

# Generating SVG syntax diagrams with plugins for all output formats

DITA-OT Day Berlin, 2017

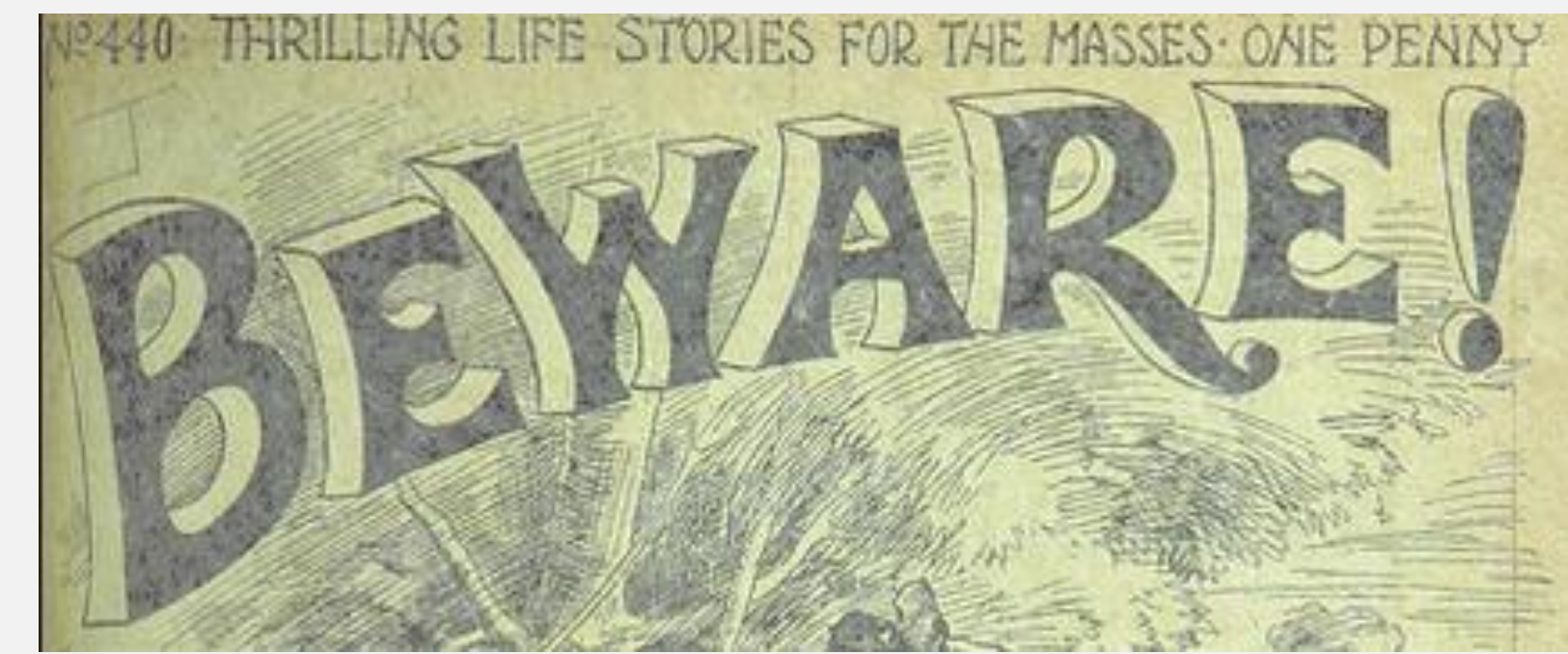
Robert D. Anderson, IBM

[@robander](https://twitter.com/robander)



# What I expect you are expecting...

- Syntax diagrams!
  - What?
  - and... Why?
- Technical drawings!
- Examples
- *The future...*





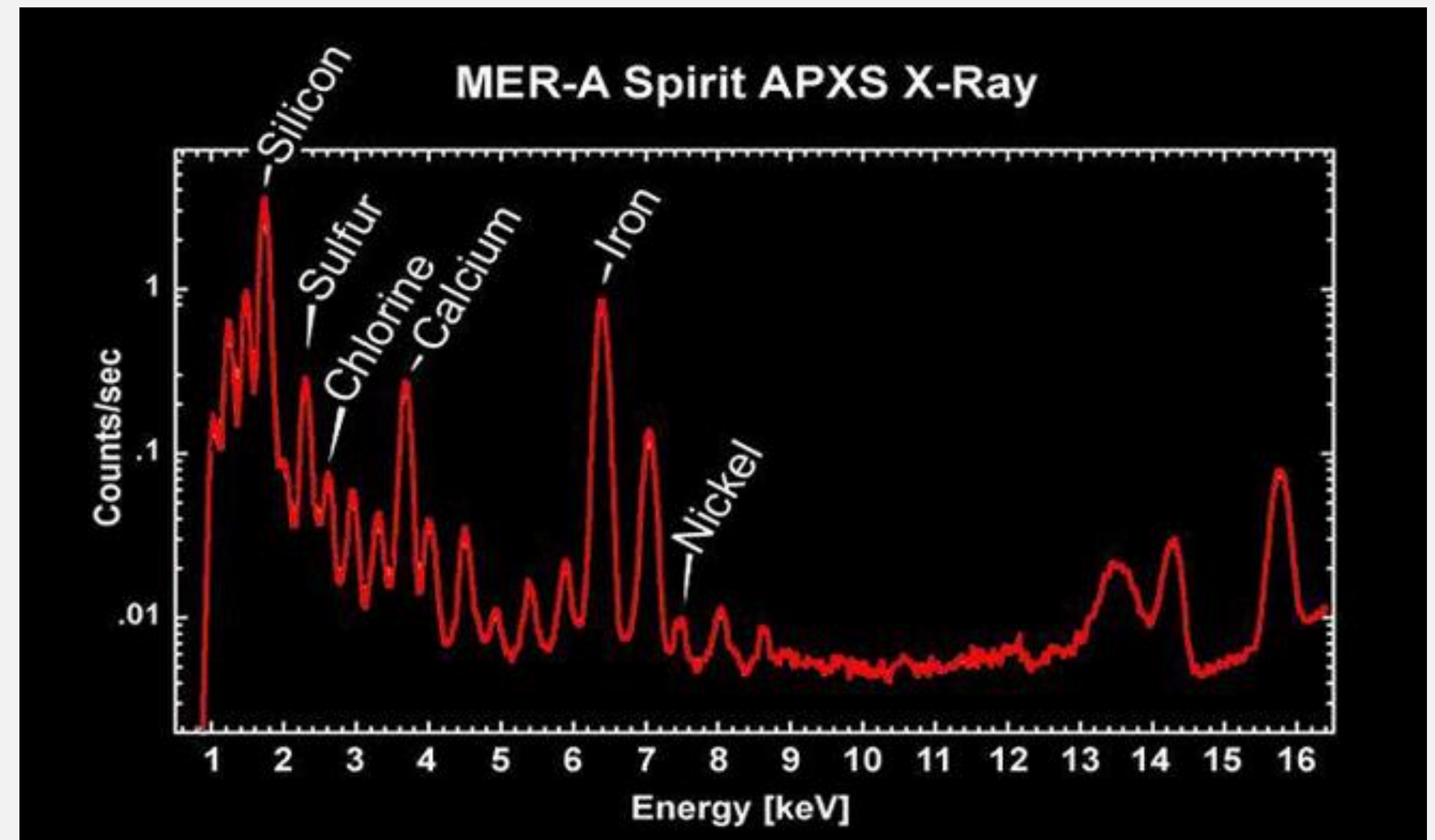
# Long, long ago...

- Syntax markup in use in IBM
  - BookMaster (or earlier?)
  - IBMIDDoc SGML
  - Eventually, part of DITA programming domain
- Intent: document command line syntax



# The `<syntaxdiagram>` elements

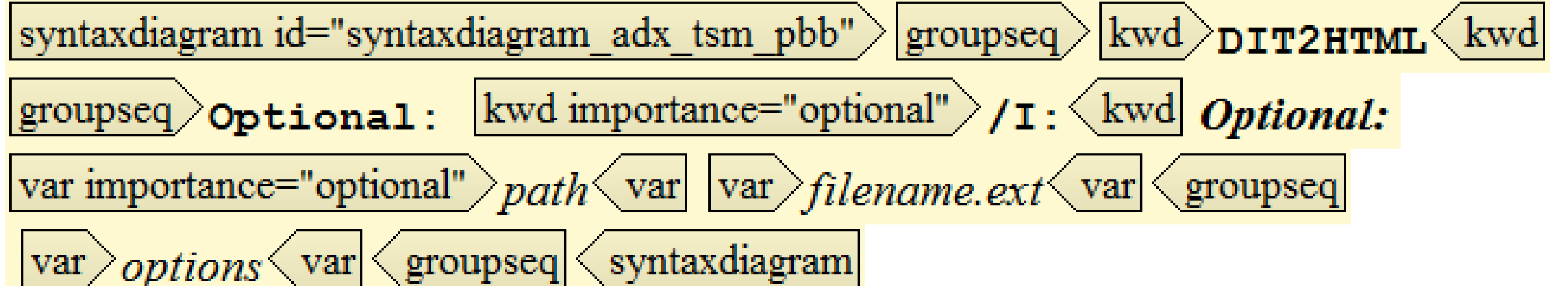
- Groups: choice, composite, sequence
- Fragments, blocks, notes
- References to notes, fragments
- `<kwd>`, `<var>`, `<oper>`,  
`<delim>`, `<sep>`, `<repsep>`





# DITA Syntax Markup: simple example

```
<syntaxdiagram id="syntaxdiagram_adx_tsm_pbb">
  <groupseq>
    <kwd>DIT2HTML</kwd>
    <groupseq>
      <kwd importance="optional">/I:</kwd>
      <var importance="optional">path</var>
      <var>filename.ext</var>
    </groupseq>
    <var>options</var>
  </groupseq>
</syntaxdiagram>
```



# Traditional rendering

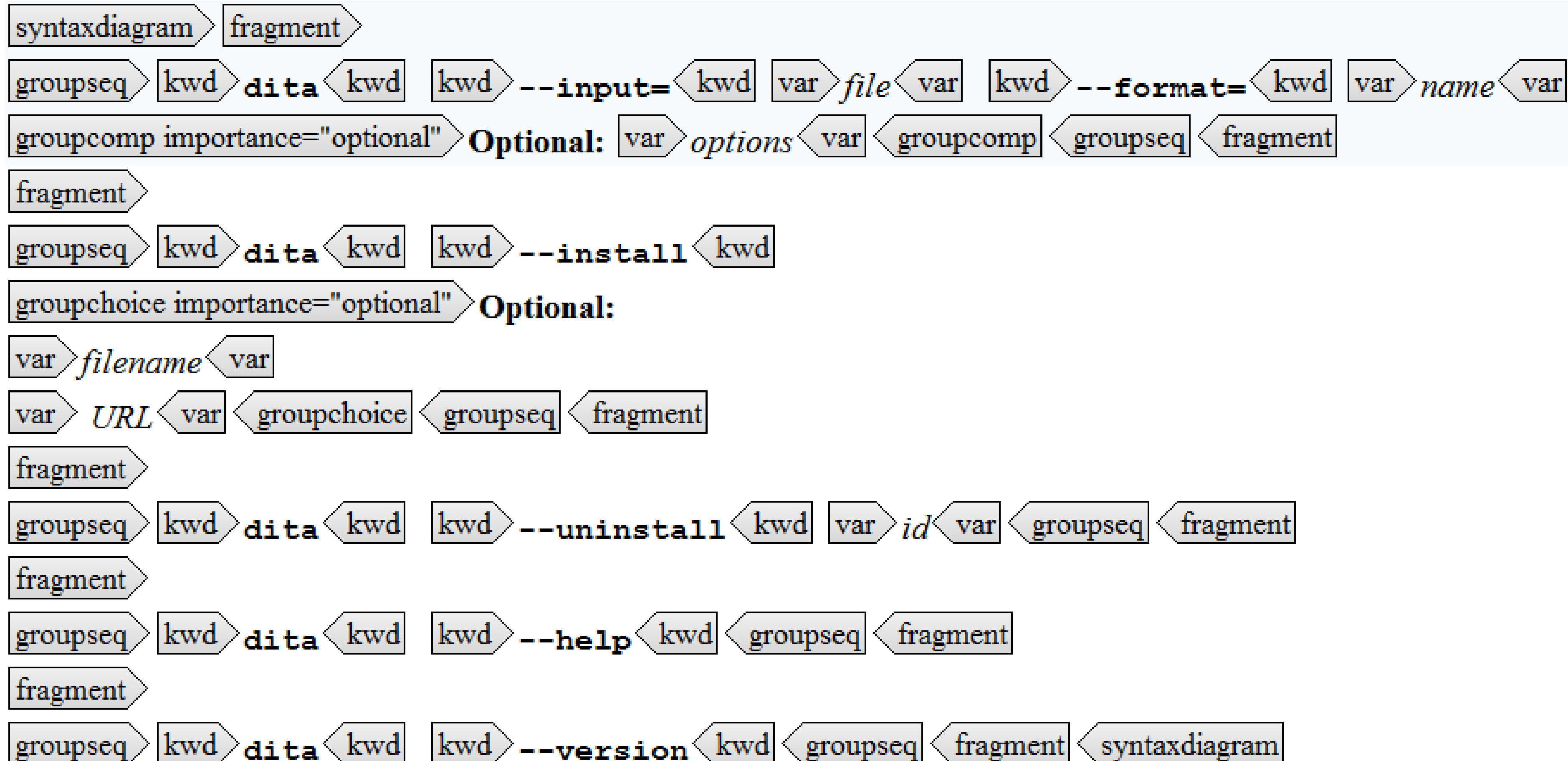
*The beauty of ASCII art...*

```
>>-DIT2HTML--+-+-----+--+-----+--filename.ext--options-----><  
      '-/I:-'   '-path-'
```

# Aside: where few dare to tread...

```
      .-REPEAT-----.
      V                                     .-complaints-. |
>>-Innocent developer----+-Write syntax generator--:--+pain-----+--+><
      |                                     '-anguish----' |
      |                                     .-joy---. |
      '-Do not write syntax generator--:--+fun---+-'
                                     '-peace-'
```

# Ever-so-slightly more complicated example





# Rendering in DITA-OT docs

```
dita --input= file --format= name [ options ]
```

```
dita --install [ { filename | URL } ]
```

```
dita --uninstall id
```

```
dita --help
```

```
dita --version
```

# Rendering (older IBM diagram tool)

```
|--dita-- --input=--file-- --format=--name--+-----+-----|  
                                         '-options-'
```

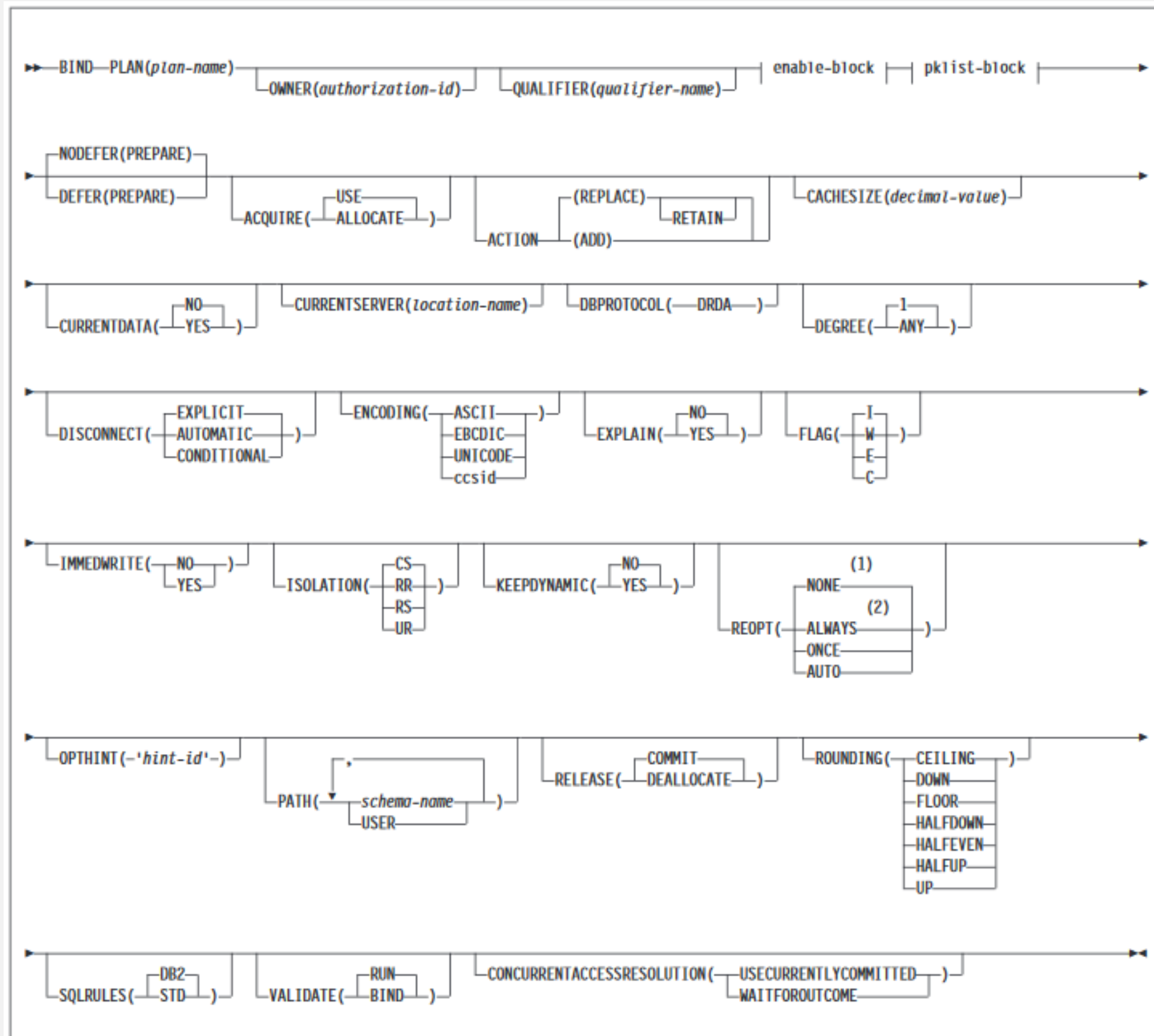
```
|--dita-- --install--+-----+-----|  
                +-filename-+  
                '-URL-----'
```

```
|--dita-- --uninstall--id-----|
```

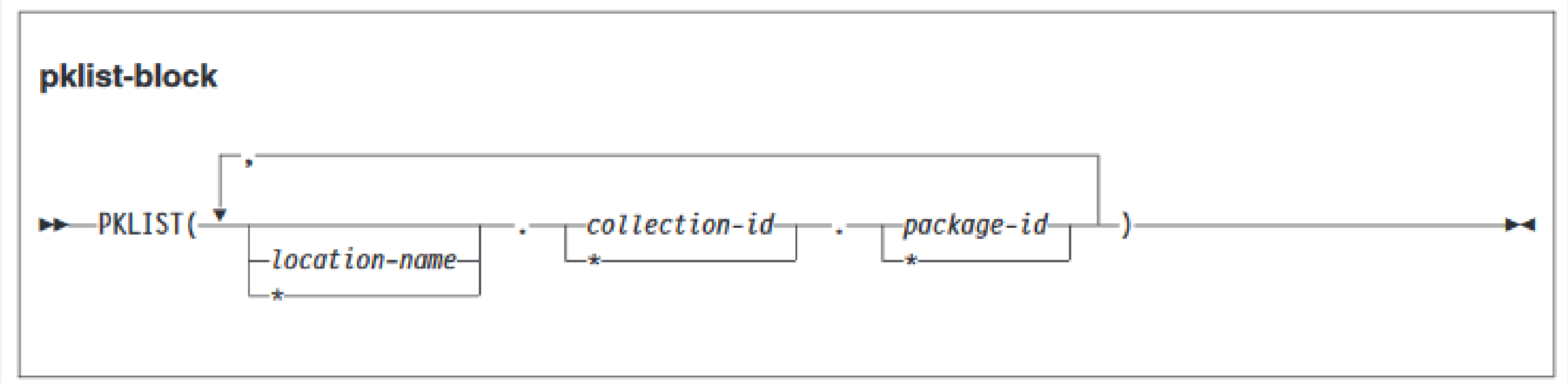
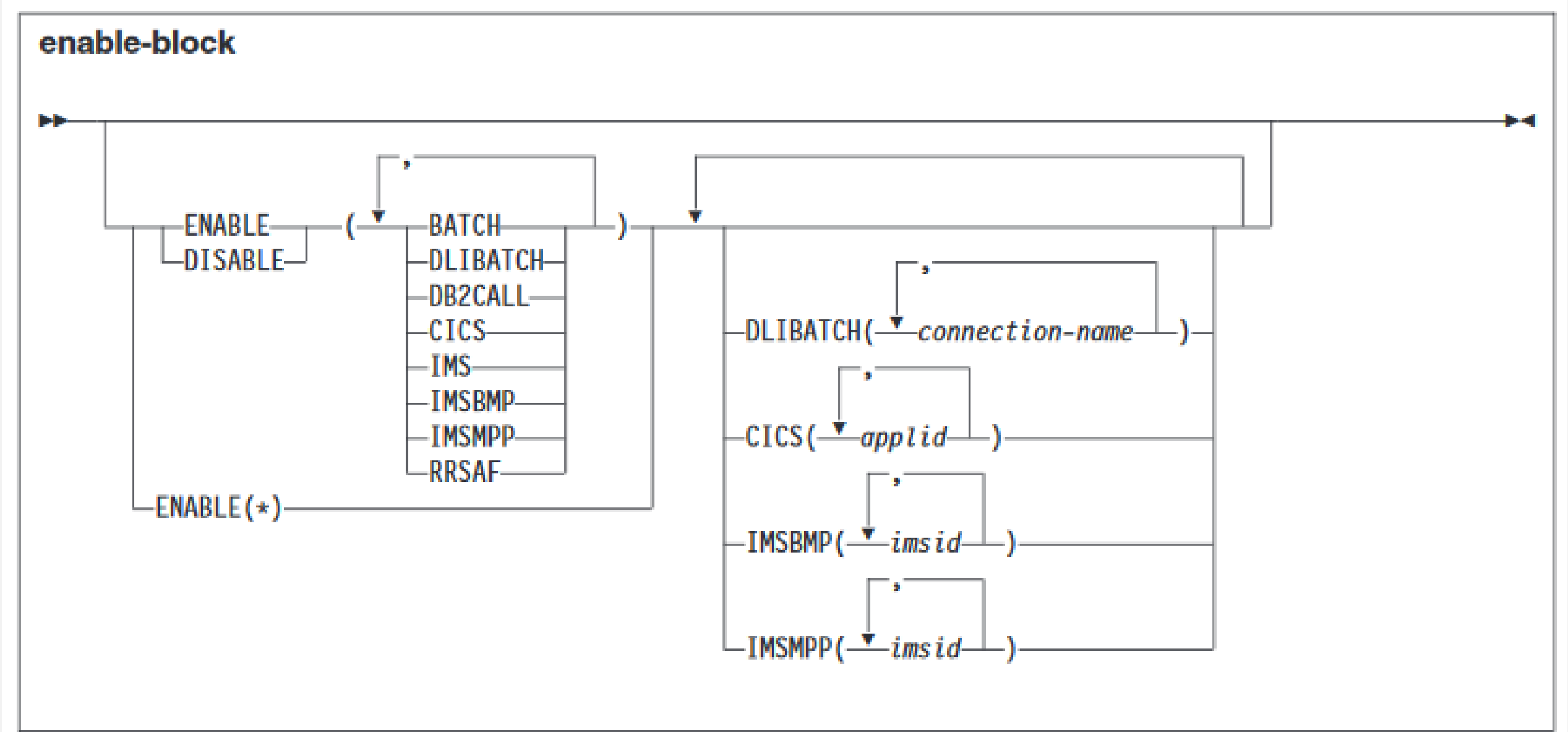
```
|--dita-- --help-----|
```

```
|--dita-- --version-----|
```

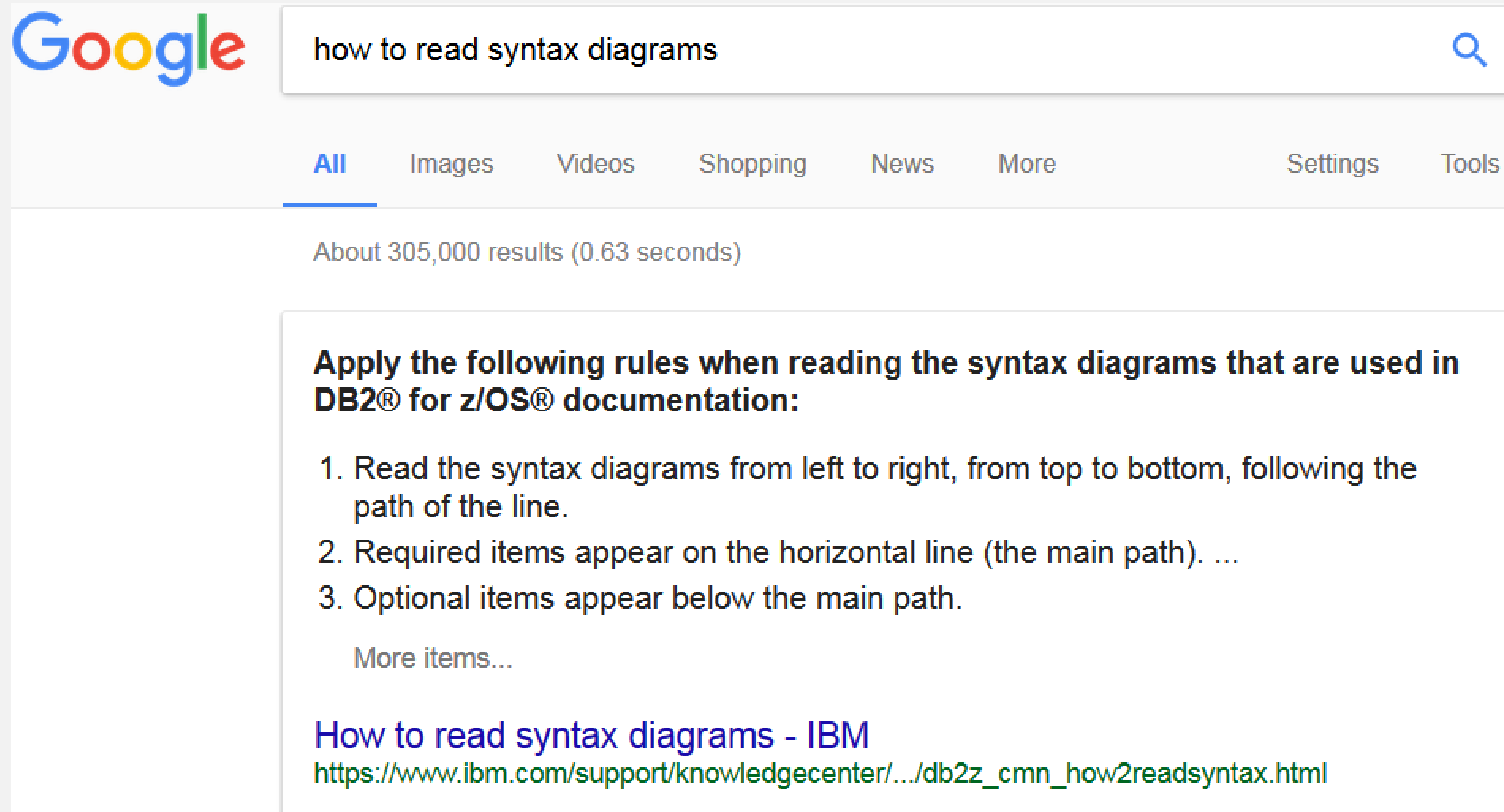
# Even more complex example



- Notes:**
- 1 NOREOPT(VARS) can be specified as a synonym of REOPT(NONE)
  - 2 REOPT(VARS) can be specified as a synonym of REOPT(ALWAYS)



# Not sure how to read that?



The image shows a Google search interface. The search bar contains the text "how to read syntax diagrams" and a magnifying glass icon. Below the search bar are navigation tabs for "All", "Images", "Videos", "Shopping", "News", "More", "Settings", and "Tools". The "All" tab is selected. Below the tabs, it says "About 305,000 results (0.63 seconds)". A search result is displayed in a white box with a thin border. The result title is "Apply the following rules when reading the syntax diagrams that are used in DB2® for z/OS® documentation:". Below the title is a numbered list of three items: 1. Read the syntax diagrams from left to right, from top to bottom, following the path of the line. 2. Required items appear on the horizontal line (the main path). ... 3. Optional items appear below the main path. Below the list is a link "More items...". At the bottom of the result box, there is a link "How to read syntax diagrams - IBM" and its URL: "https://www.ibm.com/support/knowledgecenter/.../db2z\_cm\_n\_how2readsyntax.html".

Google

how to read syntax diagrams

All Images Videos Shopping News More Settings Tools

About 305,000 results (0.63 seconds)

**Apply the following rules when reading the syntax diagrams that are used in DB2® for z/OS® documentation:**

1. Read the syntax diagrams from left to right, from top to bottom, following the path of the line.
2. Required items appear on the horizontal line (the main path). ...
3. Optional items appear below the main path.

More items...

[How to read syntax diagrams - IBM](https://www.ibm.com/support/knowledgecenter/.../db2z_cm_n_how2readsyntax.html)  
[https://www.ibm.com/support/knowledgecenter/.../db2z\\_cm\\_n\\_how2readsyntax.html](https://www.ibm.com/support/knowledgecenter/.../db2z_cm_n_how2readsyntax.html)



# Oh, the complaining!

“I WANT SVG!!!!!!”

“THOSE ARE UGLY!!!!”

“WHY DON'T WE HAVE SVG YET!!!!”



# Enter: Deborah Pickett and HTML+

2009: DITA-OT 1.4.3

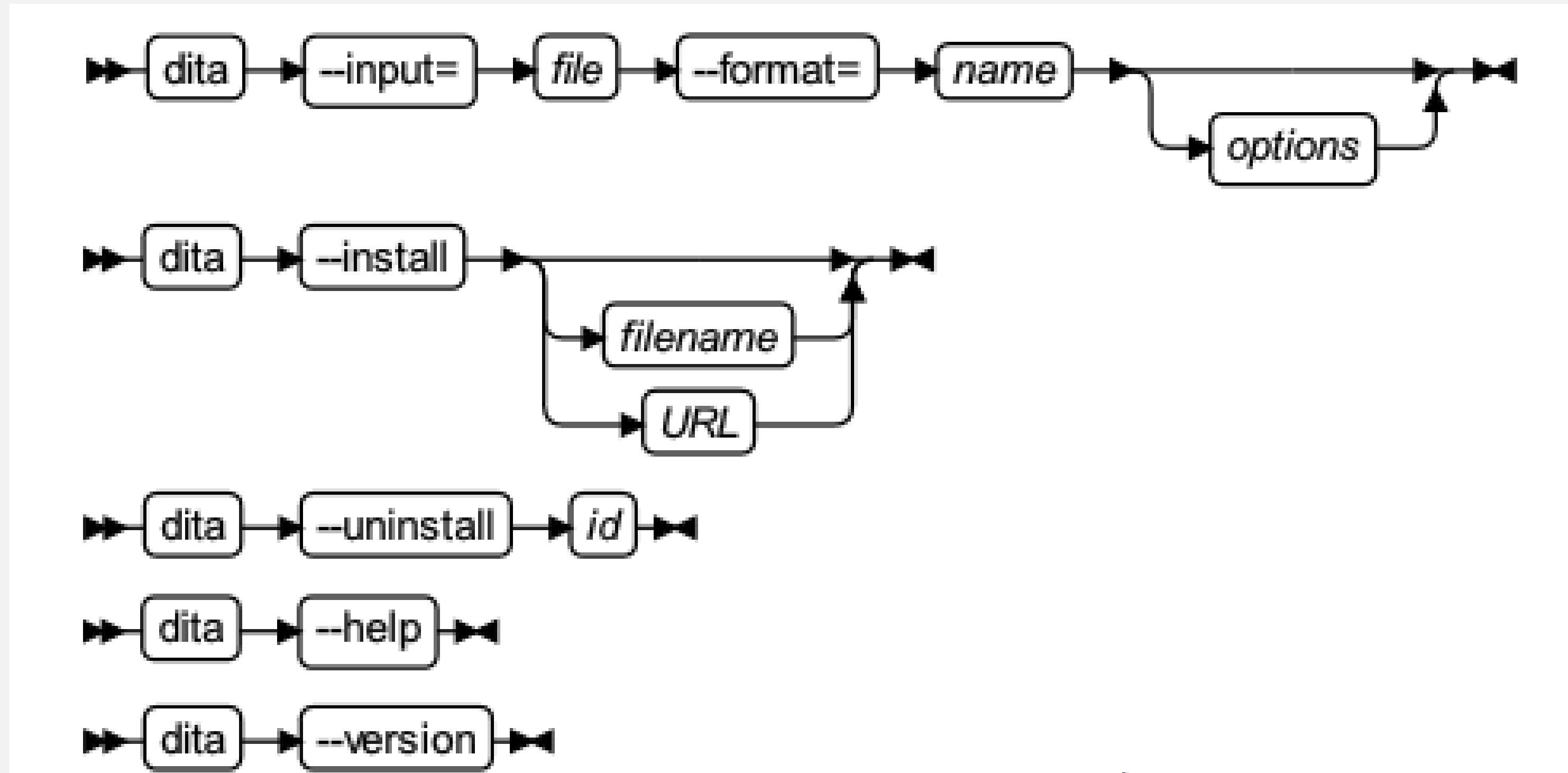
The screenshot shows a Yahoo! Groups interface for the 'dita-users' group. The top navigation bar includes links for Home, Mail, Flickr, Tumblr, News, Sports, Finance, Entertainment, Lifestyle, Answers, Groups, Mobile, and More. The main header features the Yahoo! Groups logo, a search bar for files, and buttons for 'Search Groups' and 'Search Web'. The user 'Robert' is logged in. The left sidebar shows group navigation options like 'Groups Home', 'All My Groups', and 'Manage My Groups'. The main content area is titled 'Files' and lists several zip files:

File Name	Description	Size	Uploader
<a href="#">dita-plus-143.zip</a>	Plus plugins for DITA-OT 1.4.3 and 1.5M12	533 KB	deborah_ariel_pickett
<a href="#">tocjs-plugin-1.1.zip</a>	this tocjs update includes the ability to set your content frame target as a parameter in your ant build files	484 KB	smckenzie23
<a href="#">dita-plus-20080625.zip</a>	"Plus" HTML plugins for DITA-OT 1.5 CVS (obsolete; use dita-plus-143.zip instead)	362 KB	deborah_ariel_pickett
<a href="#">l10nextextract.zip</a>	Extract the set of files used by a map, pre-localization	2 KB	deborah_ariel_pickett
<a href="#">StringsPluginExample.zip</a>	Working example of how to add your own strings to the DITA OT	8 KB	bobthomastagsmiths

# Updating for DITA-OT 2.x

- Significant refactoring (update across 7 years of DITA-OT)
- Tease out SVG code to run independently
- Add as “preprocess” extension for any format
- Don't generate JPG backups
- Lots of minor fixes

# Rendering (updated plugins from html+)





# More complex test diagram, from PDF

- Nested “choice” groups

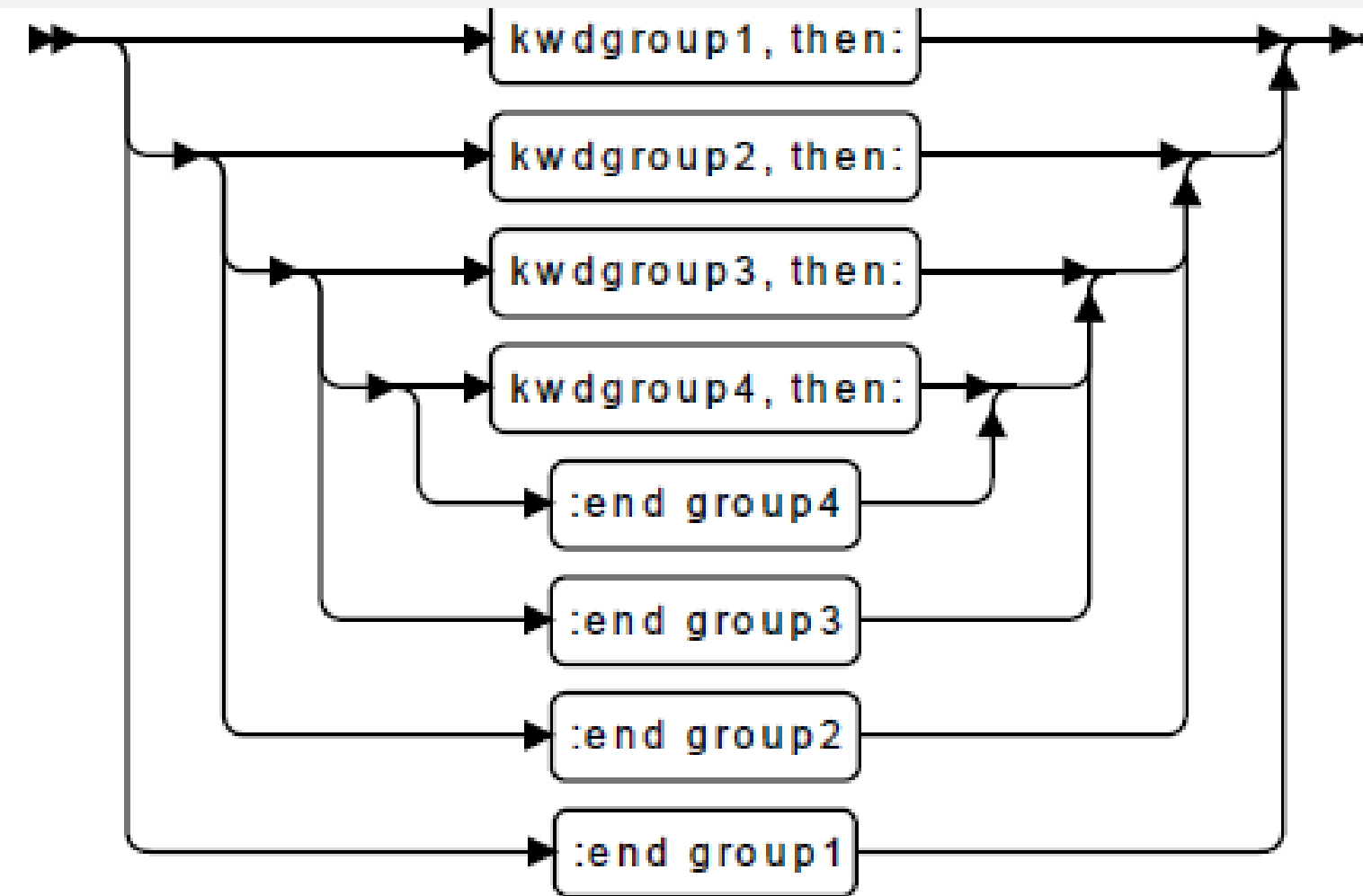


Figure 12: Choice in choice in choice in choice in ...

- Choice groups within sequence groups

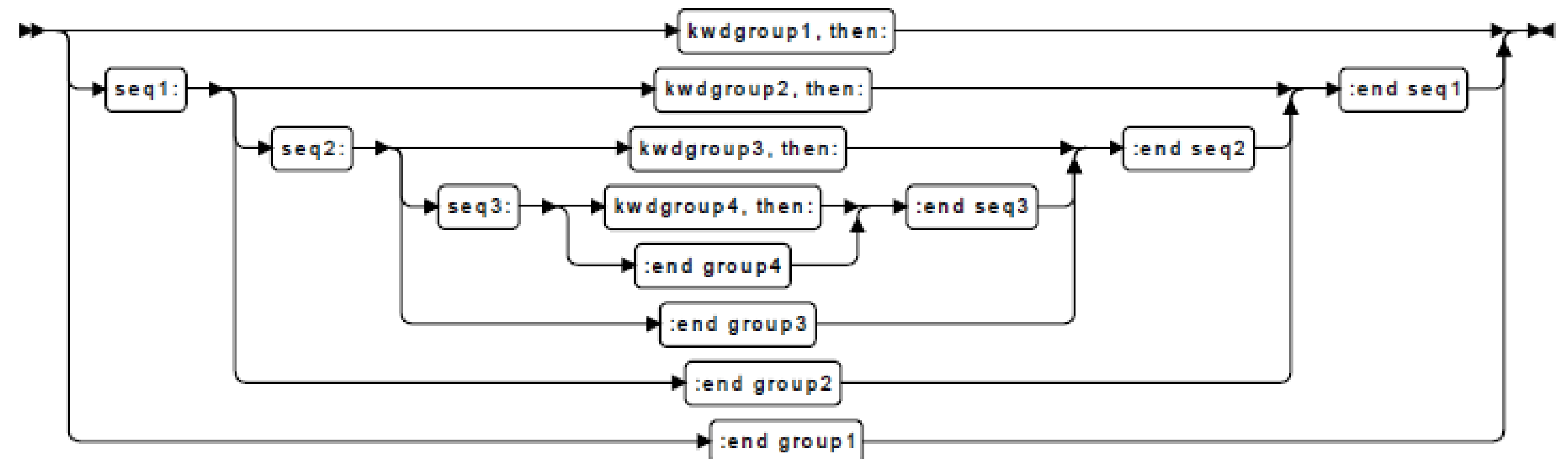
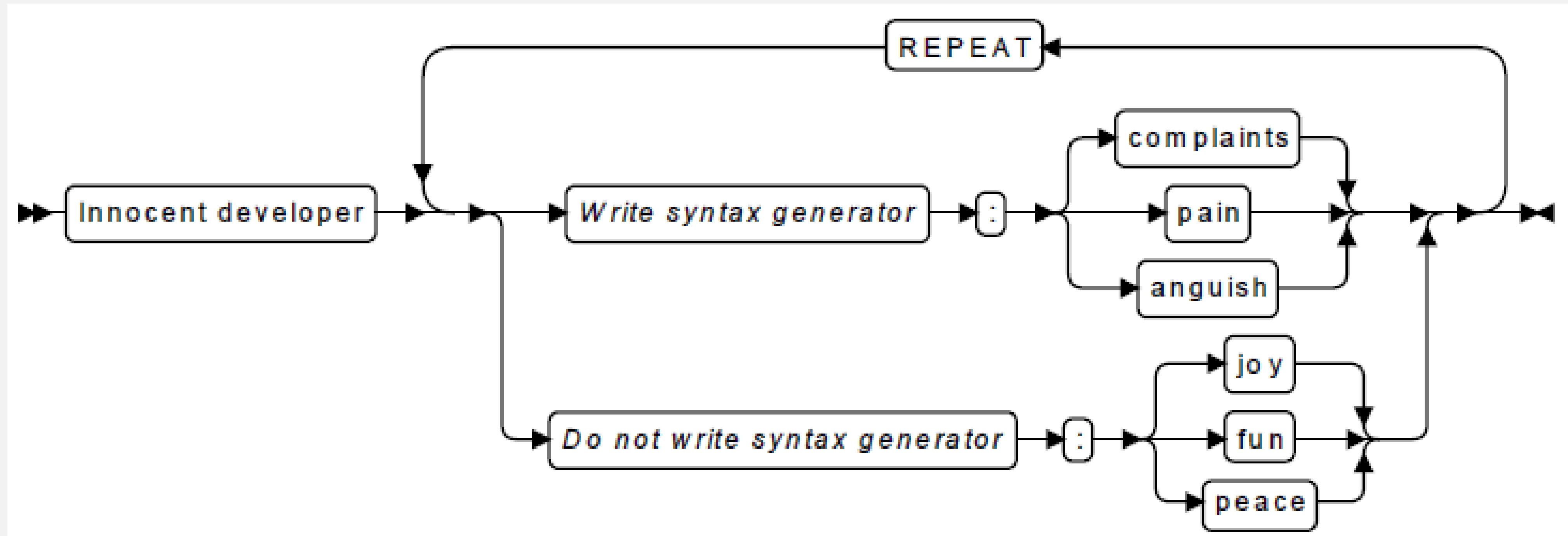


Figure 13: Choice in seq in choice in seq in ...

# Deborah took the path I feared to tread

With wonderful results:



# Current status

- Works with 2.5
- Hosted at GitHub:  
<https://github.com/robander/svg-syntaxdiagrams>
- “Make it work” approach, not as tidy as I’d like, too many plugins

# Future

- Currently failing with 3.0 but I'll have to update
  - Much of the code still declares XSLT 1
  - Also some issues with Batik version
- Would love to have others trying it





# Further study

Syntax plugins:

<https://github.com/robander/svg-syntaxdiagrams>

Project page and documentation:

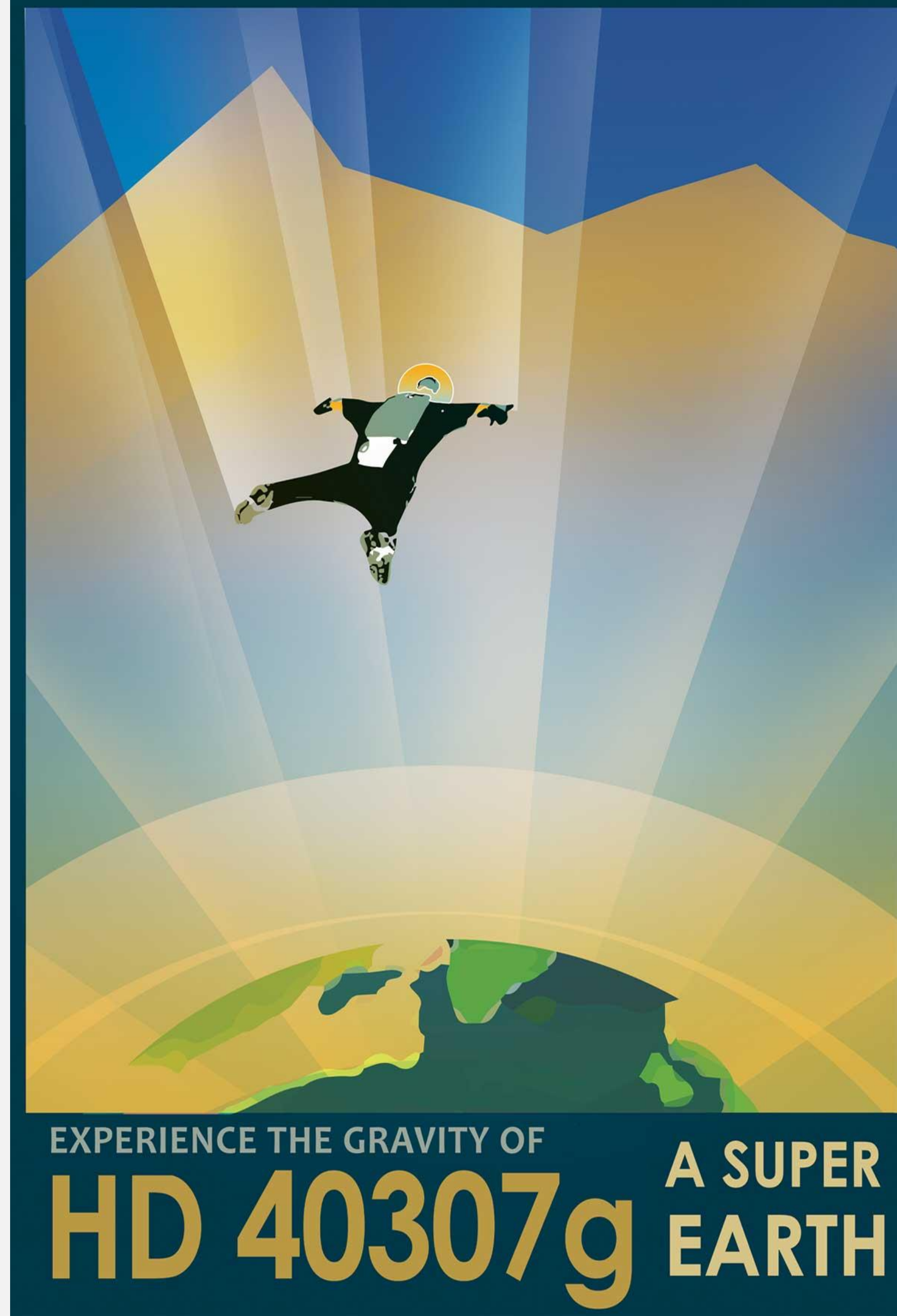
<http://dita-ot.org>

GitHub project:

<https://github.com/dita-ot/dita-ot/>

Slack channel:

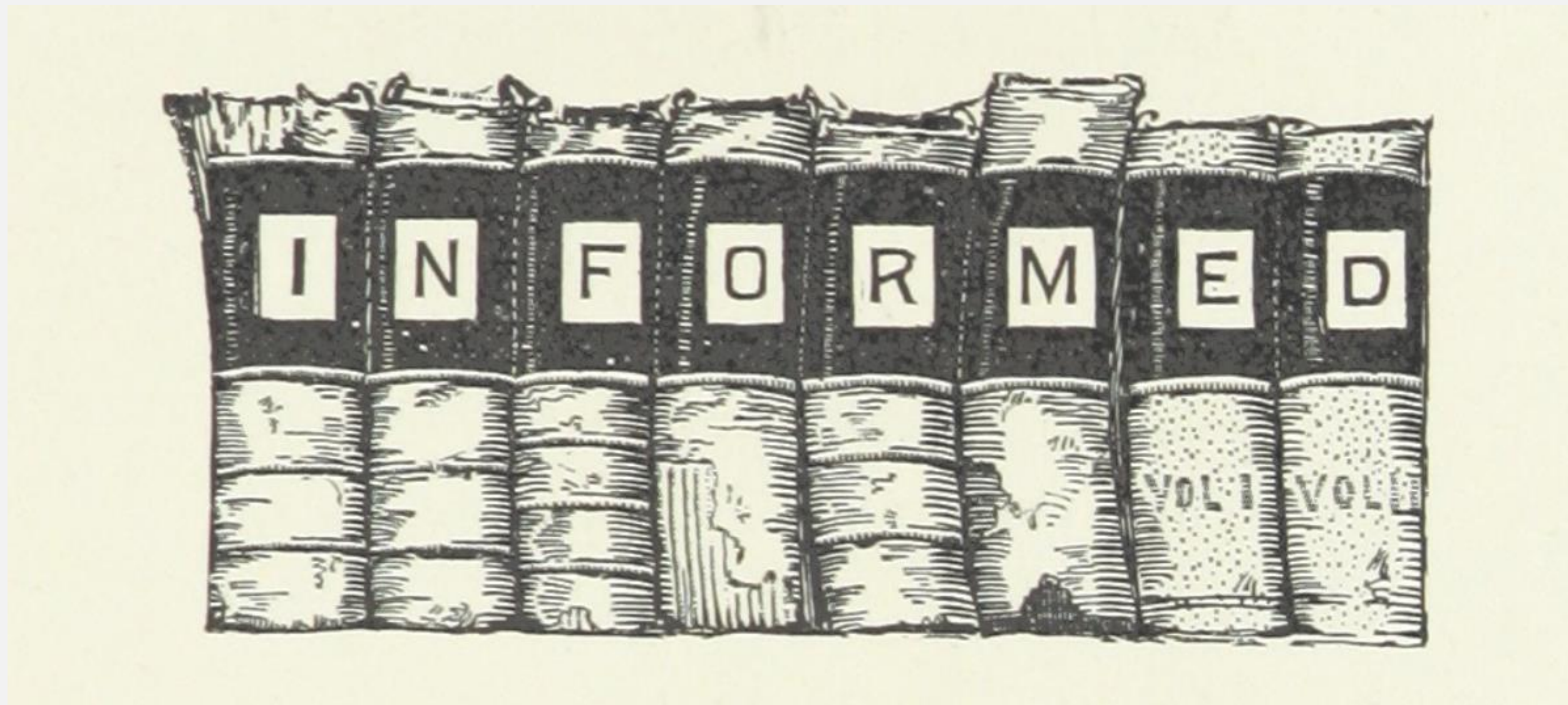
<http://slack.dita-ot.org/>





# I am ready for your help!

*...I'll also take questions*



# Image credits

NASA/JPL-Caltech

<http://www.jpl.nasa.gov/visions-of-the-future/>

<https://images.nasa.gov/>

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Thank you

Digital Services Group