Usability Test Report :: Installation and Playlist

Created: July 14, 2004

Test dates: June 28, 2004 – July 2, 2004

Test facilitator: Inna Kouper
Executive Summary

After the release of version 3.0 installer, a usability test was conducted to identify any possible problems with installation as well as with the Variations2 playlist feature while working over the modem connection. Additionally, the study looked at the use of Variations2 elements within Oncourse.

During the last week of June 2004 eight participants individually worked through a series of tasks and filled out background and satisfaction questionnaires. The task list consisted of four tasks: installing Variations2 from the CD, exploring Variations2, creating a playlist out of bookmarks provided on Oncourse, and adding a song to the existing playlist. Tests were conducted in the School of Library and Information Science (SLIS) usability lab; each session lasted for about hour and a half.

Via comments, questionnaires and debriefing sessions participants indicated above-average satisfaction with the system as a whole. Some ratings such as number of screens to deal with or participant’s location in V2 are much lower than the same ratings in previous tests, which can be associated with the nature of tasks: participants had to deal with Oncourse and open multiple player windows.

Nevertheless, most of participants were enthusiastic about learning and using Variations2. Participants liked the option to search the collections and found the interface and menus generally appealing and clear.

Overall, the issues raised by the study were caused by the PC and connection speed limitations. The most evident problematic issues included a blank gray window appearing during various procedures without any progress indicator. This caused major confusion among participants who tended to abandon the action and jump to conclusion that something was wrong.

Some of problems encountered are due to the learning curve associated with using new software. Thus, participants who were not familiar with Oncourse confused it with Variations2, perceiving both systems as a whole and trying to add tracks to Variations2 directly from Oncourse.

The study also demonstrated that participants expected Variations2 to provide standard software services such as drag and drop and re-using windows (as opening one player window for all tracks instead of opening separate windows for each tracks).

Recommendations for resolving these issues are provided based on the results of the study and the suggestions of the participants.
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**Purpose of Study**

This test is part of ongoing usability testing for Variations2: IU Digital Music Library project (V2 hereafter). Primarily the V2 project is a research project aimed to provide an arena for research in such areas as usability, copyright, metadata, system design, networking and music instruction. As functional software, V2 is a digital library system, which provides access to a multimedia collection of music in a variety of formats and styles. Using V2, students, educators and librarians may search for and listen to sound recordings, browse and display scores (scanned or encoded), as well as work closely with musical compositions using timeline and bookmark tools.

The overall goal of usability testing is to identify problems users experience with V2 and provide recommendations for further improvement of the product. Thus, previous tests revealed problems with searching, score viewer and timeline tool as well as positive improvements with printing. To maintain continuity of the usability testing, the present test contains new elements as well as elements from previous tests.

Four major concerns defined the goal of this test:
- Will a user be able to install the program quickly and easily?
- Will a user be able to use the playlist feature effectively (e.g. create the list, add selections, play selections)?
- Is the help guide for installation and using playlists really helpful?
- How easily can a user interact with elements of Variations2 within Oncourse?

To address these concerns, the test accomplished the following:
- measure time users spend installing the program
- register errors users encounter during installation
- identify confusing steps or messages during installation
- identify whether the program is working properly after installation
- identify confusing steps or wrong actions in using playlist feature
- measure overall user satisfaction with installation, playlists and help

**Participants**

Eight graduate students were recruited by the facilitator from the Summer II 2004 L595 usability workshop at the IU School of Library and Information Science. During recruitment, the facilitator explained the purpose of the study and passed around a sign-up sheet. Those students who were interested in participating wrote their names and email addresses on the sheet. The facilitator contacted them at a later time and set up session times. Participants worked individually during all sessions. A total of eight sessions were completed.

As illustrated in Table 1 below, participants had library science, information science and IST majors. Their ages ranged from 22 to 45 years, with a mean age of 31 years.

Seven participants listed their native language as English; one was a native Korean speaker. Almost all participants claimed to use computers more than 21 hours a week, except one claiming 6-10 hours per week. Platform experience ratings reflected quite high experience with PCs and essentially more moderate experience with Macs. On a scale from 1 to 5, with 1 being Novice and 5 being Expert, the mean result for PC use was 4 ranging from 3 to 5 and for Mac use was 2.4 ranging from 1 to 4.
Table 1. Participant Characteristics.

<table>
<thead>
<tr>
<th>#</th>
<th>Gender</th>
<th>Age</th>
<th>Native language</th>
<th>Current academic level</th>
<th>Major</th>
<th>Computer use (hrs per week)</th>
<th>Computer experience (1=novice - 5=expert) PC</th>
<th>Computer experience (1=novice - 5=expert) Mac</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>male</td>
<td>45</td>
<td>English</td>
<td>masters</td>
<td>library science</td>
<td>21+</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>male</td>
<td>35</td>
<td>English</td>
<td>masters</td>
<td>library science</td>
<td>6-10</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>female</td>
<td>32</td>
<td>Korean</td>
<td>masters</td>
<td>information science</td>
<td>21+</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>female</td>
<td>28</td>
<td>English</td>
<td>masters</td>
<td>IST</td>
<td>21+</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>male</td>
<td>33</td>
<td>English</td>
<td>masters</td>
<td>IST</td>
<td>21+</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>female</td>
<td>22</td>
<td>English</td>
<td>masters</td>
<td>library science</td>
<td>21+</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>7</td>
<td>female</td>
<td>26</td>
<td>English</td>
<td>masters</td>
<td>information science</td>
<td>21+</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>male</td>
<td>27</td>
<td>English</td>
<td>masters</td>
<td>IST</td>
<td>21+</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Participants reported no previous experience with Variations as well as with Variations2. None of them had participated in usability tests before as well.

**Method**

All test sessions were coordinated by the facilitator and completed at the SLIS Usability Lab. The usability lab consists of two rooms. In one, the testing room, furniture and technology are laid out to simulate a typical office environment. Here the user interacts with the computers. In the observation and control room, video monitors and computer monitors are set up and evaluators can monitor user’s hand movements on the keyboard and mouse as well as perceive any pertinent facial expressions. The testing room is monitored by several videos and through a one-way window so that observers can view the proceedings in real-time. Test facilitators can also communicate with users from the control room via a table microphone connected to a one-way speaker in the testing room.

Upon each participant’s arrival at the lab, the facilitator greeted a participant, asked to be seated at a PC and read the orientation script explaining the purpose of the test, asking to perform as they usually would in similar real-life contexts, and briefing on the session procedure. Each participant filled out a receipt for the $15 Borders gift card awarded for performing the test.

Once done with that, each participant filled out a demographic questionnaire (see Appendix, p. 16 for the list of questions) and proceeded with the task list (see Appendix, p. 17.) Tasks included installation of Variations2 from a CD, exploration of Variations2, creating a playlist, adding a song into the existing playlist. The participant had to log into the IU network via modem and complete the given tasks while articulating aloud all actions.

Audio as well as computer screen interactions were videotaped for future analysis. After the scenarios and tasks were completed to the best of the participant’s ability, each participant filled out a V2 satisfaction survey (see Appendix, p. 18 for the list of questions.) After the participant completed the survey, the facilitator then asked a few debriefing questions based upon observations of the participant’s task completion activities and comments (see Appendix, p. 19 for approximate set of questions.) Finally, the facilitator thanked the participant for his or her participation and answered any questions about the testing procedure that the participant might have had.

During the test sessions and subsequent analysis the facilitator measured time to complete tasks and its parts and registered success or failure in completing a task.
Findings

Findings below are organized into three sections. The first section provides quantitative measurements such as time and failure/success rates for completing the tasks. The second section provides observations on each task. Finally, satisfaction measures for this study and a comparison of satisfaction measures across several studies are provided in the third section.

In cases where specific qualitative comments are presented, each comment is designated by a number which references the associated user. For example, a comment made by participant number 4 would be represented by “[4]”.

Quantitative measurements

As illustrated in the Table 1 below installation did not take much time, ranging from 2:50 to 3:40 (m:ss), with a mean installation time of 3:25. One of the most time consuming procedures was starting a player by clicking on Oncourse bookmarks. Repeatedly participants closed windows prematurely without waiting till it really started playing. As one participant commented after clicking on several windows “It seems like the computer is locked up here so I am trying to close down and start over” [4]. In fact, the process of loading a container slowed down all other processes so that it seemed as if the computer was locked up. To succeed in the task of creating a playlist, participants had to start over and actually wait till something happened in the blank window.

One of possible factors that contributes to the long player openings is the size of container. Thus, opening the track # 2 takes as twice or three times more time than opening other tracks partially because it comes from a 10 CD set. At the same time there is no significant difference between opening a 1 CD set (track # 4) and a 4 CD set (track # 5). The time to open track # 1 is relatively longer than others because it’s the first time Variations2 is started.

Opening a player within Variations2 took less time and ranged from 15 to 20 seconds.

To compare modem and high speed connections, the table below also provides benchmark times for each action as if it was done via high speed connection (times were measured by the facilitator after this test on the same computer.)
Table 2. Time in min:sec to complete actions via modem (measured during tests) and via high speed connection (measured as a benchmark.)

<table>
<thead>
<tr>
<th>Task</th>
<th>Modem</th>
<th>Standard deviation</th>
<th>High speed connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installation from the CD (from click on setup to click on finish)</td>
<td>3:15</td>
<td>0:16</td>
<td>3:05</td>
</tr>
<tr>
<td>Starting a tester (from click on the link to start playing)</td>
<td>1:30</td>
<td>0:14</td>
<td>1:22</td>
</tr>
<tr>
<td>Playing bookmarks (from click on Oncourse to start playing)</td>
<td>0:46</td>
<td>0:33</td>
<td>0:09</td>
</tr>
<tr>
<td>Playing track 1</td>
<td>0:54</td>
<td>0:35</td>
<td>0:12</td>
</tr>
<tr>
<td>Playing track 2</td>
<td>1:27</td>
<td>0:30</td>
<td>0:17</td>
</tr>
<tr>
<td>Playing track 3</td>
<td>0:29</td>
<td>0:11</td>
<td>0:11</td>
</tr>
<tr>
<td>Playing track 4</td>
<td>0:34</td>
<td>0:24</td>
<td>0:06</td>
</tr>
<tr>
<td>Playing track 5</td>
<td>0:31</td>
<td>0:09</td>
<td>0:07</td>
</tr>
<tr>
<td>Playing track 6</td>
<td>0:33</td>
<td>0:21</td>
<td>0:08</td>
</tr>
<tr>
<td>Playing track 7</td>
<td>0:30</td>
<td>0:25</td>
<td>0:05</td>
</tr>
<tr>
<td>Starting a player within V2 (Presley’s song)</td>
<td>0:18</td>
<td>0:01</td>
<td>0:04</td>
</tr>
<tr>
<td>Saving a playlist</td>
<td>0:13</td>
<td>0:04</td>
<td>0:03</td>
</tr>
</tbody>
</table>

Table 2 demonstrates the rate of failures and successes in tasks completion. All participants succeeded in first and third tasks: installation and adding to the existing playlist correspondingly. Only four participants out of eight succeeded in the playlist creation without facilitator’s help. Each case of failing to create a playlist will be discussed later in the observations section and in limitations section.

Table 3. Failure / success rates of tasks completion.

<table>
<thead>
<tr>
<th>Completed the task / participant</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Creating a playlist with tracks bookmarked on Oncourse</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Adding to the existing playlist</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

Observations

Installation

1. Most users found the installation instructions easy to understand except one participant who had no idea about installation in general and mistook the InstallShield Wizard for a virus.
2. During the installation process some users found the window with customer information confusing. They did not know what to enter as a username: their IUB logins or real names. They also did not know if it is for anyone or not.
3. After participants succeeded in installation some skipped the remaining steps and did not listen to the test audio.

**Exploring Variations2**

1. Participants understood the purpose and functions of Variations2 quite well.
2. Although participants noticed the purple warning saying they could not listen to the music, they tended to ignore it and tried to listen to the music anyway.
3. Some participants mentioned that most options would be more useful for users with musical background.
4. One participant mistook the Variations2 player for Variations2 itself and was quite surprised when the search window popped up.

**Creating a playlist (using Oncourse bookmarks)**

1. Several participants used “File – New – Playlist” option and expected to be able to add a track from the New playlist window.
2. Participants tried to drag and drop items from the player window to the playlist window.
3. Most participants did not notice when a player started because the window opened minimized instead of being on the top of all other screens.
4. Many times participants did not wait till a track started playing. All of them were confused with the blank window while loading.
5. Some participants tried to add tracks to the playlist by right-clicking on an Oncourse bookmark or on links in the search window.

6. The first participant did not create a playlist with all tracks provided on Oncourse, because he misunderstood the task. He added one track from the Oncourse list, and then added two more tracks from the same container.

7. One participant who failed to create a playlist tried to search for tracks instead of clicking on bookmarks. For example, she copied the words “French suites” from the first bookmark and tried to search for it in Variations2. Although this search was successful, all other attempts failed because there are no composers’ names and exact titles in automatically created bookmarks’ names (see examples of bookmarks below.)

8. Another participant who failed to create a playlist did not keep the playlist opened, being unable to add tracks to the same playlist. Each time she clicked on the “Send to playlist” button a new playlist was created. This participant also repeatedly attempted to drag tracks from multiple player windows to the playlist window.
Adding to the playlist

1. Almost all participants tried to type the name of the Presley song into the Work Title field and got no results.
2. A few participants did not realize that it is necessary to open a playlist to be able to add to it. Most participants intuitively opened an existing playlist before or after they found the Presley’s song.
3. Most participants were concerned about using Oncourse because they had no experience with it. Thus, they were afraid to e-mail the playlist using it because they didn’t know how to attach files.

Satisfaction ratings

Participants were asked fill out a 9-question satisfaction survey after completing their tasks (see Appendix, p. 18.) Each question asked users to rate their experience with the system by circling a number on a scale from 1 to 7. Questions ranged from general system satisfaction to inquiries about specific V2 components and processes such as navigation and playlist creation. Negative adjectives were placed at the low end of the scale (1) while positive adjectives were placed at the high end (7).

Thus, a lower mean score for a particular question indicates a lower satisfaction rating. Consolidated results of the satisfaction ratings are presented in Table 4 below. Each response is marked with a “•” in its corresponding rating score column. Mean, or average, scores as well as standard deviation scores are also shown.
### Table 4. Satisfaction ratings.

<table>
<thead>
<tr>
<th>Question</th>
<th>Ratings</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. Overall, I found Variations2:</td>
<td>Terrible</td>
<td>Wonderful</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>Difficult</td>
<td>Easy</td>
</tr>
<tr>
<td></td>
<td>••</td>
<td>••</td>
</tr>
<tr>
<td></td>
<td>Frustrating</td>
<td>Satisfying</td>
</tr>
<tr>
<td></td>
<td>••</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>Dull</td>
<td>Stimulating</td>
</tr>
<tr>
<td></td>
<td>••</td>
<td>•</td>
</tr>
<tr>
<td></td>
<td>Slow</td>
<td>Fast</td>
</tr>
<tr>
<td></td>
<td>••</td>
<td>•</td>
</tr>
<tr>
<td>2. Navigating Variations2 and its components was:</td>
<td>Difficult</td>
<td>Easy</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>3. The installation of Variations2 was:</td>
<td>Difficult</td>
<td>Easy</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>4. Tasks could be performed in a straight-forward manner:</td>
<td>Never</td>
<td>Always</td>
</tr>
<tr>
<td></td>
<td>*****</td>
<td></td>
</tr>
<tr>
<td>5. My location within Variations2 at any given moment was:</td>
<td>Never apparent</td>
<td>Always apparent</td>
</tr>
<tr>
<td></td>
<td>••</td>
<td>•</td>
</tr>
<tr>
<td>6. Characters (letters, type, fonts) in Variations2 are:</td>
<td>Hard to read</td>
<td>Easy to read</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>7. Organization of information in Variations2 is:</td>
<td>Confusing</td>
<td>Clear</td>
</tr>
<tr>
<td></td>
<td>•</td>
<td>••</td>
</tr>
<tr>
<td>8. The number of screens and/or windows open at any one time in Variations2 is:</td>
<td>Difficult to deal with</td>
<td>Easy to manage</td>
</tr>
<tr>
<td></td>
<td>••</td>
<td>•</td>
</tr>
<tr>
<td>9. Creating a playlist in Variations2 is:</td>
<td>Difficult</td>
<td>Easy</td>
</tr>
<tr>
<td></td>
<td>••</td>
<td>•</td>
</tr>
</tbody>
</table>

To compare these ratings with the previous studies, see the table below.
Table 5. Mean satisfaction ratings for the current study (June 2004) and previous usability studies (conducted in November 2002, July 2003 and November 2003.)

<table>
<thead>
<tr>
<th></th>
<th>Nov-02</th>
<th>Jul-03</th>
<th>Nov-03</th>
<th>Jun-04</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall, found Variations2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>terrible - wonderful</td>
<td>5.05</td>
<td>6</td>
<td>5.57</td>
<td>4.6</td>
</tr>
<tr>
<td>difficult - easy</td>
<td>4.6</td>
<td>5.43</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>frustrating - satisfying</td>
<td>4.1</td>
<td>5.86</td>
<td>4.57</td>
<td>3.6</td>
</tr>
<tr>
<td>dull - stimulating</td>
<td>5.3</td>
<td>5.86</td>
<td>5.43</td>
<td>5.3</td>
</tr>
<tr>
<td>slow - fast</td>
<td>4.8</td>
<td>5.57</td>
<td>5.57</td>
<td>2.6</td>
</tr>
<tr>
<td>2. Navigating Variations2 and its components was</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficult - easy</td>
<td>4.3</td>
<td>5.43</td>
<td>5.86</td>
<td>4.4</td>
</tr>
<tr>
<td>3. The installation of Variations2 was</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficult - easy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6.1</td>
</tr>
<tr>
<td>4. Tasks could be performed in a straight-forward manner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>never - always</td>
<td>4.7</td>
<td>5.57</td>
<td>4.86</td>
<td>5.3</td>
</tr>
<tr>
<td>5. My location in Variations2 at any given moment was</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>never apparent - always apparent</td>
<td>5.8</td>
<td>6.14</td>
<td>6.57</td>
<td>4.8</td>
</tr>
<tr>
<td>6. Characters (letters, type, fonts) in Variations2 are</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hard to read - easy to read</td>
<td>6.5</td>
<td>6.71</td>
<td>6.57</td>
<td>6.1</td>
</tr>
<tr>
<td>7. Organization of information in Variations2 is</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>confusing - clear</td>
<td>5.2</td>
<td>5.86</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>8. The # of screens and/or windows open at any one time in Variations2 is</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficult to deal with - easy to manage</td>
<td>5.3</td>
<td>6.29</td>
<td>6</td>
<td>3.9</td>
</tr>
<tr>
<td>9. Creating a playlist in Variations2 is</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>difficult - easy</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.5</td>
</tr>
</tbody>
</table>

The most significant changes in ratings are related to the performance speed and to the number of screens open at any time. According to participants’ comments low performance speed contributed to their overall satisfaction ratings.

Although there were no articulated complaints about multiple screens, the confusion on where to click and how to deal with search, player and playlist windows corresponds with the participants’ evaluation that number of screens was rather difficult to deal with.

Via comments, questionnaires and debriefing sessions participants indicated relatively high level of satisfaction with the system as a whole. All participants were interested in exploring Variations2 and enthusiastic about learning and using Variations2. All of them appreciated the playlist feature and described it as useful. Comments on the playlist varied from the most common “I think it’s useful” [1, 3, 4, 5, 6, 7] to “that was pretty cool feature” [8]. Although all participants were non-music majors and were somewhat concerned about advanced features and options, most of them liked the option to search the collections and found the interface and menus generally appealing and clear.
The study also demonstrated that participants expected Variations2 to provide standard software services such as drag and drop and re-using windows (as opening one player window for all tracks instead of opening separate windows for each track). One of the most elaborate comments is from the participant who had apparent difficulties adding multiple tracks to one playlist: “Usually in a media player I can drag a song … and so I expected to be able to do that … and at one point I tried to do it and couldn't make that happen so … that just multiple windows and location of where that was stored and how it was stored was kind of hard to figure out. Once I had documentation it wasn't a problem” [4].

**Recommendations**

Recommended Variations2 improvements are listed below and are organized by the importance (with the most important issues being at the beginning of the list). The importance is also indicated by icons as follows:

<table>
<thead>
<tr>
<th>Importance</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-high</td>
<td>Importance is high. The issue prevents users from making progress or led to severe mistakes</td>
</tr>
<tr>
<td>-medium</td>
<td>Importance is medium. The issue causes confusion, inefficiency, or minor mistakes</td>
</tr>
<tr>
<td>-low</td>
<td>Importance is low. The issue causes slight amounts of confusion or dissatisfaction</td>
</tr>
</tbody>
</table>

**Issue: blank windows while loading -high**

Confusion caused by the lack of immediate feedback on some operations that take time (blank window appears while opening a player, opening an existing playlist or saving a playlist, sending a track to the playlist.)

**Recommendations**

Reduce the loading time (speed up all processes.)

- or -

Provide immediate feedback such as progress indicator.

– or –

Show as much content as possible (e.g. tracks in a player window) in gray (as if it is disabled) while music is being loaded.

**Issue: playlist name and playlist file -medium**

Confusion about playlist name and playlist file name.

**Recommendations**

Make the playlist name a user enters the default file name

– or –

Use the file name as playlist name so those users do not have to enter names twice
Issue: creating a playlist without opening a player – medium
Confusion about how to create a playlist when a user opens the “New Playlist” window without searching for a track and opening a player.

Recommendations
Move the search option from “File – New” to the “File” to make it more obvious.

– or –

Upon opening a new playlist, when there is no player opened, provide a pop up window suggesting searching for tracks (similar to timeline initial pop up window.)

Issue: not disabled features – low
Confusion about features that can’t be used but look activated (e.g. “forward” button when there is no next page.)

Recommendations
Deactivate features that can’t be used such as “forward” button when there is one window, “view details” and “hide track” in a new playlist window.

Issue: multiple windows – low
Difficulties handling multiple player or playlists windows: users had to click several times on each window and switch between windows often to understand what information was in each window.

Recommendations
One possible solution to reduce the number of windows is in re-using one window (e.g. by using tabs within one player window instead of opening each window separately.)

Issue: non-informative exported bookmarks – low
Confusion about information in bookmarks automatically exported to an html file from Variations2 (compare a title from the playlist and from a bookmark in the picture below: former one is much more informative than the latter one.)

Figure 4. Bookmarks in the playlist and in the html file.

Track title from Variations2 playlist

- summer test playlist
  - View Details
  - Track 1. J.S. Bach, Suite in E flat major, BWV 819, Bourree (1:41)

Track title in bookmarks exported to html (on Oncourse)
- French suites [sound recording]: BWV 812-9
  - Track 4, Bourree [1:00] [French suites [sound recording]: BWV 812-9 ; Track 4, Bourree]

Recommendations
Export the title from the bookmark folder so that it contains the name of composer/performer and the title, as is done when a playlist track is created.
Limitations of the study

The limitations of this study worth mentioning are the following.

The study was designed so that participants would use a modem connection to work with Variations2. At the same time they did not have to download an installation file or get it any other way because they were provided with a CD. In real life situation when users have a modem connection at home, it is not clear how they as well as the development team would deal with it. Currently there is no standard way of Variations2 distribution except downloading.

The sample of this study is rather convenience sample than a representative sample. Certain characteristics of participants such as level of academic involvement and level of computer literacy don’t match the user profile. This may reduce the ability to generalize results and require further testing with participants’ characteristics corresponding to those from user profile (namely, undergraduate students without technical knowledge.)

Another limitation of the study is that the user guide and help pages were not uploaded at the beginning of the test. The user guide participants had to use at the beginning did not contain instructions for playlist creation. Although two of the first three participants read the user guide, they did not need instructions for creating a playlist and completed the task. Only during the fourth usability session it was discovered that there was no help for playlist creation. The fourth participant had problems figuring out how to create a playlist as well as finding help on it. Later the proper user guide was uploaded and the participant was provided with the correct link. Having read explanations and instructions in the user guide, the participant understood how to create the playlist but did not proceed to complete the task. Due to the lack of the proper user guide and help pages for playlist creation, this particular failure cannot be considered accurate. It was also impossible to address questions of using help and the user guide.
Appendix

Demographic Questionnaire

At the beginning of the test all subjects are asked to fill out a demographic questionnaire with the following questions:

1. Are you male / female? (Circle one)
2. What is your age? _________
3. What is your native language? __________________
4. What is your current academic involvement at IU (e.g. undergraduate, master, PhD, non-student)? _____________
5. If you are in a degree program, what is your major (e.g. biology, jazz studies, piano, marketing)? ________________
6. Approximately, how many hours per week do you spend using a computer?
   [ ____ 0-5] [ ____ 6-10] [ ____ 11-20] [ ____ 21 or more]
7. Rate your computer experience on the following systems by circling 1-5 below:
   a. PC: Novice 1 2 3 4 5 Expert
   b. Macintosh: Novice 1 2 3 4 5 Expert
8. Have you used Variations software in the IU music library (circle one)? YES NO
   If you answered NO to question 8, skip questions 9, 10, 11
9. Approximately how often do you use Variations?
   ___ once a month or less
   ___ once every two weeks
   ___ once a week
   ___ 1-5 times a week
   ___ more than 5 times a week
10. When did you begin using Variations? Mark the most accurate choice.
    ___ within the last month
    ___ within the last year
    ___ within the last two years
    ___ more than two years ago
11. What activities do you mainly use Variations for? (e.g. listening to a class reserve list, preparing for recital, personal listening, etc.)
12. Have you participated in any prior Variations2 usability sessions (circle one)

   YES   NO

Task List

Part A

Due to a schedule conflict, you have decided to take an online music class Z100 MUSIC APPRECIATION taught through Oncourse. To be able to complete assignments, you have to first install the software - Variations2.

- Connect to IU using a shortcut on the desktop (use your regular IU name and password).
- Log in to Oncourse http://oncourse.iu.edu/ using your IU name and password.
- Click on the Z100 MUSIC APPRECIATION course link.
- Click on the “Click to continue” link on the next screen.
- On the TOOLS tab under “General tools” there will be installation instructions.
- Follow the instructions and install Variations2.

Part B

Now take 15 minutes to explore Variations2.

- Click on the shortcut on your desktop to start Variations2.
- Try to search for Beethoven and explore the results (Note: you may not be able to listen to the music, except the Symphony No. 5)
- Try to figure out what other features are in Variations2.

Now that you explored Variations2 a little bit, use it to prepare for the class.

- On the Syllabus tab you will find a list of recordings you need to be familiar with for the midterm. Clicking on each link opens a separate player.
- Try and click on several links to listen to recordings.

You’ve heard that with Variations2 you can create a playlist to listen to all recordings in a certain order any time you want (if you’re not familiar with playlists, read about them in the user guide before going on to the next step.)

- Create a playlist containing all the tracks listed in the Syllabus and save it on the Desktop of your computer.
- Exit Variations2 and log out from the Oncourse.

Part C

- Log on to Oncourse http://oncourse.iu.edu/ using your IU name and password.
- Click on the Z100 MUSIC APPRECIATION course link.
- Check your e-mail (there is an e-mail saying “Hi! I forgot to include the recording X to your list. Please note that you need to learn it for the midterm too.”)

Now you want to add this track to the playlist you have created earlier.

- Find this recording in Variations2.
- Add it to the playlist.
After you have added a recording, save the playlist and e-mail it to Inna Kouper using Oncourse.

Satisfaction Survey

For each question below, circle a number from 1-7. The number should best represent your feelings about the Variations2 experience during testing. Feel free to write additional comments in the space provided below.

1. Overall, I found Variations2:

Terrible  1 2 3 4 5 6 7 Wonderful
Difficult 1 2 3 4 5 6 7 Easy
Frustrating 1 2 3 4 5 6 7 Satisfying
Dull 1 2 3 4 5 6 7 Stimulating
Slow 1 2 3 4 5 6 7 Fast

2. Navigating Variations2 and its components was:

Difficult 1 2 3 4 5 6 7 Easy

3. The installation of Variations2 and its components was:

Difficult 1 2 3 4 5 6 7 Easy

4. Tasks could be performed in a straight-forward manner:

Never 1 2 3 4 5 6 7 Always

5. My location within Variations2 at any given moment was:

Never apparent 1 2 3 4 5 6 7 Always apparent

6. Characters (letters, type, fonts) in Variations2 are:

Hard to read 1 2 3 4 5 6 7 Easy to read

7. Organization of information in Variations2 is:

Confusing 1 2 3 4 5 6 7 Clear

8. The number of screens and/or windows open at any one time in Variations2 is:

Difficult to deal with 1 2 3 4 5 6 7 Easy to manage

9. Creating a playlist in Variations2 is:

Difficult 1 2 3 4 5 6 7 Easy

Additional Comments (use back of page if you need more space):

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Debriefing Questions

Below is a set of open-ended questions for the debriefing session. The interviewer should try to get as detailed answers to the questions as possible without guiding users.

If there were critical incidents (users reactions such as “Oh, no!”, “Yes!”, “I got it”, etc.), the interviewer may bring them up for discussion during the debriefing session.

1. How do you feel about Variations2?
2. Tell me about installation. Was it OK?
3. What about playlist?
4. What components of the Variations2 system did you find easiest to use?
5. What components of the Variations2 system did you find hardest to use?
6. What did you like best about Variations2?
7. What did you like least about Variations2?
8. Comment on the search interface.
9. Comment on playlist creation. Do you find this option useful?
10. Do you use it at home with other media players?
11. Comment on help (if used.)
12. Would you like to use Variations2 in your work / leisure activities?
13. Do you have any other questions / comments about Variations2?
Installation Instructions from Oncourse

Variations2 Installation Instructions for Windows XP or Windows 2000
Version 3.0

Use this sheet as a checklist for installing Variations2. The checkboxes are for you to keep your place.

---

Install Variations2

- Insert the Variations2 Installation CD into your CDrom.
- Open My Computer then open your CD Drive.
- Double-click on Variations2 -> setup.exe file to start the installation.
- Agree to all of the screens presented.
- Click the following link to make sure that the application has installed properly: tester.
- If Variations2 is properly installed, the Variations2 application should start. You will be prompted to login. Use your IUB login and password (same as you use for Oncourse), and then Beethoven's Symphony No. 5 should begin playing.

---

Notes on Installing Variations2:

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Configure QuickTime - ONLY if Variations2 didn't start as expected.

- After the installation is done, open the QuickTime Player by clicking Start > Control Panel > QuickTime
- Select "Connection Speed" from the pulldown menu in the QuikTime Settings window
- Ensure that the Connection Speed matches your Internet connection speed. (Figure 1)
- Make sure the Allow Multiple Simultaneous Streams box is checked. (Figure 2)
- Close the QuickTime Settings window.

---

Notes on Configuring QuickTime:
Still Have Problems?

- Use the Diagnostic Tool to detect what is causing the problems.
- If you experience other problems when you try to run Variations2, check the following link for possible solutions: Known Problems.
- If the Known Problems link still does not solve your problem, use Variations2 Support Form for assistance.

Notes on Problems:

---

Figure 1

QuickTime Settings

QuickTime will choose among multiple versions of internet media based on the connection speed you specify.

- 1.5 Mbps T1/Intranet/LAN
- 64 Kbps Modem/ISDN
- 128 Kbps Modem/Dial-up
- 256 Kbps DSL/Cable
- 384 Kbps DSL/Cable
- 512 Kbps DSL/Cable
- 768 Kbps DSL/Cable
- 1 Mbps Cable
- 1.5 Mbps T1/Intranet/LAN

---

Figure 2

Back to Top
QuickTime Settings

Connection Speed

QuickTime will choose among multiple versions of internet media based on the connection speed you specify.

56 Kbps Modem/ISDN

Allow Multiple Simultaneous Streams

QuickTime's default is to play one stream at a time. Use this option to allow playback of multiple streams simultaneously. This may degrade performance if your available bandwidth is exceeded.