

Data Modeling Exercise: Modeling Time Dependent Data

Create a logical model in 3rd normal form that implements the following requirements and business rules:

1. Provide a common code lookup table to hold codes and descriptions for lookup items such as Gender, Language, Order Status, Employment Status, etc.
 - a. Must ensure that the code is of the proper data type (some are numeric, others are text).
 - b. Must be able to add new codes and values easily using a web application (to be provided by the IT Development team).
2. Provide the ability to store translations of descriptions in multiple human languages.
 - a. The base language will be English.
 - b. Current requirement is to support French and Spanish (in addition to English), but must support any number of other languages if required in the future.
 - c. Translation will be done manually (using a feature of the web application) or automatically using 3rd party software.
 - d. Keep in mind that language codes and names will be in the common code lookup table and language names themselves require translation into other languages.
 - e. Consider translations based on localized languages, which are dialects of languages identified by combinations of a language code and a country code such as en-gb (English, Great Britain) and en-us (English, United States).
3. The full history of all changes must be available:
 - a. When new codes are added, they must contain an effective date so they cannot be referenced by applications prior to their effective date.
 - b. When codes are discontinued, they must remain in the database with an end date so they are only visible for historic references.
 - c. As descriptions are changed, the changes should have effective dates so that applications can reference the description that was in effect at a given point in time. Translations must be tied to the source (English) description from which they were derived.