DataDisplayWebApp

DataDisplayWebApp is a web application/service for visualizing data. The application itself is rather data agnostic, but there are some requirements for how the data is presented to the application. This document describes those requirements and the methods for querying the service using a REST API.

Definitions

Case is used to refer to one entity created by uploading one CSV file. A case includes the *data* for the case, the *sensitivity analysis data*, *selections* and other metadata.

Within the context of data, variable is used to refer to any value that can change. The concept is further divided to parameters and key performance indicators (KPIs). Parameters are variables that are used to calculate the key performance indicators.

A single datum, i.e. a row in the uploaded CSV file, can be bound to an image group, which is a collection of images related to any number of rows.

CSV annotation

As a given column can represent one of many types of data, an annotation system is required. CSV-file header is parsed with the following set of rules:

1. If a column name starts with "kpi_", it is treated as a key performance indicator (KPI).
2. If a column name starts with "type_", it is treated as a type (non-numeric) parameter.
3. If a column name starts with "var_" or has no annotations, it is treated as a numeric parameter.
4. If a column name equals "img_group", it is treated as image group identifier.
5. If a column name equals "img_count", it is treated as image count specification.

The annotations are removed from the displayed column name. Also, the special ID-column is not treated as a parameter or as a KPI.

Image group

The optional image group identifier tells *the name of the image group* that is associated with the case. This can be an arbitrary string. Image count specification tells the number of images in that image group, and is used for rotating images.

When uploading images, the images should be named with a 0-based index so that the name follows a format of: "<image_group>_<index>.jpg". Only JPEG images are supported for now.

Example

```
ID, Wall insulation (mm), Window U-rate, kpi_LCC (€/m2), img_group, img_count

1, 160.0, 1.5, 137.2, Case1, 4

2, 162.3, 1.6, 142.0, Case2, 3
```

The example above contains

- Two numeric parameters: "Wall insulation (mm)" and "Window U-rate"

- One KPI: "LCC (€/m2)"
- Image group & image count specifications

When uploading the images for above example, the filenames should be: "Case1_0.jpg", "Case1_1.jpg", "Case1_2.jpg"... and so on.

Other requirements

The CSV-file must be encoded using UTF-8 without BOM.

REST API

Example workflow

1. Create a new case by uploading a CSV file to the service.
    a. Store the URL to the created resource from the Location-header of the response.
2. Request authorization token from the service.
3. Combine the URL and token by passing the token as a query parameter by the name "t".
    a. Example: "<received_url>?t=<received_token>".
4. Point browser to the formed URL.

Common notes

1. All requests are authenticated with HTTP Basic Authentication. This means that all requests require the header "Authorization: Basic <encoded_username_and_password>".
2. The format (JSON, XML etc.) in which the representations are returned is determined by the Accept –header of the request.

Case

List

Request a list of all cases the authenticated user has access to.

Request	Path	/api/DataDisplayApi
	Method	GET
	Headers	N/A
Response	Headers	N/A
	Content	List of cases

Get

Request the representation of a single case.

Request	Path	/api/DataDisplayApi/<caseID>
	Method	GET
	Headers	N/A
Response	Headers	N/A
	Content	Representation of the case with given id.

Create

Create a new case.

Request	Path	/api/DataDisplayApi
	Method	POST
	Headers	*X-SimulationTitle* (required) Title for the case. *X-CollectionID* String identifier for the collection this case belongs to.

	Content	*multipart/form-data* request with following contents:
		
		• For case data CSV, use following Content-Disposition header:
		
		`Content-Disposition: form-data; name=data;`
		`filename="<anything>"`
		
		• For images, use following headers:
		
		`Content-Disposition: form-data; name=<anything>;`
		`filename="<image_group_identifier>_<0-based-index>"`
		`Content-Type: image/jpeg`
		
		See section about CSV format for more info on images.

Response	Headers	*Location* Url to the visualization of the case.

	Content	Representation of the created case.

Delete

Delete a case.

Request	Path	/api/DataDisplayApi/<caseID>
	Method	DELETE
	Headers	N/A
Response	Headers	N/A
	Content	N/A

Token

Get

Request a temporary authentication token for viewing case visualizations.

Request	Path	/api/TokenApi
	Method	GET
	Headers	N/A
Response	Headers	N/A
	Content	Authentication token.

Changelog

- 21.7.2014 (0.3.1)
  - Small changes to how CSV specification and image groups are explained
- 27.6.2014 (0.3)
  - Update API specification for creating a case
  - Update CSV specification to include img_group and img_count columns
- 10.4.2014 (0.2)
  - Add documentation for deleting cases
  - Fix token service endpoint
  - Clarify that when creating a case, the contents of the CSV should be written in the request body