

Design Documentation for Senior Design



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Outline

- Introduction – Motivation
 - The Importance of Documentation
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Design (from Wikipedia)

As a noun, "design" is used both for the final plan or proposal (a drawing, model, or other description), or the result of implementing that plan or proposal (the object produced).

Designing normally requires considering [aesthetic](#), [functional](#), and many other aspects of an object, which usually requires considerable [research](#), [thought](#), [modeling](#), interactive adjustment, and re-design.

Documentation (from Wikipedia)

In general terms, **documentation** is any communicable material (such as text, video, audio, etc., or combinations thereof) used to explain some attributes of an object, system or procedure.

It is often used to mean [engineering](#) or [software documentation](#), which is usually paper books or [computer readable](#) files (such as [HTML](#) pages) that describe the structure and components, or on the other hand, operation, of a system/product.

A professional whose field and work is more or less exclusively to write documentation is called a documenter. Normally, documenters are trained or have a background in [technical writing](#), along with some knowledge of the subject(s) they are documenting.

Often, though, some part or all of the documentation process is done by the engineers responsible for the system/product to be documented.

Documentation (from Wikipedia)

By engineers, perhaps among [software engineers](#) in particular, documentation is often referred to as the "boring side" of engineering, or considered a necessary evil.

This is largely unavoidable since most engineers prefer building things to documenting them, and being implicit experts in what they have built, they may have little motivation in documenting their creations so that others may understand them.

The Importance of Documentation

- Will describe the decisions you made while converting your requirements to a detailed design.
 - Will include
 - Will include, as attachments, drawings, algorithms, and other design “deliverables”.
 - Your entire project will also have requirements, a WBS, a schedule, budgets, purchase orders, etc. These are not re-written in the document.
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Example of a Design Document

- Robotic Turtle
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Comments from a Technical Writing Instructor

1. The reader can skim the Table of Contents and see all the information that will be contained in the report, so the reader could find specific pieces of information.
2. The reader knows in the first sentence of the Overview what the purpose of the design project was (to build a robot).

The first paragraph includes the design requirements (autonomous, amphibious, appear indigenous), what it must be capable of doing (navigate through land and water to a predetermined destination), and capture images of the environment (internal cameras).

Comments from a Technical Writing Instructor

3. The rest of the report tells the reader the specific "what" and "how" of the design: what was designed and how it was designed.

In addition, it offers several alternative designs and explains why the final design was selected.

4. Basically, the report moves from general information that even a non-specialist could understand (the Overview) drilling down through layers of detail and specificity.

The reader should be able to take this design report and construct the product.

Comments from a Technical Writing Instructor

5. When all the technical details were determined and explained, the report then explains the process the team undertook to complete the project; that is, the report shifted to explaining the project management aspects of the teamwork.
 6. Note that most paragraphs begin with a sentence that informs the reader of the main point of the paragraph (or section) and the rest of the information supports that main idea.
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What is next?

Lecture on October 13

Risk assessment due
