

SUNITAFE STUDENT LEARNING GUIDE



ICTICT309

Create ICT user documentation

Student Learning Guide

ICTICT309 Create ICT user documentation

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Sunraysia Institute of TAFE wishes to acknowledge the contribution from the following persons in the development of this resource:

David Cleary

Sunraysia Institute of TAFE wishes to acknowledge the following additional information sources in the development of this resource:

<https://training.gov.au/Training/Details/ICTICT309>

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1. Prepare to produce user documentation

1.1 What is user documentation?

User documentation includes all documentation that is intended for end-users of a product or service.

User documentation is a subtype of product documentation.

Effective user documentation enables end-users to find answers to questions and solutions to problems themselves without needing to access IT support personnel.

Traditionally, user documentation was provided as hard-copy or soft-copy documents. Today, user documentation is often provided via a web-site including sophisticated search facilities and a variety of other interactive components to aid users.

Essential elements of effective user documentation:

- Plain language
- Simplicity
- Visuals and diagrams
- A focus on the problem
- A logical hierarchy and flow of information
- Searchable
- Accessible for all users
- TOC and index

Video: What is User Documentation? – <https://www.youtube.com/watch?v=bYxbwsGG3Zo>

Types of user documentation:

- Product description and characteristics
- Quick start guides
- Installation and setup instructions
- User manual / guide
- FAQs
- Troubleshooting guide
- Knowledge bases
- Process descriptions

Kumar, J. (2021, Dec 14). Best Examples of User Documentation. Retrieved from Helpie WP:

<https://helpiewp.com/user-documentation/>

DeVore, J. (2021, Dec 14). 10 Examples of Great End User Documentation. Retrieved from ScreenSteps:

<https://blog.screensteps.com/10-examples-of-great-end-user-documentation>

1.1.1 Maybe the first IT user manual?

The Antikythera Mechanism from ancient Greece around 100-200 BCE was a mechanical computing device used to predict eclipses and model the orbit of the moon. The back face of the device was engraved with instructions describing the purpose of each of the dials and how the device was to be used.

1.2 Determine user documentation requirements

To determine user documentation requirements, it is essential to understand:

- The reasons why a user would be accessing a product's user documentation – what are their goals
- Details of what the user needs to do, the actions they have to perform, to have the product help them to achieve their goals.

User documentation developers need to speak with both end-users and product designers/developers.

1.3 Creating user documentation

Tips for creating effective user documentation:

- Understand the audience
- Use a task oriented approach
- Ensure a logical flow of information
- Use modules
- Use a table of contents
- Use meaningful and consistent labels
- Write in a conversational tone
- Consider the location of critical information
- Use adequate illustrations
- Tabulate information wherever possible
- Provide examples
- Include troubleshooting tips
- Construct a good index
- Edit and review
- Perform a “reality check”

Melonfire. (2021, Dec 14). Reduce user needs with these 15 tips for writing smart user manuals. Retrieved from TechRepublic: <https://www.techrepublic.com/article/reduce-user-needs-with-these-15-tips-for-writing-smart-user-manuals/>

1.4 User documentation formats

Standard	Type	Year Invented	Inventor
Markdown	Open	2004	John Gruber, Aaron Swartz

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DocBook	Open	1991	HAL Computer Systems, O'Reilly & Associates
Microsoft Word	Closed	1983	Charles Simonyi, Richard Brodie (Microsoft)
Wiki	Open	1994	Ward Cunningham
Docs-As-Code	Messy Middle	N/A	N/A
DITA	Open	2001	IBM
HTML	Open	1991	Tim Berners-Lee, Robert Cailliau

Ludwig, T. (2021, Dec 14). *What Is the Best Standard for Technical Documentation?* Retrieved from Heretto: <https://heretto.com/best-standard-for-documentation/>

1.5 Generating ideas and responses – Brainstorming

Brainstorming is a spontaneous, unstructured and somewhat haphazard problem solving and creative thinking process whereby ideas are recorded quickly as they occur.

Brainstorming is effective for quickly gathering a variety of diverse ideas from multiple participants.

The concept of “brainstorm sessions” was formalised by Alex F Osborn in 1939 as a method for developing creative ideas for advertising campaigns.

A brainstorm session begins with the issue or problem being explained to the session participants. Participants then suggest solution ideas which are recorded. As the session progresses, participants continue to search for better and more innovative ideas by noting ways in which suggested ideas can be improved and by finding associations between ideas.

Brainstorming rules:

1. Go for quantity: The more ideas generated the greater chance of finding a truly effective solution.
2. Withhold criticism: Participants need to feel free to make suggestions and propose ideas.
3. Welcome wild ideas: Innovative and new solutions are more likely to be found by welcoming wild and seemingly unlikely ideas.
4. Combine and improve ideas: These actions serve to stimulate the discover of innovative and new solutions.

Brainstorming “dos”:

1. Appoint a facilitator
2. Build on each others' ideas
3. Write and draw

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Brainstorming “don’ts”:

1. Force participation
2. Criticise other people’s ideas
3. Hold brainstorm sessions in the evening

Brainstorming can be performed using computer tools.

However, it is still usually best performed using a whiteboard, large sheets of paper and post-it notes.

An introduction to Brainstorming techniques – https://www.youtube.com/watch?v=R4M_X5xP4BY

Exercise – Gather user documentation requirements

Use brainstorming to gather user documentation requirements for:

- Casting videos and movies from a PC, smart phone or other computing device to a TV.

1.6 Industry standards for user documentation

IEEE Standard for Software User Documentation IEEE Std 1063-2001

The standard provides minimum requirements for the structure, information content, and format of user documentation, including both printed and electronic documents used in the work environment by users of systems containing software.

Routine activities specified by the standard for task-oriented instructional mode documentation:

1. Software installation and de-installation
2. Orientation to use of the features of the graphical user interface
3. Access, or log-on and sign-off the software
4. Navigation through the software to access and to exit from functions
5. Data operations (enter, save, read, print, update, and delete)
6. Methods of cancelling, interrupting, and restarting operations.

Exercise – User documentation standard

Access and analyse the IEEE Standard for Software User Documentation.

- IEEE Computer Society. (2001). IEEE Standard for Software User Documentation: IEEE Std-1063-2001. New York NY: The Institute of Electrical and Electronics Engineers, Inc.

1.7 Design and develop user documentation templates

A template is a document that includes the general structural and layout elements related to a type of situation but no (or limited) details of an actual situation or scenario.

Users fill-in templates in order to record the details of actual situations and scenarios.

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Word processing software applications, such as Microsoft Word, include facilities for creating template documents and then creating actual documents based upon the templates.

Templates can be created for different types of user documentation such as user guides.

Templates define and standardise document:

- Structure: The sequence and purpose of each of the sections to be included within a document.
- Layout: How each document page should be laid out including headers, main contents and footers.
- Naming conventions: How a document should be named and where documents should be stored.
- Version history conventions: How document versions should be named and controlled.
- Organisational logo and other key graphics dimensions and placement: How organisational logos and other graphics should be used within a document.

1.8 Utilise a style-guide

A style guide is a set of standards for the writing, formatting and design of documents.

A style-guide helps ensure document content consistency and compliance with organisational standards and encourages best practice.

Australian Government. (2021, Dec 14). Australian Government Style Manual. Retrieved from Australian Government Digital Transformation Agency: <https://www.dta.gov.au/our-projects/australian-government-style-manual>

Bohorquez, N. (2021, Dec 14). Documentation Style Guide. Retrieved from draft.dev Blog: <https://draft.dev/learn/technical-writer-style-guides>

Style guides define:

- Writing style: The grammar, punctuation, spelling and usage of a document's content.
- Typeface and fonts: What types and fonts should be used within a document. An organisation may use particular typefaces and fonts. Typefaces and fonts can also be used to differentiate different sections and types of information within a document.
- Use of colour: How colour should be used within a document. An organisation may use a particular colour palette. Colour can also be used to highlight particular information within a document.
- Images and graphics: How images and graphics should be used within a document.

Exercise – User guide template

Using Microsoft Word create a user guide template that conforms to the requirements and style guide set out in the Murray Tafe User Documentation Requirements document.

1.9 Identify the required ICT system or components to be documented

ICT systems consist of software, hardware and networking components.

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Software

- Operating systems
- Applications
- Office productivity suite
- Internet, email and communication
- New and existing business applications
- Network management
- Security
- Device drivers

Hardware

- Desktop and laptop PCs
- Tablets and phones
- Servers
- Storage devices: Disk drives, NAS, RAID
- Screens and monitors
- AV systems
- Printers
- Power management
- Cameras and security devices
- Peripherals

Networking

- Modems
- Routers
- Switches
- Wifi: WAPs, Wireless protocols
- Firewalls and security
- Data cabling: Protocols

User documentation for an ICT system needs to identify and properly describe all the included components.

Exercise – ICT system and components

Identify the ICT system components – including software, hardware and networking components – that must be addressed in the user guide for:

- Casting videos and movies from a PC, smart phone or other computing device to a TV.

Blog responses

Investigate the prompts and record your response and opinion with evidence in the online blog.

Your responses must respond to the prompt's statement and provide reasons for their views.

Prompts:

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- User guides are a recent innovation.
- A well-designed software application should not need a user manual.
- User documentation is more effective when it is integrated into a software application rather than developed as a separate document.
- User documentation should always be written by actual users.

2. Produce user documentation

2.1 Review the required ICT system or components to be documented

ICT systems consist of software, hardware and networking components.

For each of the components involved, consider:

- How the component is to be used in the ICT system to be documented
- What information users of the ICT system require about the component in order to utilise the ICT system effectively (avoid overdocumentation, this is user not technical documentation)

Example: Users of the Zoom communication software make use of speaker and microphone hardware devices.

The Zoom user manual needs to include instructions on:

- Selecting an installed speaker and microphone
- Adjusting the speaker and microphone volume
- (Maybe) basic troubleshooting if the speaker and/or microphone is not working

It does not need to include:

- Speaker and microphone installation details
- Technical information related to the internal operation of the speaker and microphone
- Compliance information related to the generation of radio frequencies by a wireless speaker or microphone

Exercise – ICT system and components

Describe the role of each of the ICT system components – including software, hardware and networking components – that must be addressed in the Casting Video to a TV User Guide

(These ICT system components were identified in the exercise in Topic 1)

2.2 Document characteristics and functions of ICT system or components

User documentation usually provides users with “directions for performing procedures” (IEEE Computer Society, 2001).

Approaches and diagramming techniques for “directions for performing procedures”:

- Use cases – Video: What is a Use Case - <https://www.youtube.com/watch?v=nN7ITDWKP6g>
- Flowchart and Workflows – Video: Introduction to Creating Flowcharts – <https://www.youtube.com/watch?v=SWRDqTx8d4k>
Video: What is Workflow – <https://www.youtube.com/watch?v=W4liOgwcNjE>
- User stories - Video: Salesforce User Stories in Action – https://www.youtube.com/watch?v=a_TB4zUb0SE

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- Data flow diagrams - Video: Data Flow Diagram Overview – <https://www.youtube.com/watch?v=YbD3oy181s8>

Exercise – Describing user functionality

List the user functions to be included in the Casting Video to a TV User Guide.

Exercise – User functionality and workflows

Using a diagramming technique that shows workflow, such as flowcharts or data flow diagrams, document one of the user functions associated the Casting Video to a TV User Guide.

2.3 Techniques for creating effective and efficient text in user documentation:

User documentation typically requires extensive use of textual descriptions.

To check and improve written text:

- Proof read – by self and by others
- Read out loud

2.3.1 Technical writing

Help users unambiguously understand technical manuals written in English

Standard: ASD-STE100 Simplified Technical English

Goals: reduce ambiguity; improve clarity of procedural writing; make human translation easier, faster and more cost effective; facilitate computer translation

Rules: restrict sentence and paragraph length; avoid slang; use simple verbs; use active voice; write sequential steps as separate sentences; start warnings with clear commands

Wikipedia. (2021, Dec 14). *Simplified Technical English*. Retrieved from Wikipedia:

https://en.wikipedia.org/wiki/Simplified_Technical_English

SSW Enterprise Software Development. (2021, Dec 14). *Rules to Better Technical Documentation - 42 Rules*.

Retrieved from SSW Enterprise Software Development: <https://www.ssw.com.au/rules/rules-to-better-technical-documentation>

Isani, S. (2021, Dec 14). *Of technical writing, instructions for use as a specialised genre and discourse communities*. Retrieved from OpenEdition Journals: <https://journals.openedition.org/asp/5713>

Perelman, L. C., Paradis, J., & Barrett, E. (2021, Dec 14). *The Mayfield Handbook of Technical and Scientific Writing*. Retrieved from Massachusetts Institute of Technology: <https://www.mit.edu/course/21/21.guide/toc.htm>

2.3.2 Plain English/language

Help users understand text as quickly, easily and completely as possible by ensuring text is easy to read and understand and broadly accessible.

Guidelines: consider the target audience; include headings, clear summaries and a TOC; logically organise text; keep sentences short; use simple and familiar vocabulary; use active voice; directly address reader; use easy to read fonts; avoid excessive and unnecessary capital letters; use white space to increase readability

Original text	Plain language
High-quality learning environments are a necessary precondition for facilitation and enhancement of the ongoing learning process.	Children need good schools if they are to learn properly.
"While we are committed to – and our strategy continues to leverage – our unparalleled global network and footprint, we have identified areas and products where our scale does not provide for meaningful returns. And we will further increase our operating efficiency by reducing excess capacity and expenses, whether they center on technology, real estate or simplifying our operations."	We are a successful company, but today we announced lay-offs. This will save cost.

Wikipedia. (2021, Dec 14). *Plain language*. Retrieved from Wikipedia:
https://en.wikipedia.org/wiki/Plain_language

Plain English Campaign. (2021, Dec 14). *How to write in plain English*. Retrieved from Plain English Campaign: <http://www.plainenglish.co.uk/how-to-write-in-plain-english.html>

2.3.3 Spelling

Ensure all words are spelled correctly

Use spell check software

2.3.4 Punctuation

Carefully consider the use of: full-stops, question marks, commas, apostrophes, quotation marks, paragraphs

2.3.5 Grammar

Ensure all statements and sentences are complete and make sense

Where possible, use short sentences

Check: verb tense, subject-verb agreement, singulars and plurals

Avoid unnecessary use of gender

Use grammar check software

2.3.6 Avoiding jargon

Consider your audience – the language in a user manual is likely to be very different to the language you use chatting with friends

In general, avoid jargon and colloquialisms

Exercise – Describing user functionality

Focusing on the use of plain English and ensuring correct spelling, punctuation and grammar, document using text one of the user functions associated with the Casting Video to a TV User Guide.

2.4 Access applicable technical, design, user specification and supporting documentation

Across the life cycle of an ICT component or system, a large variety of technical, design, user and supporting documentation is created and used.

ICT documentation can be classified into:

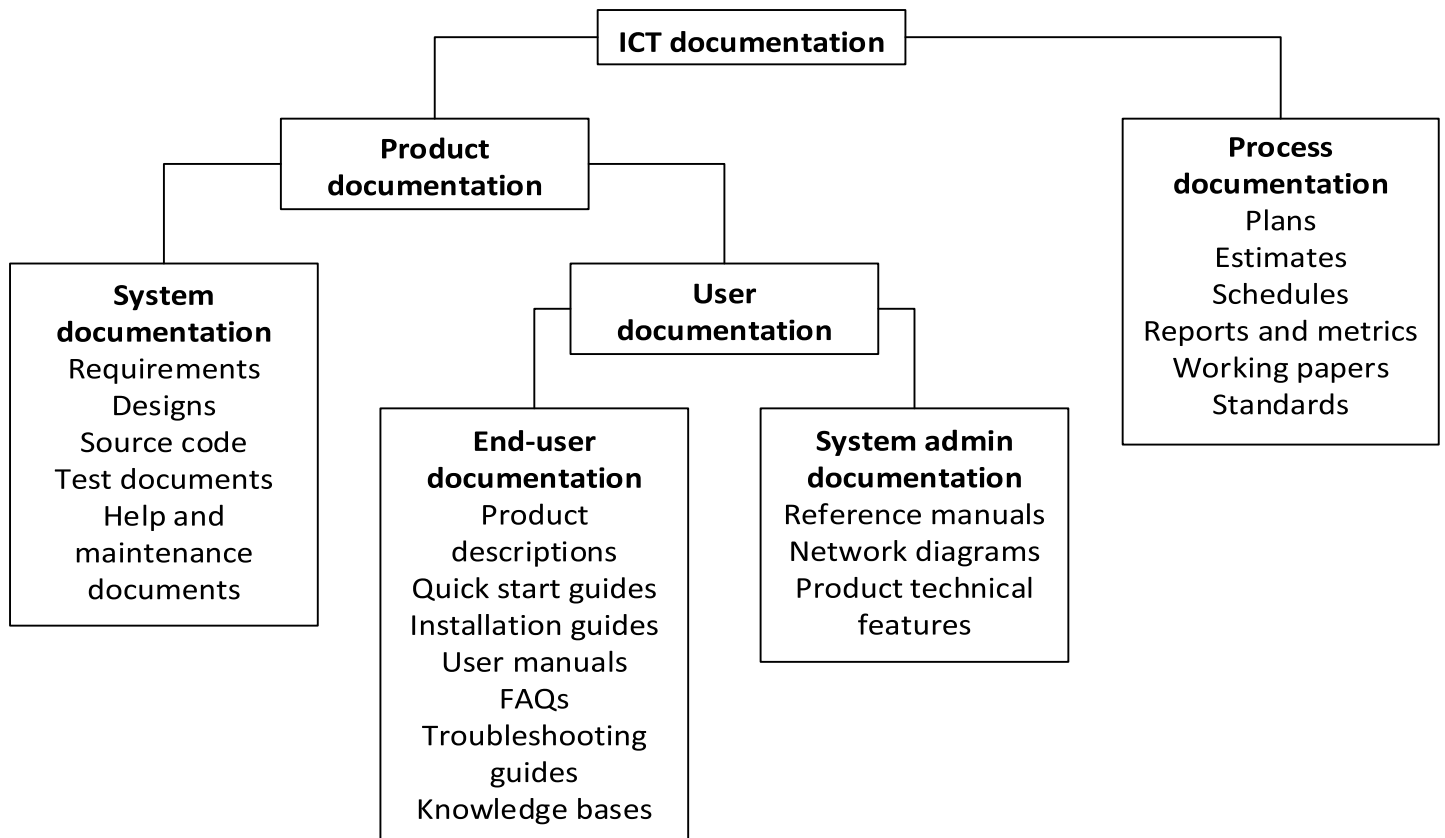
- Process documentation – concerned with describing how the ICT component or system is produced
- Product documentation – concerned with describing the ICT component or system

End-user documentation is a sub-category of product documentation

Vendor documentation is documentation produced by the ICT component or system vendor

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Altexsoft. (2021, Dec 14). *Technical Documentation in Software Development: Types, Best Practices, and Tools*. Retrieved from Altexsoft: <https://www.altexsoft.com/blog/business/technical-documentation-in-software-development-types-best-practices-and-tools/>

Exercise – Technical design documentation

Describe the purpose of the following technical design documents for ICT systems:

- Business requirements document
- Architecture design document
- System test plan.

Exercise – Vendor documentation

Access and record the URLs for vendor documentation associated with the Casting Video to a TV User Guide.

Exercise – Finalise user documentation

Finalise the user guide associated with the Casting Video to a TV User Guide.

Ensure all required characteristics and elements are included.

Investigation

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Select a software application you are familiar with and gather together all the documentation you can find for that application.

- Create a short presentation
- No more than six slides

Blog responses

Investigate the prompts and record your response and opinion with evidence in the online blog.

Your responses must respond to the prompt's statement and provide reasons for their views.

Prompts:

- User documentation for an ICT system is more effective when separate documentation exists for the hardware, software and networking components of the system rather than there being a single integrated document.
- Use cases can be used to describe interactions between human users and ICT systems but are unsatisfactory for describing interactions between ICT systems.
- Jargon should always be avoided in technical writing and user documentation.

3. Review user documentation

3.1 User documentation review

User documentation should be reviewed prior to being made available for use by end-users.

Reviewing helps ensure that user documentation is correct, clear, complete, consistent, relevant and accessible to all users.

During user documentation review, the documentation progresses through a series of drafts with each draft incorporating the feedback from users and other reviewers.

Benefits of user documentation review:

- Improved quality: Errors, ambiguities and aesthetic issues are addressed
- Reduced cost: Users less likely to need to contact the supplier because of missing information or misunderstandings due to ambiguity
- Improved user relationships: Users generally happier with suppliers when supplier has provided high quality information

Exercise – User documentation review plan

Using a flowchart, create a documentation review plan for the Casting Video to a TV User Guide.

3.2 Incorporating user feedback

Feedback is information about a product or activity that is used as the basis for improvement.

Feedback from users about user documentation:

- Helps identify errors, inconsistencies and ambiguities in the documentation. Sometimes these issues may not have been apparent to the documentation developers.
- Is obtained through user analysis of the user documentation and is enhanced through follow-up interviews with the users.
- Is incorporated into the user documentation so as to improve it.

Video: ACS Percipio Giving feedback – <https://acs-preview.percipio.com/channels/26ff0a80-205f-11e7-a06b-196ddb80a7e9?tab=WATCH>

Video: ACS Percipio Receiving feedback – <https://acs-preview.percipio.com/channels/13998770-f91f-11e6-aad2-6b3c03be7fe8?tab=WATCH>

Exercise – Giving and receiving feedback

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Working in a pair, read through another student's Casting Video to a TV User Guide and give and receive feedback.

3.3 Version control and Git

In computing, version control involves tracking and managing changes to computer source code and other documents.

Version control systems are computer applications that record all changes made to a document in a manner that allows any version of the document to be retrieved if and when needed.

Version control supports:

- Collaboration between multiple, concurrent document creators
- Storing of multiple versions of documents addressing varying needs
- Restoring previous versions of documents.

Git

- Version control in ICT projects is typically managed using the Git tool.
- The most popular Git website is Github – <http://github.com>.
- Git and Github support management of all the source code and documents in a project.
- Git and Github can be accessed via desktop apps in Windows and MacOs and via the git command line.

Exercise – Github

Login to Github – <https://github.com>

Work through the following Github tutorials:

- Quickstart: Hello World – <https://docs.github.com/en/get-started/quickstart/hello-world>
- Quickstart: Create a repo – <https://docs.github.com/en/get-started/quickstart/create-a-repo>
- Quickstart: Fork a repo – <https://docs.github.com/en/get-started/quickstart/fork-a-repo>
- Managing files – <https://docs.github.com/en/repositories/working-with-files/managing-files>

Blog responses

Investigate the prompts and record your response and opinion with evidence in the online blog.

Your responses must respond to the prompt's statement and provide reasons for their views.

Prompts:

- File locking in a version control system is an effective process for managing file updates by multiple users.
- Version control in a software development project is only effective for managing source code files.
- Github is not a secure location in which to store important or confidential information.