

Food Product Image Dataset Metadata

1 General Information

ID:	Food Product Image Dataset
Directory:	food-product-image-dataset\data
Title:	Product Dataset Images
Description:	Dataset of food product images
Creation date:	2021
Version	1.0
License:	Creative Commons 0 License
Language:	English
Source:	https://gitlab.rlp.net/ISS/food-product-image-dataset
Format:	XML (Pascal VOC), JPG (images), and CSV (product & image information)
Number of files:	2068 with 1034 images

2 Contact

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3 Description

3.1 Image Data

Title:	Image Information
Description:	image information for image classification tasks
Filename:	image-information.csv
Validity period:	not relevant
Scope:	not relevant
Format:	CSV
Columns:	7
Rows without header:	1034
NULL-Value:	N/A
Comment:	see label policy for more details on label contents; Values are based off the GS1 Web Vocabulary, the GS1 Codes for Packaging types, and the GS1 Product Image Specification Standard
Attributes:	
File name	Name of the file
Creation Date	Date when the image was added to the dataset
Image Type	Scope of how product is shown in the image
Facing	Face of the product shown in the image
Packaging Type	Type of packaging the product is in

Packaging Material	Material of the product's packaging (outer layer)
Fill Type	Number of single items in the product (Single- or Multipack)

3.2 Product Data

Title:	Product Information
Description:	product information about label contents and GPC Classification
Filename:	product-information.csv
Validity period:	not relevant
Scope:	not relevant
Format:	CSV
Columns:	30
Rows without header:	250
NULL-Value:	N/A
Comment:	see label policy for more details on label contents; GPC brick information is based off GPC Version 11/2020
Attributes:	
Nr.	Assigned number of product in dataset
GTIN	GTIN of the product
brandName	Brand of the product
product name	Human readable product name
Energy [kJ]	Energy in kJ
Energy [kcal]	Energy in kcal
Fat	Fat content
Fat_isEqual	*
OfWhichSaturates	Saturated fats
OfWhichSaturates_isEqual	*
Carbohydrate	Carbohydrates
Carbohydrate_isEqual	*
OfWhichSugars	Sugar content
OfWhichSugars_isEqual	*
Protein	Protein content
Protein_isEqual	*
Salt	Salt content
Salt_isEqual	*
oneHundred_reference_unit	Reference unit of nutrition table (100 ml or 100 g)
barcode	barcode
detailedProductName	Descriptive name of the product
netContent	Net weight or quantity of product within packaging
netContentUnit	Unit the net content is displayed in
packagingMarkedLabelAccreditation	Seal codes of official, external seals that determine the quality of the product and/or the packaging (see seal reference for seal names)
organicClaim	Official, external seals that show if the product is organic (see seal reference for seal names)
percentageAlcoholByVolume	Alcohol content of the product
percentageAlcoholByVolume_isEqual	*
PackagingRecyclingProcessType	Seal that marks how the packaging must be recycled or disposed of (see seal reference for

	seal names)
brick_code	Brick code of the product (GPC classification)
brick description	Description of the brick code

*all isEqual values are displayed as either TRUE or FALSE. TRUE means that the nutritional value on the packaging is given as an exact value, while FALSE means that the packaging indicates that the nutritional value in the product is less than or equal to the value given on the packaging.

3.3 Product Images

Title:	Image File
Description:	image files in the dataset
Filename:	[GTIN]_[nr_in_imageset_of_product]_ucb.JPG
Validity period:	N/A
Scope:	N/A
Format:	.JPG
Comment:	1034 images; in subdirectory img
Resolution:	70% 4000x4000; 30% 4480x4480

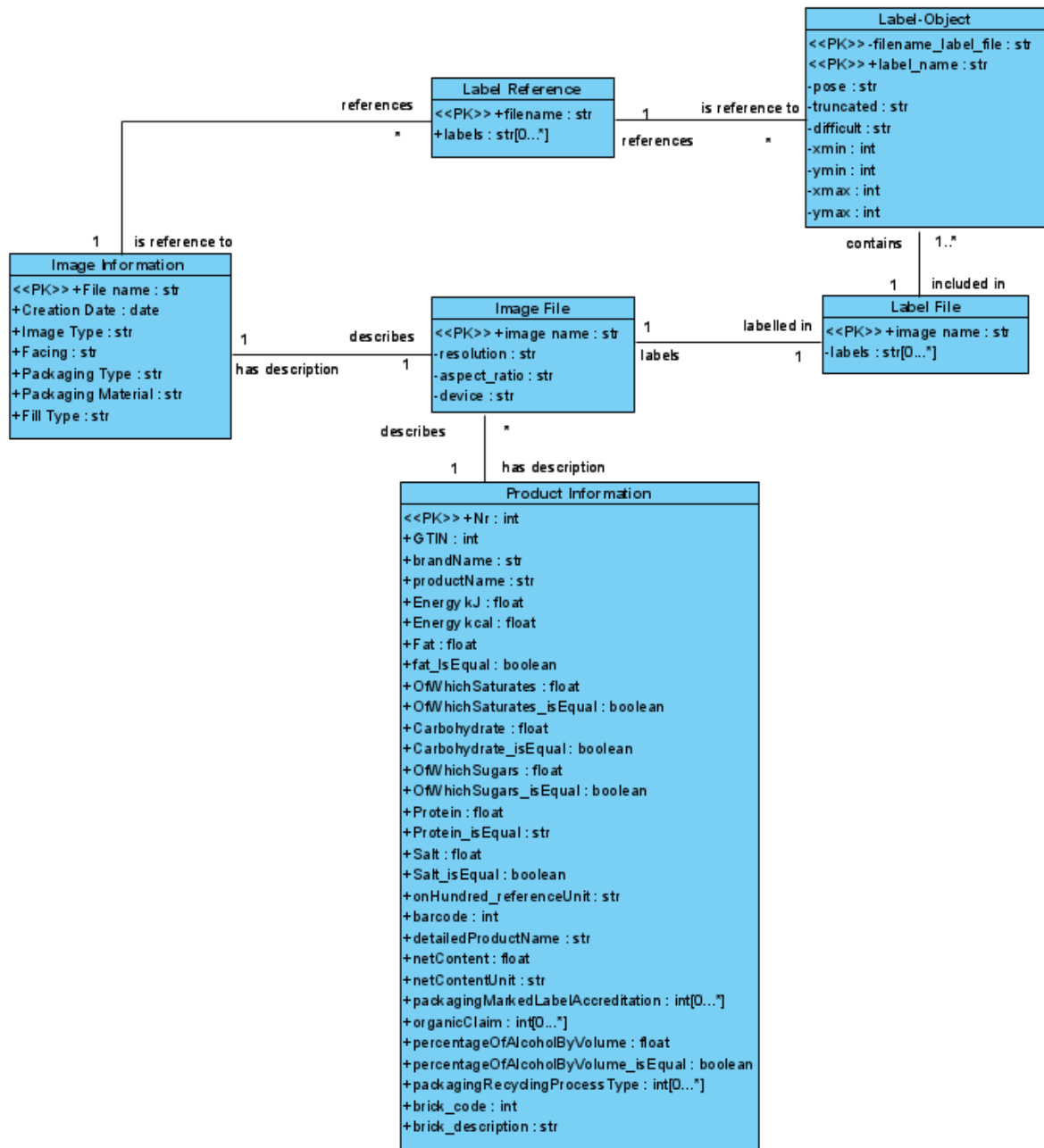
3.4 Label Files

Title:	Label File
Description:	Label files of all images in the dataset
Filename:	[GTIN]_[nr_in_imageset_of_product]_ucb.XML
Validity period:	N/A
Scope:	N/A
Format:	.XML
Comment:	1034 label files; in subdirectory img

4 Source

The images have been shot, labelled, and classified by students of the Environmental Campus Birkenfeld

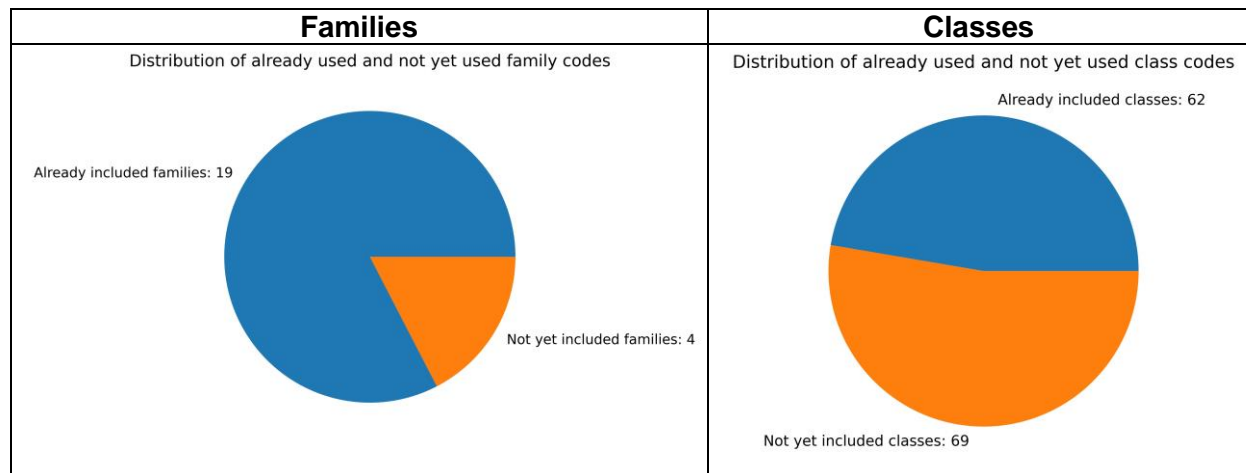
5 Data Model



6 Extending the Dataset

One of our ongoing efforts has been, to make this dataset extendable. This is one of the reasons, why we decided to closely link our data set to the GS1 Global Product Classification (GPC) standard. In this current version, we aimed to have ten products associated with each of the families represented in the segment "50000000 Food/Beverage/Tobacco". We consider a family as completed, if at least 10 products associated are present. Right now, we are missing 4 of the 23 families. One being tobacco, which we decided not to include, since most of our labels don't fit tobacco products. We also didn't want our labellers exposed to the graphic illustrations present on German tobacco products. The next immediate goal would be to add products for the missing families. Afterwards, adding products to complete the

representation on class level, then brick level. This approach is meant to avoid bias by adding too many images from one specific type of product.



Instructions:

1. Assign a number to all products starting after the last number found within the product-information.csv file
2. Shoot Images
3. Label images as per the Label Policy
4. Classify images using Label Studio set up with the annotation labels found in the references folder
5. Add image classification, as well as date of image creation to the image-information.csv sheet
6. Input all product specific information into the product-information.xlsx file
7. Add brick codes to the product information using the GPC Reference Picker (the description is added automatically by extending the column down) CSV settings: Make sure that your CSV files are using the semicolon as delimiter. Make sure that texts are put into double quotes

References:

- GPC Classification Standard <https://www.gs1.org/standards/gpc> version November 2020 by GS1 last accessed: 21.04.2023
- GS1 Codes for types of packaging <https://gs1.nl/en/knowledge-base/gs1-datapools-overview/codes-for-types-of-packaging/> version 1.7 from August 2022
- GS1 Product Image Specification Standard <https://www.gs1.org/standards/gs1-product-image-specification-standard/current-standard#1-Introduction> last accessed: 21.04.2023
- GS1 Web Vocabulary Food Beverage Tobacco Product <https://www.gs1.org/voc/FoodBeverageTobaccoProduct> last accessed: 21.04.2023