Software User Manual
Overview

• Plan the manual
• Write a draft
• Have someone review the draft
• Improve the manual based on the review
• Plan, conduct, and evaluate a usability test
• Modify and write the final manual
Planning the Manual

• Determine your purpose
• Consider the audience
• Determine a schedule
• Determine sets of actions the user must perform
• Analyze the steps
• Select visual aids
• Format the manual properly
Determine Your Purpose

• Which topics are important for the user?
• What level of detail is appropriate for each topic?
• Focus your sense of purpose
Consider the Audience

• How much do they know about the general terms and concepts?
  – Make a list of terms your users understand

• What should the user be able to do after reading the manual?

• How will the user read the manual?
  – Probably not from beginning to end!
Consider the Audience

• Where will the users use the manual?
  – Consider lighting conditions or font size for easy readability

• Does the user really want to read a manual?
  – Probably not. Make it useful and “trustworthy”!
Determine a Schedule

• Plan for a review of the draft
• Set a precise date for the review, who will be part of the review team, and what kind of feedback you expect
Create a Gantt Chart

- Get Specifications
- Design Manual and Usability Test
- Prepare Draft
- Review Draft
- Conduct User Test
- Prepare Final

Discover Sequences

• Find out what the software does
• Find out what people are supposed to do when they use it
  – These actions form the basis for the Procedures Section
Analyze the Steps

• Name each individual action that a user performs
• Write a set of instructions
• Make a flow chart or a decision tree
  • List each action and show how it fits into a sequence with other actions
Select Visual Aids

• Goal is to create a text-visual interaction that best conveys the information
• Use visuals to eliminate text as much as possible
  – Visuals reassure readers that they are “in the right place”
Format the Manual

• Must be easy to read

• Associate a particular space on the page with a particular kind of information
  • For example: “All figures are in the lower left-hand corner”
  • Create a *template* page that indicates placement of page numbers, headers, footers, rules, blocks of text, headings, and figures
  • Start with a tentative template (may change as the document progresses)
# Writing the Manual


<table>
<thead>
<tr>
<th>Component</th>
<th>Required?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title page</td>
<td>Yes</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>Yes</td>
</tr>
<tr>
<td>List of Illustrations and Figures</td>
<td>Yes</td>
</tr>
<tr>
<td>Introduction (Overview)</td>
<td>Yes</td>
</tr>
<tr>
<td>Information for use of the documentation</td>
<td>Optional</td>
</tr>
<tr>
<td>Concept of operations</td>
<td>Optional</td>
</tr>
<tr>
<td>General Use</td>
<td>Optional</td>
</tr>
<tr>
<td>Procedures</td>
<td>Yes (Instructional Mode)</td>
</tr>
<tr>
<td>Information on software commands</td>
<td>Optional (Reference Mode)</td>
</tr>
<tr>
<td>Error messages and problem resolution</td>
<td>Yes</td>
</tr>
<tr>
<td>Glossary</td>
<td>Yes</td>
</tr>
<tr>
<td>Related informational sources</td>
<td>Optional</td>
</tr>
<tr>
<td>Navigational features</td>
<td>Optional</td>
</tr>
<tr>
<td>Index</td>
<td>Yes</td>
</tr>
<tr>
<td>References</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Usage Modes

• What are the needs of the users?
  – Instructional Mode: User needs to learn about the software
    • Information-oriented: instruct the user
    • Task-oriented: show the user how to accomplish a goal
  – Reference Mode: Users need to refresh their memory about the software
Title Page

- Manual title
- Course and section number
- Your name
- Date of submission
- Draft written at top of draft only (final version has nothing written at top)
Table of Contents

• List the topics with page numbers
  • Wording is identical to what appears in the text

• Include sub-topics and page numbers, indented

• Include all information that follows the Table of Contents
  • Introduction, Concept of Operation, Procedures, Glossary, References, Index, etc.
List of Illustrations and Figures

• Separate page following Table of Contents
• List all illustrations and figures with page numbers
  • Wording is identical to what appears in the text (the caption on the illustration or figure)
  • Include illustration number or figure number
Introduction

• Describe the intended audience, scope and purpose for the manual
• Include a brief overview of the software purpose, functions, and operating environment
Use of Document Section

• Information on how to use the manual
• Explanation of notation
• May include notable changes from the previous version of the manual or the software product
Concept of Operations Section

• Conceptual background for use of the software
• Process, workflow, theory of operation, rationale, algorithms, general concept of operation
• Relate each documented function to the overall process or tasks
General Use Section

• Pertains to task-oriented instructional mode
  – Hardware and operating system
  – Software installation and de-installation
  – Use of the features of the GUI
  – Log-on and log-off (or launch and close)
  – General data operations (enter, save, read, print, etc.)
  – General methods of canceling, interrupting, and starting operations
Procedures Section

- 3 parts:
  - Preliminary Information
  - Instructional Steps (sub-sections)
  - Completion Information

- Each sub-section in the Procedures Section must have a separate introduction
  - However, preliminary information common to several procedures may be grouped and presented once to avoid redundancy
Procedures Section

• Each sub-section should include:
  • A brief overview of the purpose of the procedure and definitions or explanations of necessary concepts not elsewhere included
  • Identification of technical or administrative activities that must be done before starting the task
  • A list of materials the user will need to complete the task, which may include data, documents, passwords, additional software, and identification of drivers, interfaces, or protocols
  • Relevant warnings, cautions, and notes, that apply to the entire procedure
  • The procedure for completing the task
Format for Representing GUIs

• Use consistent graphical or typographical formats, easily distinguishable from the surrounding text

• Include a representation of the element, its purpose, and an explanation of its action
  • Show examples of actual operation
Error Messages and Problem Resolution Section

• Address all known problems with using the software in sufficient detail such that the users can either recover from or report the problem

• May include contact information for reporting problems with the documentation, or suggesting improvements
Glossary

• Must include terms in the glossary if they are likely to be unfamiliar to the audience
• Alphabetical list of terms and definitions
  • Include abbreviations and acronyms with their definitions
• Terms included in the glossary should also be defined on their first appearance in the printed document
Index

• Alphabetical listing of keywords, graphics, or concepts with a page number for each

• An index entry may cross-reference another index entry
  • The referenced entry should give a page number and not point to a third index entry
References

• Alphabetical by the first author’s last name

• Refer to source in the text with a bracketed number
  • “... The event handler implements the well-known Observer design pattern [7] ...”
Usability Testing

• Does this manual allow the audience to use the software product easily and confidently?
Usability Testing

• Plan the usability test
• Conduct the test
  – Informal Observation
  – User Protocols
  – Computer and Editorial Analysis
  – Surveys and Interviews
• Use the results to revise your manual
Planning a Usability Test

- Select the aspects of the manual you want to evaluate
- Select the methods you will use
- Recruit the test subjects
Selecting the Aspects

• Time
  • How long did it take the subject to find the information?

• Errors
  • How many and what types of errors did the subject make?

• Assistance
  • How often did the subject need help?
  • At what points did the subject need help?
  • What type of information did the subject need?

• Information
  • Was the information easy to find and understand, and was it sufficient to perform the task?
Selecting the Aspects

• Format
  • Is the format consistent?
  • Are the heading, introductions, visuals, etc. helpful?
  • Is the arrangement of the pages helpful?

• Audience Engagement
  • Is the vocabulary understandable?
  • Is the text concrete enough?
  • Is the sequence “natural”?
  • Does it seem to the subject that this is the route to follow to do this activity?
Selecting the Method

• Informational Observation
  • Watch the subject use the manual and record all the places where a problem arose (for the selected aspects)

• User Protocols
  • “Speak-aloud”
  • Record the thoughts that the user speaks as he or she works with the manual

• Computer Text Analysis
  • Automated
  • Word count, spelling, grammar, readability score (grade level)
Selecting the Method

- Editorial Review
  - Knowledgeable commentary from a person who is not one of the writers of the text (i.e., someone in your group!)

- Surveys and Interviews
  - A series of questions that you ask the user after he or she has worked with the manual

- Goal is to match the test method with the kind of information you want to get

- For this assignment, you must use either informational observation, a user protocol, a survey, or an interview
  - You may optionally use one of the other methods in addition
Selecting the Subjects

• The test subjects are most often individuals who are probable members of the manual’s target audience, but have not worked on developing the manual
Conducting a Usability Test

• Have a way to record all the data!
  – Tally sheet with three columns:
    – observation, expected behavior, user comment
  – Audio or video record of a test session
  – Design a form with a list of questions
    – yes/no or rate on scale (1 = highly disagree, 5 = highly agree)

• Get as much feedback as quickly as possible!
Sample Survey Questions

• Were you able to find information on X quickly?
• Did the comments in the left margin help you find information?
• Did you read the introductions to the sequences?
• Did the introduction to each sequence make it easier for you to grasp the point of the sequence?
Evaluating a Usability Test

• Determine how to use the results of the test
• Results could indicate a problem with:
  • The text (spelling, grammar, sufficiency of information)
  • The text’s design (consistency, usefulness of column arrangement, placement of graphics)
  • The learning style of the audience (basic way in which they approach the material)
Checklist for Preparing a Manual

• Consider the audience
  – How much do they know?
  – Where and when will they use the manual?
  – What should they be able to do after reading the manual?
  – List all the terms a user must comprehend. Define each term.
Checklist for Preparing a Manual

• Determine a schedule
  – On what date is the manual due?
  – Who will review each stage?
  – How long will each review cycle take?

• List sources of information on product
  – A person?
  – Reading?
  – Working with the item?
Checklist for Preparing a Manual

- Analyze the procedures a user must follow
  - What must be done to install it, to start it running, to stop it running, and to do its various tasks?
  - List the sequences of procedures to be performed
  - Organize each sequence – chronological or importance?
  - Create a flow chart for each procedure the software follows
  - Create a decision tree for each procedure the user follows
  - Name each method and its function
  - Select only the most important sequences
Checklist for Writing a Manual

• Choose a visual aid strategy
  – What type of visual aid will you use (photos? screen captures?)
    – If so, how many, and of what?
  – Will you use a visual aid for each instruction?
  – Will you use a visual aid on each page?
Checklist for Writing a Manual

• Prepare a template for
  – Levels of heads, captions for visual aids, margins, page numbers, and fonts
  – Size and placement of visual aids, captions for visual aids
  – Rules, headers, and footers

• Write step-by-step instructions
  – Label any step that could endanger the person
  – Provide WARNING! Caution! or Notes
  – Present action, then results
Checklist for Usability Testing

- Select the features of the manual you want to test
- Select a method of testing those features
- Create a clear method for recording answers
- Pre-determine acceptable results.
  - e.g., “The time to perform this process should be less than 1 minute.”
- Select subjects to use the manual
- Run the usability test
- Analyze the results
- Revise the manual using the results from the study