The WISE plugins for the i2b2 webclient

**Background:** The i2b2 webclient contains panels for its user to issue queries through its drag-and-drop graphic user-interface. Users can drag and drop any queries they created into the “shared” folder of the Workplace panel, to share them with other researchers. When researchers share their queries, the Workplace panel often becomes full of shared items. While thoughtful placements of these items within logical and hierarchical folder structures may help, manually combing through all the tree branches to try to locate or isolate queries is impractical.

**The WISE Plugins:** The purpose of this tool set is to facilitate and enhance the sharing of the items or objects in the Workplace panel of the i2b2 web client, and to avoid unnecessary repetitions of existing queries.

**The WISEsearcher Plugin:** This plugin provides the following main functions:

1. Finds all Workplace items / objects (folders, queries, patient sets, etc.) containing the terms provided (in either their annotations or their names) in the condition selected.
2. Tabulates found items (with their corresponding icons) in the alphabetical order of their paths.
3. Exports aforementioned tabulated data (without the item icons) into an Excel spreadsheet file.

The first function allows researchers to specify all the relevant search terms of their investigation. The second function provides researchers with detail tabulated search results that identify all the items that satisfy the search conditions. The third function provides a convenient way for a researcher to save these data for future reference.

**WISEannotator plugin:** The i2b2 webclient Workplace panel framework does provide an “annotate” menu. However, this “annotate” menu has a few limitations:

1. It only provides a dialog with a text field of just 76 characters long, making it very difficult to read any note longer than that length.
2. It is difficult to edit an existing lengthy annotation.
3. It does not check if the entered note exceeded the 255 character length limit; displaying a generic, non-descriptive error dialog only if the oversized note is rejected by i2b2.
4. It is impossible to enter any multi-paragraph annotation.
5. It has no provision for adding simple standalone keywords or tags.
6. It has no provision for adding simple author or creator information.
7. The annotation is cached instead of fetched from the database every time – making it susceptible to being outdated if another user happens to have submitted an update from another webclient.

This plugin:

1. Facilitates annotating a Workplace item (object) with distinct short paragraphs for better descriptions, keywords (tags) to facilitate searches, and author annotation.
2. Dynamically keeps count of the length of the annotation as it is being updated, and warns the user when it reaches the length limit.
3. Displays the saved annotation for review.

**Conclusions:** The i2b2 webclient has been and continues to be invaluable in facilitating translational research at UMass Medical School (UMMS). The UMMS Biomedical Informatics Core, fund by the CTSA, seeks to develop tools for i2b2 that facilitate an investigators ability to use the platform for cohort discovery. As a result, these webclient plugins, suitable for enhancing the user experience and reducing the cohort-gathering cycle, has been identified and developed for deployment. The WISEsearcher provides a convenient and effective way for researchers to identify any Workplace items that could be germane to their own investigations. The WISEannotator provides an enhanced user interface to help the researchers make more meaningful notes as well as add useful identification tags for their queries that they share with the rest of the user community.

These plugins are part of the tool set that targets the WISE (Workplace Items Sharing Enhancement) effort here in UMMS. They are invaluable additions to a user’s toolkit and will further expand the user base.

For more information visit: [http://micard.umassmed.edu/help.html#WISE-tools](http://micard.umassmed.edu/help.html#WISE-tools)