# Feeding Time Domain Declarations (with SQL definitions)

Note that this is a version of the domain catalogue for the data dictionary (Table 3 in the solution to Activity 4.4) in which an SQL definition for the domain has been given.

Some domains that have a pattern definition have two forms (one commented out). The first uses the SUBSTRING function to extract single characters from the value supplied to check whether they fit the permitted pattern. The second is for those SQL environments that permit regular-expression pattern matching – this allows a more compact representation of the same pattern check. Since not all environments implement regular expressions, this version of the definition has been commented out.

These domain definitions also appear in the script file Feeding\_Time\_DOMAINS\_script.txt.

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| **Domain name** | **Specification** | **Sample value** | **SQL definition** |
| Tags | RFID tag code used in Animal Management System.  Format 'dddAddAdd' where d is a digit, the first A can be 'B' or 'K' and the second A can be 'C' or 'X' | 123B83X11 | DROP DOMAIN IF EXISTS Tags;  CREATE DOMAIN Tags AS CHAR(9)  CHECK(  (LENGTH(VALUE) = 9) AND  (SUBSTRING(VALUE,1,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,2,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,3,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,4,1) IN ('B','K')) AND  (SUBSTRING(VALUE,5,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,6,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,7,1) IN ('C','X')) AND  (SUBSTRING(VALUE,8,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,9,1) IN ('0','1','2','3','4','5','6','7','8','9'))  );  -- -- or as a regular expression  -- CREATE DOMAIN Tags AS CHAR(9)  -- CHECK( (VALUE ~ '^\d{3}[BK]\d{2}[CX]\d{2}$' ) ); |
| Dates | Standard calendar dates.  Format yyyy-mm-dd | 2000-10-21 | Use SQL – DATE  Note that individual constraints will apply to specific attributes depending on semantics. (See attributes catalogue.) |
| Times | Standard 24-hour clock times | 15:30 | Use SQL– TIME  Note that individual constraints will apply to specific attributes depending on semantics. (See attributes catalogue.) |
| EmpIDs | Employee ID code used in Human Resources system.  Format 'ddddd' where 00000 is not permitted | 12345 | DROP DOMAIN IF EXISTS EmpIDs;  CREATE DOMAIN EmpIDs AS CHAR(5)  CHECK(  (NOT (VALUE ='00000') ) AND  (LENGTH(VALUE) = 5) AND  (SUBSTRING(VALUE,1,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,2,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,3,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,4,1) IN  ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,5,1) IN ('0','1','2','3','4','5','6','7','8','9'))  );  -- or as a regular expression  -- CREATE DOMAIN EmpIDs AS CHAR(5)  -- CHECK ( (VALUE ~ '^\d{5}$' ) AND (NOT (VALUE = '00000')) ); |
| PersonNames | Character-string representation of the name of a person. In Feeding Time this is drawn from the Human Resources system, so no validation is imposed.  String of characters | Dr James Doolittle | DROP DOMAIN IF EXISTS PersonNames;  CREATE DOMAIN PersonNames AS VARCHAR(60)  CHECK (VALUE <> ''); |
| BreedNames | Character-string representation of the standard name of animal breeds. In Feeding Time this is drawn from the Animal Management system, so no validation is imposed.  String of characters | Xuwen Cattle | DROP DOMAIN IF EXISTS BreedNames;  CREATE DOMAIN BreedNames AS VARCHAR(60)  CHECK (VALUE <> ''); |
| AnimalNames | Character-string representation of the name of an animal. No validation is imposed.  String of characters | Marko | DROP DOMAIN IF EXISTS AnimalNames;  CREATE DOMAIN AnimalNames AS VARCHAR(60)  CHECK (VALUE <> ''); |
| FreeText | Character string to allow free text notes. No validation is imposed.  String of characters | A sample of 1 piece of free text. | DROP DOMAIN IF EXISTS FreeText;  CREATE DOMAIN FreeText AS VARCHAR(200); |
| Lifespans | Lifespan of animals in years.  Range 0–140 | 23 | DROP DOMAIN IF EXISTS Lifespans;  CREATE DOMAIN Lifespans AS INT  CHECK(VALUE >=0 AND VALUE <=140); |
| AnimalWeights | Weight of animals in kilograms.  Range 1–1000 | 231 | DROP DOMAIN IF EXISTS AnimalWeights;  CREATE DOMAIN AnimalWeights AS INT  CHECK(VALUE >0 AND VALUE <=1000); |
| AnimalHeights | Height of animals in centimetres.  Range 10–500 | 134 | DROP DOMAIN IF EXISTS AnimalHeights;  CREATE DOMAIN AnimalHeights AS INT  CHECK(VALUE >9 AND VALUE <=500); |
| LocCodes | A location code for a part of the farm, used in the Land Management System.  Format 'AAddd' where AA can be 'BA' or 'PA' or 'SH' or 'RU' | PA123 | DROP DOMAIN IF EXISTS LocCodes;  CREATE DOMAIN LocCodes AS CHAR(5)  CHECK(  (LENGTH(VALUE) = 5) AND  (SUBSTRING(VALUE,1,2) IN ('BA','PA','SH','RU')) AND  (SUBSTRING(VALUE,2,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,3,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,4,1) IN ('0','1','2','3','4','5','6','7','8','9'))  );  -- -- or as a regular expression  -- CREATE DOMAIN LocCodes AS CHAR(5)  -- CHECK( (VALUE ~ '^(BA|PA|SH|RU)\d{3}$' ) ); |
| TimePeriod | Duration of time in minutes.  Range 1–90 | 34 | DROP DOMAIN IF EXISTS TimePeriod;  CREATE DOMAIN TimePeriod AS INT  CHECK(VALUE >0 AND VALUE <=90); |
| WeatherDesc | Description of weather condition.  From the set ['Sunny', 'Cloudy', 'Raining'] | Raining | DROP DOMAIN IF EXISTS WeatherDesc;  CREATE DOMAIN WeatherDesc AS VARCHAR(8)  CHECK(  (VALUE = 'Sunny') OR  (VALUE = 'Cloudy') OR  (VALUE = 'Raining')  ); |
| LocNames | Character string representing a location on the farm. No validation is imposed.  String of characters | Tony’s Barn | DROP DOMAIN IF EXISTS LocNames;  CREATE DOMAIN LocNames AS VARCHAR(30)  CHECK(VALUE <> ''); |
| AreaDomain | Size of an area of land in square metres.  Range 1–1500 | 230 | DROP DOMAIN IF EXISTS AreaDomain;  CREATE DOMAIN AreaDomain AS INT  CHECK(VALUE >0 AND VALUE <=1500); |
| YesNo | A yes/no value string.  ['Yes', 'No'] | Yes | DROP DOMAIN IF EXISTS YesNo;  CREATE DOMAIN YesNo AS VARCHAR(3)  CHECK(( VALUE = 'Yes' ) OR ( VALUE = 'No' ) ); |
| FeedCodes | A code for a type of feedstuff, with values drawn from the Feed Management system.  Format 'dddddd' | 333441 | DROP DOMAIN IF EXISTS FeedCodes;  CREATE DOMAIN FeedCodes AS CHAR(6)  CHECK(  (LENGTH(VALUE) = 6) AND  (SUBSTRING(VALUE,1,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,2,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,3,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,4,1) IN  ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,5,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,6,1) IN ('0','1','2','3','4','5','6','7','8','9'))  );  -- or as a regular expression  -- CREATE DOMAIN FeedCodes AS CHAR(6)  -- C HECK ( VALUE ~ '^\d{6}$' ); |
| StoreCodes | A code for the location of the storage containing a feedstuff, with values drawn from the Feed Management system.  Format 'Addd' where A can be ‘F’ or ‘S’ or ‘B’ | S343 | DROP DOMAIN IF EXISTS StoreCodes;  CREATE DOMAIN StoreCodes AS CHAR(4)  CHECK(  (LENGTH(VALUE) = 4) AND  (SUBSTRING(VALUE,1,1) IN ('F','S','B')) AND  (SUBSTRING(VALUE,2,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,3,1) IN ('0','1','2','3','4','5','6','7','8','9')) AND  (SUBSTRING(VALUE,4,1) IN ('0','1','2','3','4','5','6','7','8','9'))  );  -- or as a regular expression  -- CREATE DOMAIN StoreCodes AS CHAR(4)  -- CHECK( VALUE ~ '^[FSB]\d{3}$' ); |
| CalVal | Energy content of the feedstuff in kilocalories per kilogram.  Range 1–10000 | 2346 | DROP DOMAIN IF EXISTS CalVal;  CREATE DOMAIN CalVal AS INT  CHECK(VALUE >0 AND VALUE <=10000); |
| FeedQuantities | Amount of feedstuff in a serving in kilograms.  Range 1–50 | 14 | DROP DOMAIN IF EXISTS FeedQuanitities;  CREATE DOMAIN FeedQuantities AS INT  CHECK(VALUE >0 AND VALUE <=50); |