

Enterprise Code Tables

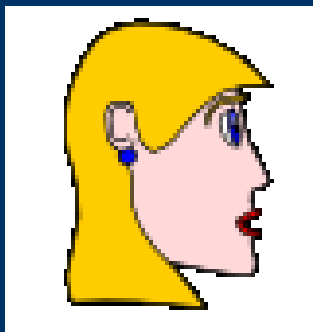
John C. Flack
Synectics for Management Decisions, Inc.

Overview

- What is a code table?
- Why use code tables?
- Code Tables and Lists of Values

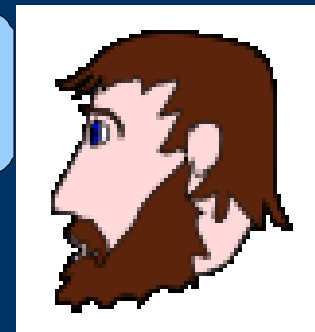


Why use Codes?



Red

Crimson



Code Tables and LOVs

Color: Red
 Green
 Blue
 Orange

```
<table border="0">
<tr>
<td>Color:</td>
<td><input type="radio" name="color"
value="R"> Red</td>
</tr>
<tr>
<td>&nbsp;</td>
<td><input type="radio" name="color"
value="G"> Green</td>
</tr>
<tr>
<td>&nbsp;</td>
<td><input type="radio" name="color"
value="B"> Blue</td>
</tr>
<tr>
<td>&nbsp;</td>
<td><input type="radio" name="color"
value="O"> Orange</td>
</tr>
</table>
```

First Cut

- Code/Description
- Code Categories
- Problems with the simple view.



Simple Code Table

Color Codes

| | |
|-------------|--------------|
| Code | VARCHAR2(1) |
| Description | VARCHAR2(30) |

A Set of Code Tables

Color Codes

| | |
|-------------|--------------|
| Code | VARCHAR2(1) |
| Description | VARCHAR2(30) |
| Swatch | BLOB |

Car Maker Codes

| | |
|-------------|--------------|
| Code | VARCHAR2(10) |
| Description | VARCHAR2(30) |

Model Codes

| | |
|-------------|--------------|
| Code | VARCHAR2(15) |
| Description | VARCHAR2(30) |

Problems with the Simple View

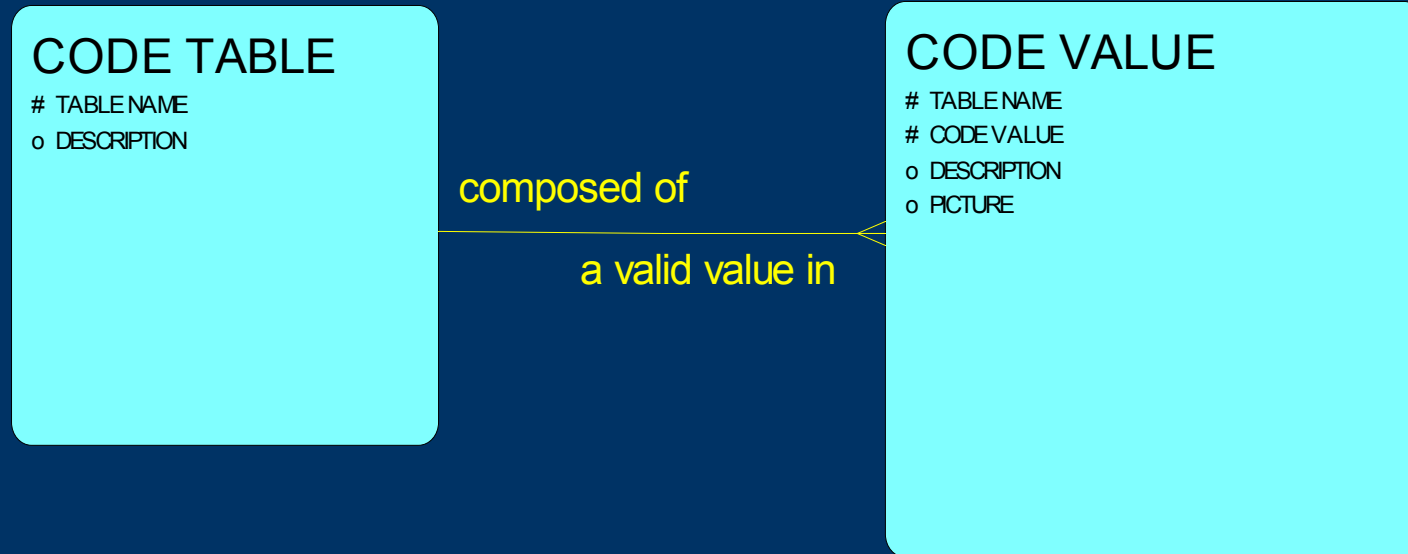
- Many Tables to maintain
 - Need one maintenance module per table
 - Yet these tables are very similar
 - Need a new code table?
 - Create a new table
 - And the maintenance module
 - How many State Code tables do we need?
-
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Rethinking the code table

- Let's draw a model
- The two table design
- Advantages of two tables rather than many



The Two Table Model



Advantages of the Two Table Model

- One module to maintain any code table
- Can standardize lookup functions

```
CREATE PACKAGE code_util IS
```

```
    FUNCTION get_description (
```

```
        p_table_name code_values.table_name%TYPE,
```

```
        p_code_value code_values.code_value%TYPE)
```

```
    RETURN code_values.description%TYPE;
```

- Can standardize other functions too
 - FUNCTION pop_list

Enterprise Code Tables

- We are not alone
- The COMMON schema
- Designing for sharing and re-use.

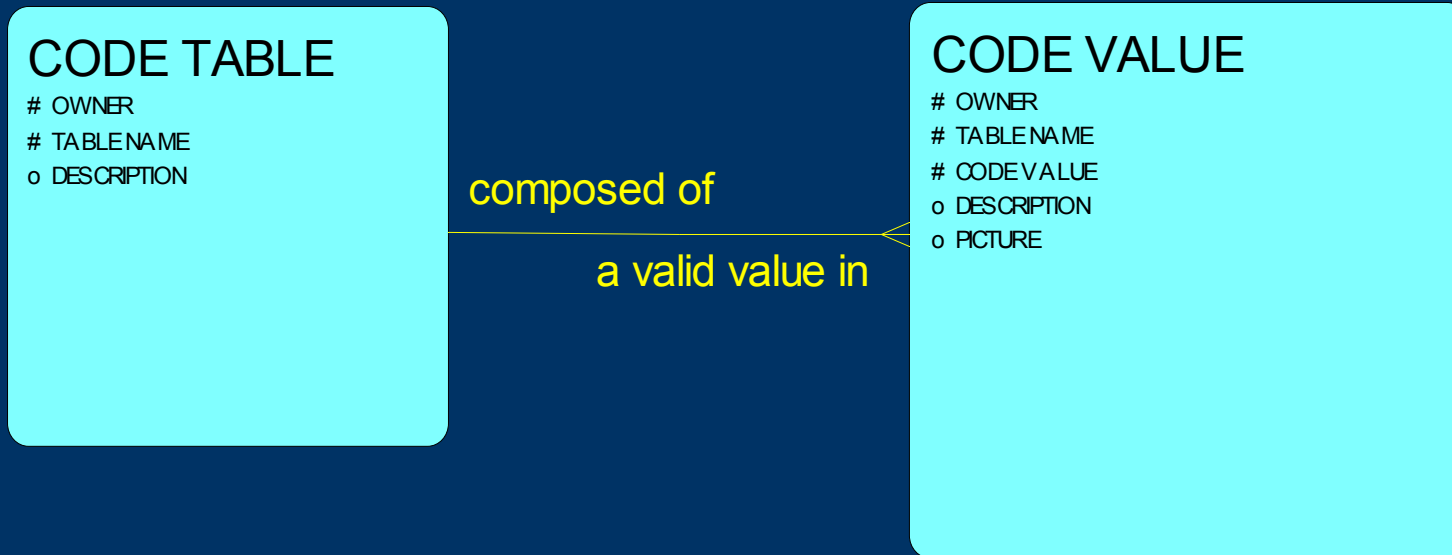


Why Share the Code Tables

- Many code tables are used by more than one application
 - FIPS_STATE_CODES
 - PROGRAM_TYPE
- Reuse the maintenance modules and function package



Enterprise Two Table Model



Features of the Enterprise Code Table

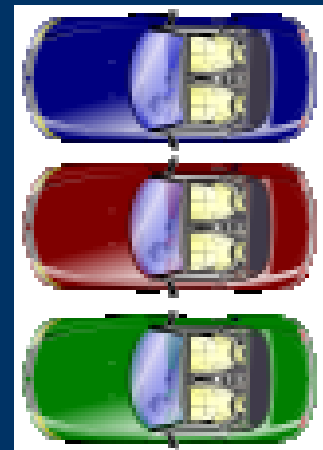
- Created in a shared schema
 - Mine is called COMMON
 - New column, OWNER, says who owns the table
 - Controls who may update a code table
 - Create views, USER_CODE_TABLES and USER_CODE_VALUES, where OWNER=USER
 - Or write rules for VPDB
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Enhancements

- Hierarchical Code Tables
 - Is the code available?
 - Active/Inactive Switch
 - Date Range
 - Code History
 - Code Ranges
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Why Hierarchical Code Tables?

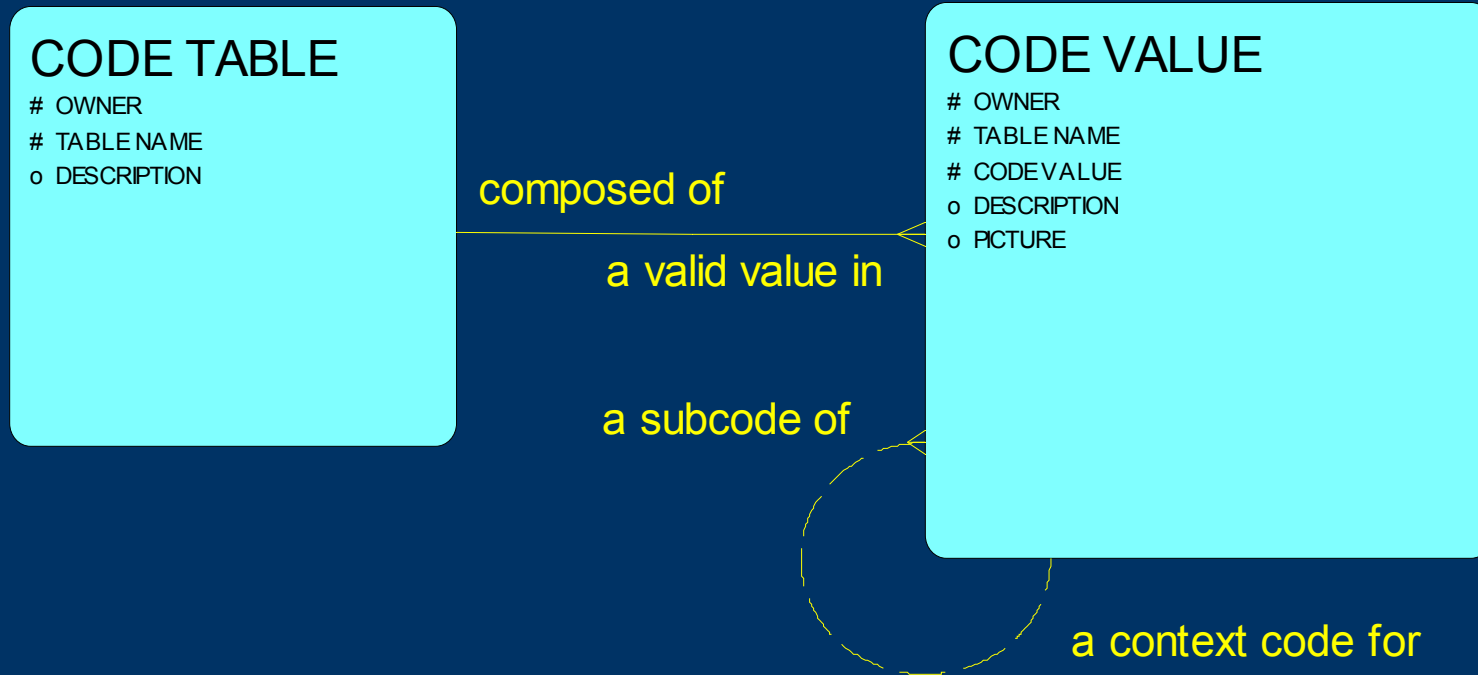
- Some Code Tables depend on others
- Like:
 - Models
 - Colors
 - States
 - Counties
 - Cities



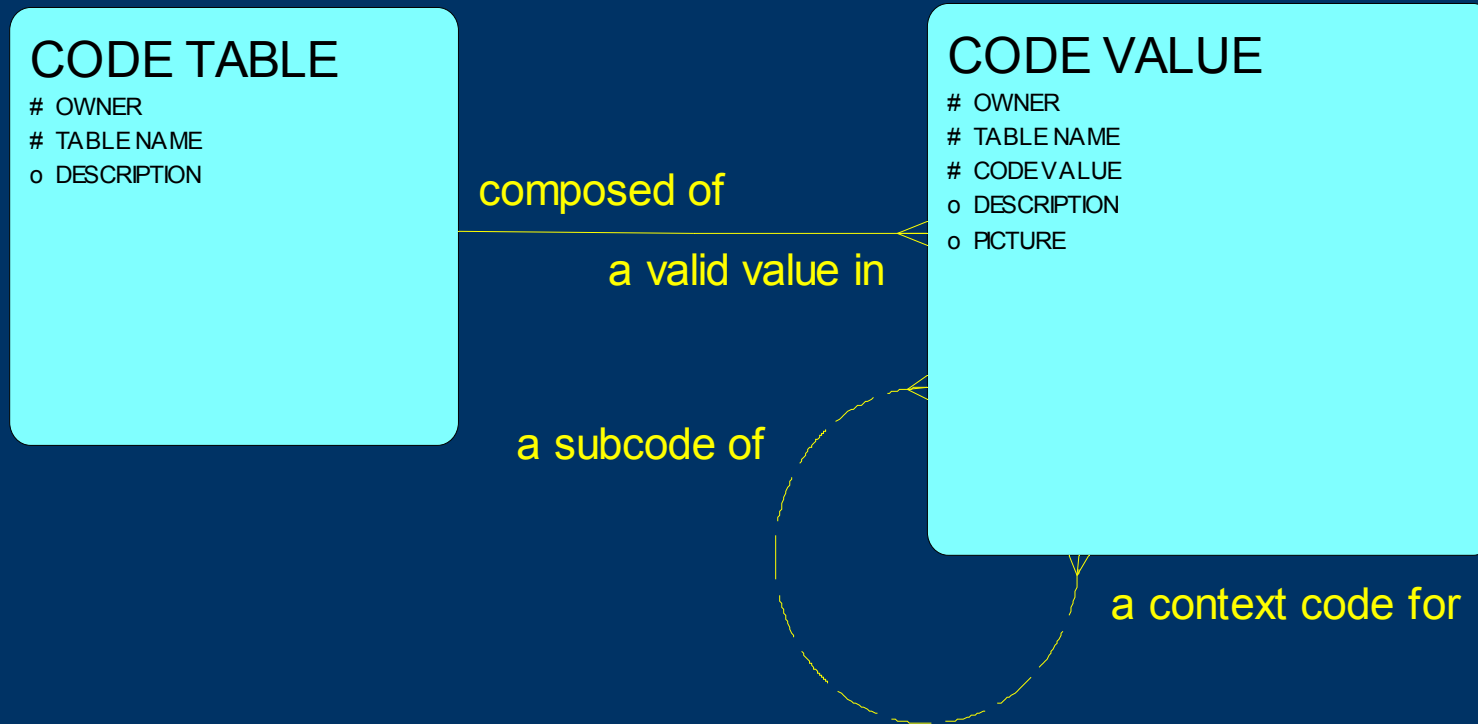
I love the "Z", but does it come in yellow?



Hierarchical Code Tables - V1



Hierarchical Code Tables - V2



Is the Code Available?

- Can't delete codes
 - Need old codes for historical reports
 - But need to make unavailable for new data
 - Active/Inactive Switch
 - Date range – Code available during range
 - Can enter a code before it is valid
 - Can specify end of range in advance
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Code History

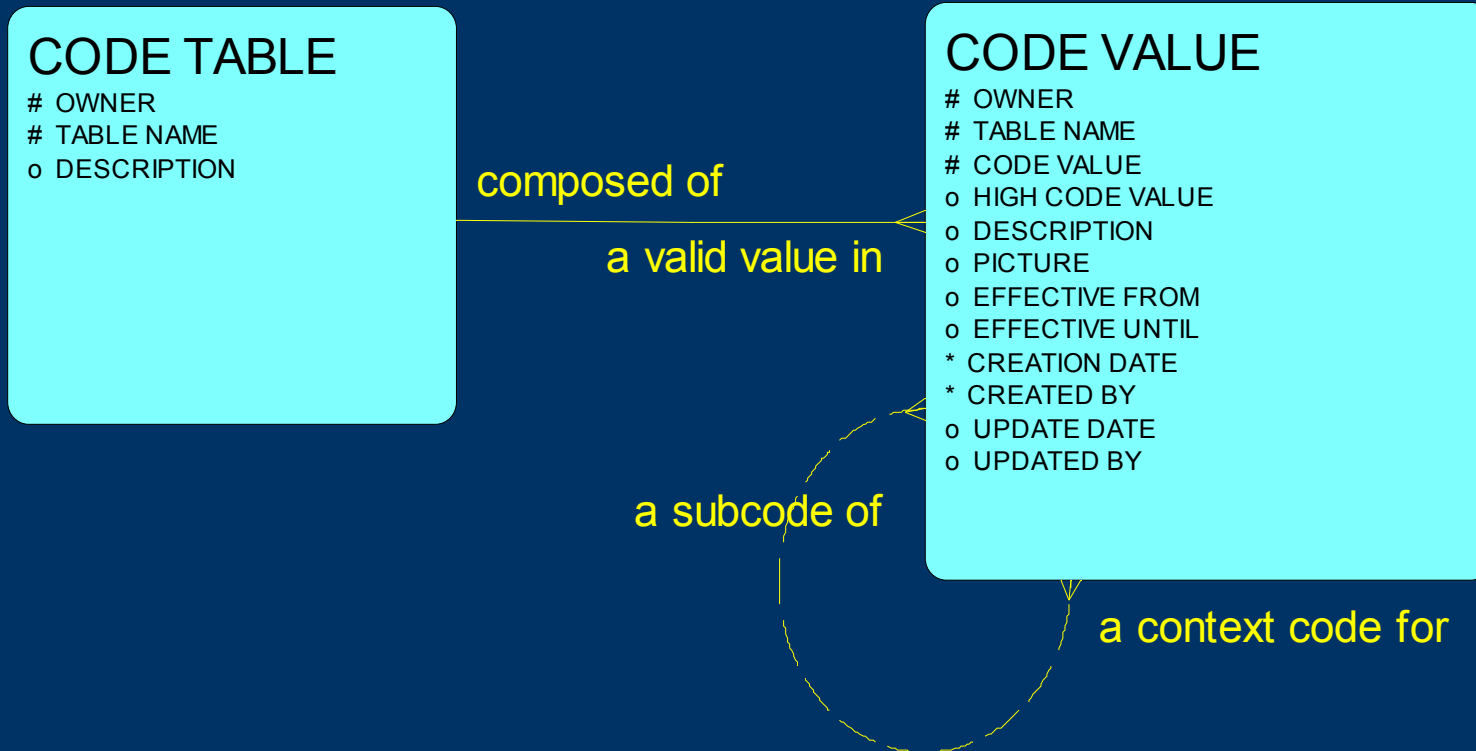
- We may want to know
 - Who inserted the code and when
 - Who changed it and when
- Might have been active/inactive several times



Code Ranges

- Codes may have ranges of valid values, not lists
 - Ranges may be used for summary reporting
 - Example: Ages 0-4, 5-10, 11-17, 18+
 - Better in a code table than hard-coded in modules
-
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Final Design



Design as Implemented

| CODE_TABLES (COMMON) | | | |
|----------------------|-----|----|-------------|
| # * | 789 | PK | CDTBL_ID |
| * | A | | OWNER |
| * | A | | TABLE_NAME |
| ○ | A | | DESCRIPTION |

CDVAL_CDTBL_FK

| CODE_VALUES (COMMON) | | | |
|----------------------|-----|----|-----------------|
| # * | 789 | PK | CDVAL_ID |
| * | A | | OWNER |
| * | A | | TABLE_NAME |
| * | A | | CODE_VALUE |
| ○ | A | | HIGH_CODE_VALUE |
| ○ | A | | DESCRIPTION |
| ○ | 789 | | PICTURE |
| ○ | ES1 | | EFFECTIVE_FROM |
| ○ | ES1 | | EFFECTIVE_UNTIL |
| * | ES1 | | CREATION_DATE |
| * | A | | CREATED_BY |
| ○ | ES1 | | UPDATE_DATE |
| ○ | A | | UPDATED_BY |
| * | 789 | FK | CDTBL_ID |

| ASSIGN_CODE_VALUE_NETWORK (COMMON) | | | |
|------------------------------------|-----|----|-----------------------------|
| # * | 789 | FK | CDVAL_ID |
| # * | 789 | FK | CDVAL_ID_A_CONTEXT_CODE_FOR |

CDVAL_CDVAL_SUBCODE_FK

CDVAL_CDVAL_CNTXT_CODE_FK



Conclusions

- Code Tables are integral to most applications
 - The Two Table design gives great re-usability and flexibility
 - Add an Owner to make this an Enterprise Code Table
 - Enhance to meet your needs
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About the Speaker

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