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# **Assign\_GUP Documentation**

***Release 0.g1faac9e.dirty***

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**Apr 04, 2017**



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## Assist in assigning APS GUPs to PRP members

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**docs** [http://assign\\_gup.readthedocs.io](http://assign_gup.readthedocs.io)

**git** [https://github.com/prjemian/assign\\_gup.git](https://github.com/prjemian/assign_gup.git)

**PyPI** [https://pypi.python.org/pypi/assign\\_gup](https://pypi.python.org/pypi/assign_gup)

**TODO list** [https://github.com/prjemian/assign\\_gup/issues](https://github.com/prjemian/assign_gup/issues)

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# CHAPTER 1

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## Overview

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Assign\_GUP is a tool for the Proposal Review Panel of the Advanced Photon Source Small-Angle X-ray Scattering General User Proposal panel. The tool helps the panel chairman to assign the most appropriate reviewers to each panel while balancing the work load across the panel. It replaces a system previously conducted in Excel spreadsheets.

A goal of this software is to automate this process, as much as possible. During the development process of this project, it is expected to discover, identify, and encode the algorithms underlying the proposal assignment process.

The code was first used in the 2011-2 proposal review cycle and was of some, albeit limited, help.

In the 2011-3 cycle, the software was much more useful (although the distribution of panelists amongst the proposals might have contributed) and the entire process was completed within a few hours. Previously, the process would take about a business day.



# CHAPTER 2

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## Contents

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## Instructions for the Review Panel Chairman

### Outline

1. Before the proposal deadline
  - (a) Verify the members of the proposal review panel: *List of Reviewers*
  - (b) Answer questions from review panel members. CC the APS User Office.
2. After the proposal deadline
  - (a) *List of Proposals*
  - (b) Run the Assign\_GUP software.
    - i. Create a new project file
    - ii. Import the proposals (from the XML file)
    - iii. Create the list of reviewers or Import from previous .agup file
    - iv. Edit reviewers to assign topic weights
    - v. *Assign topic weights to each proposal*
    - vi. *Assign Reviewers to Proposals*
    - vii. *Update the Assignments on the Web site*
    - viii. Prepare the boilerplate letter
    - ix. *Send emails*

### List of Reviewers

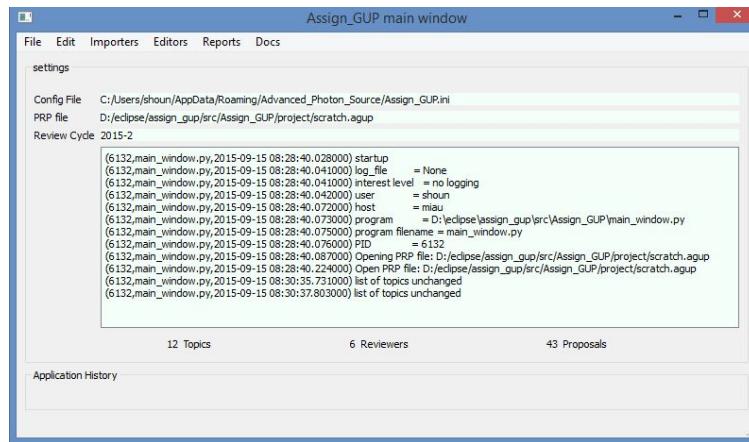


Fig. 2.1: Assign\_GUP main window

### At least a month before the GUP deadline...

Check the reviewers and verify they all can attend on the review date. (GUP Calendar: [http://www.aps.anl.gov/Users/Calendars/GUP\\_Calendar.htm](http://www.aps.anl.gov/Users/Calendars/GUP_Calendar.htm))

1. Identify panel members whose terms expire soon.
2. Is a temporary reviewer necessary?
3. Identify new candidates to replace expiring panel members. Evaluate panel members strengths in the various topics for review and compare with proposal weights in each topic. This will point out whether the panel has sufficient strength to review proposals on each topic.
4. Confirm the list of reviewers for the upcoming cycle.
5. Verify that each member can attend.
6. Assign values for reviewer strength on each topic. Use a scale from 0 (no strength) to 1.0 (high strength), with 0.1 precision.

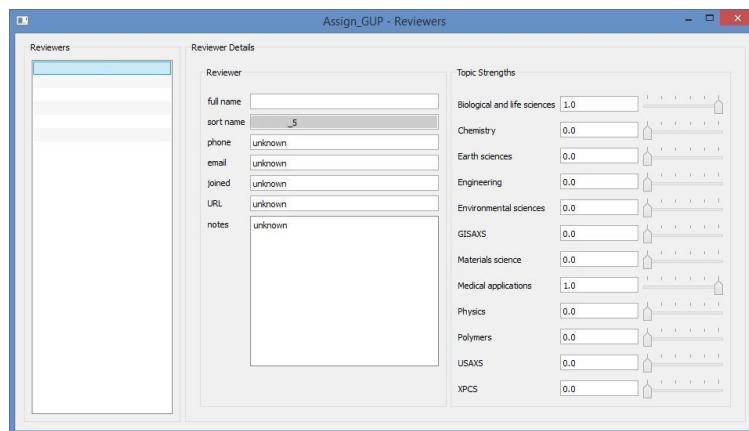


Fig. 2.2: Editor: Reviewers

**Note:** In various example screen images shown in this documentation, the details of specific individuals or proposals

have been removed or obscured to preserve anonymity.

## List of Proposals

### Be prompt!

Download the list in XML version of the proposals just after the proposal deadline. Assignments should be received within just a few days. Assigned reviewers must have sufficient to make their reviews.

1. Login to your panel's proposal review web site, and click the "Download the list in XML" link. Each panel has a slightly different URL. Consult the following table or contact the APS User Office:

panel	URL
small-angle	<a href="https://beam.aps.anl.gov/pls/apsweb/gup0008.panel_start_page?i_attrib=246B2411-PNL5">https://beam.aps.anl.gov/pls/apsweb/gup0008.panel_start_page?i_attrib=246B2411-PNL5</a>
spectroscopy	<a href="https://beam.aps.anl.gov/pls/apsweb/gup0008.panel_start_page?i_attrib=246B2412-PNL6">https://beam.aps.anl.gov/pls/apsweb/gup0008.panel_start_page?i_attrib=246B2412-PNL6</a>
proposal system	<a href="https://www1.aps.anl.gov/Users-Information/About-Proposals/Apply-for-Time">https://www1.aps.anl.gov/Users-Information/About-Proposals/Apply-for-Time</a>

You might also consider using the "Print All Proposals" link to generate a single PDF file containing all the proposals and attachments. Any problem attachments will be noted on separate pages at the end of the document. Be sure to save that on-screen image to a file or it will go away when you close your browser.

2. When that page appears, it will look unformatted and not like XML. Don't worry, underneath the page is XML but is rendered poorly.
3. In your browser, choose "view source" (Control-U on Firefox) and save to a file such as `raw-proposals-2015-2.xml` (use the name of the proper review cycle).
4. This raw file may have characters that break the later XML processing. That's why I save it as raw and then make a working copy next.
5. Copy this file to `proposals-2015-2.xml` and make one change first. Add a `period` attribute (if not present) to the root element `Review_list` with a value of the current review cycle, such as:

```
<Review_list period="2015-2">
```

Be on the lookout for:

- proposals that belong on another panel
- PUP or project proposals (they require additional reviewer work)
- identical or related proposals (may not be the same PI or beam line)
- ineligible reviewer(s) (ineligible since reviewer name is on the proposal)

## List of Topics

Central to this process is the creation of a list of topics. These topics represent the various scientific or experimental subjects represented by this suite of proposals. Each of the reviewers on the panel will have a different strength in each of the topics. This strength is represented as a decimal topic value, ranging between zero (no strength) to 1.0 (expert or confident). The *dot product* of the topic values between any reviewer and proposal can be used as a measure of how appropriate is that reviewer to evaluate that proposal.

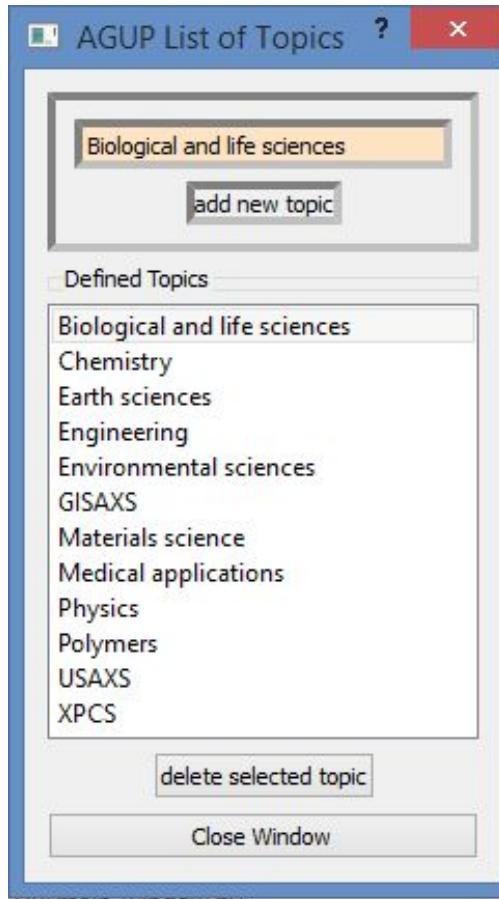


Fig. 2.3: Editor: topics

Initially, the list of topics is extracted from the proposals from the list of subjects selected for each proposal by the proposal's author.

The list of topics may be edited to remove such nondescript names as "Other" and to add in instrument-specific techniques such as XPCS for which specific expertise may not be so common amongst the panel reviewers.

Once the list of topics has been modified, check both the list of reviewers and the list of proposals that the topic values are assigned properly. (New topics added will be given topic values of 0.0.)

## Assign topic weights to each proposal

Similar to the reviewers, each proposal must be assigned a topic weight. The weight (a floating point decimal number) is the relevance of each topic to the proposal. The scale is 0 to 1 where 0 means *not related* and 1 mean *related*.

When the proposals XML file is imported, a list of topics is created from all the subjects as selected by the proposers. Each topic created is assigned a weight of 1.0. **These topic assessments should be verified** since some proposers put down lots of extraneous topics that are weakly related to the specifics of the proposal.

## Assign Reviewers to Proposals

Choose a primary and a secondary reviewer for each proposal. Most likely, these will be reviewers with the strongest topic weighting for this proposal.

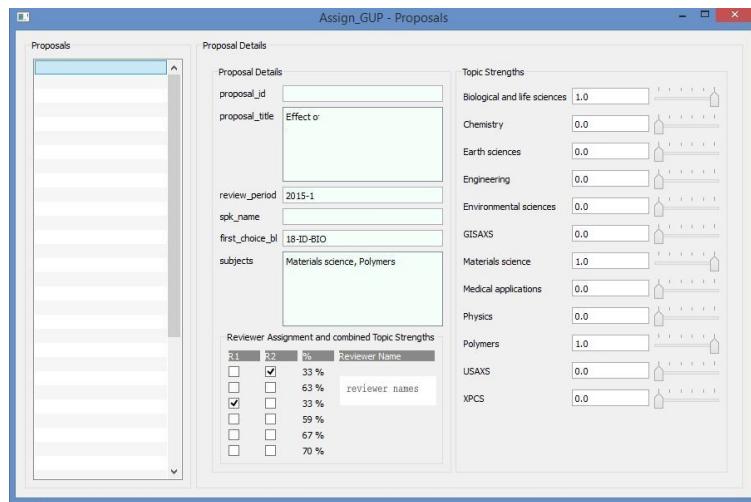


Fig. 2.4: Editor: Proposals

The rules are such that only one reviewer can be a *primary* and a different one can be *secondary*.

If a reviewer is ineligible to review a proposal (usually because they are named on the proposal team), their name will be grey and the checkboxes to select them as either primary or secondary reviewer will be disabled.

Refer to the summary and analysis grid reports when attempting to balance the number of proposals assigned to each reviewer.

## Update the Assignments on the Web site

The assignments report gives a listing of the assigned reviewers for all proposals. Looking at this page, enter the same information into the APS Review web site. There is no upload capability possible for this data, you must enter it in

from the web form.

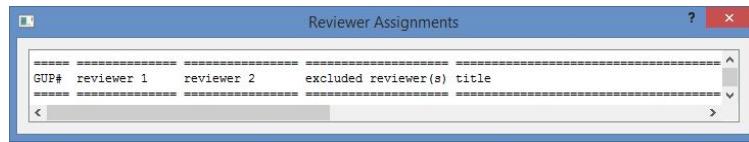


Fig. 2.5: Report: Reviewer assignments

## Send emails

Send emails to each reviewer listing the proposals on which they are primary or secondary reviewer. CC the APS User Office on each email.

To prepare the template for the emails, open the *Edit Email Template ...* from the *Editors* menu:

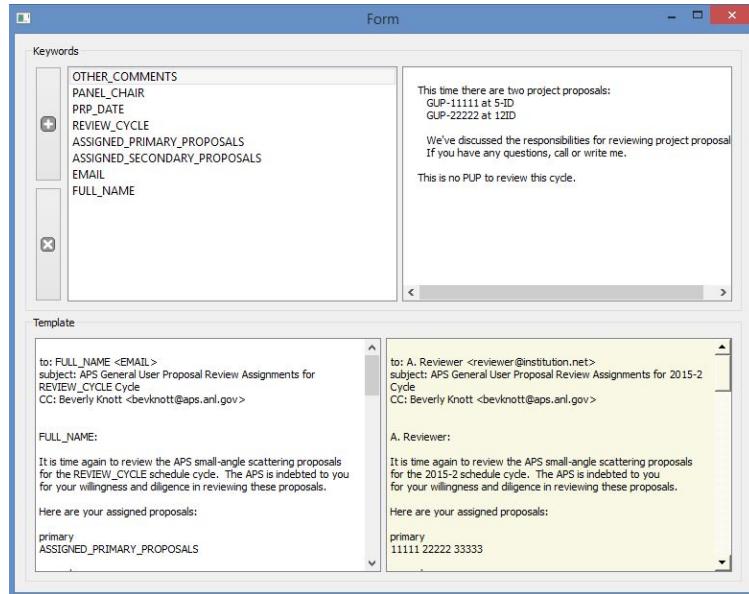


Fig. 2.6: Editor: Email template and substitution keywords

To prepare the email text for each reviewer, select *Email Letters ...* from the *Reports* menu. A new window will appear for each reviewer with details specific to that reviewer. Use this to create an email to each reviewer.

## How to Install Assign\_GUP

The basic installation procedure:

1. install Python 2.7
2. install Assign\_GUP

## Background

This program requires Python 2.7 (not ready for Python 3 yet) and several additional packages. Most of the package dependencies are met by using a Python distribution (provides Python, the basic package suite, and other popular packages).

The major package requirements are:

- *PyQt4* : provides the graphical user interface widgets
- *lxml* : XML support
- *pyRestTable* : presents information in a sensible table format

## Python

It is suggested to use the Anaconda Python 2.7 distribution<sup>1</sup> as it contains most of the packages used by this program.

1. use a web browser and visit: <https://www.continuum.io/downloads>
2. select the distribution for your operating system
3. make sure to follow links for *Python 2.7*
4. download the installer file
5. follow the instructions to install on your computer

## Assign\_GUP

Install this program from the Python Package Index (PyPI) using the *pip* command:

```
pip install pyRestTable
pip install --no-deps Assign_GUP
```

The *--no-deps* option tells *pip* not to download and attempt to build newer versions of other required packages such as *lxml*.

It *may* be necessary to install the *lxml* package if your distribution does not already have it installed. You can view all the installed packages using this command:

```
pip list
```

The list may have dozens or more items. To install *lxml*:

```
pip install lxml
```

## Updating Assign\_GUP

To update to a newer version of *Assign\_GUP*, use this command:

```
pip install -U --no-deps Assign_GUP
```

The *-U* option tells *pip* to search for and install the latest package update.

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<sup>1</sup> Anaconda Python 2.7: <https://www.continuum.io>

## Alternative Installation steps

It is possible to install **Assign\_GUP** using steps common to Python developers, such as:

```
pip install https://github.com/prjemian/assign_gup
```

or:

```
git clone https://github.com/prjemian/assign_gup.git
cd assign_gup
python ./setup.py install
```

These are not recommended for regular use.

## Assign\_GUP package: source code documentation

### Module contents

Source code for the Assign\_GUP (AGUP) package

### Submodules

#### module: about

show the About box

**class** `Assign_GUP.about.InfoBox` (*parent=None, settings=None*)

Bases: `PyQt4.QtGui.QDialog`

a Qt GUI for the About box

**closeEvent** (*event*)

called when user clicks the big [X] to quit

**doDocsUrl** ()

opening documentation URL in default browser

**doIssuesUrl** ()

opening issues URL in default browser

**doLicense** ()

show the license

**doUrl** (*url*)

opening URL in default browser

#### module: agup\_data

Data model for a review session: proposals, reviewers, topics, and analyses

**class** `Assign_GUP.agup_data.AGUP_Data` (*parent\_window=None, config=None*)

Bases: `PyQt4.QtCore.QObject`

Complete data for a PRP review session

```
clearAllData()
    clear all data (except for self.settings)

getCycle()
    the review cycle, as defined by the proposals

importEmailTemplate (xmlFile)
    import the email template support

importProposals (xmlFile)
    import a Proposals XML file as generated by the APS or proposals from a PRP Project file

importReviewers (xmlFile)
    import a complete set of reviewers (usually from a previous review cycle's file)
    Completely replace the set of reviewers currently in place.

importTopics (xmlFile)
    import a complete set of Topics (usually from a previous PRP Project file)
    Completely replace the set of Topics currently in place.

openPrpFile (filename)

setReviewersModel (rvwrs)
    set the data model for the list of reviewers

write (filename)
    write this data to an XML file
```

### module: auto\_assignment

automatic assignment of reviewers to proposals

```
class Assign_GUP.auto_assignment.Auto_Assign (agup)
    Bases: object
        automatically assign reviewers to proposals
    simpleAssignment (): assign the first two reviewers with the highest scores to unassigned proposals
    getScores (prop)
        generate scores for this proposal
    simpleAssignment ()
        assign the first two reviewers with the highest scores to unassigned proposals
        •no attempt to balance assignment loads in this procedure
        •score must be above zero to qualify
```

### module: editor\_email\_template

edit the template to send emails, include editor for keyword substitutions

Provide tools to:

- manage list of substitution keywords
- manage values of substitution keywords
- display as read-only those substitution keywords defined for each reviewer
- provide editor for email template letter

- show example email with substitutions applied

The email template is stored in the project file.

The substitution keyword dictionary is (at present) stored in the settings file.

```
class Assign_GUP.editor_email_template.Editor(parent, agup, settings=None)
Bases: PyQt4.QtGui.QWidget

closeEvent(event)
doCurrentItemChanged(widget_item)
doKeywordTextChanged(*args, **kw)
doMerge()
doTemplateTextChanged(*args, **kw)
onAdd(*args, **kw)
    add keyword substitution

Keywords are allowed to start with a letter or “_”, then can have numbers also. All letters must be upper-case.

Substitutions may be any text, including any white space.

Strings must have a minimum length of MINIMUM_KEY_LENGTH (3) characters.

onDelete(*args, **kw)
    delete the selected key

    check that self.current_key is not None then delete that one and reset to next in list

restoreSplitterDetails()
    put the splitters back where they were

restoreWindowGeometry()
    put the window back where it was

saveSplitterDetails()
    remember where the splitters were

saveWindowGeometry()
    remember where the window was

selectFirstKeyword()
```

### module: email\_mvc\_view

MVC View for emails

see <http://www.saltycrane.com/blog/2008/01/pyqt-43-simple-qabstractlistmodel/>

see <http://www.saltycrane.com/blog/2007/12/pyqt-43-qtableview-qabstracttablemodel/>

```
class Assign_GUP.email_mvc_view.AGUP_Emails_View(parent=None, agup=None, settings=None, hide_email_button=True)
Bases: PyQt4.QtGui.QWidget
```

Show the email to be sent to each Reviewer

#### Parameters

- **parent** (*obj*) – instance of main\_window.AGUP\_MainWindow or None

- **agup** (*obj*) – instance of agup\_data.AGUP\_Data
- **settings** (*obj*) – instance of settings.ApplicationQSettings

**closeEvent** (*event*)

**doOpenEmail** ()  
open the email letter in the email tool (does not work too good now)

**index\_to\_ID** (*index*)  
convert QListView index to sort\_name string

**on\_item\_clicked** (*index*)  
called when changing the selected Reviewer in the list

**restoreWindowGeometry** ()  
put the window back where it was

**saveWindowGeometry** ()  
remember where the window was

**selectFirstListItem** ()

**selectModelByIndex** (*curr, prev*)  
select Reviewer for email display as referenced by QListView index

**Parameters**

- **curr** (*index*) – sort\_name string of current selected reviewer
- **prev** (*index*) – QListView index of previously selected reviewer

**setModel** (*model*)

**showReviewerEmail** ()  
select Reviewer for email display as referenced by self.sort\_name

**class** Assign\_GUP.email\_mvc\_view.**Email**  
Bases: object

data structure for sending email

**send** ()  
send the email content to the default email tool

Assign\_GUP.email\_mvc\_view.**main** ()  
simple starter program to develop this code

### module: email\_template

Create email notices to each Reviewer describing specific assignments

**class** Assign\_GUP.email\_template.**EmailTemplate**  
Bases: object

Support the creation of custom emails to each Reviewer from template and fields

It is possible to create and use custom fields. Be sure that the custom fields are *uniquely identifiable* to avoid replacing the wrong text.

**importXml** (*filename*)

**Parameters** **filename** (*str*) – name of XML file with email template and keywords

**mail\_merge (\*\*kw\_dict)**  
create one email with a mail merge of self.keyword\_dict and kw\_dict into self.email\_template  
suggest defining at least these four keywords, to be applied for each reviewer during mail merge step  
(values filled in programmatically):

```
FULL_NAME = 'Ima Reviewer',
EMAIL = 'reviewer@institution.net',
ASSIGNED_PRIMARY_PROPOSALS = '11111 22222 33333',
ASSIGNED_SECONDARY_PROPOSALS = '44444 55555 66666',
```

**mass\_merge (reviewers, \*\*kw)**  
create emails for all Reviewers, return as a dictionary by sort\_name  
**Parameters** **reviewers** (*obj*) – instance of revu\_mvc\_data.AGUP\_Reviewers\_List  
**writeXmlNode (root\_node)**  
write email template data to the XML document  
**Parameters** **root\_node** (*obj*) – XML node to contain this data

### module: event\_filters

event filters for certain MVC widgets such as QListView

**class Assign\_GUP.event\_filters.ArrowKeysEventFilter**  
Bases: PyQt4.QtCore.QObject  
watches for ArrowUp and ArrowDown (navigator keys) to change selection in QtCore.QAbstractListModel  
**eventFilter (listView, event)**  
custom event filter

### module: general\_mvc\_model

Generic MVC Model for AGUP

**class Assign\_GUP.general\_mvc\_model.AGUP\_MVC\_Model** (*data\_object*=[], *headerdata*=None, *parent*=None)  
Bases: PyQt4.QtCore.QAbstractListModel  
Generic MVC model for AGUP  
This is an adapter for the actual data object  
**columnCount (parent)**  
**data (index, role)**  
**rowCount (parent)**

### module: history

document program history events in a log file

**class Assign\_GUP.history.Logger** (*log\_file*=None, *level*=20, *statusbar*=None, *history\_widget*=None, *minor\_details*=False)  
Bases: object  
use Python logging package to record program history

**Parameters**

- **log\_file** (*str*) – name of file to store history
- **level** (*enum*) – logging interest level (default=logging.INFO, no logs = -1)
- **statusbar** (*obj*) – QStatusBar instance in main window
- **history\_widget** (*str*) – QPlainTextEdit instance in main window
- **minor\_details** (*bool*) – Include minor details in the logs?

**add** (*message, major\_status=True*)

log a message or report from the application

**Parameters**

- **message** (*str*) – words to be logged
- **major\_status** (*bool*) – major (True) or minor (False) status of this message

**first\_logs()**Assign\_GUP.history.**addLog** (*message=''*, *major=True*)

put this message in the logs, note whether if major (True)

Assign\_GUP.history.**logMinorDetails** (*choice*)

choose to record (True) or not record (False) minor details in the logs

**module: main\_window**

Main code runs the GUI.

**class Assign\_GUP.main\_window.AGUP\_MainWindow**

Bases: PyQt4.QtGui.QMainWindow

Creates a Qt GUI for the main window

**adjustMainWindowTitle()**

mark if main window is dirty

indicate in main window title when there are unsaved modifications (i.e., when self.cannotProceed() is True)

**cannotProceed()**

advise if the application has unsaved changes and should not do the proposed action

**closeEvent** (*event*)

called when user clicks the big [X] to quit

**closeSubwindows()**

close all other windows created by this code

**confirmAbandonChangesNotOk()**

Ask user to save changes before exit or opening another project.

Return True if application should *NOT* exit.**confirmEditTopics()**

confirm before proceeding

**doAgupInfo** (\**args*, \*\**kw*)

describe this application and where to get more info

**doAnalysis\_gridReport()**  
show a table with dotProducts for each reviewer against each proposal *and* assignments

**doAssignmentsReport()**  
show a read-only text page with assignments for each proposal

**doAutomatedAssignment()**  
make automated assignments of reviewers to proposals

**doClose(\*args, \*\*kw)**  
called when user chooses exit (or quit), or from closeEvent()

**doEditEmailTemplate()**  
edit the template to send emails, include editor for keyword substitutions

**doEditProposals()**  
edit the list of Proposals

**doEditReviewers()**  
edit the list of Reviewers

**doEditTopics()**  
Create Window to edit list of Topics

**doImportProposals()**  
import the proposal file as downloaded from the APS web site

**doImportReviewers()**  
copy the list of Reviewers into this project from another PRP Project file

**doImportTopics()**  
copy the list of Topics from another PRP file into this project

**doLettersReport()**  
prepare the email form letters to each reviewer with their assignments

**doNewPrpFile()**  
clear the data in self.agup

**doOpenPrpFile()**  
open an existing PRP file

**doRecalc()**

**doResetDefaultSettings()**  
user requested to reset the settings to their default values  
Note: does not write to the rfile

**doSave()**  
save the self.agup data to the known project file name

**doSaveAs()**  
save the self.agup data to the data file name selected from a dialog box  
You may choose any file name and extension that you prefer. It is strongly suggested you choose the default file extension, to identify AGUP PRP Project files more easily on disk. Multiple projects files, perhaps for different review cycles, can be saved in the same directory. Or you can save each project file in a different directory as you choose.  
By default, the file extension will be **.agup**, indicating that this is an AGUP PRP Project file. The extensions **.prp** or **.xml** may be used as alternatives. Each of these describes a file with *exactly the same file format*, an XML document.

```
doSummaryReport()
    this report is helpful to balance proposal assignments
    show a read-only text page with how many primary and secondary proposals assigned to each reviewer

doUnassignProposals()
    Remove ALL assignments of reviewers to proposals

getOpenFileName (*args, **items)
    convenience wrapper for Qt open file dialog

getReviewCycleText()

importProposals (filename)
    read a proposals XML file and set the model accordingly

importReviewers (filename)
    read Reviewers from a PRP Project file and set the model accordingly

importTopics (filename)
    read Topics from an AGUP PRP Project file and set the model accordingly

onAssignmentsChanged()
    called when a reviewer assignment checkbox has been changed

onTemplateChanged()

onTopicValuesChanged (*args, **kw)
    called when a proposal or reviewer topic value has been changed

openPrpFile (filename)
    choose the XML file with data for this PRP review

requestConfirmation (message, informative_text, buttons=None, default_button=None)
    request confirmation from the user about something

restoreWindowGeometry()
    put the window back where it was

saveWindowGeometry()
    remember where the window was

setIndicators()
    show the numbers of topics, reviewers, and proposals, also the cycle

setNumProposalsWidget (number)

setNumReviewersWidget (number)

setNumTopicsWidget (number)

setPrpFileText (text)

setRcFileText (text)

setReviewCycleText (text)

Assign_GUP.main_window.main()
    start the program

Assign_GUP.main_window.process_command_line()
    support command-line options such as `--help` and `--version`
```

## module: plainTextEdit

show text in a GUI window

**class** Assign\_GUP.plainTextEdit.TextWindow (*parent=None*, *title='window title'*, *text=''*, *settings=None*)

Bases: PyQt4.QtGui.QWidget

show text in a GUI window that remembers its geometry, based on supplied window title

### Parameters

- **parent** (*obj*) – instance of QWidget
- **title** (*str*) – to be used as the window title (and settings group name)
- **text** (*str*) – window content
- **settings** (*obj*) – instance of settings.ApplicationQSettings

**closeEvent** (*event*)

**moveEvent** (*event*)

**restoreWindowGeometry** ()

put the window back where it was

**saveWindowGeometry** ()

remember where the window was

**setText** (*text*)

**setTitle** (*title*)

**settingsGroupName** ()

need a group name in the settings file to save the window geometry, based on window title

## module: prop\_mvc\_data

Proposals: underlying data class for the MVC model

**class** Assign\_GUP.prop\_mvc\_data.AGUP\_Proposals\_List (*agup*)

Bases: PyQt4.QtCore.QObject

the list of all proposals

**addTopic** (*key, value=None*)

add a new topic key and initial value to all proposals

**addTopics** (*key\_list*)

add several topics at once (with default values)

**exists** (*prop\_id*)

given ID string, does proposal exist?

**getByIndex** (*index*)

given index in sorted list of proposals, return indexed proposal

note: index is *not* the proposal ID number

**getProposal** (*prop\_id*)

return proposal selected by ID string

**importXml** (*filename*)

**Parameters** `filename` (*str*) – name of XML file with proposals

**removeTopic** (*key*)

remove an existing topic key from all proposals

**removeTopics** (*key\_list*)

remove several topics at once

**setTopicValue** (*prop\_id, topic, value*)

set the topic value on a proposal identified by GUP ID

**writeXmlNode** (*specified\_node*)

write Proposals' data to a specified node in the XML document

**Parameters** `specified_node` (*obj*) – XML node to contain this data

## module: prop\_mvc\_view

MVC View for proposals

**see** <http://www.saltycrane.com/blog/2008/01/pyqt-43-simple-qabstractlistmodel/>

**see** <http://www.saltycrane.com/blog/2007/12/pyqt-43-qtableview-qabstracttablemodel/>

**class** `Assign_GUP.prop_mvc_view.AGUP_Proposals_View` (*parent=None, agup=None, settings=None*)

Bases: `PyQt4.QtGui.QWidget`

Manage the list of proposals, including assignments of topic weights and reviewers

**Parameters**

- **parent** (*obj*) – instance of `main_window.AGUP_MainWindow` or `None`
- **agup** (*obj*) – instance of `agup_data.AGUP_Data`
- **settings** (*obj*) – instance of `settings.ApplicationQSettings`

**closeEvent** (*event*)

in response to user requesting the window be closed

**details\_modified()**

OK to select a different proposal now?

**editProposal** (*prop\_id, prev\_prop\_index*)

select Proposal for editing as referenced by ID number

**index\_to\_ID** (*index*)

convert QListView index to GUP ID string

**isProposalListModified()**

**onAssignmentsChanged()**

called when a reviewer assignment checkbox has been changed

**onTopicValueChanged** (*prop\_id, topic, value*)

called when user changed a topic value in the details panel

**on\_item\_clicked** (*index*)

called when changing the selected Proposal in the list

**recalc()**

recalculate dot products

```
restoreWindowGeometry()  
    put the window back where it was  
  
saveWindowGeometry()  
    remember where the window was  
  
selectFirstListItem()  
  
selectModelByIndex(curr, prev)  
    select Proposal for editing as referenced by QListView index
```

#### Parameters

- **curr** (*index*) – GUP ID string of current selected proposal
- **prev** (*index*) – QListView index of previously selected proposal

```
setModel(model)
```

```
update()
```

### module: prop\_revu\_grid

widgets of one Reviewer of one Proposal instance

#### ProposalReviewerRow

adds one row of widgets for possible Reviewer of Proposal

Method	Description
<i>getAssignment()</i>	return which type of reviewer this is (0, 1, 2)
<i>setAssignment()</i>	define which type of reviewer this is (0, 1, 2)
<i>setValue()</i>	set dotProduct value as percentage
<i>setEnabled()</i>	enable/disable the checkboxes based on Reviewer eligibility
<i>setNumberAssigned()</i>	show the number of assigned proposals with given role (1   2)
<i>dotProduct()</i>	compute and set widget with dot product of reviewer & proposal topics

#### ReviewerAssignmentGridLayout

QGridLayout of possible Reviewers of Proposal

Method	Description
<i>addReviewer()</i>	add controls for one Reviewer to the grid
<i>addReviewers()</i>	add list of Reviewers to the grid
<i>setEnabled()</i>	enable/disable one Reviewer
<i>setProposal()</i>	specify the Proposal associated with this grid
<i>setAssignment()</i>	define the type for a named Reviewer
<i>onCheck()</i>	ensure only one reviewer is either primary or secondary
<i>setValue()</i>	set dotProduct value of a named Reviewer as percentage

---

```
class Assign_GUP.prop_revu_grid.ProposalReviewerRow(parent, layout, reviewer, proposal)  
Bases: PyQt4.QtCore.QObject
```

Adds a row of widgets to an existing grid layout for one Reviewer of one Proposal instance

**dotProduct ()**

dot product of Proposal and Reviewer topic strengths,  $\vec{p} \cdot \vec{r}$

Computes  $\vec{p} \cdot \vec{r}$  where:

- $\vec{p}$  is array of topic value strengths for Proposal

- $\vec{r}$  is array of topic value strengths for Reviewer

**getAssignment ()**

report which type of reviewer this is

returns	description
0	unassigned
1	primary reviewer (#1)
2	secondary reviewer (#2)

**onCheckBoxClick (widget)**

either check box was clicked

**rowCheck (checkbox)**

ensure at most one checkbox (primary or secondary) is checked for this reviewer

**Parameters** `checkbox (obj)` – instance of QCheckBox

**setAssignment (code)**

define which type of reviewer this is

code	description
0	unassigned
1	primary reviewer (#1)
2	secondary reviewer (#2)

**Parameters** `code (int)` – integer code (0 | 1 | 2)

**setNumberAssigned (number, role)**

show the number of assigned proposals with given role

**setProposal (proposal)**

define the proposal to be used with this row

**setValue (percentage)**

set the percentage value

**Parameters** `percentage (int)` – dot product of reviewer and proposal topic strengths

**update ()**

**class** Assign\_GUP.prop\_revu\_grid.ReviewerAssignmentGridLayout (*parent, agup*)

Bases: PyQt4.QtGui.QGridLayout

display and manage the assignment checkboxes and reported percentages for each reviewer on this proposal

**addReviewer (rvwr)**

add this reviewer object for display

**addReviewers (reviewers)**

add a list of reviewers

**onCheck (row\_widget)**

ensure only one reviewer is either primary or secondary

**setAssignment (sort\_name, code)**

define which type of reviewer this is

### Parameters

- **sort\_name** (*str*) – reviewer's identifying key
- **code** (*int*) – integer code (0 | 1 | 2)

**setEnabled** (*sort\_name, state=True*)

enable (True) or disable (False) a Reviewer identified by sort\_name

All eligible Reviewers are enabled. Reviewers become ineligible when they are named as part of the Proposal team.

**setProposal** (*proposal*)

declare which proposal is associated with this grid

**setReviewersValues** (*reviewers*)

set the widget values for all Reviewers

**setValue** (*sort\_name, percentage*)

set the percentage value

**update** ()

**updateNumbersOfAssignedProposals** ()

update the numbers of assigned proposals shown for each reviewer and each role

Assign\_GUP.prop\_revu\_grid.**developer\_main**()

create QGroupBox + QGridLayout and run the panel

R1	#1	R2	#2	%	Reviewer Name
[x]	1	[ ]	0	100%	Joe User
[ ]	0	[x]	1	80%	Second Reviewer
[ ]	0	[ ]	0	22%	Some Panel Member
[ ]	0	[ ]	0	1%	Another Panel Member

### module: proposal

Data for one General User Proposal

**class** Assign\_GUP.proposal.**AGUP\_Proposal\_Data** (*xmlParentNode=None, xmlFile=None*)  
Bases: object

A single General User Proposal

**addTopic** (*topic, value=None*)

declare a new topic and give it an initial value (default value=0.0)

topic must not exist or KeyError exception will be raised

**addTopics** (*topics\_list*)

declare several new topics and give them all default values

each topic must not exist or KeyError exception will be raised

**getAssignedReviewers** ()

return a list of assigned reviewers for this proposal

**getExcludedReviewers** (*reviewers*)

return a list of excluded reviewers for this proposal

**Parameters** **reviewers** (*obj*) – list of all available reviewers

---

```

getKey (key)
    get the item from self.db identified by key

getSubjects ()
    return the list of subjects as specified in the Proposal

getTopic (topic)
    return the value of the named topic

getTopicList ()
    return a list of all topics

hasTopic (topic)
    does the named topic exist?

importXml (proposal_node)
    Fill the class variables with values from the XML node

        Parameters proposal_node – lxml node of the Proposal

removeTopic (key)
    remove the named topic

removeTopics (key_list)
    remove several topics at once

setAssignedReviewer (reviewer, role=None)
    assign a reviewer to this proposal as primary (role=1) or secondary (role=2) or None (unassigned)

setTopic (topic, value=None)
    set value of an existing topic

    topic must exist or KeyError exception will be raised

writeXmlNode (specified_node)
    write this Proposal's data to a specified node in the XML document

        Parameters specified_node (obj) – XML node to contain this data

```

### module: proposal\_details

QtGui widget to edit one Proposal instance

#### **AGUP\_ProposalDetails**

adds one row of widgets for possible Reviewer of Proposal

Method	Description
<code>addReviewer ()</code>	add a Reviewer to the panel

```
class Assign_GUP.proposal_details.AGUP_ProposalDetails (parent=None, settings=None, agup=None)
```

Bases: PyQt4.QtGui.QWidget

QtGui widget to edit one Proposal instance

```
addReviewers (reviewers)
    Add the list of Reviewers to the details panel
```

```
addTopic (topic, value)
```

```
addTopics (topic_list)
```

```
clear()
getProposalID()
onAssignmentsChanged()
    called when a reviewer assignment checkbox has been changed
onTopicValueChanged(topic)
restoreSplitterDetails()
saveSplitterDetails()
setAll(prop_id, title, period, speaker, choice, subjects)
setFirstChoiceBl(value)
setProposalID(value)
setProposalTitle(value)
setReviewPeriod(value)
setSpkName(value)
setSubjects(value)
setTopic(key, value)
setupProposal(proposal)
    install proposal data in the editor's widgets
update()
```

### module: qt\_utils

Helper routines for Qt

```
Assign_GUP.qt_utils.setBackgroundColor(widget, color='#efefef')
Assign_GUP.qt_utils.setWidgetBackground(widget, color='#efefef')
    change the background color of a Qt widget
```

**Parameters** `color` (`str`) – specified as name (mintcream), hex RGB (#dea)

### module: report\_analysis\_grid

show a table with dotProducts for each reviewer against each proposal *and* assignments

```
class Assign_GUP.report_analysis_grid.Report(parent, agup, settings)
    Bases: Assign_GUP.plainTextEdit.TextWindow

    makeText()
        generate the text of the panel
    update()
```

### module: report\_assignments

show a read-only text page with assignments for each proposal

GUP#	reviewer 1	reviewer 2	excluded reviewer(s)	title
11111	A Reviewer	Ima Reviewer		Study of stuff

---

```
class Assign_GUP.report_assignments.Report (parent, agup, settings)
    Bases: Assign_GUP.plainTextEdit.TextWindow

makeText ()
    generate the text of the panel

update ()
```

**module: report\_summary**

show a read-only text page with how many primary and secondary proposals assigned to each reviewer

```
total number of proposals: #
primary proposals per reviewer: #.#

Overall topic strength: TBA

Primary assignments:
reviewer1 ##: ##### ###### ######
reviewer2 ##: ##### ###### ######
reviewer3 ##: ##### ###### ######

Secondary assignments:
reviewer1 ##: ##### ###### ######
reviewer2 ##: ##### ###### ######
reviewer3 ##: ##### ###### ######

Unassigned proposals: #
```

```
class Assign_GUP.report_summary.Report (parent, agup, settings)
    Bases: Assign_GUP.plainTextEdit.TextWindow

makeText ()
    generate the text of the panel

update ()
```

**module: resources**

(internal) support for items in resources folder, such as forms defined in .ui files

```
Assign_GUP.resources.get_forms_path (path=None)
    identify our resources directory
```

```
Assign_GUP.resources.loadUi (ui_file, baseinstance=None, **kw)
    load a .ui file for use in building a GUI
```

Wraps *uic.loadUi()* with code that finds our program's *resources* directory.

See <http://nullege.com/codes/search/PyQt4.uic.loadUi>

See <http://bitesofcode.blogspot.ca/2011/10/comparison-of-loading-techniques.html>

inspired by: <http://stackoverflow.com/questions/14892713/how-do-you-load-ui-files-onto-python-classes-with-pyside?lq=1>

## Basic Procedure

1. Use Qt Designer to create a .ui file.
2. Create a python class of the same type as the widget you created in the .ui file.
3. When initializing the python class, use uic to dynamically load the .ui file onto the class.

Here is an example from this code:

```
1  from PyQt4 import QtGui
2  import resources
3
4  UI_FILE = 'plainTextEdit.ui'
5
6  class TextWindow(QtGui.QDialog, form_class):
7
8      def __init__(self, title, text):
9          QtGui.QDialog.__init__(self, parent)
10         resources.loadUi(UI_FILE, baseinstance=self)
11         self.setWindowTitle(title)
12         self.plainTextEdit.setPlainText(text)
13
14 import sys
15 app = QtGui.QApplication(sys.argv)
16 win = TextWindow('the title', __doc__)
17 win.show()
18 sys.exit(app.exec_())
```

Assign\_GUP.resources.**resource\_file**(filename, dir=None)  
absolute path to file in resources directory

## module: reviewer

Data for one Reviewer of General User Proposals

**class** Assign\_GUP.reviewer.**AGUP\_Reviewer\_Data**(xmlParentNode=None, xmlFile=None)  
Bases: object

A Reviewer of General User Proposals

**addTopic**(topic, value=None)

declare a new topic and give it an initial value

topic must not exist or KeyError exception will be raised

**addTopics**(topics\_list)

declare several new topics and give them all default values

each topic must not exist or KeyError exception will be raised

**getAssignments**(proposals, role)

find all proposals assigned to this reviewer with the given role

**getFullName**()

**getKey**(key)

**getSortName**()

---

```

getTopic (topic)
    return the value of the named topic

getTopicList ()
    return a list of all topics

importXml (reviewer)
    Fill the class variables with values from the XML node

        Parameters reviewer – lxml node node of the Reviewer

removeTopic (key)
    remove the named topic

removeTopics (key_list)
    remove several topics at once

setKey (key, value)
    save a value to a known key

    example:

        self.setKey('full_name', 'Pete Jemian')

setTopic (topic, value=None)
    set value of an existing topic

    topic must exist or KeyError exception will be raised

writeXmlNode (specified_node)
    write this Reviewer's data to a specified node in the XML document

        Parameters specified_node (obj) – XML node to contain this data

```

## module: reviewer\_details

QtGui widget to edit one Reviewer instance

```

class Assign_GUP.reviewers_reviewer_details.AGUP_ReviewerDetails (parent=None, settings=None)
    Bases: PyQt4.QtGui.QWidget

    QtGui widget to edit one Reviewer instance

    addTopic (topic, value)
    addTopics (topic_list)
    getEmail ()
    getFullName ()
    getJoined ()
    getNotes ()
    getPhone ()
    getSortName ()
    getUrl ()
    onTopicValueChanged (topic)
    restoreSplitterDetails ()

```

```
saveSplitterDetails()
setEmail (value)
setFullName (value)
setJoined (value)
setNotes (value)
setPhone (value)
setSortName (value)
setTopic (key, value)
setUrl (value)
```

## module: revu\_mvc\_data

Reviewers: underlying data class for the MVC model

```
class Assign_GUP.revu_mvc_data.AGUP_Reviewers_List (agup)
Bases: PyQt4.QtCore.QObject
```

the list of all reviewers

```
addTopic (key, value=None)
add a new topic key and initial value to all reviewers
```

```
addTopics (key_list)
add several topics at once (with default values)
```

```
exists (sort_name)
given sort_name string, does reviewer exist?
```

```
getByFullName (full_name)
return reviewer selected by full_name string
```

```
getByIndex (index)
```

```
getReviewer (sort_name)
return reviewer selected by sort_name string
```

```
getReviewerAssignments (sort_name, role=None)
find all proposals assigned to the named reviewer
```

### Parameters

- **sort\_name** (*str*) – key for reviewer name
- **role** (*int*) – one of [None, 0, 1, 2], where None or 0 mean get both roles

```
importXml (filename)
```

Parameters **filename** (*str*) – name of XML file with reviewers

```
inOrder ()
```

```
keyOrder ()
```

```
removeReviewer (full_name)
remove named reviewer
```

```
removeTopic (key)
remove an existing topic key from all reviewers
```

```
removeTopics (key_list)
    remove several topics at once

setTopicValue (sort_name, topic, value)
    set the topic value on a reviewer identified by sort_name

writeXmlNode (specified_node)
    write Reviewers' data to a specified node in the XML document

    Parameters specified_node (obj) – XML node to contain this data
```

### module: revu\_mvc\_view

MVC View for reviewers

see <http://www.saltycrane.com/blog/2008/01/pyqt-43-simple-qabstractlistmodel/>  
see <http://www.saltycrane.com/blog/2007/12/pyqt-43-qtableview-qabstracttablemodel/>

```
class Assign_GUP.revu_mvc_view.AGUP_Reviewers_View (parent=None, agup=None, settings=None)
Bases: PyQt4.QtGui.QWidget
```

Manage the list of Reviewers, including assignments of topic weights

#### Parameters

- **parent** (*obj*) – instance of main\_window.AGUP\_MainWindow or None
- **agup** (*obj*) – instance of agup\_data.AGUP\_Data
- **settings** (*obj*) – instance of settings.ApplicationQSettings

**closeEvent** (*event*)

**details\_modified()**

OK to select a different reviewer now?

**editReviewer** (*sort\_name, prev\_index*)

select Reviewer for editing as referenced by sort\_name

**index\_to\_ID** (*index*)

convert QListView index to sort\_name string

**isReviewerListModified()**

**onDetailsModified**(\*args)

**onTopicValueChanged** (*sort\_name, topic, value*)

called when user changed a topic value in the details panel

**on\_item\_clicked** (*index*)

called when changing the selected Reviewer in the list

**restoreWindowGeometry()**

put the window back where it was

**saveReviewerDetails()**

copied Reviewer details from editor panel to main data structure

**saveWindowGeometry()**

remember where the window was

**selectFirstListItem()**

**selectModelByIndex** (*curr, prev*)  
select Reviewer for editing as referenced by QListView index

### Parameters

- **curr** (*index*) – sort\_name string of current selected reviewer
- **prev** (*index*) – QListView index of previously selected reviewer

**setModel** (*model*)

Assign\_GUP.revu\_mvc\_view.**main**()  
simple starter program to develop this code

## module: settings

Support for AGUP program settings

A settings file is used to preserve certain values of the application (such as window positions and full path to the project file). The name of the settings file is given in the main window. Note, the settings file may have the suffix ".ini" on some operating systems. Remove the settings file to clear any settings. There is also a menu item to clear this file and reset it to defaults.

This module uses QSettings (<http://doc.qt.io/qt-4.8/qsettings.html>).

---

**Note:** Multi-monitor support : method restoreWindowGeometry()

On multi-monitor systems such as laptops, window may be restored to offscreen position. Here is how it happens:

- geo was saved while window was on 2nd screen while docked
- now re-opened on laptop display and window is off-screen

For now, keep the windows on the main screen or learn how to edit the settings file.

---

---

```
class Assign_GUP.settings.ApplicationQSettings
    Bases: PyQt4.QtCore.QSettings

    manage and preserve default settings for this application using QSettings

    Use the .ini file format and save under user directory

    getEmailKeywords()
        return the email substitution keywords as a dictionary

    getKey(key)
        return the Python value (not a QVariant) of key or None if not found
            Raises TypeError – if key is None

    getPrpFile()

    getReviewCycle()

    keyExists(key)
        does the named key exist?

    resetDefaults()
        Reset all application settings to default values.
```

---

```

restoreSplitterDetails(window)
    put the splitter back where it was

        Parameters window(obj) – instance of QWidget

restoreWindowGeometry(window, group=None)
    put the window back where it was

        Parameters window(obj) – instance of QWidget

saveEmailKeywords(keyword_dict)
    remember the email substitution keywords

saveSplitterDetails(window)
    remember where the splitter was

        Parameters window(obj) – instance of QWidget

saveWindowGeometry(window, group=None)
    remember where the window was

        Parameters window(obj) – instance of QWidget

setKey(key, value)
    set the value of a configuration key, creates the key if it does not exist

        Parameters key(str) – either key or group/key

    Complement: self.value(key) returns value of key

setPrpFile(prp_file)

setReviewCycle(review_cycle)

updateTimeStamp()

```

## module: signals

Custom Qt4 signals

signal	args	comments
changed		template editor
checkBoxGridChanged		reviewer assignment
closed		topics_editor
recalc		dotProduct
topicValueChanged	str, str, float	reviewer or proposal

```

class Assign_GUP.signals.CustomSignals
    Bases: PyQt4.QtCore.QObject

    custom signals

```

## module: tools

common tools used in various places

for more information on the various codepoints, see <https://docs.python.org/2/library/codecs.html#standard-encodings>

```

Assign_GUP.tools.text_decode(source)
    try decoding source with various known codepoints to unicode

```

```
Assign_GUP.tools.text_encode(source)
    encode source using the default codepoint
```

**module: topic\_slider**

add label, slider, value to a QGridLayout

Coordinate the action of a slider with the topic value:

label	value	slider
bio	0.7	--- --- ---  [-]  ---
phys	0.2	--[   ]-- --- --- ---

widget	type	description
label	QLabel	mnemonic name (no white space)
value	QLineEdit	string with floating point value: 0 <= value <= 1.0
slider	QSlider	graphical adjustment of value

These three widgets will be added to the *parent* widget, assumed to be on the same row of a QGridLayout.

A *topic* (known here as *label*) is some scientific area of interest to the PRP. Such as, for the SAXS review panel, some of the proposals are for XPCS (X-ray Photon Correlation Spectroscopy).

Each proposal will have a strength value assigned for each topic, indicating how important that topic is to the proposed experiment.

Each reviewer will have a strength value assigned for each topic, indicating the strength of that reviewer in the particular topic.

The strength values will be constrained to the range [0 .. 1]. A QValidator() object will be used to color the background of the QLineEdit to indicate whether or not the entered text is acceptable. The value of the slider will update with acceptable values from the text entry. The background color indicates acceptable or invalid input. The slider will be updated for acceptable values. The validator will also constrain the input to a precision of 2 decimal places.

---

```
class Assign_GUP.topic_slider.AGUP_TopicSlider(parent, row, label, value)
```

Bases: PyQt4.QtCore.QObject

add topic, slider, value\_entry to a QGridLayout

```
getSliderValue()
```

```
getValue()
```

```
onSliderChange(value)
```

update the QLineEdit when the slider is changed

```
onValueChange(value)
```

update the QSlider when the value is changed

```
setSliderValue(value)
```

set value of the slider indicating strength of this topic (0:low, 100: high)

**Parameters** **value** (*int*) – 0 <= value <= 100

This routine sets the text value.

```
setValue(value)
```

set strength of this topic (0:low, 1.0: high)

**Parameters** **value** (*int*) – 0 <= value <= 100

This routine sets the slider value.

**module: topics**

Support AGUP topics

**class Assign\_GUP.topics.Topics**

Bases: object

manage the list of AGUP topics (known here as key)

**add**(key, value=0.0)

define a new topic (known here as key)

**addTopics**(key\_list)

add several topics at once (with default values)

**Parameters** **key\_list** ([str]) – list of topics (strings) to be added

**clearAll**()

remove all keys from the list of topics

**compare**(other\_topics\_object)

compare topics in self.topics with the other\_topics\_object, return True if identical

compares sorted list of topics between each object

**Parameters** **other\_topics\_object** (obj) – instance of Topics()

**diff**(other\_topics\_object)

differences in list of topics between self.topics and other\_topics\_object

Comparison assumes that self.topics is the final result. Returned result shows topics added and removed from other\_topics\_object to obtain current list.

**Parameters** **other\_topics\_object** (obj) – instance of Topics()

**Returns** ([],[]) first list is topics added, second list is topics removed

**dotProduct**(other)

normalized dot product of Proposal (*self*) and Reviewer (*other*) topic strengths,  $\vec{p} \cdot \vec{r}$

**Parameters** **other** (obj) – instance of Topics()

**Returns**  $\sum \vec{p} \cdot \vec{r} / \sum \vec{p}$

•  $\vec{p}$  is array of topic value strengths for Proposal

•  $\vec{r}$  is array of topic value strengths for Reviewer

**exists**(key)

Is key already known?

**get**(key)

return value of an existing topic (known here as key)

topic must exist or KeyError exception will be raised

**getTopicList**()

return a list of all topics

**importXml**(xmlFile, read\_values=True)

**Parameters**

- **filename** (str) – name of XML file with Topics

- **read\_values** (bool) – import topic values?

**importXmlTopics** (*parent\_node*, *read\_values=True*)  
make this common code segment reuseable

**Parameters**

- **parent\_node** (*obj*) – XML parent node
- **read\_values** (*bool*) – import topic values?

**inOrder()**

**remove** (*key*)  
remove the named topic

**Parameters** **key** (*str*) – topic to be removed

**removeTopics** (*key\_list*)  
remove several topics at once

**Parameters** **key\_list** (*[str]*) – list of topics (strings) to be removed

**set** (*key*, *value*)  
set value of an existing topic (known here as *key*)

topic must exist or KeyError exception will be raised

**valueOrder()**  
sort by topic values

**writeXml** (*specified\_node*, *write\_values=True*)  
write Topics' data to a specified node in the XML document

**Parameters**

- **specified\_node** (*obj*) – XML node to contain this data
- **read\_values** (*bool*) – write topic values?

Assign\_GUP.topics.**checkTopicValueRange** (*value*)  
topic values must be 0..1 inclusive: standardize this check

**Parameters** **value** (*float*) – topic value to be checked

Assign\_GUP.topics.**diffLists** (*new\_list*, *old\_list*)  
differences between two lists, return tuple([items added], [items removed])  
assumes each list had only unique entries, no redundancies

**Parameters**

- **new\_list** (*[str]*) – new list of strings to be compared
- **old\_list** (*[str]*) – old list of strings to be compared

Assign\_GUP.topics.**sortListUnique** (*the\_list*)  
sort list and eliminate redundant items

- make a dictionary with each list item
- redundancies will be overwritten

**Parameters** **the\_list** (*[str]*) – list of strings to be sorted

Assign\_GUP.topics.**synchronizeTopics** (*a\_list*, *b\_list*)  
make the topic names in each list be the same  
• assumes each topics list had only unique entries, no redundancies

- modifies objects in place

#### Parameters

- **a\_list** (*obj*) – instance of Topics()
- **b\_list** (*obj*) – instance of Topics()

### module: topics\_editor

GUI to edit the list of topics

```
class Assign_GUP.topics_editor.AGUP_TopicsEditor(parent=None, topics_list=None, settings=None)
Bases: PyQt4.QtGui.QDialog
add topic, slider, value_entry to a QGridLayout
closeEvent(event)
getTopicList()
    when all editing is complete, call this method to get the final list
onAdd(*args, **kw)
    add the text in the entry box to the list of topics
onCloseButton(event)
onDelete(*args)
    remove the selected item from the list of topics
restoreWindowGeometry()
    put the window back where it was
saveWindowGeometry()
    remember where the window was
```

### module: xml\_utility

XML utility methods

```
exception Assign_GUP.xml_utility.IncorrectXmlRootTag
Bases: lxml.etree.DocumentInvalid
the root tag of the XML file is incorrect

exception Assign_GUP.xml_utility.InvalidWithXmlSchema
Bases: lxml.etree.DocumentInvalid
error while validating against the XML Schema

exception Assign_GUP.xml_utility.XmlSyntaxError
Bases: lxml.etree.XMLSyntaxError
Xml Syntax error

Assign_GUP.xml_utility.getXmlText(parent, tag, default=None)
Read the text content of an XML node
```

#### Parameters

- **reviewer** – lxml node node

- **default** – default value is no node text

**Returns** node text or None

`Assign_GUP.xml_utility.readValidXmlDoc(filename, expected_root_tag, XML_Schema_file, alt_root_tag='', alt_schema=None)`

Common code to read an XML file, validate it with an XML Schema, and return the XML doc object

**Parameters** `XML_Schema_file` (`str`) – name of XML Schema file (local to package directory)

`Assign_GUP.xml_utility.validate(xml_tree, XSD_Schema_file)`

validate an XML document tree against an XML Schema file

**Parameters**

- `xml_tree` (`obj`) – instance of `etree._ElementTree`
- `XSD_Schema_file` (`str`) – name of XSD Schema file (local to package directory)

## History of Source Code Changes

### 2017.4.0

- #72 build for RTD in conda virtual environment
- #25 pick up GitHub release info using python-versioneer

**2017.3.1** fixes (issue #69) resolve conflicting reviewer assignments on XML import

**2017.3.0** fixes (issue #67) call `setModel()` after importing reviewers

**2016.1025.0** standardize versioning kit with `pyRestTable`

**2016.0312.0** fixes (issue #58) excluded reviewers are not auto-assigned, fixes (issue #63) save changes before opening another project

**2016.0311.1** (fixes #57) codepoint conflicts resolved

**2016.0309.1** (fixes #50) window objects need to be None after disposal

**2016.0309.0** (fixes #51) topic strengths not assigned automatically

**2016.0308.4** (fixes #55) unhandled non-ASCII character(s)

**2016.0209.0** added missing imports

**2016.0208.0** (#33) validate number entry in topic slider

**2016.0205.0** (#44) reports update after auto-assign

**2016.0203.2** fixes (issue #36)

**2016.0203.1** fixes (issue #21)

**2016.0203.0** fixes (issue #19), fixes (issue #32), fixes (issue #35), fixes (issue #41), fixes (issue #42)

**2016.0201.1** provide an “un-assign all proposals” capability (issue #37)

**2016.0201.0** announce that `auto_assign` has completed (issue #36)

**2016.0114.1** described program installation

**2016.0114.0** added simple auto-assignment of proposals (issue #20), report window focus problem fixed

**2016.0113.4** remove search for legacy .xsd file

**2016.0113.3** assignments report window re-displays on demand now

**2016.0113.2** resolved errors when building the documentation due to versoneer

**2016.0113.1** #24 apparently fixed by previous work

**2016.0113.0** added *versoneer* support, LICENSE GUI now displays (#24 fixed also)

**2015.0921.0** first release of new **Assign\_GUP** application

**2015.09.rc1** first pre-release using PyQt4, resolving issues 1-9, provides every capability in previous wxPython version

**2013.11.0** last release using wxPython

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```

# CHAPTER 3

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- modindex
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