When Documentation Met Computational Thinking

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The R2P genesis

- IBM
- XML
- SGML
- US Army
- Apple
- Minimalism
- Usability
- Task Orientation
- John Carroll (Virginia Tech)
- Sun/Adobe
- JoAnn Hackos

History of 3 genres

- 1984 Macintosh Documentation Guidelines
  - Learn
  - Use
  - Reference
- 1994 JoAnn Hackos Information Types
  - Concept
  - Procedure
  - Reference

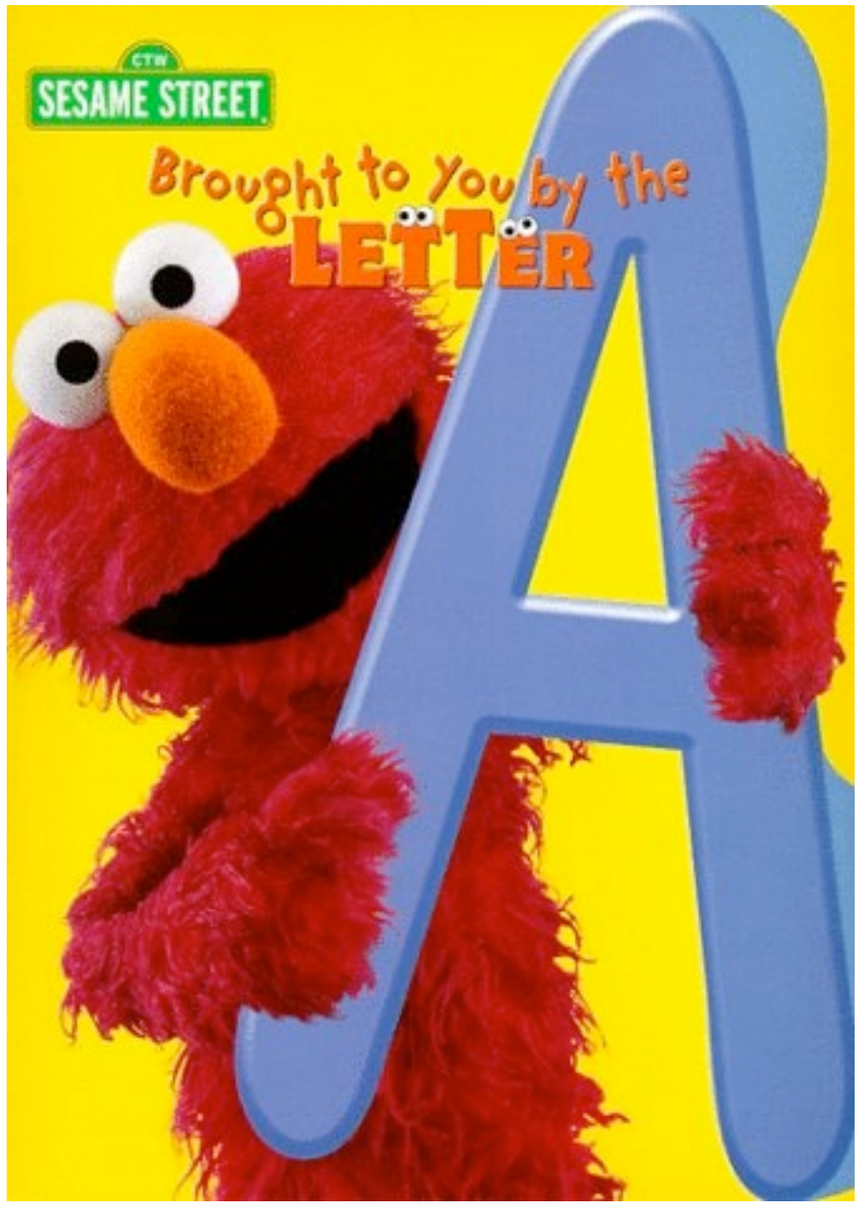
Document Engineering

- Abstraction
- Granularity

Procedural document

- Is an information architecture
- It works like a map
- It works like a blueprint
- It has directions
- It has **structure**

Architecture



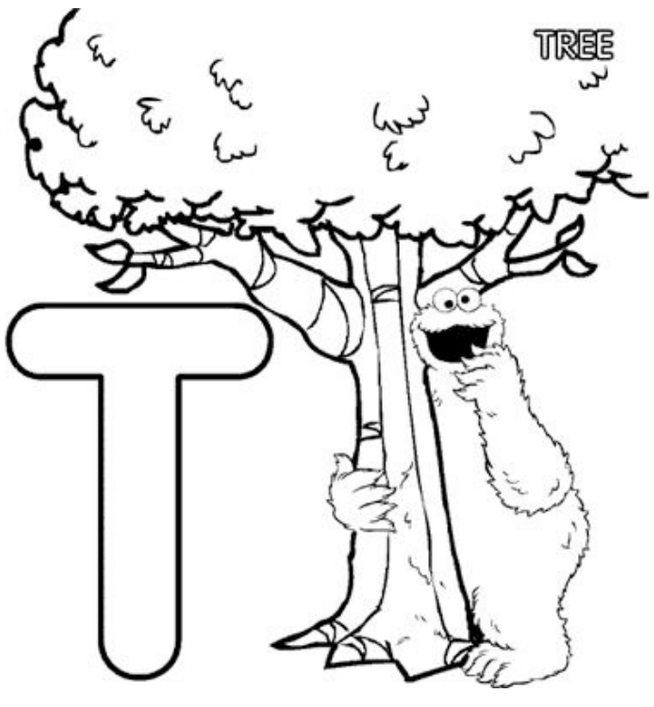
A

Modules

- Are specific types of information
- (Some) are similar in structure...
- .. and also have differences:
- Learn-Use-Reference
- Create many information types

Information Type

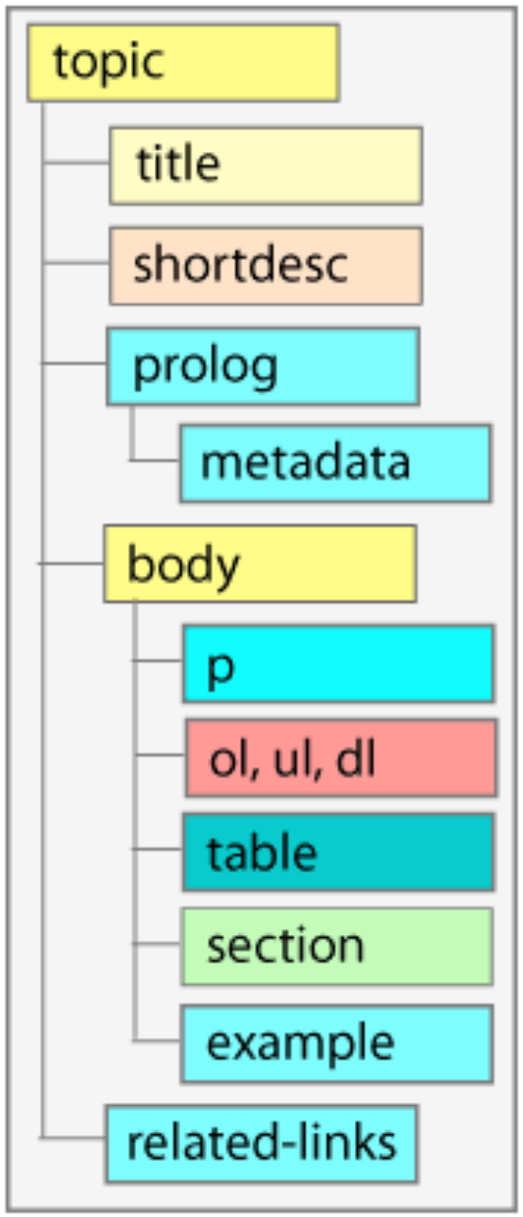
I T A



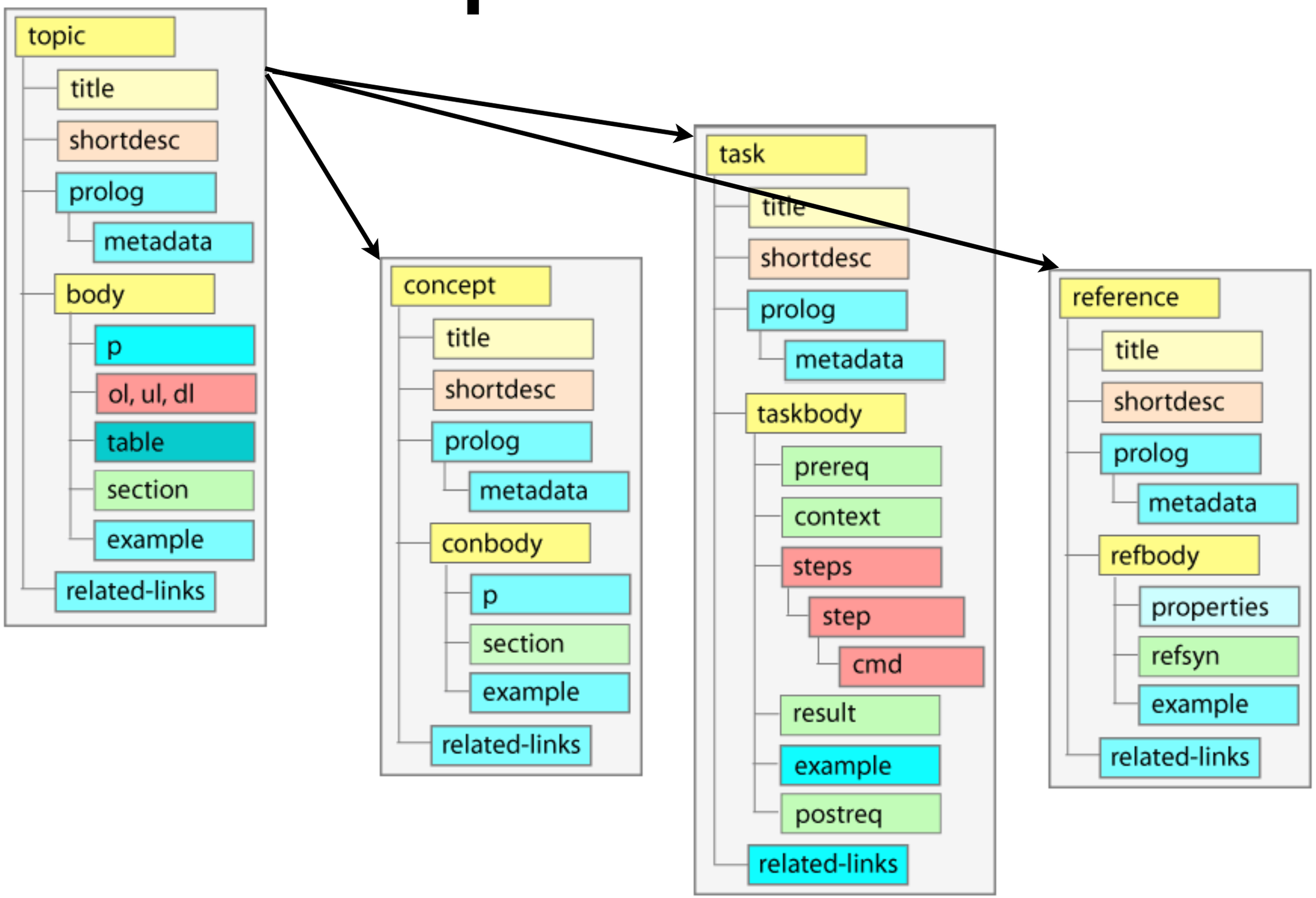
Chunks=Topics

- Topic is the smallest chunk of IT
- Technical documents are collections of topics
- SOPs have topics
- Cookbooks have topics
- Monkeys do not have topics

The proto topic

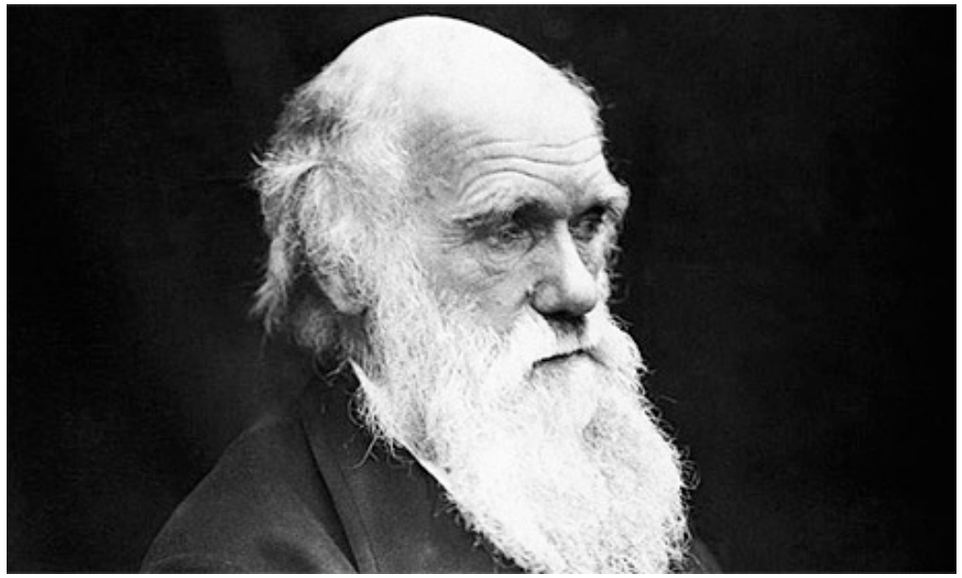


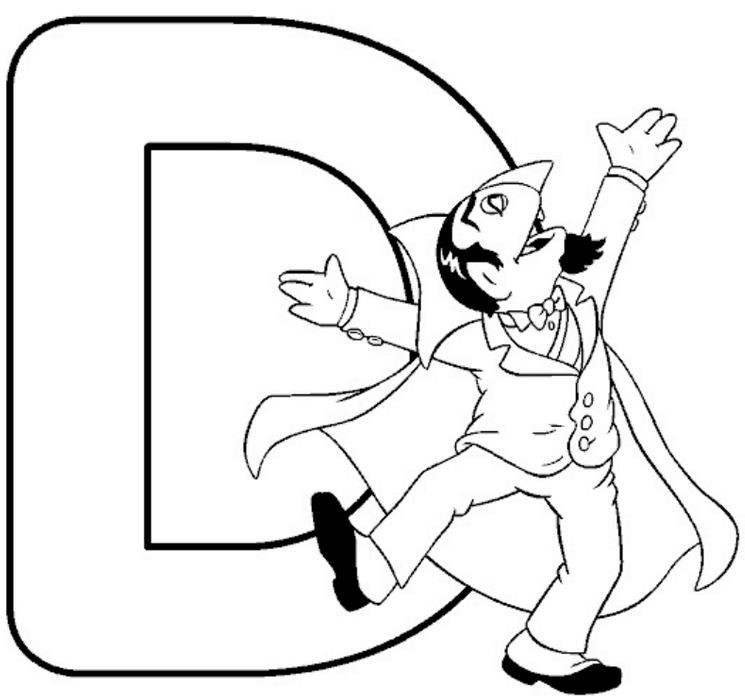
Topic evolution



Evolution?

- Evolution
- Classification systems
- A common ancestor





Darwin

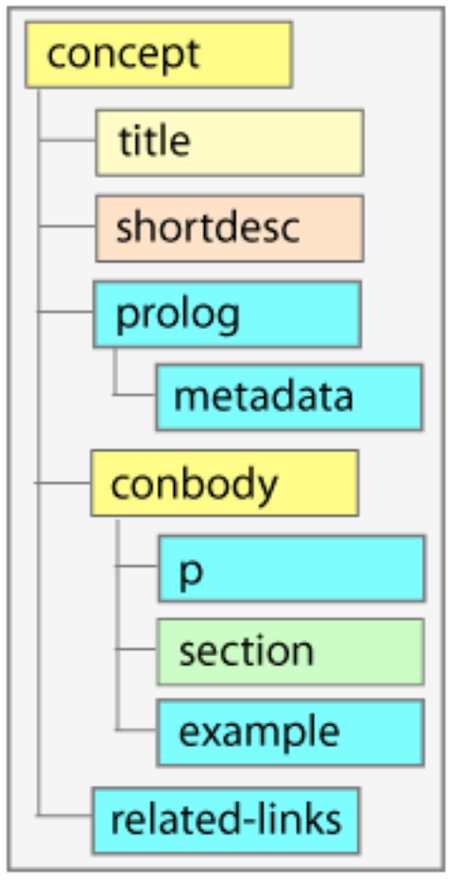
D I T A

DITA

- Darwin Information Typing Architecture
- An XML grammar for engineering technical documentation
- Based on topics: concept, task, and reference
- No need to create <section> tags
- It's a standard

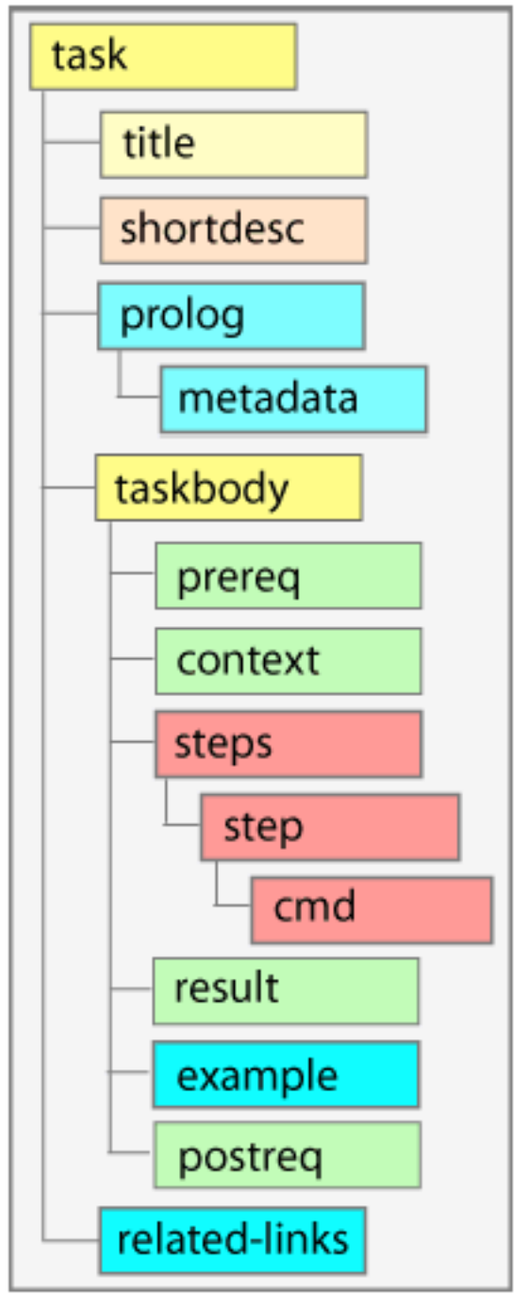
Concept

- "What is?"
- Explains something
- Think an introduction (book or section)



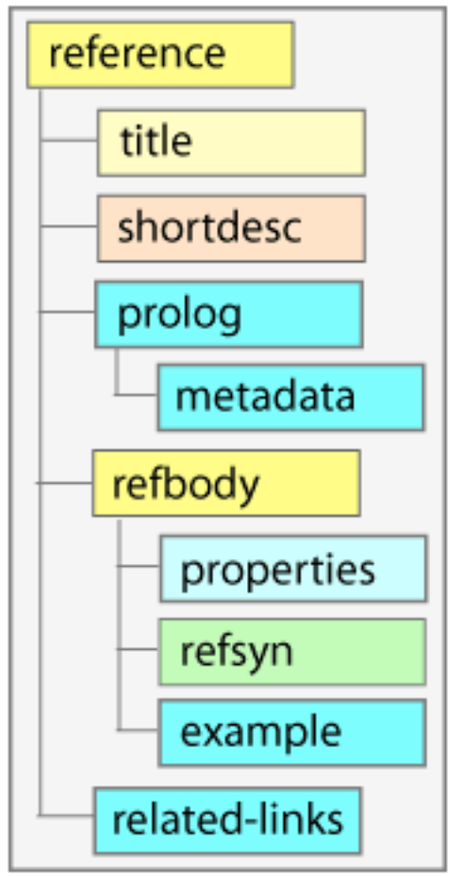
Task

- "How to?"
- Guides through steps
- The heart and soul of technical documentation



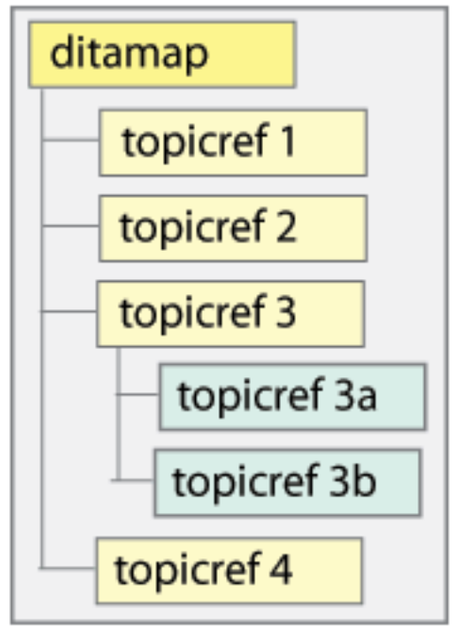
Reference

- "Facts without explanation"
- Use only when needed
- Think codes for programming TV remote



DITA Maps

- Like TOCs
- But with many choices
- And many outputs




```
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  <topicref href="topic1.dita" />
  <topicref href="topic2.dita" />
  <topicref href="topic3.dita">
     <topicref href="topic3a.dita" />
     <topicref href="topic3b.dita" />
  </topicref>
  <topicref href="topic4.dita" />
</map>
```
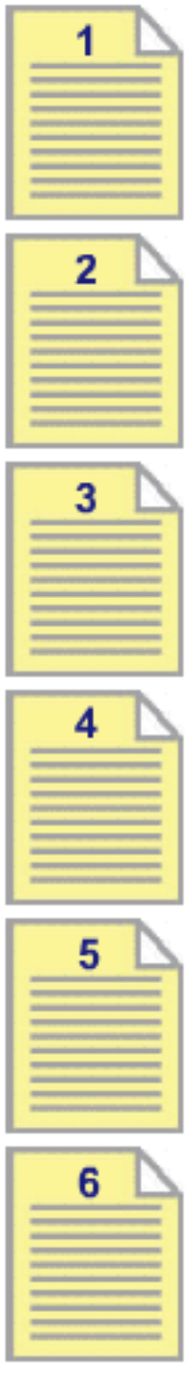

Organizing Topics with Maps



We start with six topics.

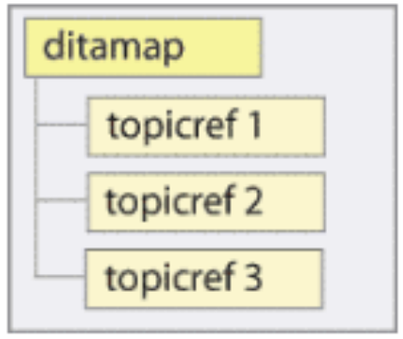
The first DITA map organizes topics 1, 2, and 3 into a web (HTML) deliverable.

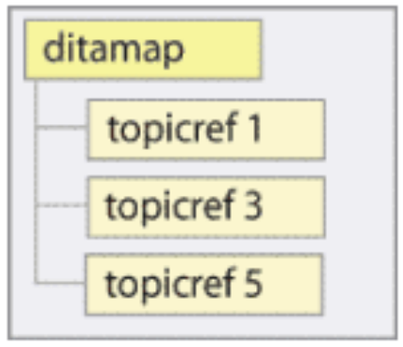
A second map organizes topics 1, 3, and 5 into a print (PDF) deliverable.

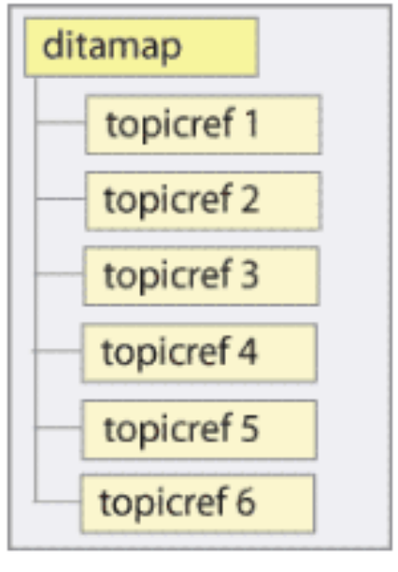
A third map organizes all six topics into a Help deliverable.

DITA provides reuse of topic content with single sourcing.

Change the original topic content, recompile, and all your deliverables are updated.







Your procedural docs in DITA

- Think of your documents in terms of
    - Concept
    - Task
    - Reference
    - Map

DITA topic images borrowed from http://dita.xml.org/resource/5-minute-dita-tutorial

Computational Thinking

- Abstraction
- Automation

DITA Open Toolkit

- http://dita-ot.github.io/

Silly DITA examples

- http://www.carlosevia.com/CS6604/