IUDML Version 1 Interface Specification
Indiana University Digital Music Library Project
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Note: Where this document conflicts with the earlier Screen Examples document (Sept. 27, 2001), this document takes precedence.

I. Introduction

The four main user interfaces of the IUDML for Version 1 are as follows:

- Audio Player [Player] - listen to audio content
- Score Viewer [Viewer] - view digitized score images
- Search/Browse Window [Search] – search and browse metadata to locate content
- Administrative/Cataloging Windows [Admin] – a variety of dialogs to maintain the collection and enter new data

Several ‘helper’ windows will also exist, which will help the user accomplish specific tasks:

- Login - allow user to login; a special window appearing only once at start of session
- Help - show tutorials and help information
- Bookmarks – work with bookmarks and generate URL’s

Each of these interface components is discussed in detail in the following sections. However, first we must discuss menus and window behaviors, two issues that apply to the system as a whole.

II. Menus and Window Behaviors

Each of the IUDML interface components mentioned above will appear in its own top-level window. Any number of windows may be opened at once, except for the single Bookmarks window. Most windows can be minimized, maximized and resized as appropriate. The user may navigate freely back and forth between windows in the usual way.

A menu bar will be available for each Player, Viewer, and Search window. On Microsoft Windows systems, a menu bar will appear at the top of each window; on Macintosh OS X systems, the menu bar will instead appear in the menu bar at the top of the screen, in the usual way for Macintosh applications; this menu bar, however, will always reflect the appropriate menus for the frontmost window. All menu items will also have keyboard shortcuts, which will allow the user to access the menu commands using the keyboard. These shortcuts will be based on the customary keyboard shortcuts for Macintosh and Microsoft Windows operating systems. Each window will have the following Common Menus available from the menu bar.

A. File Menu
   - New Search – Opens a new Search window
   - Export (disabled except in Viewer windows) – See Viewer section for description
   - Close – Closes only the frontmost open window
   - Exit (Quit on OS X, from Application menu)– Closes all IUDML windows and exits the system (a dialog box will confirm this choice)

B. Edit Menu
   The common Cut, Copy, Paste, and Clear commands for selecting and exporting text to the clipboard will go here.
C. Bookmarks Menu
   Access bookmarks and the Bookmarks Window. See Bookmarks, below.

D. Admin Menu
   Available for catalogers only, this menu is used for various administrative tasks; see Admin section below for details.

E. Window Menu
   This menu will display a list of all currently open windows by title for easy navigation between them.

F. Help Menu
   Provides access to the help system. See Help, below.

Each kind of window (Viewer, Player, and Search) will also have a menu unique to that window. Most of the functionality of that interface will be accessible directly from these menus. See individual sections below for details.

III. Help

The Help system for v1 consists of both simple pop up ‘tooltips’ for individual controls and higher level help and tutorials through a standard web browser window.

A. Tooltips
   Tooltips are short descriptions of individual controls which appear when the mouse hovers over that control. These should be available for controls on all windows.

B. Help Window (Web Browser)
   All higher-level help for the IUDML in Version 1 will be handled through a separate web browser interface. This browser could display tutorials, FAQ’s, descriptions of each of the IUDML interface components, information about the IUDML project, and any other help information which is available. Since the help will be web browser based, following links through the help system to various topics will be facilitated. The web browser can be invoked from any window via the common ‘Help’ menu. This menu will display a series of help topics, with the first topic always being a help screen specific to the frontmost window.

IV. Login

The Login window appears when a user first invokes the IUDML application. The user’s identity, as specified at the Login window, can determine what functions and content of the system the user is allowed to access. The Login window always appears before any other windows. Users must always successfully authenticate before accessing any other IUDML windows. The Login window consists of the following components:

- **Username** - Text field for entering username. ‘Guest’ usernames may be possible depending on location.
- **Password** - Text field (hidden text) for entering the password for this user.
- **Login Button**
- **Cancel Button** – Cancel the login and quit the program.

During the authentication process, the user’s name is checked to see if that user has cataloger privileges. If the user has these privileges, a dialog will ask whether the user wishes to log in with cataloger privileges, or wishes to log in as a regular user.
V. Bookmarks

Bookmarks can be created directly from any Player or Viewer window. A user’s bookmarks will be saved internally by the application and will be recalled the next time the user logs in, and may also be exported and imported. Bookmarks may be accessed directly from menus, or a user may open up a Bookmarks Window where bookmarks can be edited, exported, or imported.

A. Creating Bookmarks
The user may create a bookmark at any time from a Player or Viewer by pressing the ‘Add Bookmark’ button on the Player or Viewer. The application will choose a name for the bookmark based on the name of the current work, but the user will be allowed to change this name in the Bookmarks Window. Bookmarks for v1 will encode the current container, media object, and time offset (for Player windows) or page number (for Viewer windows).

B. The Bookmarks Menu
At any time, the user may access his or her bookmark list directly by accessing the ‘Bookmarks’ common menu on any main window. The first option will be Add Bookmark. This option, which is only enabled in Player and Viewer windows, has the same functionality as pressing the Add Bookmark button (see above). The second option will always be Edit Bookmarks (see below), followed by a list of all the user’s current bookmarks. Bookmarks will be listed by name. Ordering will be based on the order that the bookmarks were created, unless the user decides to reorganize the bookmarks through the Bookmarks Window. Bookmarks may be placed in folders; the bookmarks menu will be hierarchical to allow easy navigation through the user’s bookmarks. Choosing a bookmark opens up a new Player or Viewer window and queues the window to the offset time or page number of the bookmark. Or, if a window for the container that contains the bookmark is already open, that player or viewer will be brought to the front and queued to the appropriate spot.

C. The Bookmarks Window
The Bookmarks Window is invoked through the Edit Bookmarks command from a Bookmarks menu. This window is similar to a modeless dialog, in that it does not contain menus and may be open while the user is using other windows.

The Bookmarks Window displays a ‘tree’-type list of all the user’s current bookmarks by name. Bookmarks can be dragged and dropped into different locations on the bookmark window, including dragging and dropping into folders. Clicking a bookmark will select it (highlight it) for dragging and dropping. Double-clicking a bookmark or selecting a bookmark and pressing ‘Open’ will jump to the bookmark directly, similar to accessing bookmarks directly from the Bookmarks menu. Multiple bookmarks may be selected at one time for dragging and dropping, although they may not double-clicked. At the bottom of the bookmarks window, there will be additional buttons:

- Rename – Active only if a single bookmark or folder is selected; allows the user to give the bookmark or folder a new name.
o **Open** – Active only if a single bookmark is selected; jumps directly to the selected bookmark, similar to accessing bookmarks directly from the Bookmarks menu.

o **Properties** – Active only if a single bookmark is selected; choosing this option brings up a dialog box with various information about this bookmark, including the name of the bookmark, container and section that the bookmark represents, and a URL that can be used from a web browser to start the IUDML application and queue a Player or Viewer. Note that for Version 1, these properties cannot be edited, only viewed or copied.

o **Delete** – Active only if bookmark(s) and/or folder(s) are selected, including multiple selections; removes the bookmarks and/or folders from the list. Selected bookmarks can also be deleted by pressing the ‘Delete’ key on the keyboard. A warning dialog with cancel option will always appear before deletion.

o **New Folder** – Creates a new folder for bookmarks to be dragged into; default name will be ‘Folder 1’ or something similar, although the folder will immediately be selected for renaming by the user.

o **Import** – Allows the user to load in bookmarks from a local HTML file. These bookmarks will be added to the user’s current bookmarks by creating a new folder and placing all the bookmarks within this folder.

o **Export** – Allows the user to generate and save a web page containing URL links to each of his or her bookmarks.

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### VI. Player

The audio player interface allows the user to listen to and navigate through audio content. The interface consists of the usual audio player controls (play, RW, FF, etc.) as well as controls which allow the user to navigate via the structure of the work. The title of each Player window will be the title of the container, as contained in the Structural Metadata for the container.

#### A. General Functions

1. **Volume** – The user may adjust the volume of the audio output via a **Volume Slider**. The default volume level will be the maximum level, which corresponds to the overall system volume; the minimum level is silence. A **Mute Checkbox** accompanying the slider will allow the user to mute the output momentarily.

2. **Status** – A status bar will appear at the bottom of the Player to give the user feedback on the state of the Player. A **Status Readout** gives a description of the current activity. Possible states include ‘Idle’, ‘Playing Stream’, ‘Buffering/Loading’, and ‘Error’. An error message might be generated if anything unexpected happens (files not found, etc.). It may also be possible to give feedback to the user of the amount of wait time for buffering (20% done, etc.).

3. **Play/Pause/Stop Buttons** – These controls stop and start playback of the audio stream. The Stop button will both stop the audio stream and reset to the beginning of the current track, CD/Side, or Container, depending on the status of the Time Slider (see below).

4. **RW/FF Buttons** – These two buttons allow incremental navigation through the audio content. Clicking one of them pauses the stream (if currently streaming), and begins to move the playback position through the content. When the button is no longer being pressed, playback will shift to the new location.

5. **Next/Previous Buttons** – These buttons will automatically relocate playback to the beginning of the next or previous track. If the container is a multi-CD set or analog disc, Next/Previous will also navigate to the next or previous CD or analog disc side when appropriate.
6. **Time Elapsed Indicators** – The **Time Slider** will indicate the elapsed time for the current track or audio segment (side, CD, etc.), or the entire Container. Moving the slider will change the playback position of the current stream to the new location. While the slider is moving, playback will pause (if currently streaming), and will resume when the mouse is released. A time readout will display a textual readout of the time elapsed out of the overall time for the current track, audio segment, or Container in the form ‘2:34 / 3:31’ (2 minutes 34 seconds out of 3 minutes 31 seconds total). A combo box will allow the user to choose the segment that the slider controls: the current track, CD/Side, or entire Container.

7. **Track and Bookmark Indicators**
   Above the Time Slider, a **Bookmark Indicator** will be displayed for each bookmark within the current audio segment, in the appropriate place proportional to the length of the slider. Clicking on one of these bookmark indicators immediately navigates the Player to this location within the audio segment. Additionally, when the user is viewing an entire CD or Side or an entire container, **Track Indicators** above the slider will show the placement of tracks within the CD/Side or container.

8. **Currently Playing** – This combo box displays the number only of the current track and side (or CD). The user may also move to any other track by accessing the appropriate selection from the combo box. This box appears only when in Compact View (see below).

9. **Add/Clear Bookmark** – The ‘Add’ button will add a bookmark of the current Container, media object, and time offset to the user’s bookmark list (see Bookmarks, above). The ‘Clear’ button will clear all bookmarks in the current track, CD/Side, or Container, depending on the current state of the Time Slider.

10. **Compact/Full View Switch** – This button will toggle the Player between Full and Compact modes. In Compact mode, the Structural Navigation Frame will not be shown, and will be replaced by the ‘Currently Playing’ combo box.

B. **Menu Functions**
   In addition to the Common Menus, the Player will have a **Player** menu. From this menu, the user can access the following commands:

1. **Volume** – Opens up a submenu with three options.
   a. **Up** – Raise the volume level a predetermined amount.
   b. **Down** – Lower the volume level a predetermined amount.
   c. **Mute** – Turn off sound momentarily (checked or unchecked).

2. **Control** – Opens a submenu with the following options. These options will have the same functionality as the corresponding buttons on the Player interface.
   a. **Play/Pause**
   b. **Next**
   c. **Previous**

3. **Compact View** – Toggles between compact and full views.

C. **Structural Navigation Frame:**
   Structural navigation will be accomplished via two ‘tree-view’ displays, the **Container Navigation** and **Work Navigation** displays. Since the two displays contain somewhat redundant information, they will be displayed on separate tabs within the Structural Navigation Frame. The default tab will be Container Navigation. The individual tabs are explained below:

1. **Container Navigation** – This tree-view display shows at the outermost level the name of the container, at the next level the individual audio segments if more than one exists (CD’s, analog disc sides), and at the next level the names of tracks. Some tracks which share part of their name (movements of a symphony for example) may contain additional levels of hierarchy. Clicking on any part of the Container Navigation display will queue the audio to the beginning of that track, or to the first track in that section. Clicking a small **Info** icon next to the container title will bring
up a Search window which will display the full record for this container and all its
instantiations. **NOTE:** The actual name of this tab as shown on the display will reflect
the original media format (‘CD Navigation’, ‘Analog Disc Navigation’, etc.)

2. **Work Navigation** – This tree-view display shows at the outermost level a list of the
works that are on the current container. Each work-branch of the tree opens into a
listing of the sections of that work for which there are bindings. For Version 1 this is
probably a listing of movements, or perhaps a more hierarchical list of sections such
as would be contained in an opera. Clicking on any part of the Work Navigation
display will queue the audio to the beginning of that section. Clicking a small **Info**
icon next to each of the work titles will bring up a Search window which will display
the full record for this work.

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**VII. Viewer**

The score viewer interface allows the user to view and navigate through scanned score images.
The interface consists of controls which allow the user to modify the way images appear
onscreen, export images for printing, and navigate through score images via various navigational
controls. The title of each Viewer window will be the title of the container, from the container’s
Structural Metadata.

**A. General Functions:**

1. **Score Display** – The actual score images are displayed in this panel, which will
grow and shrink depending on the overall size of the Viewer. If the score is larger
than the current size of this window, scroll bars on the edges will allow the user to
view the rest of the score image. The display can show either 1 or 2 score pages at a
time, depending on current settings.

2. **Zoom** – Zooming of score images will be accomplished with two buttons and an
editable combo box. A **Zoom In** button will magnify the current image(s), up to
some arbitrary maximum, and a **Zoom Out** button will decrease magnification of the
current image(s), also to some arbitrary minimum. A combo box will show the
current percent magnification, and allow the user to directly enter percentage values
(within arbitrary constraints). The drop-down menu from this combo box will offer
the following options: a number of percentages (200%, 100%, 50%, etc.), **Fit to Window**, **Fit Width**, and **Fit Height**. The ‘fit’ choices will cause the image to be
resized if the window is resized.

3. **Status** – A status bar will appear at the bottom of the Viewer to give the user
feedback on its current state. A **Status Readout** gives a description of the current
activity. Possible states include ‘Idle’, ‘Loading Image’, and ‘Error’. An error message
might be generated if anything unexpected happens (files not found, etc). It may
also be possible to give feedback to the user of the amount of wait time for loading
images (20% done, etc.).

4. **Add/Clear Bookmark** – The ‘Add’ button will add a bookmark of the current
container, media object, and page number to the user’s bookmark list. If two pages
are being viewed at once, the bookmark will apply to the first viewed page (on the
left-hand side). The ‘Clear’ button will clear all pages in the current Container.

5. **Next/Previous Page** – Paging through scores will handled by a horizontal scroll
bar above the Score Display. Clicking on the ends of the scroll bar will automatically
advance the Viewer page by page through the score. If the container is a multi-
volume score, Next/Previous will also navigate to the next or previous score volume
when appropriate. If the user is viewing two pages at once, the viewer will advance
the page on the right side to the left and load in the next page on the right. The user
may also use to scroll bar to quickly navigate to any page in the score container.
6. **Track and Bookmark Indicators** - Above the Next/Previous Page scroll bar, a **Bookmark Indicator** will be displayed for each bookmark within the current container. Clicking on one of these bookmark indicators immediately navigates the Viewer to this page.

7. **Page Number** – This textbox by default displays the current page ‘number’ (the number as shown on the page). Users may input text into this box, and then press a **Go To** button next to the textbox to directly navigate to a different page. When viewing two pages at once, this box will show both page numbers (ex. 11-12). By choosing the correct menu option, users may also view the actual page number as it is represented on the media object.

8. **Single/Multi Page View Toggle** – A **Switch To Multi-Page View** button, which changes to **Switch To Single Page View** when pressed, will allow either one or two score pages to be displayed at a time in the Score Display.

9. **Compact/Full View Toggle** – This button will toggle the Viewer between Full and Compact modes. In Compact mode, the Structural Navigation Frame and other nonessential controls will not be shown.

**B. Menu Functions:**

1. **Export** – The **Export** function, available from the ‘File’ menu, allows the user to export score images to a local file for printing. (Printing natively from within the IUDML application will not be supported in Version 1.) The Export function may be available only for certain scores, depending on copyright restrictions. When this selection is chosen, a pop-up dialog appears which allows the user to select whether he or she wishes to export the entire score or the page or pages currently displayed. The appropriate image files are then downloaded to the client computer for opening from a web browser for printing. When exporting an entire score, the wait time could be quite long, so a separate dialog will appear to show download progress and allow the user to cancel the process.

In addition to the Common Menus, the Viewer will have a **Viewer** menu. From this menu, the user may access the following commands:

2. **Zoom** – This menu will have a number of submenu options, which correspond to the choices in the Zoom combo box.

3. **Control** – Two submenus with the same functionality as the corresponding buttons.
   a. **Next Page**
   b. **Previous Page**

4. **View** – Consists of two submenus. **Multi-Page View** may be either checked or unchecked, to control whether Single Page or Multi-Page View is selected. **Compact View** may be checked or unchecked, to toggle between Compact and Full views.

5. **Page Numbering** – A submenu will contain two radio button options, **As Shown on Score**, and **File Numbering**. The default is ‘As Shown On Score’. If ‘File Numbering’ is shown, the Page Number textbox will display the actual number of the page as designated on the media object.

**C. Structural Navigation Frame**

Structural navigation will be accomplished via two ‘tree-view’ displays, the **Score Navigation** and **Work Navigation** displays. Since the two displays contain somewhat redundant information, they will be displayed on separate tabs within the Structural Navigation Frame. The default tab will always be Score Navigation. The individual tabs are explained below:

1. **Score Navigation** – This tree-view display shows at the outermost level the name of the container, and displays hierarchically within the tree the names of score volumes, page groups (works and work movements and other groups such as ‘Index’ or ‘Table of Contents’), and individual pages. Clicking on any part of the Score
Navigation display will cause the Score Display to show the selected page, or the first page in that section. Clicking a small Info icon next to the container title will bring up a Search window which will display the full record for this container and all of its instantiations.

2. **Work Navigation** – This tree-view display shows at the outermost level a list of the works that are in the current container. Each work branch of the tree opens into a listing of the sections of that work for which there are bindings. For Version 1 this is probably a listing of movements, or perhaps a more hierarchical list of sections such as would be contained in an opera. Clicking on any part of the Work Navigation display will change the page shown in the Score Display to the first page of that section. Clicking a small Info icon next to any of the Work titles will bring up a Search window which will display the full record for this work.

### VIII. Search

The Search interface allows the user to discover content in the system. The interface consists of a Search window with two frames, a **Query Frame** and a **Results Frame**. A Search window always appears first when the application is initiated, and it is possible for more than one of these windows to be open at once. The title of the Search window for Version 1 will be static and not reflect the current search (for example, ‘IUDML Search’).

**A. Query Frame**

The Query Frame runs across the top of the overall Search window. The entire Query Frame should normally be viewable without scrolling. It will be possible to navigate between search fields in the Query Frame by using the Tab button on the keyboard. Query text fields will be supplied with both appropriate labels and also several examples of appropriate use of that field, featuring both single-word and multi-word examples. These query fields will be wide and will auto-scroll, to facilitate entry of long text queries.

The Query Frame consists of three tabs; each tab represents a different kind of search and contains different fields. The tabs are Basic, Advanced, and Keyword. (A fourth Admin tab is available for catalogers; see the Admin section for details.) The default tab is Basic. The components of each tab are explained below.

1. **Basic Search** - A text entry box, label and examples for each of the following will be supplied:
   a. **Creator** *(composer, poet, etc.)*
   b. **Performer** *(or Conductor, etc.)*
   c. **Work Title**

   Additionally, the user will be able to select **Key** and **Media Format**.

   d. **Key** - Two components are used to select a key. The **Key Combo box** lists the 12 keys by letter name, with enharmonics ('C#/Db') listed together as one option. It is also possible to choose All from this combo box, and 'All' is the default. The **Mode Combo box** displays a list of possible modes for the key. The possible choices are Major, Minor, Other and All. The default will be 'All'.

   e. **Media Format** – The **Media Format Combo box** allows the user to specify what types of media to search for. The user may select from the following choices: All, All Recordings, CD, Analog Disc, Tape, All Scores, Full Scores, Reduced Scores, Parts, and Facsimile. The default is 'All'.

   f. **Clear Button** – Clear all text entry boxes and reset all combo boxes to defaults.
g. **Search Button** - Lastly, a Search Button will allow the user to initiate the search process and display the results in the results frame.

2. **Advanced Search** - The Advanced Search will have all of the same components as the Basic Search, plus the following additional text entry boxes (with labels):
   a. **Recording/Score Title**
   b. **Publisher**
   c. **Other Contributor (Editor, Producer, etc.)**
   d. **Subject Heading**

3. **Keyword Search** - The keyword search consists only of a **Keyword(s)** text entry box, a **Media Format Combo box**, and **Search** and **Clear** buttons. The keyword search process is substantially different than the other kinds of searches; see the next section for details.

B. **The Search Process**

Searching metadata in the IUDML is somewhat different than searching regular library catalogs. Our metadata is stored in a way that maintains rich relationships between people, works, instantiations, and containers. Although the actual search mechanism is thus somewhat complex, it is hoped that this richness translates into a more intuitive and meaningful searching and browsing experience for the user.

1. **Selection Screens**

   When the user initiates a Basic or Advanced Search, he or she will be taken through a series of screens which allow the user to correctly identify the components of his or her search. This disambiguation process will hopefully reduce situations in which the user must randomly search through large results sets. The following diagram identifies the order of the selection screens:

   ![Selection Screens Diagram]

   - **Creator Selection Screen**
   - **Performer Selection Screen**
   - **Work Selection Screen**
   - **Other Contributor Selection Screen**
   - **Recording/Score Title Selection Screen**
   - **Instantiation Selection Screen**
The individual screens are defined in more detail below. Regardless of the choices that the user makes, the final selection screen will always be either the Recording/Score Title Selection Screen or the Instantiation Selection Screen, because content can only be accessed directly from these two screens. When the user initiates a Keyword Search, the system will be unable to identify the meaning of each search term (whether it is a name, work, instantiation, etc.); therefore, Keyword Searches will always take the user directly to the Recording/Score Title Selection Screen.

2. General Search Engine Behavior
The following rules will be used when by the system when searching:
   a. In any given entry field, the user has the ability to enter multiple search terms. However, these search terms are applied to one field only. For example, entering "Brahms" and "Johannes" in the Creator field will find all name fields where both terms appear in a single field. Entering "Gilbert" and "Sullivan" will likely result in zero hits, as our catalog will (probably) not have any ONE composer whose name contains both the strings "Gilbert" and "Sullivan."
   b. On each Selection Screen, only results matching all search criteria will be shown, unless there are no such results (see Zero Results, below). However, it will be possible at many steps to branch in other directions (see descriptions of individual Selection Screens, below).
   c. If a particular Selection Screen would display only one result, that Selection Screen is skipped. This will help enable users who are more specific in their queries to quickly get to actual content.
   d. Implicit trailing wild cards will be assumed for all words entered into search fields. When a word matches a query word exactly (with no wild cards), that result will be emphasized to distinguish exact matches.
   e. The words 'AND', 'OR' and 'NOT' will work as Booleans only when using Keyword Search. Otherwise, an implicit 'AND' is always assumed within and between all fields.
   f. Word groups within quote marks will be treated as a single phrase rather than as separate words.
   g. Whenever a user diverges from a search path, by selecting an option such as 'View all Works By This Composer', a new Search window will open with an appropriate query and results.
   h. If a user switches from one type of search to another, filled-in text fields and combo box choices should be carried over into the new search when possible.
   i. The following chart shows the specific type of record that each query field searches against:
C. Results Frame

1. General Features

The Results Frame allows the user to view results, explore metadata, and to initiate Players and Viewers with selected content. The Results Frame will somewhat resemble a web browser, in that it will consist of both standard and colored, underlined text (links). It will be possible to navigate between links in the Results Frame by using the Tab button on the keyboard.

The Results Frame consists of several screens which are described in the following sections. Regardless of the current screen, the Results Frame always consists of the following components:

a. **Back** and **Forward Buttons** – Just as in a traditional web browser, these buttons allow the user to recall previous results screens.

b. **Status** – A status bar will appear at the bottom of the Results Frame to give the user feedback on its state. A **Status Readout** gives a description of the current activity. Possible states include ‘Idle’ and ‘Retrieving’. A **Cancel Button** will allow the user to cancel queries in progress.

c. **Sort by** – This combo box displays a list of ways that the current result set can be sorted. When the results screen is empty or the results cannot be resorted, this box is disabled. See individual selection screen descriptions for more details.
d. **Show** – This combo box allows the user to filter results by media type. The choices are **All**, **Recordings**, and **Scores**. The default is 'All'. This box is only enabled on the Recording/Score Title Selection Screen or the Instantiation Selection Screen, when the user did not specify Media Format in the original query.

e. **Results**
Search results will be displayed here. If there are more results than can be displayed within the current frame size, a traditional vertical scroll bar will allow the remaining results to be accessed. Only the Results should scroll; the rest of the Results Frame should remain visible at all times.

Directly above the results, the user will be given feedback as to what the results represent. This feedback will be structured in the following form:

4 creators matching 'Bach' were found:
  with the work matching 'Sonata'.
*Please select a creator from the list or choose 'Select All' to continue your query.*

OR

4 works matching 'Sonata' were found:
  where the Creator matched 'Bach, Johann Christian'.
*Please select a work from the list or choose 'Select All' to continue your query.*

Note that where the user has already made a specific choice on a previous screen, the entire work or name will be shown; for choices not yet specified, the original query field text will be shown.

For Selection Screens, the Results list will show only a small number of fields (see below for details). When possible, the text originally entered into the search fields will be highlighted within the display; fields that aren’t normally displayed (such as Variant Name fields) will be displayed if they contain the matching text. There will be no highlighting on Keyword results displays.

Partial View and Full View Screens will display Work, Name, Instantiation, and Container Records. For Partial View Screens, only a few selected fields will be shown, and empty fields will be hidden. For Full View Screens, all fields will be shown, including empty fields.

The following sections describe each of the Results Screens:

2. **Default Screen**
The Default Screen will be displayed in the Results Frame first, before the user has initiated a search. For Version 1, the Default Screen will probably contain information about the IUDML project and tips for successful searching strategies.

3. **Zero Results Screen**
When the user initiates a search, it is of course possible that there will be no results which match all the search criteria entered. This may be because the system truly does not contain the desired content, or this may be caused by a misspelling, incorrectly entered field, or other error. In order to facilitate the user, the system will attempt to help the user find appropriate content when zero results are found. This screen will use the following format:
NOTHING MATCHED ALL OF YOUR SEARCH CRITERIA. Try changing or removing search elements. The following information about this library’s holdings may help:

958 Work Titles match Concerto.
0 Creators match Brahms
2 Performers match Karajan.
2017 Keys match D Minor.

Note that it is possible that each term, when considered on its own, will have matches, but that all terms taken together will result in zero results. Also note that if multiple words are entered in a single field, each word receives a separate entry in this list.

4. **Creator Selection Screen**
The Results Frame components for the Creator Selection Screen will be displayed as follows:

   a. **Results List** – The matching creators will be displayed in a list. The displayed fields for each creator will be **Name, Variant Name** (only if query matches text here), **Birth/Death Dates**, and **Role**. The fields will be displayed in the following format:

      1. **Select**
         Name: Beethoven, Ludwig van (1770-1827)
         Role: Composer
      2. **Select**
         Name: Beethoven, Camper van (1970-)
         Role: Composer

Choosing the ‘Select’ link will select a particular creator and continue the query process by showing the next Selection Screen. Clicking on a creator name will bring up a pop-up menu with the following options:

   i. **View Detailed Information For This Creator**
      View the Name Record for the selected creator (see Name Full View Screen, below).
   ii. **Select Creator And Continue Query**
      Choosing this option has the same effect as choosing ‘Select’ from the Results List.
   iii. **View All Works By This Creator**
      Choosing this option initiates a new search for works by this creator, within the same search window.

   b. **Select All** – A Select All link at the top of the Results List will allow the user to select all creators and continue to the next Selection Screen.
   c. **Sort by** – The Results List will initially be sorted by creator name. The user may also sort by role, by choosing this option in the Sort By combo box.

5. **Performer Selection Screen**
The Results Frame components for the Performer Selection Screen will be displayed as follows:

   a. **Results List** – The matching performers will be displayed in a list. The displayed fields for each performer will be **Name, Variant Name** (only if query matches text here), **Birth/Death Dates** and **Role**. The fields will be displayed in the following format:
1. **Select**  
   Name: Horowitz, Vladimir (1903-1989)  
   Role: Performer

2. **Select**  
   Name: Horowitz, Helga (1934-1963)  
   Role: Conductor

Choosing the 'Select' link will select a particular performer and continue the query process by showing the next Selection Screen. Clicking on a performer name will bring up a pop-up menu with the following options:

1. **View Detailed Information For This Performer**  
   View the Name Record for the selected performer (see Name Full View Screen, below).

2. **Select Performer And Continue Query**  
   Choosing this option has the same effect as choosing 'Select' from the Results List.

3. **View All Works Featuring This Performer**  
   Choosing this option opens initiates a new search for works featuring this performer, in the same search window.

4. **Select All** – A Select All link at the top of the Results List will allow the user to select all performers and continue to the next Selection Screen.

5. **Sort by** – The Results List will initially be sorted by performer name. The user may also sort by role, by choosing this option in the Sort By combo box.

6. **Work Selection Screen**

The Results Frame components for the Work Selection Screen will be displayed as follows:

1. **Results List** – The matching works will be displayed in a list. The displayed fields for each work will be *Work Title, Composition Date, Variant Title* (only if query matches text here), *Composer*, and *Composer Birth/Death Dates*, and *Composition Date*. The fields will be displayed in the following format:

   1. **Select**  
      Work Title: Sonatas, piano, no. 14, op. 27, no. 2, C#minor (1801)  
      Variant Work Title: Moonlight Sonata  
      Composer: Beethoven, Ludwig van (1770-1827)

The following example shows a match was made against a particular section of a work:

2. **Select**  
   Work Title: Moonlight Serenade,  
   From Nighttime In New York (1943)  
   Composer: Porter, Cole (1891-1964)

Note that if a given work has more than one contributor in the Composer role, each composer will be shown. Choosing the 'Select' link will select a particular work and continue the query process by showing the next Selection Screen. Clicking on a work name will bring up a pop-up menu with the following options:

1. **View Detailed Information For This Work**  
   View the Work Record (partial view) for the selected work (see Work Partial View Screen, below).
ii. **Select Work And Continue Query**
Choosing this option has the same effect as choosing ‘Select’ from the Results List.

Clicking on a composer name will bring up a pop-up menu with the following options:

i. **View Detailed Information For This Composer**
View the Name Record for the selected creator (see Name Full View Screen, below).

ii. **View All Works By This Composer**
Choosing this option initiates a new search for works by this composer, within the same search window.

**NOTE:** Selecting a collective work will work differently than selecting a single work. Therefore, collective works will be displayed separately from other works and can only be selected individually.

b. **Select All** – A Select All link at the top of the Results List will allow the user to select all works and continue to the next Selection Screen. Note that Select All will only apply to non-collective works (see above).

c. **Sort by** – The Results List will initially be sorted by work name. The user may also sort by composer name, by choosing this option in the Sort By combo box.

7. **Other Contributor Selection Screen**
The Results Frame components for the Other Contributor Selection Screen will be displayed as follows:

a. **Results List** – The matching contributors will be displayed in a list. The displayed fields for each contributor will be **Name, Birth/Death Dates, Variant Name** (only if query matches text here), and Role. The fields will be displayed in the following format:

1. **Select**
   Name: Smith, George (1945-)
   Role: Editor

Choosing the 'Select' link will select a particular contributor and continue the query process by showing the next Selection Screen. Clicking on a contributor name will bring up a pop-up menu with the following options:

i. **View Detailed Information For This Contributor**
View the Name Record for the selected contributor (see Name Full View Screen, below).

ii. **Select Contributor And Continue Query**
Choosing this option has the same effect as choosing ‘Select’ from the Results List.

iii. **View All Recordings and Scores Featuring This Contributor**
Choosing this option initiates a new search for containers featuring this contributor.

b. **Select All** – A Select All link at the top of the Results List will allow the user to select all contributors and continue to the next Selection Screen.

c. **Sort by** – The Results List will initially be sorted by contributor name. The user may also sort by role, by choosing this option in the Sort By combo box.

8. **Recording/Score Title Selection Screen**
This is the final Selection Screen if the user specified Publisher, Other Contributor, or Recording/Score Title as part of the query, or if a Collective Work was selected. From this screen, the user can directly access IUDML content, or navigate into Containers
to view and access content from within them. The Results portion of this screen will consist of the following components:

a. **Results List** – The matching Containers will be displayed in a list. The displayed fields for each Container will be **Format/Type/Container Title/Date of Publication** (displayed on one line), **Composer** and **Composer Birth/Death Dates, Performer** and **Performer Birth/Death dates** (for recordings only), and **Publisher** (for Scores only). If there is more than one performer or composer for the given Container, up to three may be shown. The fields will be displayed in the following format:

1. **View**
   Score Title: *Beethoven Piano Sonatas (1949)*
   Composer: *Beethoven, Ludwig van (1770-1827)*
   Publisher: *Henle Verlag*

2. **Listen**
   Recording (CD) Title: *Beethoven Classics (1967)*
   Composer: *Beethoven, Ludwig van (1770-1827)*
   Performer: *Horowitz, Vladimir (1904-1987)*

b. Choosing the ‘View’ or ‘Listen’ links will open a Viewer or Player and queue it to the beginning of the container. If a Viewer/Player to the container that this instantiation is from is already open, this Viewer/Player will be brought to the front and queued instead. Clicking on a Container Title will bring up a pop-up menu with 2 options, **Listen To This Recording** (or ‘View This Score’) or **More Details About This Recording/Score**. Choosing ‘More Details’ will bring up the Container (w/Instantiations) View Screen for the selected Container. Clicking on a Performer will bring up a pop-up menu with 2 options, **View All Recordings Featuring This Performer** and **View Detailed Information for This Performer**. Clicking on a Composer will bring up a pop-up menu with the following 2 options: **View Detailed Information For This Composer**, and **View All Works By This Creator**.

c. **Sort by** – The Results List will initially be sorted by container title. The user may also sort by composer (first displayed only), or media format, by choosing this option in the Sort By combo box.

d. **Show** – If the user did not specify media options in the initial query, this combo box will allow the user to show only recordings, only scores, or both.

9. **Instantiation Selection Screen**
This is the final Selection Screen for most searches. From this screen, the user can directly access IUDML content. The Results portion of this screen will consist of the following components:

a. **Results List** – The matching instantiations will be displayed in a list. The displayed fields for each instantiation will be **Format/Type/Container Title/Date of Publication** (displayed on one line), **Work Title** (and variants if needed) and **Date of Composition, Composer** and **Composer Birth/Death dates, Performer** and **Performer Birth/Death Dates** (for recordings only), and **Publisher** (for scores only). If there is more than one performer for the given instantiation, up to three performers may be shown. The fields will be displayed in the following format:
1. **View**

   **Score Title:** Beethoven Piano Sonatas (1943)  
   **Work Title:** Sonatas, piano, no. 14, op. 27, no. 2, C# minor (1801)  
   **Variant Title:** Moonlight Sonata  
   **Composer:** Beethoven, Ludwig van (1770-1827)  
   **Publisher:** Henle Verlag

2. **Listen**

   **Recording (CD) Title:** Beethoven Classics (1968)  
   **Work Title:** Sonatas, piano, no. 14, op. 27, no. 2, C# minor (1801)  
   **Variant Title:** Moonlight Sonata  
   **Composer:** Beethoven, Ludwig van (1770-1827)  
   **Performer:** Horowitz, Vladimir (1904-1987)

Choosing the 'View' or 'Listen' links will open a Viewer or Player and queue it to the appropriate page or time offset. If a Viewer/Player to the container that this instantiation is from is already open, this Viewer/Player will be brought to the front and queued instead.

Clicking on a Container Title will bring up a pop-up menu with 2 options, 'Listen To This Recording' (or 'View This Score') or 'More Details About This Recording/Score'. Choosing 'More Details' will bring up the Container (w/Instantiations) View Screen for the selected Container. Clicking on a Performer will bring up a pop-up menu with 2 options, 'View All Recordings Featuring This Performer' and 'View Detailed Information for This Performer'. Clicking on a Composer will bring up a pop-up menu with the following 2 options: 'View Detailed Information For This Composer', and 'View All Works By This Creator'. Clicking on a Work Title will bring up a pop-up menu with the following 2 options: 'View Detailed Information About This Work', and 'Listen to this Work' (or 'View this Work').

   **b. Sort by** – The Results List will initially be sorted by work title. The user may also sort by composer (first displayed only), media format, or container title, by choosing this option in the Sort By combo box.

   **c. Show** – If the user did not specify media options in the initial query, this combo box will allow the user to show only recordings, only scores, or both.

10. **Name Full View Screen**

    This screen is shown when a user chooses to view additional information about a particular person (or group). Note that since the name records are relatively short, there is no distinction between Partial and Full views for them. All fields from the appropriate name record will be shown. The following rules should be observed.

    **a.** All the roles for this person will be displayed. Clicking on a particular role will initiate a new search for works (or instantiations) for which the person served in that role.

    **b.** Any URL’s (such as in the Related Resource field) should be hotlinked so as to invoke a web browser and bring up the appropriate page.

    **c.** For catalogers only, three additional links, **Edit**, **Delete**, and **New Similar Record** allow the user to make changes to the name record (see Admin, below).

11. **Work Partial View Screen**

    This screen is shown when a user chooses to view additional information about a work. If nonempty, the following fields will be displayed: Uniform Title, Variant Titles, Date of Composition, Subject Headings, Key, and Contributors. The following rules should be observed:
a. Any URL’s (such as in the Related Resource field) should be hotlinked so as to invoke a web browser and bring up the appropriate page.

b. For catalogers only, three additional links, Edit, Delete, and New Similar Record allow the user to make changes to the work record (see Admin, below).

c. A View Full Record button will allow the user to view the entire work record via a Work Full View Screen.

12. Work Full View Screen
This screen is similar to the Work Partial View Screen, except that ALL fields will be shown, including empty ones. Also, a View Partial Record button will replace the View Full Record button. Note that structural information is not displayed here; the appropriate Player (or Viewer) must interpret the structural metadata for the work.

13. Container (w/Instantiations) View Screen
This screen provides a convenient way to view abbreviated information about a Container and all the Instantiations that it contains. The following fields, if nonempty, will be displayed for the Container: Title, Series Title, Publisher, and Date. Following this will be a listing of each instantiation on the Container (in order). For each instantiation, the following fields, if nonempty, will be displayed: Title and Performers (first three only). The following rules should be observed:

a. Clicking on the container title will bring up the Container Full View Screen for this title. Clicking on the title of any of the instantiations will bring up the Instantiation Full View Screen for that instantiation.

b. Any URL’s (such as in the Related Resource field) should be hotlinked so as to invoke a web browser and bring up the appropriate page.

c. For catalogers only, two additional links, Edit and Delete, allow the user to make changes to the Container record (see Admin, below).

d. A Listen (or View) icon next to each instantiation will allow the user to invoke a Player (or Viewer) queued directly to that instantiation.

14. Container Full View Screen
This screen shows full information about a particular container. It resembles the Container (w/Instantiations) Screen above, except that additional information is shown about the container. Note that structural information is not displayed here; the appropriate Player (or Viewer) must interpret the structural metadata for the container. Also note that the same (abbreviated) information is shown for each instantiation; the full instantiation records are shown on separate screens (see the next section).

15. Instantiation Full View Screen
This screen allows the user to view the full record for a particular instantiation. All fields, including empty fields, will be shown. The following rules should be observed:

a. A Listen (or View) button next to the instantiation title will invoke a Viewer (or Player) and queue it to the appropriate point.

b. Any URL’s (such as in the Related Resource field) should be hotlinked so as to invoke a web browser and bring up the appropriate page.

D. Menus
In addition to the Common Menus, the Search window will have a Search menu. From this menu, the user may access the following commands:

1. Back – Same as Back button on Results Frame.

2. Forward - Same as Forward button on Results Frame.
IX. Admin

The Admin interface allows the library cataloger to manage the content of the system by creating new records, modifying and deleting existing records, and maintaining media objects. The cataloger uses the Search window, the Admin menu, and various Admin dialogs to accomplish these tasks. The next section describes in a general way how each admin task can be accomplished; the following sections describe the Admin interface in more detail.

A. Administrative Tasks

1. Finding a Record

Catalogers will locate records using the same Search window that regular users use. However, they will have additional functionality and one additional tab in the Query Frame. This Admin Tab will allow the cataloger to search for records by ID number, or record status and update or creation date. The record status flag indicates the completeness of a record. Hidden records are not accessible to the general public, usually because that record is incomplete. Brief records contain only essential metadata, so that records may be entered quickly and still made available to the public. Full records contain complete or nearly-complete information.

2. Deleting a record

It is not anticipated that many records will need to be deleted entirely from the system, especially for Version 1. However, if the cataloger wishes to delete a record, he or she merely chooses ‘Delete’ when viewing the record from the Search interface. Note that when a cataloger deletes a record, that record is actually only flagged as deleted (and Hidden). If the record that is being deleted is referred to by other records in the system, the cataloger will receive a warning, stating that the references to this record should be fixed; before the record can be actually deleted, all the referring records must be updated.

3. Creating a new Name or Work record

A cataloger initiates the creation of a Name or Work record by choosing New Name Record or New Work Record from the Admin menu on any window, or by choosing New Similar Record while viewing a Name or Work record from within a Search window. At this point, the authority record for this Name or Work may be imported, if one exists. For Name records, the cataloger simply fills in all the known fields. For Works, the cataloger fills in known fields, and also enters structural information for the work.

It is possible that a large number of Name and Work records could be entered into the system automatically, outside of the context of this interface, using conversion from existing MARC authority files. Such records might be flagged as Hidden until they are checked for accuracy.

4. Modifying an existing Name or Work record

A cataloger initiates the modification of a Name or Work record by choosing Edit from a search result screen. The cataloger can then edit the record using the appropriate Admin screen (Name Edit screen or Work Edit screen).

5. Creating a new Container record

The process of creating a new Container record actually begins outside of the context of this interface. The following processes will be completed before the cataloger begins the process of entering data for a new Container:

a. Digitization and conversion of the actual content to the appropriate formats
b. Placement of these files on the appropriate server
c. Creation of media object records for the files
d. Creation of a (skeletal) container record for the files, which will be flagged as Hidden until edited by a cataloger

Thus, the cataloger most likely will never create a new Container from scratch; instead, the cataloger will find the incomplete record which has been already created, and edit it. This record might be found by searching for Hidden records, or the cataloger may know the ID number of the record.

The first thing the cataloger will likely do is import an existing MARC record, using this information to assist in entering descriptive metadata, and also in finding or creating applicable Name and Work records.

Next, the cataloger may edit the Container Structure. For audio imported from Variations, the structural information for the Container can be generated automatically from the bookmark (bkm) files used by Variations; the cataloger merely checks what has been generated. For scores, the cataloger will need to do substantial editing to accurately generate the Structural metadata.

The cataloger next adds instantiations to the Container, linking to Work and Name records, and creating new Work and Name records where appropriate. Bindings for each instantiation are created. The cataloger may also listen to or view the media content directly from the Container Edit screen, if needed to edit Instantiation binding information.

Lastly, although it may not always be necessary, the cataloger can view and edit the Media Object information for each Media Object that is associated with the Container.

6. Modifying an existing Container record

Catalogers modify an existing Container, Instantiation, or Media Object record by choosing 'Edit' while viewing a record using a Search window. This action initiates a Container Edit screen, where the cataloger makes the appropriate changes. Note that Instantiation and Media Object records are edited through the Container Edit screen for the associated Container.

B. Admin Menu

For catalogers, all Windows will have an Admin Menu in addition to the usual Common Menus. This Window will have the following choices:

1. New Name Record – Brings up the Name Edit screen, with a new blank name record.
2. New Work Record – Brings up the Work Edit screen, with a new blank work record.
3. Open MARC Record – Container – Allows the cataloger to open a MARC bibliographic record; see the ‘MARC Import’ section for more details.
4. Open MARC Record – Work – Allows the cataloger to open a MARC authority record for a work; see the ‘MARC Import’ section for more details.
5. Open MARC Record – Name - Allows the cataloger to open a MARC authority record for a name; see the ‘MARC Import’ section for more details.

C. Search Window – Special Features For Catalogers

This section describes special features of the Search interface available only to catalogers.

1. Query Frame – Admin tab

In addition to Basic, Advanced, and Keyword searches, catalogers can initiate a search using the Admin tab. The components of this tab are as follows:

a. Search Mode – Two radio buttons allow the cataloger to choose between the two modes of searching, by record ID or by status and date.

b. Status/Date Entry – A variety of components allow searching by status and date. A Created/Updated combo box toggles between searching for records by creation date and late updated date. An After/Before/On combo box toggles between searching for dates that are After, Before, or On
the chosen date. A Date text entry field allows the user to enter the date itself. Brief and Hidden checkboxes allow the user to show only Hidden and/or Brief records in the results display.

c. **Record ID Entry** – A text field for entering the ID number for a record.

d. **Search Button** – This button initiates a search based on the criteria selected. The user may search by either Record ID, or Date/Status, but not both at the same time.

2. **Results Frame modifications**

What follows are changes in the Results Frame of the Search window for catalogers:

a. **Edit, Delete, New Similar Record** – These additional links on search results screens and full record views allow the cataloger to modify existing records and create new ones based on existing records. New Similar Record is available only for Name and Work records. Note that these links will exist whether the cataloger is using the Admin tab, or one of the conventional search tabs.

b. **ID Number, Icon** - When viewing full or partial records, the cataloger will be able to see the ID number for the record. Also, a draggable icon which represents that record will allow the user to quickly make connections when editing records.

c. **Creation Date** – The creation date will be shown for each record displayed in the Results Frame.

d. **Changes to Results Frame when using the Admin tab**

i. The results list will default to a sort by ID number.

ii. The 'Show' combo box will have the following options: Container, Instantiation, Work, and Name. The default will be Container. If there are matching results in only one kind of record, that record will be chosen as a default instead.

iii. When a cataloger uses the Admin tab, the usual disambiguation process is not initiated. Thus, ‘Select’ links which lead the user to successive screens will not be present. ‘Listen’ and ‘View’ links, however, will still be present.

D. **Edit Screens, general features**

The following features are common to all three primary Admin editing screens (Container Edit screen, Name Edit screen, and Work Edit screen):

1. An ID number (not editable) and draggable Icon which represents the record will be shown for each record.

2. A variety of text fields and combo boxes (for controlled vocabularies; mostly non-editable) will allow the user to enter metadata. For 0-to-many fields or 1-to-many fields, text will be entered via separate dialogs for each field. Each dialog will list the current entries, and allow the user to edit, add, or delete entries.

3. An **OK** button will save changes to all appropriate records and open up a confirmation window. This window will display a consolidated, plain-text version of the record(s) that are being modified. The cataloger can verify that data has been entered correctly on this screen before closing the record entirely. An **Apply** button will save changes without closing the window. A **Cancel** button will close the window without saving changes (a dialog will confirm this choice). Also, if the user attempts to close the window without first saving changes, a confirmation dialog will give the user the opportunity to save changes first before closing, if desired.

4. When a record references another record, the reference will be indicated onscreen as both an ID and a text field. This non-editable text field will display the uniform name of the object being referenced.
5. When a record is saved, if the status flag is set to ‘Brief’ or ‘Full’ (not Hidden), that record will immediately be made available to general users of the system. Also, unless a record is ‘Hidden’, the record will be verified when the cataloger attempts to save. If the system deems the record broken or otherwise incorrect, the user will not be allowed to save unless it is ‘Hidden’.

6. If field names are followed by a double asterisk (**), these fields are required by the database for appropriate connections to be made to other records. If field names are followed by a single asterisk (*), these fields are required to make the record qualify for ‘Brief’ record status. (The program itself will not verify that a record is correctly entered for ‘Brief’ status.)

7. A View Record Access Data button will display the Administrative fields associated with each record, such as record creation date, last updated date, etc.

E. Name Edit Screen
The user will make changes to Name records, or create new Name records, using this screen. Other than the features listed above, the only additional feature is a MARC Import button. This button will allow the cataloger to import a MARC authority record for this name. See the MARC import section below for details.

F. Work Edit Screen
The user will make changes to Work records, or create new Work records, using this screen. In addition to the features listed as ‘general features’ above, Work Edit screens, will have the following additional features:

1. An Attributes tab will allow the cataloger to enter descriptive metadata for the work. A MARC Import button on this tab will allow the cataloger to import a MARC authority record for this work. See the MARC Import section below for details.

2. A Contributors tab will allow the user to add contributors to the work. Contributors can be added by dragging an icon from the appropriate Name record screen onto the contributor section, or by entering the ID number for the Name record directly. A role for each name will be set by a combo box. Both the ID number and Uniform Name will be displayed onscreen for each contributor added to the Work record.

3. A Work Structure tab contains components for editing and creating the work structure metadata. The Work Structure editing components are as follows:
   a. **Work Tree Display** – Displays the current state of the work structure. For each node, the tree itself will display the Label for that node and the ID (unique within this structure only). Initially, this tree will consist of a single node representing the entire work. Tree nodes may be selected (individual or multiple) and dragged and dropped within the tree structure itself.
   b. **Node Value Display** – When a single node is selected, this section allows the user to enter and edit metadata for that node, including Label, Title (where applicable), and Type.
   c. **Node Movement Buttons** – Four buttons allow the user to move nodes within the work structure tree. Up and Down will move nodes up and down in the tree, and Left and Right will move nodes out or in one hierarchical level (if possible). These actions will work on single nodes or multiple selected nodes.
   d. **New/Update/Delete Buttons** – The New button will add a new node to the tree, directly below and at the same hierarchical level as the currently selected node. The Update button will save changes made to a selected node. The Delete button will delete the currently selected
node (or nodes). Children of the node will not be deleted, but will change position within the hierarchy.

e. **Source** – Source information for the work structure.

### G. Container Edit Screen

The Container Edit screen allows the user to edit a Container, and also its associated Media Objects and Instantiations. Thus, this screen is a bit more complex than other edit screens; most of the functionality of this screen is divided into separate tabs. The Container Edit screen consists of the following sections:

1. In addition to the usual **OK/Cancel/Apply** buttons at the bottom of the dialog, a **Listen/View** button will allow the cataloger to listen to or view the current Container. Note that the cataloger can access the content even if the record isn’t in a finished state, although some aspects of the Player and Viewer interface may not work (such as the Structural Navigation trees).

All other Container editing is done through various tabs. The tabs are **Attributes, Contributors, Structure, Media Objects, and Instantiations**.

2. The **Attributes** Tab is where the cataloger enters descriptive metadata for the Container as a whole, using the usual text fields, combo boxes, and sub-dialogs as discussed above. An **Import From MARC** button on this tab will allow the cataloger to import a MARC bibliographic record for this container. See the MARC Import section below for details.

3. The **Contributor** Tab allows the cataloger to enter Contributor information for the Container. This tab will closely resemble the Contributor Tab for a Work record.

4. The **Structure** Tab allows the user to enter and edit the Structural Metadata for the container. This tab consists of the following components:
   a. The **Container Structure Tree** displays the Container Structure in hierarchical form. Nodes may be selected (single or multiple) and dragged and dropped within the tree itself.
   b. **New/Update/Delete Buttons** – The **New** button will add a new node to the tree, directly below and at the same hierarchical level as the currently selected node. The **Update** button will save changes made to a selected node. The **Delete** button will delete the currently selected node (or nodes). Children of the node will not be deleted, but will change position within the hierarchy.
   c. **Node Movement Buttons** – Four buttons allow the user to move nodes within the Container structure tree. **Up** and **Down** will move nodes up and down in the tree, and **Left** and **Right** will move nodes out or in one hierarchical level (if possible). These actions will work on single nodes or multiple selected nodes.
   d. **Data Entry Fields** – The label, and possibly other fields, for the selected node can be edited here.
   e. **Bindings** – The cataloger edits container bindings (either page numbers or time offsets) here.
   f. **Page Numbering (for Score containers only)** – Originally, the label for each page in a score will correspond to the actual page number of that page in the media object. Frequently, however, the page number printed on the page is different, and our page label should reflect the actual page number as printed on the page. This section will allow the cataloger to set page labels. A **Page Number Display** section will show each physical page number and the corresponding page label. A **Page Label** textbox will show the label for the current page and allow the user to edit this label. For renumbering large numbers of pages
automatically, a **Renumber** button and associated textboxes will allow the cataloger to renumber a group of pages, starting from a specified number.

5. The **Media Objects** Tab allows the user to enter and edit metadata regarding the media objects that are associated with this container. This tab consists of two parts. The **Media Object Display** is simply a list of all the Media Objects associated with this Container, by description. This display will be in a table format, allowing the user to add more Media Objects or delete them. Selecting one of these Media Object ID’s will fill the fields in the **Media Object Edit** panel with the appropriate values. These values can then be edited and updated by pressing the **Update** button.

6. The **Instantiations** Tab allows the user to enter and edit metadata regarding the Instantiations that are associated with this container. Near the top of the tab, the **Instantiation List** will be display each Instantiation currently associated with the container. **New, Update,** and **Delete** buttons on the tab allow Instantiations to be created and manipulated. Bindings for each Instantiation are edited on a separate sub-dialog window. This sub-window contains the following components:
   a. The **Work Sections** area displays the sections of the work being instantiated in a tree-view display.
   b. The **Bindings** area allows the user to specify bindings for the currently selected work section. For audio, the **Pick Tracks** area allows the start and stop points from audio tracks to be used as work structure bindings. For scores, the **Pick Sections** area has similar functionality, with page groups rather than tracks. Alternatively, bindings can be set manually, specifying offsets into media objects for audio or page numbers for scores.

H. **MARC Import Screens**

In order for a cataloger to import a MARC record, the appropriate record must first be exported from a cataloging program and placed on the local drive for importing. When the cataloger presses the 'Import from MARC' button from a Name, Work, or Container Edit dialog, a file select dialog will allow the cataloger to choose the correct MARC record. Then, all appropriate fields on the Edit dialog will be filled in automatically. Additionally, a MARC Import window will display the entire MARC record for cutting and pasting, as well as additional information. Note that if the cataloger instead chooses to view a MARC record from the Admin menu, no fields will be overwritten, but the MARC Import screen will still be shown; thus, multiple MARC records can be opened at once if necessary. The MARC Import screen components are shown below:

1. A **MARC Record View** textfield will display the full MARC record, for copying and pasting into appropriate fields.

2. A **Records Display** section will show Name and Work records which were derived from the MARC record. (For Work records, only Names will be shown. For Name records, this section will not be present.) For records which already exist in the system, the Uniform Name and a draggable icon will be shown. For records which do not exist in the system, only a Uniform Name will be shown. Selecting this name will initiate a new Work Edit screen or Name Edit screen. Note that importing a MARC record does not automatically create new Work, Name or Instantiation records; this must be done manually by the cataloger.
NOTE:
The following topics are not explored fully in this document. Exact specification for these topics will be determined as the system is implemented.

- Specific keyboard shortcuts for menu options (Mac and Windows will be different here)
- Details of window layouts and behaviors, especially resizing behaviors