Mulberry Preferences Redesign

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Overview
The preferences area in Mulberry was examined to assess the usability problems in this area. From this analysis, prototypes of the main preferences dialog were created and iteratively tested with users. A startup wizard and an email account setup wizard were also designed and user tested.

Background Investigation
The preferences team conducted some background investigation to determine what parts of the preferences area should be fixed and to give some insight into how to fix these problems.

1. Preference screen analysis – There are over fifty screens in the current preferences panel. The team made screenshots of these screens and analyzed them to determine what functionality is contained in preferences area.

2. Competitive analysis – The group examined the equivalent preferences panel interfaces in other email programs, such as Eudora, Outlook, and Mail for Mac. This activity gave the team ideas about how to best organize interfaces for setting up email accounts and specifying user preferences in Mulberry.

3. Problems found during initial Mulberry analysis phase – Earlier in the project, the group examined the whole Mulberry interface in order to determine the major usability problems. The results gathered regarding the preferences area were taken into account in the preferences panel redesign.

4. Analysis of tech support pages and common preferences settings – The team looked at the tech support pages and a list of common preferences settings (as given to the group by CMU Computing Services) to determine what areas of the preferences panel are used the most by users. This analysis helped the group determine what preferences settings should be moved to the advanced area of the panel and what tasks should be used for user testing.

5. Card sort and definitions task analysis – The group asked users to define some email terms used in Mulberry and to sort words related to email into groups. This activity helped the team determine the organization and labeling used in the Preferences dialog. The testing results can be found in Appendix A.
Redesign of Wizards

Background Research
The team conducted research to determine how to best design wizard user interfaces. Our research uncovered a few articles that analyzed the usability of wizards (see Appendix B for the citations.) In addition, wizard design guidelines created by Microsoft were found on MSDN.com (see Appendix B for the full citation.) These guidelines were found to be very helpful in determining the design of the wizard and are taken from the website are as follows:

- Model your Wizard after one that ships with Microsoft Excel.
- Step 1 described the results of using the Wizard.
- Step 1 generally has limited choices and controls.
- All pages are generally the same size.
- Enable and disable the appropriate navigational buttons.
- The title should include “Step X of Y” to provide a sense of location.
- All title text should be implemented with constants.
- Gather as much input as possible, and then batch process the results after the user has pressed the Finish button.
- Input should be validated as a user leaves a page.
- The Next button shouldn’t be enabled if essential input is not provided.
- Minimize processing between pages.
- If possible, provide default values for all inputs and enable the Finish button as soon as practical.
- Initialize as many pages and controls as possible before the Wizard displays.
- Provide a browse button if file-name information is required.
- Use drop-down and/or list controls instead of radio buttons.
- Provide extensive instructions and/or use graphics to explain concepts.

Testing Summary
Thirty-five people were tested in a total of six testing sessions. Users in the first session were given paper prototypes to use when executing tasks in user testing. Users in the remaining testing sessions were given prototypes created in Visual Basic.

Some of findings from these testing sessions should be kept in mind when implementing the wizards.

1. Email account settings need to match the user’s mental model of email accounts – In the first testing session, users were given two versions of the Email Account Setup Wizard: a version where the email account settings stemmed from the incoming mail server and a version where the email account settings stemmed from the email account name and email address. Users found the first navigation scheme more confusing than the second version. When asked about this confusion, users stated that they expected the incoming server settings to come after the email account name and
email address. Subsequent email wizard prototypes followed the model of email account and email address as the first step in the wizard. Users were shown to have the most success with this wizard navigation.

2. Email account name can be confusing to users – In earlier versions of the prototype, users were confused about the email account name field. Some users did not understand the definition of this field and did not understand how this field was different from the email address. To clarify the definition of this field, it was renamed to email description and sample text is shown next to the field label. Entering the email name is optional. When a user chooses not to enter an email name, the email address will be substituted for the email description.

3. Explanatory text is important – Users often referred to explanatory text in the wizard to help them determine what action to perform in a step. In earlier versions that did not have this text, users often were more confused by their choices during user testing and sometimes asked for an explanation from the tester.

4. Email account settings should only be edited through the Preferences dialog – Users found editing email account information through the wizard cumbersome because they had to go through the wizard steps to change an email account setting. To remedy this problem, users will only be able to edit email account settings through the Preferences dialog.

5. Getting tab order right is important – Users use the tab button a lot to navigate through the interface. User testing showed that tab order that does not make sense to the user will be noticed and, therefore, will make the wizard less usable. Tab order must be put implemented in the wizard and made consistent to match most users’ expectations.

6. User settings must be saved when navigating through the wizard – It is important that email account settings do not change when a user navigates backwards and forward in the wizard. During user testing, users did move back and forth between the wizard screens (especially when setting advanced account settings) and expressed relief when they realized that the settings were not changed by doing this navigation.

7. Radio button focus should change automatically when associated text box edited – Sometimes users would edit text boxes (such as the check email account by minutes setting in the Startup Wizard) without selecting the associated radio button. Because of this, radio buttons should change when the user starts to edit associated text boxes.

8. Wizard presets do not seriously hamper usability – The Startup Wizard was tested with preset information in appropriate areas of the wizard. This preset information was made to be editable by users and it was found that most users did not decide to change this information.
**Email Account Setup Wizard Specifications**

The email account setup wizard allows users to set up email accounts in a systematic fashion. The email account setup wizard launches when the user chooses to create a new email account through the Preferences dialog.

There are a total of six screens that make up the email account setup wizard. The screens flow in the following order:

1. **Introduction**
2. **Email details and protocol type**
3. **Security options and server address**
4. **Advanced options**
5. **Signature**
6. **Confirmation and setup verification**

All of the screens have the following buttons on the bottom, in order from left to right:

1. **Help** – Accesses help on the particular wizard step.
2. **Cancel** – Dismisses the wizard without saving any of the settings.
3. **Back** – Moves the wizard back one step.
4. **Next** – Moves the wizard forward one step. Performs checking on appropriate fields in the wizard.

5. **Done** – Saves the settings made through the wizard and creates the new email account using those settings.

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**Introduction screen**

This screen serves as an introduction to the wizard. Explanatory text informs the user of the wizard’s purpose.

When users choose the basic email account option, they are given the additional steps of the wizard as described in the following section. When users choose the other email account option, they are shown the account details dialog as shown in the Accounts section of the main preferences dialog area in this document.

The Back and Done buttons are not available to the user on this step. The Next button is given focus by default.
Email details and protocol type screen

In this screen, users can input details regarding their email account. This includes the account description, email address, and the user’s name. If users choose to leave the account description field blank, the email address will be substituted for the account description. The email address and user name must be filled in by the user.

On the bottom half of the screen, users can choose the type of protocol for their account. Users are asked to choose between IMAP, POP and Don’t know. Descriptive text explaining the three options are included to aid the user in their decision making. The Don’t know option allows users to have Mulberry try to find the appropriate protocol for you.

Because the user is not finished with setting the options for the email account, the Done button is not available.
Security options and server address screen

The top half of the screen has areas for inputting the incoming and outgoing server addresses. Inputting these two server names is not optional. Error messages will be given to the user upon hitting the Next button if these two server addresses are not completed.

Users can put the security options for their account in the bottom portion of the screen. Users can put the user id, password, authentication method and check additional security options for the account. All of these options are optional for the user. The default authentication method is Plain Text. The available security methods are in order: Plain Text, CRAM-MD5, DIGEST-MD5, Kerberos V4, NTLM, and Anonymous.

The More Account Options button will launch the More Account Options dialog, described later in this document. Because the options in this dialog are dependent on the user choosing a defined protocol type, the button will be made unavailable when the Don’t know protocol is chosen.
Signature screen

The signature screen allows users to set up a signature for an account if they want to during set up. The default setting for this step is to not set up a signature, because it was found that many users did not want to set up a signature during testing. Having no signature as a default also avoids the possibility of users moving on in the wizard while accidentally entering a supposedly blank signature.

Clicking on the text area below the “Set up a signature now” option sets focus to this area and switches the radio button selection to “Set up a signature now.” When the text in the signature moves beyond the bounds of the text area, scrollbars will appear allowing the user to edit the area.
Confirmation and setup verification screen

All of the settings specified by the user in the previous screens are shown at the top of the screen. To save space, the options set in the advanced options screen do not appear here.

When a signature is not set, “Not set” will appear in the text area for the signature. When a signature is set, “Set” and the signature text will appear in the text area for the signature.

The security options chosen by the user appear in the security text area. The security type, whether SSL security is set (“SSL” or “No SSL”), and whether the outgoing server security settings are the same (“Outgoing server same” or “No outgoing server same”).

Users can hit the Check Account Settings button to check that their email account is set up correctly. When the email account is set up correctly, a message confirming that the email settings have been correctly verified will appear. When the email account is not set up correctly, a message will appear stating that the email account has not been set up correctly and the user will be given an option to correct the settings for the email account. If possible, user should be told what parts of the email account settings are wrong to help facilitate error correction. For example, a message stating “The email account settings are not correct. The incoming server address was not valid. Please enter a correct incoming server address in step 3.” could appear when the incoming server address was found to be wrong.
Advanced options screen

There are two versions of this dialog depending on whether the POP or IMAP protocol setting has been chosen by the user.

**IMAP version -**

![Email Setup Wizard](image)

The IMAP version provides an area for the user to specify disconnected mode operation for the account.
The POP version provides an area to specify how email delivery should be done for the account. “Leave messages on server” is selected by default. Users can also specify “Delete from server after <#> days” or “Remove from server when expunged.” In the “Delete from server after <#> days” option, the radio button option should get focus on this option when the user enters in numbers in the text area. In addition, for this option the text box should be checked for valid numeric entry when the dialog is dismissed through the OK button.

Both versions of the dialog provide a way for users to specify port numbers for the email account. The default port numbers should be shown to the user. Port numbers for SSL security should be shown when this security option is selected by the user.

**Startup Wizard Specifications**

The startup wizard will be launched when the user starts Mulberry for the first time. The startup wizard works just like the email account setup wizard above but with an additional step after the confirmation and setup verification screen and different introductory text on the first screen. The flow for these screens works exactly like the flow of the screens for the email account setup wizard above with the addition of the special screen as the last step and change in text in the first screen.
For those cases where presets have been set for email settings, the settings are provided in the wizard and made editable for those who would like to change the defaults. Users were tested with this scenario and usually left the presets in the wizard.

**Introduction screen**

The introduction screen for this wizard appears above. It has the same format as the introduction screen for the email account setup wizard, but has different introductory text.
Startup preferences screen

This screen allows users to set up additional preferences settings in Mulberry, such as the default window view and the alerts for when new mail comes. The defaults are shown in the screen above. These defaults can also change depending on settings made by the system administrator.

Redesign of Main Preferences Dialog

Background Research
Our research started with examination of the current organization of the preferences in Mulberry as well as the preferences dialogs found in competitors' products. One thing became clear: while different preferences interfaces range from the simple to the complex, Mulberry had one of the most complex interfaces to preferences among all those examined.

While most competitors products had a small number of screens (six in Apple Mail, fifteen in Mozilla), Mulberry has over fifty screens of options all tucked within the preferences window. We settled on two goals for the redesign of the main preferences window: 1) reduce the number of screens, and 2) move the most important options to the forefront, while still providing advanced access to less frequently used options. Our prototype and testing cycles focused on these goals.
Prototype and Testing Summary

Over forty people tested prototypes of portions of the interface in over eight design iterations. The first three sessions involved paper prototypes which focused on determining the best number of categories and general layout of options in each group. A GTK+ prototype was generated and used for a few of the initial prototype iterations. During this testing, we put emphasis on spacing and ordering of options in the individual panels of the dialog.

From the feedback generated, a new, more complete, prototype was written using Java Swing. These later iterations focused on fitting more of the options into sensible places, refining the placement and naming of terms, and figuring out the semantics of the Advanced options editor.

The address book tab was created in conjunction with the redesign of the address book section interface. This testing was done with the goals of the revised address book in mind. Initial testing of this tab was done using paper prototypes. Additional testing was conducted using prototypes made in Visual Basic.

Between each testing cycle, small or large adjustments were made, taken on feedback gathered from users and discussions with Cyrusoft.

Some important findings from this testing follows:

1. **Advanced options must be accessible in a way different from the main list of options.** - When testing methods on grouping lesser used options (“Advanced” options), an attempt was made to add it as a button next to other categories in the preferences window, making it a peer to the other options. Users ended up getting lost in the Advanced tab, thinking that solutions common tasks would also be found there. To solve this problem, the advanced options were moved to another window entirely, and access given by a distinct GUI element (a button, instead of another tab). This solved the problem of users prematurely searching advanced options before exhausting simpler ones.

2. **The word “preferences” shouldn't occur within the main preferences window as a category.** - Different words were investigated for the tab describing the concept of multiple preference sets. When the words “Preference Sets” was used as a tab title, users became very confused during all tasks. When questioned, it was revealed that the word “preferences” made users think that they were not yet in the main preferences screen, and thus needed to go additionally to that category as well, even with the window title reading “Preferences”. Changing the category title to “Profiles” was slightly better, although users then confused this with “Accounts” or “Identities”. The final title “Sets” was chosen because it is a neutral word, it produced minimal confusion among users, and the meaning would be quickly learned by users.

3. **As a rule, options shouldn’t appear in two different places if they accomplish identical things (Simple vs. Advanced).** - Having options like “Simple” and
“Advanced” or a “Basic” tab among others leads to a confusion about which options do what. In most cases, users seeing the same options in different places may get confused about the duplication. This was not such a big issue in the existing design of Mulberry, since the Simple and Advanced preferences are quite different in appearance. In the new design, where Simple became the “Basic” tab among other tabs, users showed some confusion about seeing the same options twice. Since our tests showed that users can perform just as well without a Simple mode, it is recommended that the Basic or Simple options be removed. With careful design, all normal interaction can be simple (with uncommon options moved to a different place: the Advanced window).

4. **Servers (“Accounts” in current Mulberry terminology) are an arbitrary top-level organization method which does not necessarily follow users' mental models.** - While redesigning the preferences, it made sense to break up the current organization of servers. Currently, many types of servers can be added to Mulberry, even for servers that make no sense in duplication (like IMSP). The decision was made to move servers into the top level category to which they belong. Address and directory servers go into the “Addresses” tab; incoming and outgoing mail servers go into the “Accounts” tab (which meets the mental model of grouping by email account); preference servers go into the “Sets” tab, which manages multiple preference sets.

5. **“Disconnected mode” is confusing for most users.** - Having to set a special option for making an incoming account enabled for Disconnected mode is unnatural and arbitrary. While it may have some technical motivation in the past (management of allocation of disk space), there is little reason to worry so much about this now. The recommendation is to have this option set on by default for new servers, or to remove the option altogether.

6. **Organization of alerts by cabinet is not necessarily a good idea.** - In the existing implementation, cabinets are used to organize alert styles for differing mailboxes. Since the Mulberry team is currently evaluating cabinets as part of the final phase of work, the solution to this issue is still under investigation. With this currently insufficient data, all that can be offered is the prediction that cabinets do not seem to carry the correct amount of “Alert-ness” to use them as the main grouping for alerts. More information related to this topic is forthcoming.

**Specifications**
The following screens are from the latest Java prototype used in testing, and the latest Visual Basic prototype. Keep in mind that the Java widgets and layout do not offer themselves to perfect duplication of native system widgets and appearance. Final implementations should adjust sizes and flow of layout to be more like widgets on the native system.

Some fine-grained issues related to the existing Preferences were not investigated, they seemed to be sufficient as is (Colors and Styles, Fonts), or were too complicated to be
fully worked out without major changes to Mulberry (Identities). These specifications should lead the developer to a general sense of the overall layout of the preferences system, with a specific look at just a few important parts.

**Tab Layout**

The prototype features nine tabs:

1. Accounts - which controls email accounts and mail servers
2. Notifications - which controls mail check intervals, alerts, and return receipts
3. Messages - which controls fonts, forwards and replies, signatures, and other message related items
4. Addresses - which contains settings for the add to address and expand address functionality and the specifications for the address book servers and directories.
5. Colors and Styles - which contains methods to set attribute based colors on servers, mailboxes, and messages
6. Identities - one of the few leftover elements from the old Preferences
7. Window Layout - format of the windows in the application
8. Attachments - settings on how the application handles attachments
9. Spelling - settings on how the spell check functionality in the program should work

The prototype also contains two extra buttons:

1. Advanced - which brings up a window containing lesser-used options
2. Sets - which brings up a window specifying remote and local preference sets

**Accounts**

The accounts tab contains a single list of email accounts. An “account” for this purpose is defined as a username/incoming server pair.
An account may be selected for deletion or editing, or a new account may be created. The email account wizard is launched upon activation of the “New Account” button. The Account Edit screen appears upon activation of the “Edit Account” button. Within the Account Edit window, we first see a description, followed by email address and real name. After a space, we see login information, incoming server address and options, and outgoing server address and options. The display given by the options buttons are unspecified, but they should contain methods to set port numbers, disconnected mode settings, and other options not shown on this main screen. Also not shown here is an OK/Cancel pair, which was not needed for this prototype.

Notifications

This tab contains mail check options, new mail alert options, and return receipt options.
The first three items are wrapped within a drop down box which selects the style to apply these changes to. (A more clear visual indication should be used. Java does not allow drop down boxes to appear within the border of a grouping.) As discussed in the folder reorganization document, the use of cabinets as a method of applying notification styles is not recommended.

The drop down menu contains three sections:
- The category styles: “For My Mail”, “For Shared”, “For Public”
- Any custom styles, which can be applied to mailboxes individually in the Details window
- The custom style manipulation options: “New”, “Rename”, “Delete”.

The category styles cannot be renamed or deleted, and apply to the three categories as displayed in the main window. As in the existing implementation, selecting a style from the box changes the options appearing beneath, and changing the options updates the style.

Additional information should be given in the drop down, since individual mailbox styles can override category styles. The following table shows a recommended (but untested) way that the categories can be annotated:

<table>
<thead>
<tr>
<th>With No custom mailbox notifications</th>
<th>With Some custom mailbox notifications</th>
<th>With All custom mailbox notifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>“For My Mail”</td>
<td>“For My Mail (except for $n$ custom set mailboxes)”</td>
<td>“For My Mail (currently no mailboxes)”</td>
</tr>
<tr>
<td>“For Shared”</td>
<td>“For Shared (except for $n$ custom set mailboxes)”</td>
<td>“For Shared (currently no mailboxes)”</td>
</tr>
<tr>
<td>“For Public”</td>
<td>“For Public (except for $n$ custom set mailboxes)”</td>
<td>“For Public (currently no mailboxes)”</td>
</tr>
</tbody>
</table>

Likewise, the custom styles should list in parenthesis the number of mailboxes currently using that style. An example of the style drop down follows:
The “sensible defaults” styles, which are available from the Details window for individual mailboxes, are not visible or editable in this window.

**Messages**

The messages tab shows options relevant to messages, as discovered by empirical study. Font selection, while not fully investigated, was thought best to reside here. Setting of Forward and Bcc captions (relabeled as “templates”) are done here, as well as the “Bcc Append Text”, signature selection, and the auto Copy mechanism.

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**Addresses**

The address tab includes settings for the add to address and expand address book functionality. Both tabs are pictured below.

The captures to address book options were revised from testing on the main address book pane. This testing showed that users prefer being able to edit addresses before adding them to the address book. These additional options let users modify this default functionality when automatically adding addresses to the address book.

It is recommended that the following default preferences are set on this tab: allow choice when editing multiple addresses and expand when nicknames fail.

The allow choice of addresses option should be moved to the Advanced tab described later in this document. By default, the alt key should be down by default. The options for allow choice of addresses should be left as alt key is down and alt key is not down.
In addition, the display edit dialog on capture should be moved to the advanced tab. It is recommended that the edit dialog always be shown on capture as the default. Most users will probably not want to change this, however this option should still be made available for those expert users who would like to change this advanced setting.
When users click on the Address Book Locations button, they are prompted with the following dialog. This dialog is designed to be similar to the add and edit email accounts dialog shown in the Accounts section.

A list of Address servers can be found in a list box. Users can select an entry from the list and hit Edit or remove. Edit will pop-up the editing dialog similar to the one in the edit email account tab. Remove will ask for confirmation and then remove the server from the list. New will pop-up the editing dialog with blank information.
The following dialogs will appear when the user selects a new server or edits a server. The dialog will be prefilled with the current settings for the server in the appropriate areas. This dialog is similar to the design for the new email account dialog.

The following dialog will be shown for the IMSP server selection. The LDAP server selection will be similar, with the addition of the LDAP-specific fields in a separate tab.
The following dialog is for the local server.

![Servers and Directories]

**Colors and Styles**

The layout of this tab was not tested, as the current interface was deemed acceptable for most use.

**Sets**

The “Manage Preference Sets...” button appears at the bottom of the main window, outside of the scope of the tabs. Pressing it brings up a window with the functionality of what was previously on the right side of the main preferences window. A list of all saved preferences, local and remote, is presented along with four applicable actions.

![Preferences Management]
• Selecting a set and pressing “Load Set” will reload Mulberry with that new set of preferences, and will mark the set as “Current”, shown to the right of the set title.
• The action of saving a set is more precisely described as duplication, so pressing the “Duplicate Set” button will make a new copy of the highlighted set, saved either locally or on the remote server. A dialog box will appear to ask the user to title the new set, and to choose the location (remote or local).
• The “Delete Set” button will delete the highlighted set.
• “Make Default” will mark the highlighted set as the set to load by default. This will be the default highlighted set presented to the user when Mulberry starts up.

At the top, the IMSP server is shown and can be modified. Since Mulberry can only meaningfully work with at most one server, it makes sense to have a spot for exactly one. The “Edit Server Settings” button will open another window with options for the server name and authentication.

Window Layout

The window layout tab contains options for the arrangement of the main windows interface (single main window view vs. separate window view) and options for how the three panes in the single main option should be arranged. The options for the arrangement of the three panes should only be available when the single main window view is selected.

These items are originally found in the Windows menu. The menu items should be kept in the menu as well as in the preferences dialog.

Other windows options can be found in the Windows menu. In the future, these items could be moved to the preferences dialog.

Graphics for this screen help the user determine the meaning of the windows layout option. Graphics were created for the main windows layout option. Graphics were not created for the windows arrangement section. The current graphics found in the Mac Windows menu can be added to this section as shown in the main windows layout option.
Attachments

It is recommended that the majority of the items in the current attachments tab be moved to the advanced dialog. The majority of users will not choose to set these options and expert users will be able to find these options in the advanced dialog.

The only part of the current attachments interface that should remain in the attachments tab are some of the options in the current receiving tab. Specifically these items are the save to disk section and the radio buttons in the application launch section. These options are seen to be more commonly used by users and should be kept on this tab.

The MIME mappings portion of the application should be removed from the interface altogether. This functionality is generally handled by the user’s operating system and this functionality should not be duplicated in the Mulberry interface.

Spelling
The options for this dialog are kept the same as the options in the spelling options dialog. It is recommended that this option be removed from the Edit menu and be kept only in the Preferences dialog. The options were rearranged and relabeled to make the spelling options more usable. In addition, the default color selection was given a drop-down so it has the affordance of clicking.

The following options were moved to the advanced dialog: automatically position dialog and suggestion accuracy. By default the automatically position dialog should be selected and the moderate suggestion accuracy setting should be set.

The defaults for this dialog are shown in the following screenshot. The default for the dictionary type should be picked up during installation of the program dependent on the operating system settings. The default color for the color drop-down should be yellow.
Identities

It is recommended that this tab be kept as is, since our research leads us to believe that only slight changes were necessary to hide the complexity of identities, with the alternative being major surgery on the inner workings of Mulberry. Other documents have recommendations pertaining to identities, and the existing implementation is sufficient here for now.

Advanced

At the bottom of the main preference window, near the OK/Cancel buttons, there is an “Advanced...” button which opens up a window similar to this:
This Advanced Preferences window, modeled loosely after Microsoft Internet Explorer, presents a categorized, alphabetical list of extra options that are not vital for normal use. Categories are presented at the top of the window as tabs. Individual options are alphabetized and listed under the categories.

In the prototype, three option types were implemented:

- Checkbox
- Drop down menu
- Text entry

This seems to cover the most number of options. Users, when given a specific option to adjust, had no problems finding and setting the option. This should make it easy for technical support staff and documentation to give meaningful instruction to users on various advanced options.

Advanced users should also have no problems with this presentation, since the categories mirror the layout of the existing implementation.

Here is a table with the advanced options used in the prototype:

<table>
<thead>
<tr>
<th>Category</th>
<th>Type</th>
<th>Option Title</th>
<th>Default Selection</th>
<th>Drop down option list</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mailbox</td>
<td>Checkbox</td>
<td>Automatic Modem Dial/Hang-up for Disconnected Mode</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Ask before Opening Next</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Expunge on Close</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Maximum Cabinet History:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Message Display Cache Increment:</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Message Display Cache Limit:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Message Display Cache Sort Warning:</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Message Display Cache Initial Download:</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Type</td>
<td>Option Title</td>
<td>Default Selection</td>
<td>Drop down option list</td>
</tr>
<tr>
<td>-----------</td>
<td>------------</td>
<td>---------------------------------------------------</td>
<td>-------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Mailbox</td>
<td>Drop down</td>
<td>New Messages are:</td>
<td>0</td>
<td>{Unseen; Recent; Recent and Unseen}</td>
</tr>
<tr>
<td></td>
<td>Drop down</td>
<td>Open Mailbox at:</td>
<td>2</td>
<td>{First Message; Last Message; First New Message}</td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Open Next with New Messages</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drop down</td>
<td>Processing Order:</td>
<td>0</td>
<td>{Oldest to Newest; Newest to Oldest}</td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Prompt for Disconnected Mode on Startup if Required</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Use 'Copy Drafts To' Cabinet</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Use 'Copy Messages To' Cabinet</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Use OS Specific Default Locations for Disconnected Mode</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Warn if Mailboxes do not Match when Reconnecting</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Warn on Expunge</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td>Message</td>
<td>Drop down</td>
<td>Allow Choice of Who to Reply to when:</td>
<td>0</td>
<td>{Option Key is Down; Option Key in not Down}</td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Allow Deleted Messages to be Opened</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Delete Message After Copy</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Expand Header for Multiple Addresses</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Expand Parts for Attachments</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Type</td>
<td>Option Title</td>
<td>Default Selection</td>
<td>Drop down option list</td>
</tr>
<tr>
<td>------------</td>
<td>---------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Message</td>
<td>Checkbox</td>
<td>Open First Digest Message</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Put Message Header in File when Saving</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Quote Selection Only</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Quote Whole Message if no Selection</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Reuse Open Message Window</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drop down</td>
<td>Sender Read Receipt Requests:</td>
<td>2</td>
<td>{Always Send Read Receipt; Never Send Read Receipt; Prompt to Send Read Receipt}</td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Show Message Header in Window</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Show Styled Text Field Alternatives</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Warn when Opening a Message bigger than (in KB):</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Addresses</td>
<td>Radio Button</td>
<td>Allow choice of addresses when a) Alt key is down, b) Alt key is not down</td>
<td>Alt key is down</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Show edit address dialog when adding addresses to address book:</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td>Outgoing</td>
<td>Checkbox</td>
<td>Add Blank Line Before Signature</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Always Show Cc Field</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Always Show Bcc Field</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Type</td>
<td>Option Title</td>
<td>Default Selection</td>
<td>Drop down option list</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
<td>--------------------------------------------------</td>
<td>-------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Outgoing</td>
<td>Checkbox</td>
<td>Append as Draft</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Copy INBOX Messages Being Replied To</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Default Domain for Outgoing Mail:</td>
<td>andrew.cmu.edu</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Delete Original Draft</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Don't Delete Important Drafts</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Remember Chosen Copy Mailbox</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Tab Width:</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Use Spaces Instead of Tabs</td>
<td>FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Warn if no Subject When Sending</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Field</td>
<td>Wrap Length:</td>
<td>76</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Wrap Text Field While Composing</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td>Attachments</td>
<td>Drop down</td>
<td>Override MIME with:</td>
<td>UU</td>
<td>UU; BinHex4; Apple Single; Apple Double</td>
</tr>
<tr>
<td></td>
<td>Dropdown</td>
<td>Use Override MIME Options:</td>
<td>Only override when needed</td>
<td>Always override MIME; Only override when needed</td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Check for mailto URL handling on startup</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dropdown</td>
<td>Double-click attachment to:</td>
<td>View it</td>
<td>View it; Save it to disk</td>
</tr>
<tr>
<td></td>
<td>Checkbox</td>
<td>Include text attachments when launching applications</td>
<td>TRUE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Text Area</td>
<td>Application launch</td>
<td>Blank</td>
<td></td>
</tr>
</tbody>
</table>
Appendix
Appendix A – Card Sort and Definitions Task Analysis Report

Overview

Purpose
This activity will help determine if the words used in the Preferences section of Mulberry are words that users can understand. The results of these tests have informed the team about the terminology and organization of the Preferences section.

Demographics
7 users were tested in the word description task. All participants were female and ranged in age from 18 to 23. 2 users were University of Pittsburgh students and 5 users were Carnegie Mellon University students.

Email use of subjects ranged from one time a day to frequent checking of email throughout the day (more than 10 times a day). 4 out of 7 users checked email 7 or more times a day. The frequency of use was evenly distributed between colleges.

5 users used the Mulberry software and 2 users did not. It is important to note that all of the CMU students used Mulberry and none of the Pitt students used Mulberry. CMU students are also trained in the Mulberry software upon entry into the university. These two factors can be seen in the results. On average Pitt students incorrectly defined 25% more words than CMU students.

Word Description Task

Test Activity
Subjects were asked to write down the definitions of 16 words that are used in the Preferences section of Mulberry. The experimenter asked the participants to give definitions in terms of email use and told subjects that it was ok to leave definitions for words that they did not know blank.

Analysis
The experimenter categorized the word definitions of the words as either correct, incorrect, or no definition. Frequencies were performed for each word using the SPSS statistics program.

Results
The words that 100% of the subjects got correct were: attachments, message, inbox, style, and folders.

The words where more than 30% of subjects got the definition of the words either incorrect or did not put a definition are accounts (42.9%), mailbox (42.9%), identities (71.4%), print captions (71.4%), mappings (85.7%), and quotes (42.9%). Pie charts illustrating these words are below.
Accounts

Incorrect definition 42.9%
Correct definition 57.1%
Print Captions

- No definition: 57.1%
- Incorrect definition: 14.3%
- Correct definition: 28.6%

Mappings

- No definition: 57.1%
- Incorrect definition: 28.6%
- Correct definition: 14.3%
Quotes

- Correct definition: 57.1%
- No definition: 28.6%
- Incorrect definition: 14.3%
**Word Sorting Task**

*Test Activity*
Participants were asked to sort words on cards taken from Mulberry, Eudora, and Outlook into piles that made sense to them. They were then asked to label the piles with a name that made sense to them.

*Analysis*
Data from the tests were put in a matrix that represented the frequency of pairs in the piles. Then multivariate, factor analysis, and hierarchical clustering statistics were all performed on the data with the JMP statistics package.

*Results*
The dendograms created by the hierarchical clustering algorithms were helpful in determining the organization of the areas in the Preferences panel. The two dendograms are shown below. The group is currently working on a prototype that utilizes these categories and the terminology in the first task.

Dendogram 1
Dendogram 2
Appendix B – Wizard Research References


