Gender and Agriculture data Navigator

The GNAV is a wordpress plugin that allows selection of surveys based on pre-set criteria.

There are two main parts:
- Wordpress plugin files (php, js, html, css etc.)
- Database

FILES

The folder structure of the plugin can be found in appendix 1.

The main server-side files are: GNAV.php and GNAV_dataproc.php.

GNAV.php

The actual plugin file. Determines which js, css files are send to the user. Processes incoming ajax requests and delegates these to the data-processor or the db-creator. This file contains a few classes:
- GNAV_MAIN: the main class
- GNAV_public: sends and processes data for the plugin on the regular pages
- GNAV_Options_page: Only displays the settings page
- GNAV_Loader: unused class, but nicely copied

GNAV_dataproc.php

Processes all regular interactions with the database: data-selections and changes, including file upload. This file contains one single class that does all the work:
- GNAV_DATA_PROCESSOR

GNAV_db_create.php

Processes the mayor interactions with the database: creation, filling and emptying of all the GNAV tables. Can only be started by the main file, and requests come from a management page in wordpress. These requests have a different security-nonce and action and are initiated from a separate javascript file and template which is only sent when opening the wordpress management page.
This file contains one single class:
- GNAV_db_creator

GNAV_XLSX_READER.php

This contains a very (really very) basic xlsx reader, that is able to open an xlsx file and return data (no support for markup, formulas, merged cells, only values and text)
This file contains one single class:
- gnav_xlsx_reader

JAVASCRIPT

5 javascript files for the client side:
- GNAV.js
- GNAV_admin.js
- GNAV_select.js
- GNAV_user_admin.js
- GNAV_padmin.js

GNAV.js

This contains the main script that initializes the plugin on the client side. It does very little else.

GNAV_select.js
This contains the script that displays the selector.

GNAV_admin.js
This contains the script that displays the data-admin 'page'

GNAV_user_admin.js
This contains the script that displays the user-admin 'page'

GNAV_padmin.js
This contains a script that sends sends ajax requests to the server for major database interactions: inserting base-data, removing all data and backing up to txt file.

The plugin is heavily dependent on jQuery.
And uses
Leaflet (https://npmcdn.com/leaflet@0.7.7/dist/leaflet.js)
to display a small map
D3 queue (https://d3js.org/d3-queue.v2.min.js)
To queue multiple Ajax requests before executing functions
Bootstrap (https://maxcdn.bootstrapcdn.com/bootstrap/3.3.6/js/bootstrap.min.js)
Popovers and Smooth collapsing of elements.

The javascript are programmed as if they are classes with their own variables and functions.

HTML

All the html files are located in the /template folder of the plugin.
The initial structure is minimal, and the javascripts add data using HTML5 templates.
A workaround is used to provide support for browsers that do not support templates.

CSS

The css file (/css/GNAV.css) is 1 file for all the pages.

Miscellaneous files

Images used by the plugin
arrow-down.png (used in the selector)
icon_Add.png (used in the data-admin page)
icon_Remove.png (used in the data-admin page)

countries.geojson
JSON containing geo-json country info (used by leaflet)

GNavigator_datatemplate.xlsx
A downloadable template that can be filled and uploaded to add surveys/datasets to the database.l

/data_backup
A folder that is used to store data-dumps. These data-dumps can be made in the wordpress settings page of the plugin. They are also automatically created when a user makes a major change from this page (e.g. inserts all the base data, deletes all the data). The files in this folder are plain text files with the data in the tables as ; delimited. At this moment there is no script to process these files to restore the database.

Database

The database consists of the following tables:

- GNAV_SURVEYS
- GNAV_SVERSIONS
- GNAV_SURVEY_DATA
- GNAV_SURVEY_DATA_LT
- GNAV_DEFS
- GNAV_SCORE_HIERARCHY
- GNAV_SCORE_SITE_ORDER
- GNAV_USERS
- GNAV_VTYPES
- GNAV_LOG

GNAV_SURVEYS

The surveys. Only contains the survey index (SID: initially just a crc32 of the survey-name) and creation info.

GNAV_SVERSIONS

Dataset versions of the survey. (SVERSION: incrementing numbers from 0.1) and creation/modification info

GNAV_SURVEY_DATA

All the actual survey data (linked by SID & SVERSION to surveys and dataset versions)

GNAV_SURVEY_DATA_LT

Survey data if long strings (e.g. survey descriptions). The php script generates a unique index which is the link between GNAV_SURVEY_DATA and this table.

GNAV_DEFS

The data-definitions (descriptions for values, categories etc.)

GNAV_VTYPES

Allowed value types for each category (necessary as some categories have multiple value types)

GNAV_SCORE_HIERARCHY

The hierarchy of the categories, in a Category – Parent structure.

GNAV_SCORE_SITE_ORDER

The order in which data should be displayed on the site. Initially only contained score-values, but expanded to all data-types. The name has remained, sorry.

GNAV_USERS

Assignment of user rights. Only stores user-id and additional rights. The complete user-info (and management) is done on the wordpress/hosted system.

GNAV_LOG

A log of data-changes. Currently only input, but admins with database access can follow what is going on. Data is added by PHP script, not by mysql triggers.

DATA structure:

GNAV_SURVEYS

This table stores the surveys.
SID; SURVEY_STATUS; created_at; create_user; remarks
SID: the survey ID, (crc32 of the survey name).
SURVEY_STATUS:

- new: the survey is just entered in the database
- publish: the survey data can be published in the navigator
- hidden: the survey data is not published in the navigator

created_at: timestamp of creation of the survey
create_user: user ID that added the survey to the database
remarks: any remarks, mostly unused, but could be used by admins with db access.

GNAV_SVERSIONS

This table stores basic dataset version data.
SID; SVERSION; version_status; created_at; last_edit_at; create_user; last_edit_user; remarks
SID: see GNAV_SURVEYS
SVERSION: dataset version number, incrementing number from 0.1 (+=.1)
version_status:

- in_process: dataset is being edited
- new: dataset is just added to the database
- pending_approval: dataset is pending approval, not editable until review
- publish: dataset can published on the site
- not_accepted: dataset is rejected for publishing (not used, as a rejected dataset is removed)

created_at; last_edit_at: timestamp of adding/modifying the dataset
create_user; last_edit_user: user ID's
remarks: any remarks, mostly unused, but could be used by admins with db access.

GNAV_SURVEY_DATA

This table stores all the data for datasets
tid; SID; SVERSION; GNAV_VALUE; GNAV_VALUE_TYPE; GNAV_SCAT; GNAV_DCAT; GNAV_YNQUESTION; GNAV_MCAT; GNAV_LANGUAGE; GNAV_REMARKS

SID: see GNAV_SURVEYS
SVERSION: see GNAV_SVERSIONS
GNAV_VALUE: a value
GNAV_VALUE_TYPE: pre-defined value type
GNAV_SCAT: score category, a code with a definition in GNAV_DEFS
GNAV_DCAT: data category: sex-disaggregated, respondent, QR type, YNQuestion
GNAV_YNQUESTION: YNQuestion. Only a code is stored in this table, the question definition is stored in GNAV_DEFS.
GNAV_MCAT: Meta category for the data. A short 'coded' version is stored in this table, the definition is stored in GNAV_DEFS.
GNAV_LANGUAGE: language field, unused, defaults to "@EN". Having this field set would only make sense in the case where the value is a "general_text" type without a definition in GNAV_DEFS.
GNAV_REMARKS: any remarks, mostly unused, but could be used by admins with db access.

GNAV_SURVEY_DATA_LT

This table stores long text strings, it is directly linked to GNAV_SURVEY_DATA, but supports large strings (survey descriptions)
GNAV_VALUE_ID; GNAV_VALUE
GNAV_VALUE_ID: an index which links the stored data from GNAV_SURVEY_DATA:GNAV_VALUE

to this table. The queries will look up this data if GNAV_SURVEY_DATA:GNAV_VALUE_TYPE is set to “long_text”.
GNAV_VALUE: the actual long text string.

GNAV_DEFS
Stores all the definitions used in the GNAV database.
GNAV_VALUE; GNAV_CATEGORY; GNAV_VALUE_TYPE; GNAV_DESCRIPTION; GNAV_MCAT; LANGUAGE
GNAV_VALUE: the value having a definition
GNAV_CATEGORY: the category in which this definition is valid (e.g. GNAV_SCAT, GNAV_SVAL, GNAV_DCAT).
GNAV_VALUE_TYPE: used if a category as a sub-category.
GNAV_DESCRIPTION: the definition of the value
GNAV_MCAT: in case a GNAV_SCAT has is a meta-category (like Country, survey-name), it is defined here.
LANGUAGE: unused, defaults to “@EN”. Could be used in future versions to adapt the navigator to support multiple languages.

GNAV_SCORE_HIERARCHY
GNAV_SCAT, SCORE_PARENT
GNAV_SCAT: score category
SCORE_PARENT: parent category
Unfortunately sql is not very apt for this kind of structure. Appendix 1 gives a query which shows the hierarchy in an easier to understand way.

GNAV_SCORE_SITE_ORDER
GNAV_DATA_TYPE; GNAV_VALUE; GNAV_SORDER; GNAV_SUSE
GNAV_DATA_TYPE: the datatype/category in which the value has an order
GNAV_VALUE: the value
GNAV_SORDER: the order (from low to high)
GNAV_SUSE: site use: 1 if the value is in use, anything else, it will not be displayed

GNAV_USERS
UID; GNAV_ALLOW_ACCEPT_REJECT; GNAV_ALLOW_MOD_USERS
UID: user ID as given from wordpress. It is just an “extension” of the user system in place.
GNAV_ALLOW_ACCEPT_REJECT: 1 if the user is allowed to publish/reject surveys
GNAV_ALLOW_MOD_USERS: 1 if the user is allowed to give other users priviliges as set in this table.

GNAV_LOG
tbl_ID; date_entry; GNAV_USER; GNAV_ACTION; GNAV_DATA
tbl_ID: auto increment number, largely useless
date_entry: timestamp of the log
GNAV_USER: user ID of the person that executed something loggable
GNAV_ACTION: very short description of the activity
GNAV_DATA: short, but detailed description of the data-change

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Appendix

1. Folder structure of the plugin

```
\GNAV
|   GNAV.php
|
+---assets
|   +---downloads
|   |       GNavigator_datatemplate.xlsx
|   |
|   +---img
|   |       arrow-down.png
|   |       icon_Add.png
|   |       icon_Remove.png
|   |
|   \---json
|           countries.geojson
|
+---css
|       GNAV.css
|       leaflet.css
|
+---data_backup
|       gnav_backup_20161126175804.txt  (example file)
|
+---includes
|       GNAV_dataproc.php
|       GNAV_db_create.php
|       GNAV_XLSX_READER.php
|
+---js
|       GNAV.js
|       GNAV_admin.js
|       GNAV_padmin.js
|       GNAV_select.js
|       GNAV_user_admin.js
|       html5shiv.min.js
|
+---public
|   |   index.php
|   |
|   \---partials
|           GNAV_public_display.php
|
\---template
        GNAV_ADMIN_TEMPLATE.php
        GNAV_MAIN.php
        GNAV_PADMIN_TEMPLATE.php
        GNAV_SELECT.php
        GNAV_SKELETON_NIE.php
        GNAV_USER_ADMIN_TEMPLATE.php
```

2. Query to select the categories in hierarchical order

```
SELECT
L0.lvl0,
HA1.GNAV_SCAT as lvl1,
HA2.GNAV_SCAT as lvl2,
HA3.GNAV_SCAT as lvl3,
SO0.GNAV_SORDER as S0,
SO1.GNAV_SORDER as S1,
SO2.GNAV_SORDER as S2,
SO3.GNAV_SORDER as S3,
D0.GNAV_DESCRIPTION as DF0,
D1.GNAV_DESCRIPTION as DF1,
D2.GNAV_DESCRIPTION as DF2,
D3.GNAV_DESCRIPTION as DF3

FROM
(SELECT GNAV_SCAT as lvl0, SCORE_PARENT FROM GNAV_SCORE_HIERARCHY
        WHERE SCORE_PARENT='A') L0
LEFT JOIN (SELECT GNAV_SCAT, SCORE_PARENT FROM GNAV_SCORE_HIERARCHY) HA1
        ON L0.lvl0=HA1.SCORE_PARENT
LEFT JOIN (SELECT GNAV_SCAT, SCORE_PARENT FROM GNAV_SCORE_HIERARCHY) HA2
        ON HA1.GNAV_SCAT=HA2.SCORE_PARENT
LEFT JOIN (SELECT GNAV_SCAT, SCORE_PARENT FROM GNAV_SCORE_HIERARCHY) HA3
        ON HA2.GNAV_SCAT=HA3.SCORE_PARENT
LEFT JOIN (SELECT GNAV_VALUE, GNAV_SORDER FROM GNAV_SCORE_SITE_ORDER
        WHERE GNAV_DATA_TYPE='GNAV_SCAT') SO0
        ON L0.lvl0=SO0.GNAV_VALUE
LEFT JOIN (SELECT GNAV_VALUE, GNAV_SORDER FROM GNAV_SCORE_SITE_ORDER
        WHERE GNAV_DATA_TYPE='GNAV_SCAT') SO1
        ON HA1.GNAV_SCAT=SO1.GNAV_VALUE
LEFT JOIN (SELECT GNAV_VALUE, GNAV_SORDER FROM GNAV_SCORE_SITE_ORDER
        WHERE GNAV_DATA_TYPE='GNAV_SCAT') SO2
        ON HA2.GNAV_SCAT=SO2.GNAV_VALUE
LEFT JOIN (SELECT GNAV_VALUE, GNAV_SORDER FROM GNAV_SCORE_SITE_ORDER
        WHERE GNAV_DATA_TYPE='GNAV_SCAT') SO3
        ON HA3.GNAV_SCAT=SO3.GNAV_VALUE
LEFT JOIN (SELECT GNAV_DESCRIPTION, GNAV_VALUE FROM GNAV_DEFS
        WHERE GNAV_CATEGORY='GNAV_SCAT') D0
        ON L0.lvl0=D0.GNAV_VALUE
LEFT JOIN (SELECT GNAV_DESCRIPTION, GNAV_VALUE FROM
        GNAV_DEFS WHERE GNAV_CATEGORY='GNAV_SCAT') D1
        ON HA1.GNAV_SCAT=D1.GNAV_VALUE
LEFT JOIN (SELECT GNAV_DESCRIPTION, GNAV_VALUE FROM
        GNAV_DEFS WHERE GNAV_CATEGORY='GNAV_SCAT') D2
        ON HA2.GNAV_SCAT=D2.GNAV_VALUE
LEFT JOIN (SELECT GNAV_DESCRIPTION, GNAV_VALUE FROM
        GNAV_DEFS WHERE GNAV_CATEGORY='GNAV_SCAT') D3
        ON HA3.GNAV_SCAT=D3.GNAV_VALUE
ORDER BY S0, S1, S2, S3;
```