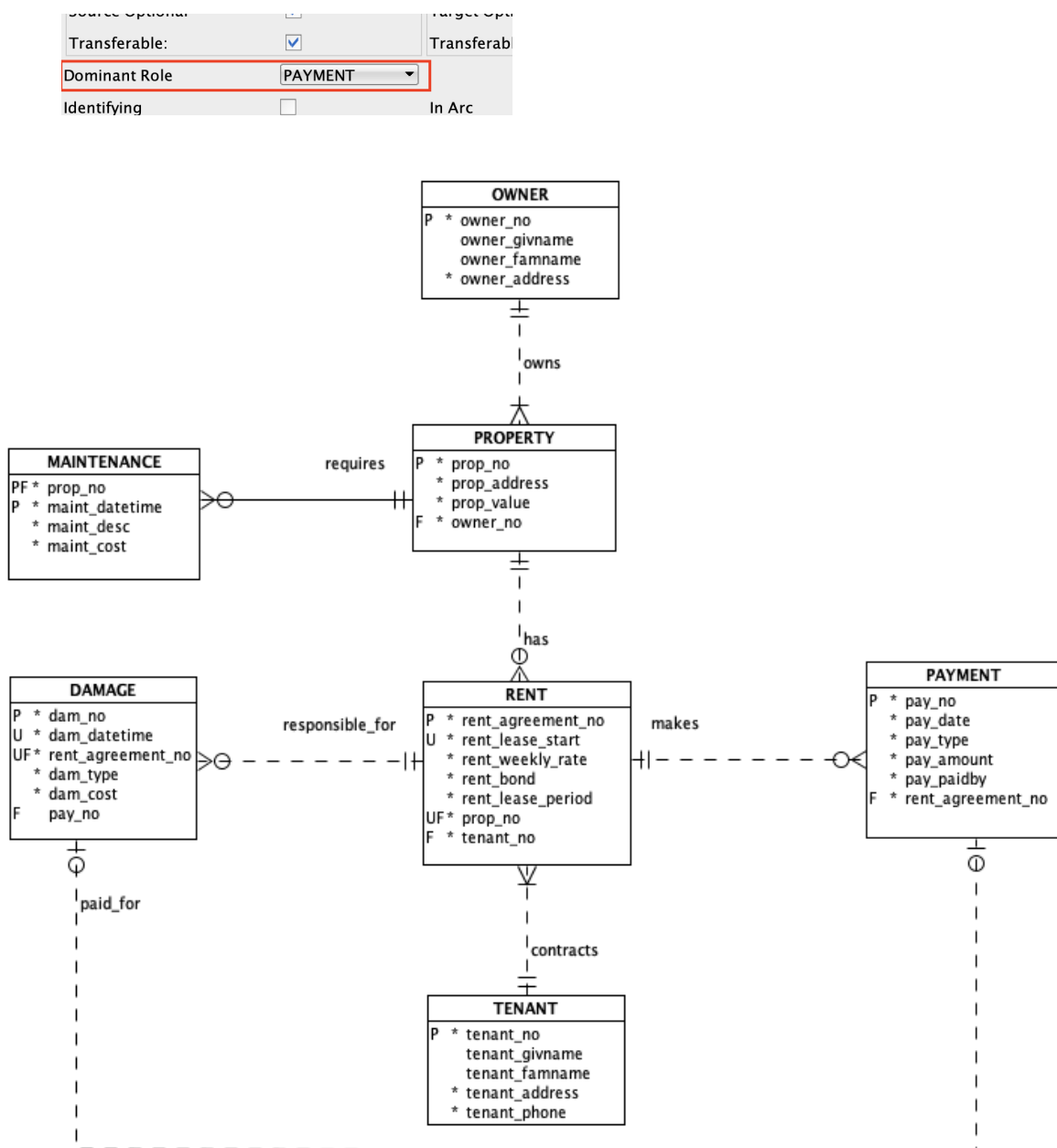


## 6.4 Property-Rental Model

### 6.4.1 Drawing Logical Model

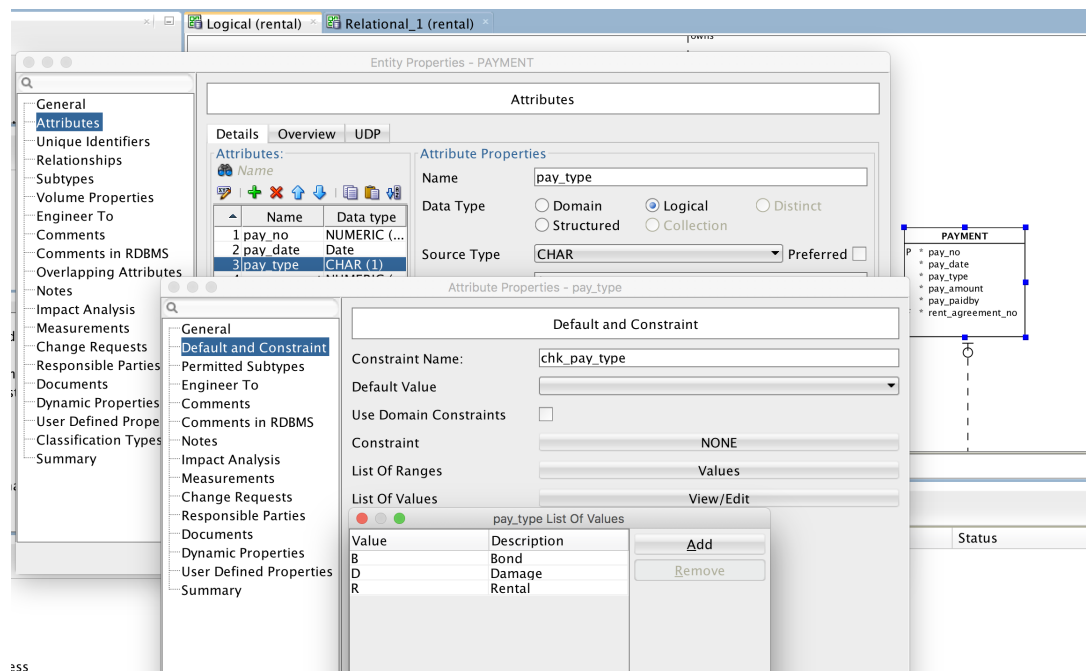
Note:

- Surrogate keys of rent\_agreement\_no and dam\_no added to RENT and DAMAGE respectively. Note that when a surrogate key is added, a unique identifier is created to maintain the natural key.
- Since the model is to be implemented in Oracle date and time can be stored in a single DATE type attribute
- In the one to one relationship between PAYMENT and DAMAGE, the FK should be placed in DAMAGE (remember that you have to place the FK in a relation such that the database has less null values). Thus, the Dominant Role is set as PAYMENT and the FK is placed in DAMAGE:

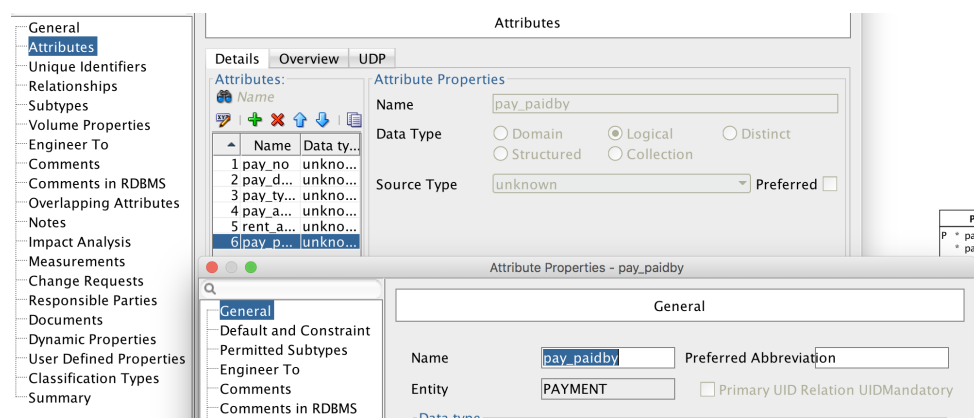


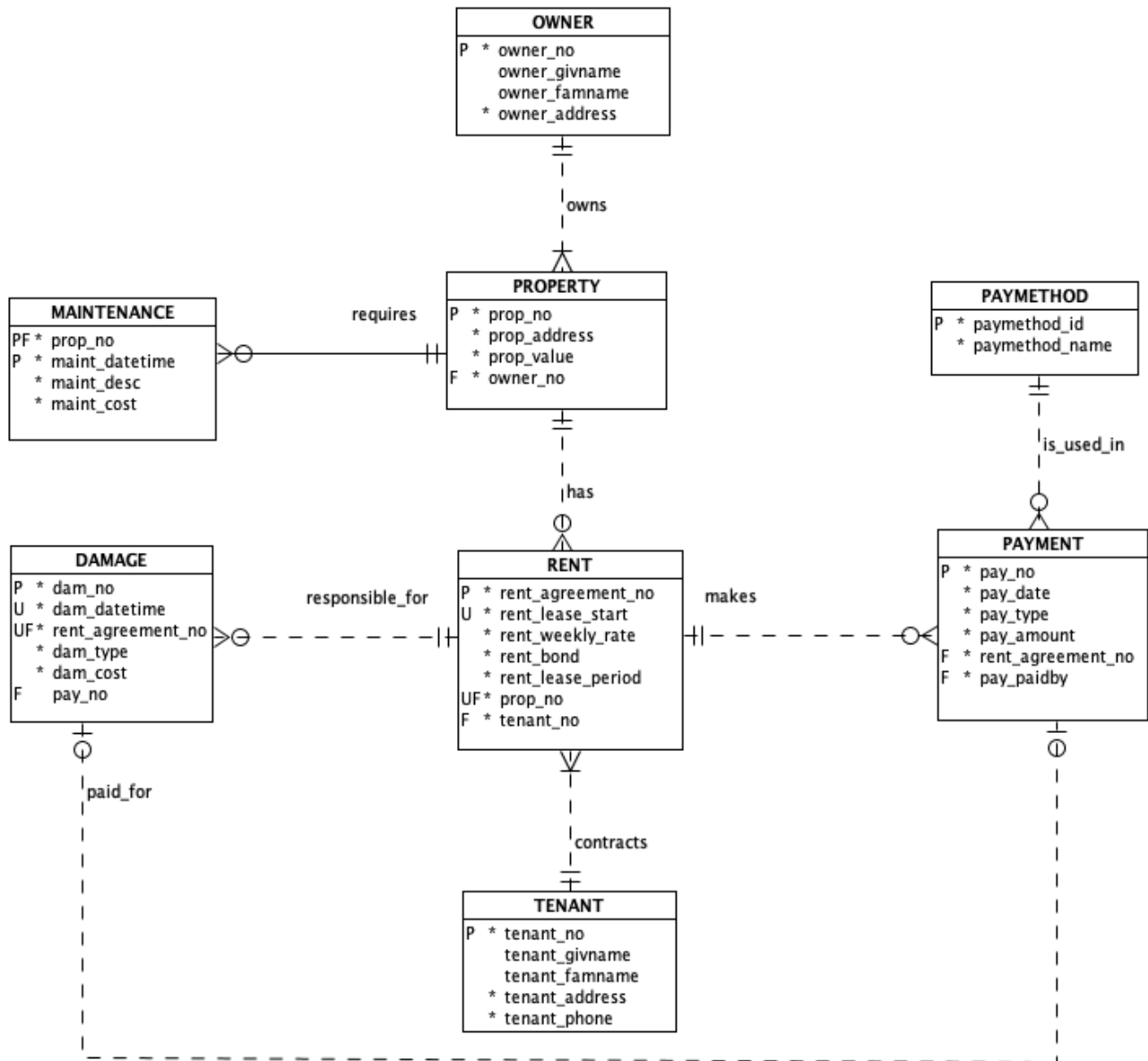
Part of the case study indicates that the payment type must be recorded as Rent, Bond or Damage. This should be enforced by adding a CONSTRAINT. This constraint becomes part of the database structure, if the user wishes to add a new option, say 'F' for future rent payments then the structure must be altered.

The picture below shows controlling pay\_type via a CONSTRAINT (CHK\_PAY\_TYPE) - add a check clause to payment.pay\_type:



The case study also indicates that it needs flexibility in the design to be able to add new, and remove current, payment methods as circumstances change. This should be handled by adding a LOOKUP table. Lookup tables are a good approach where there is likely to be a need to extend the possible values for an attribute. In the diagram, we add a new relation (PAYMETHOD) and add a relationship between PAYMETHOD and PAYMENT relation. Note that the name of FK can be different from the PK name. You can change the name of FK by double clicking the FK attribute in child relation → change the attribute name.





## 6.4.2 Generate Relational (Physical) Model

The schema file is provided as part of this solution.

To capture the full run of your schema file you must insert a SPOOL and ECHO on command at the top of your file, and a SPOOL OFF and ECHO off at the end of your script.

For example - added to the top of your script:

```
-- Capture run of script in file called rental-run.txt
SET ECHO ON
SPOOL prop_rental_schema_output.txt

-- Database Teaching Team
-- Property Rental Logical Model Schema script file
-- Schema file includes example constraint to control pay_type
```

*..... the SQL Developer Generated Script goes here .....*

```
-----
SPOOL off
set echo off
```

Please check the sample solution schema files to see this in action.