GenISys
Advancing the Standard

BPEyAtMhEoRn

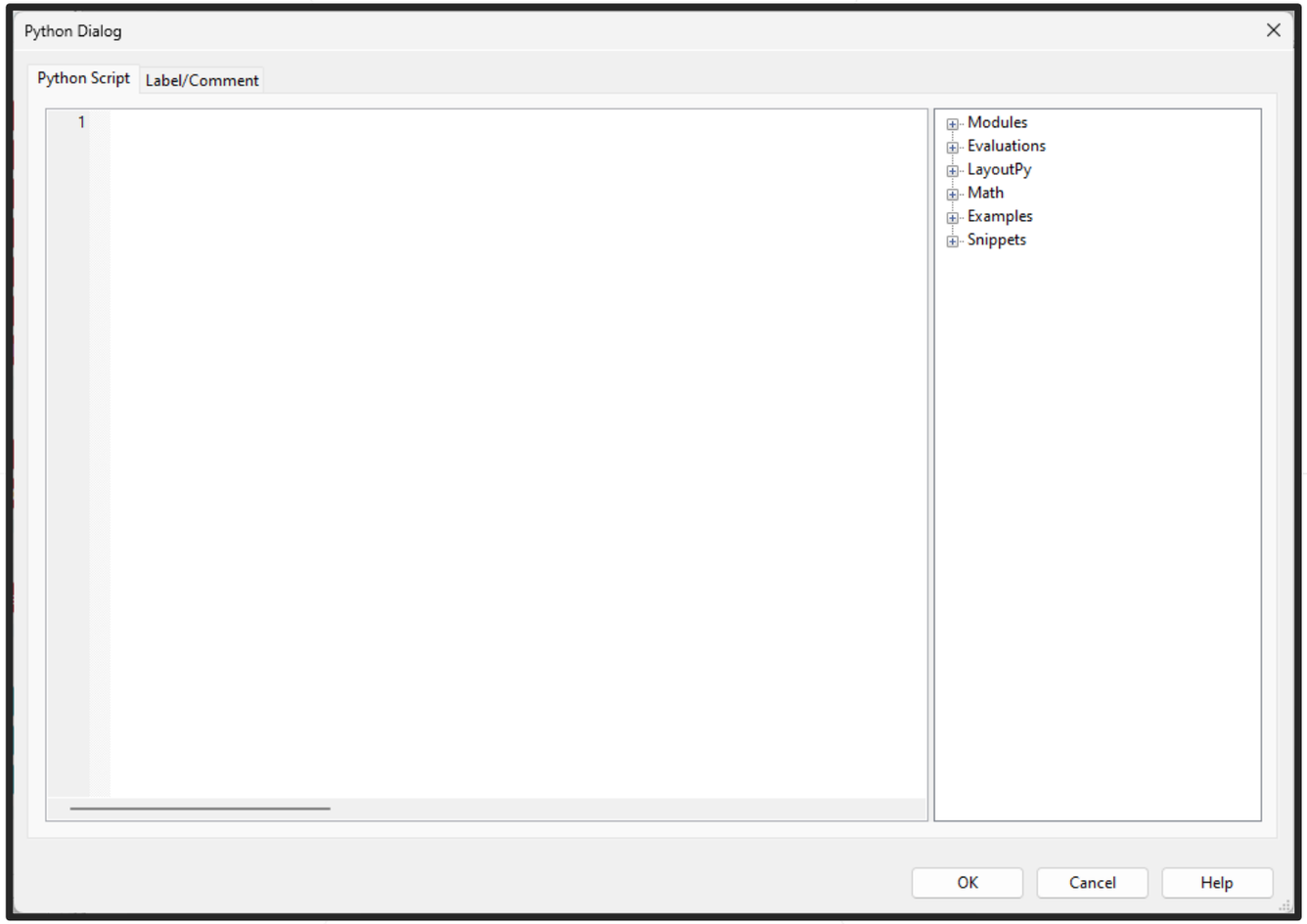
Expanding the Possibilities

Topics

- Overview of the Python Module
  - Functions
  - Evaluations
  - LayoutPy
- Application
  - Tester for avoiding frequency issues on the tool
  - Populating an arbitrary shape with Photonic crystals

Functions

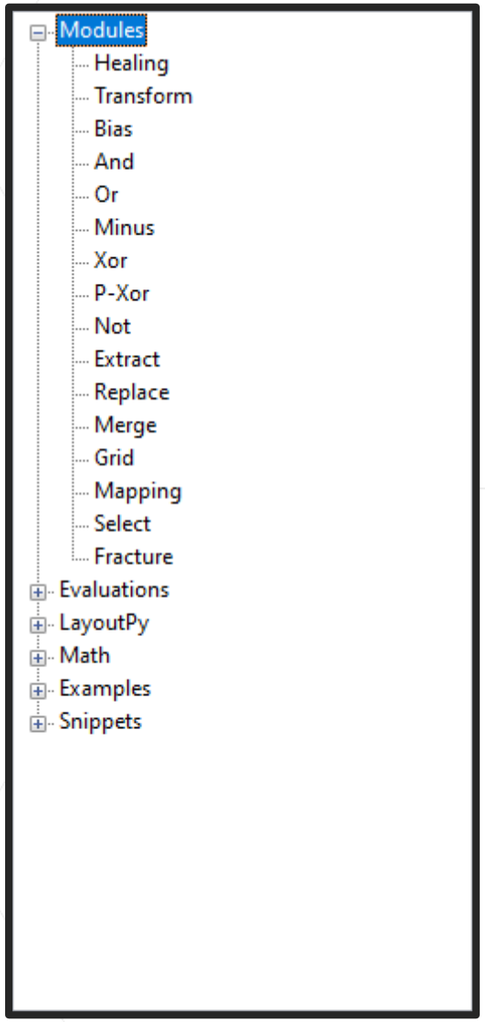
- Editor
  for code writing with syntax highlighting
- Function tree
  - Modules
  - Evaluations
  - LayoutPy
  - Math
  - Examples
  - Snippets



Function - Modules

Code templates of samples of BEAMER modules

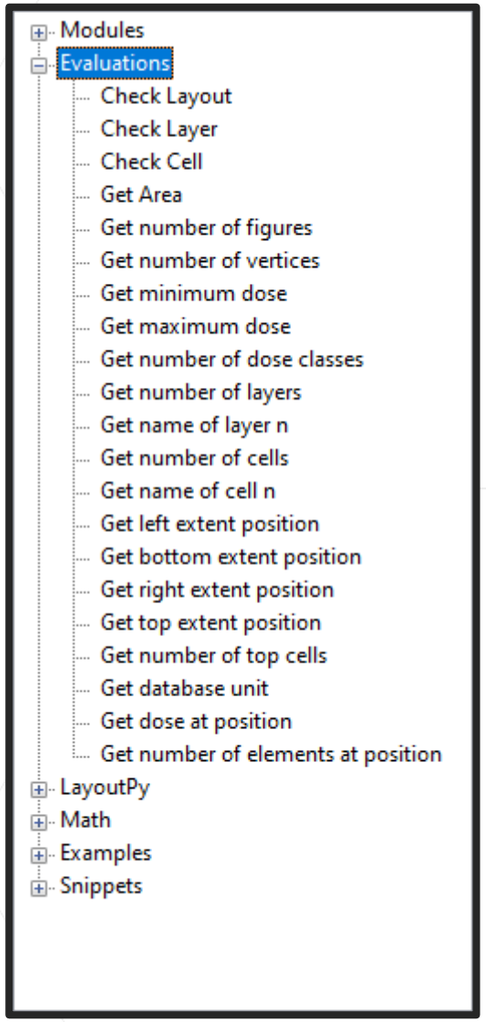
- List is built with focus on typical use cases by a python script
- EXPORT and PEC code can also be pasted from the Python info panel here for execution



Function - Evaluations

Retrieving information from the layout

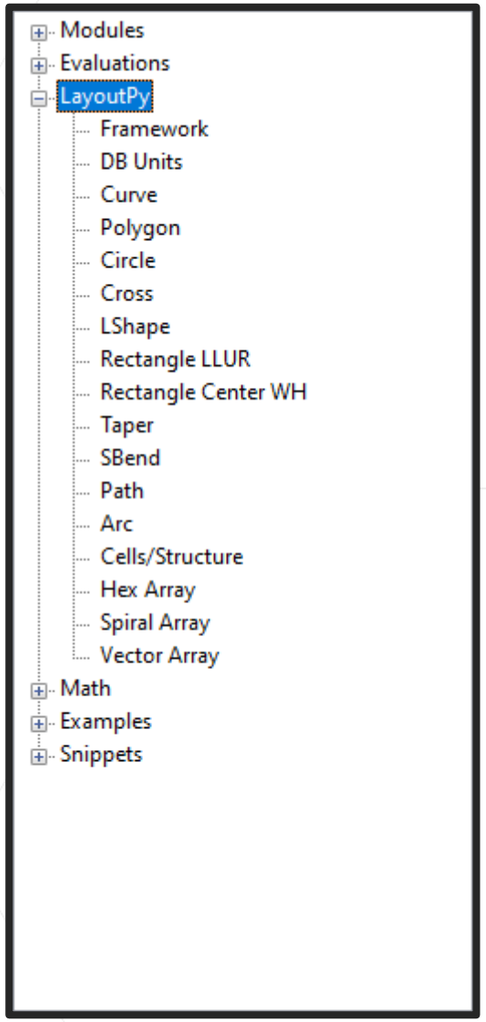
- query information from the design for decision-based post processing
- Equivalent to the queries of the IF module



Functions - LayoutPy

Layout generation in a BEAMER database

- Open a database and add
  - Rectangles, Circles, Arcs, Paths, Splines
  - Cells, References, Arrays
  - Special Shapes
    - Taper
    - SBends
    - Cross
    - …
  - Extendable by own design elements



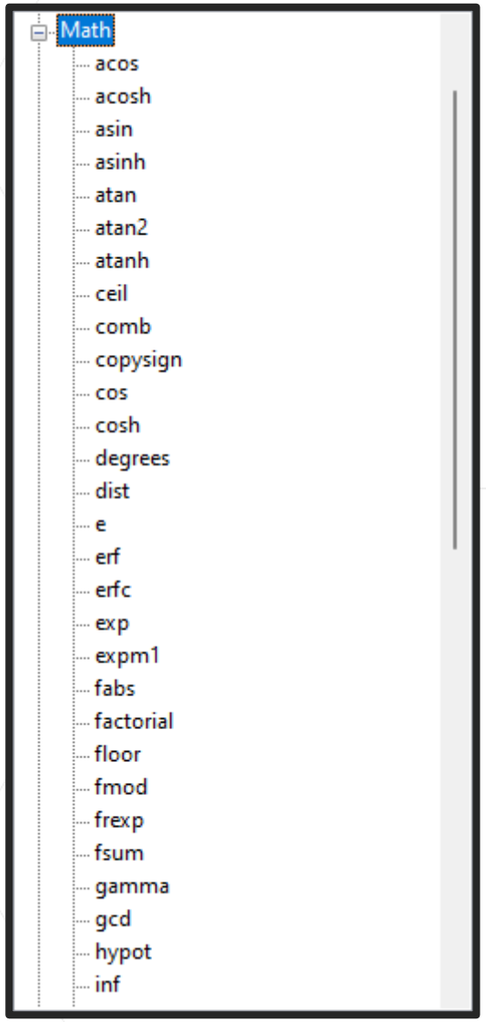
Functions - Math

Combine your script with mathematical functions

- Geometric functions
- Standard math operations

Applications examples:

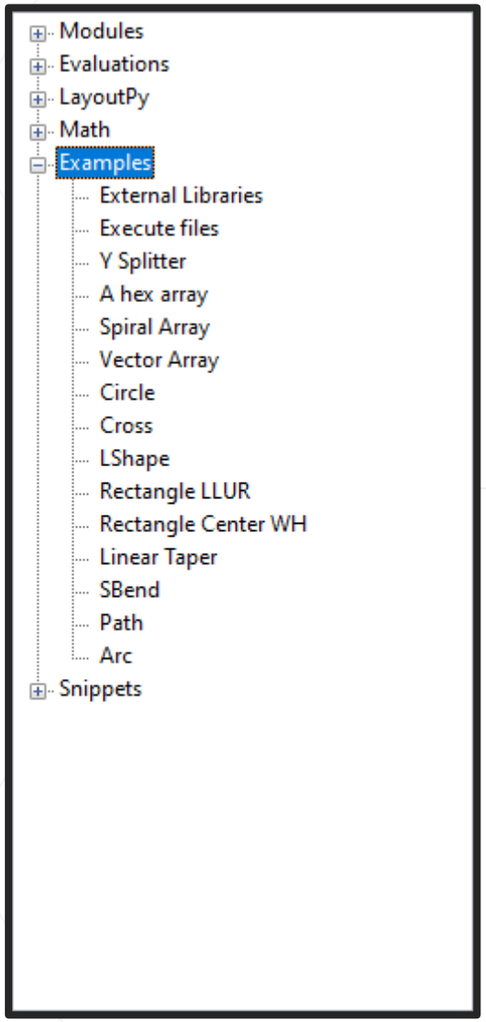
- Sinusoidal Polygons
- Algorithmic pattern generation



Functions - Examples

Library of samples

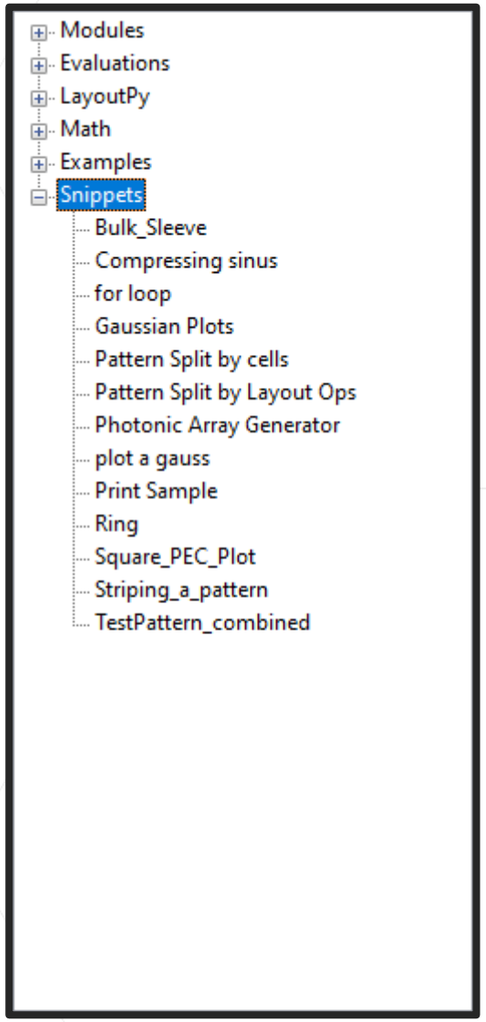
- Get a kickstart by using the prepare templates
- learn and adapt what LayoutPy can do quickly



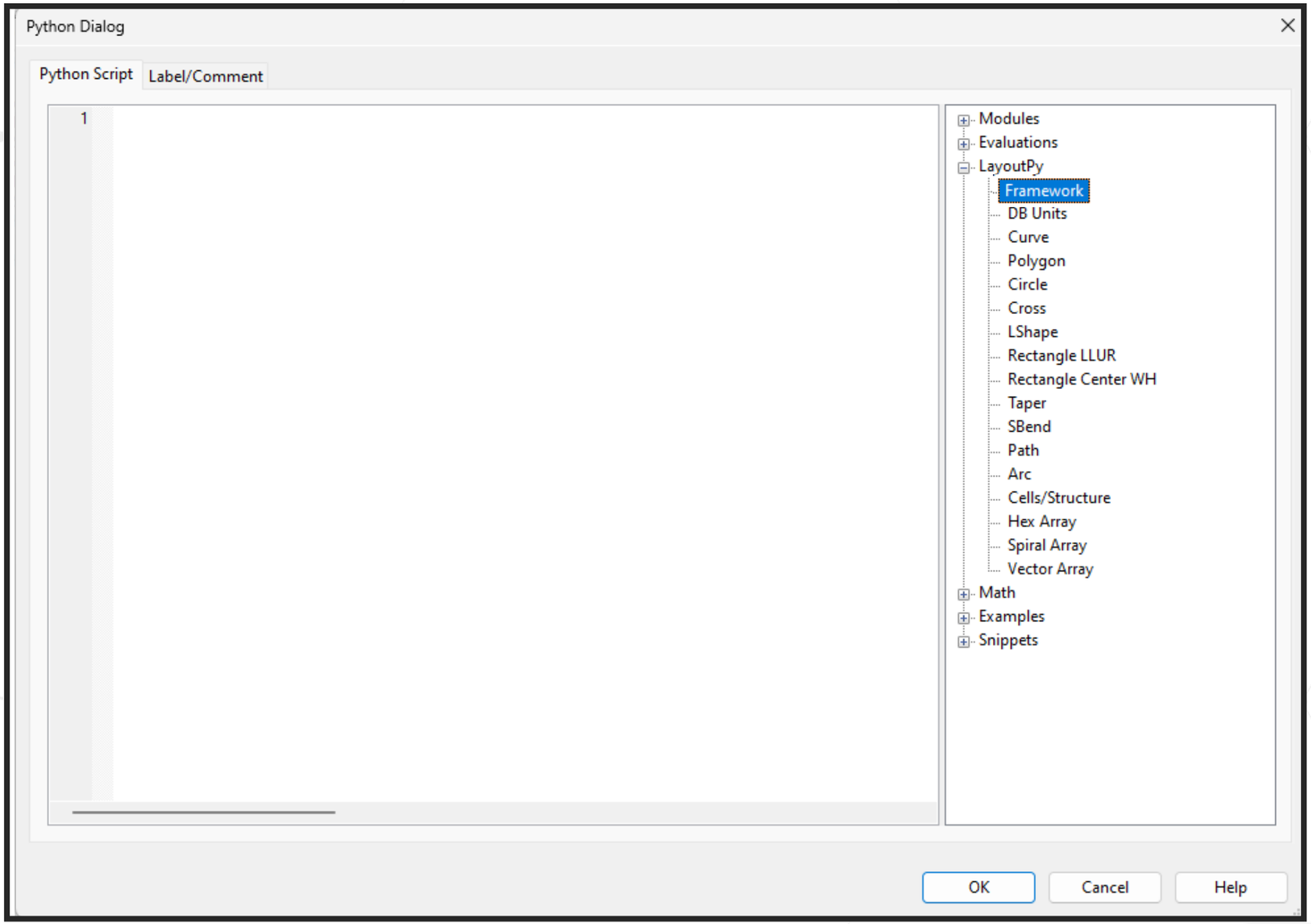
Functions - Snippets

Custom Library

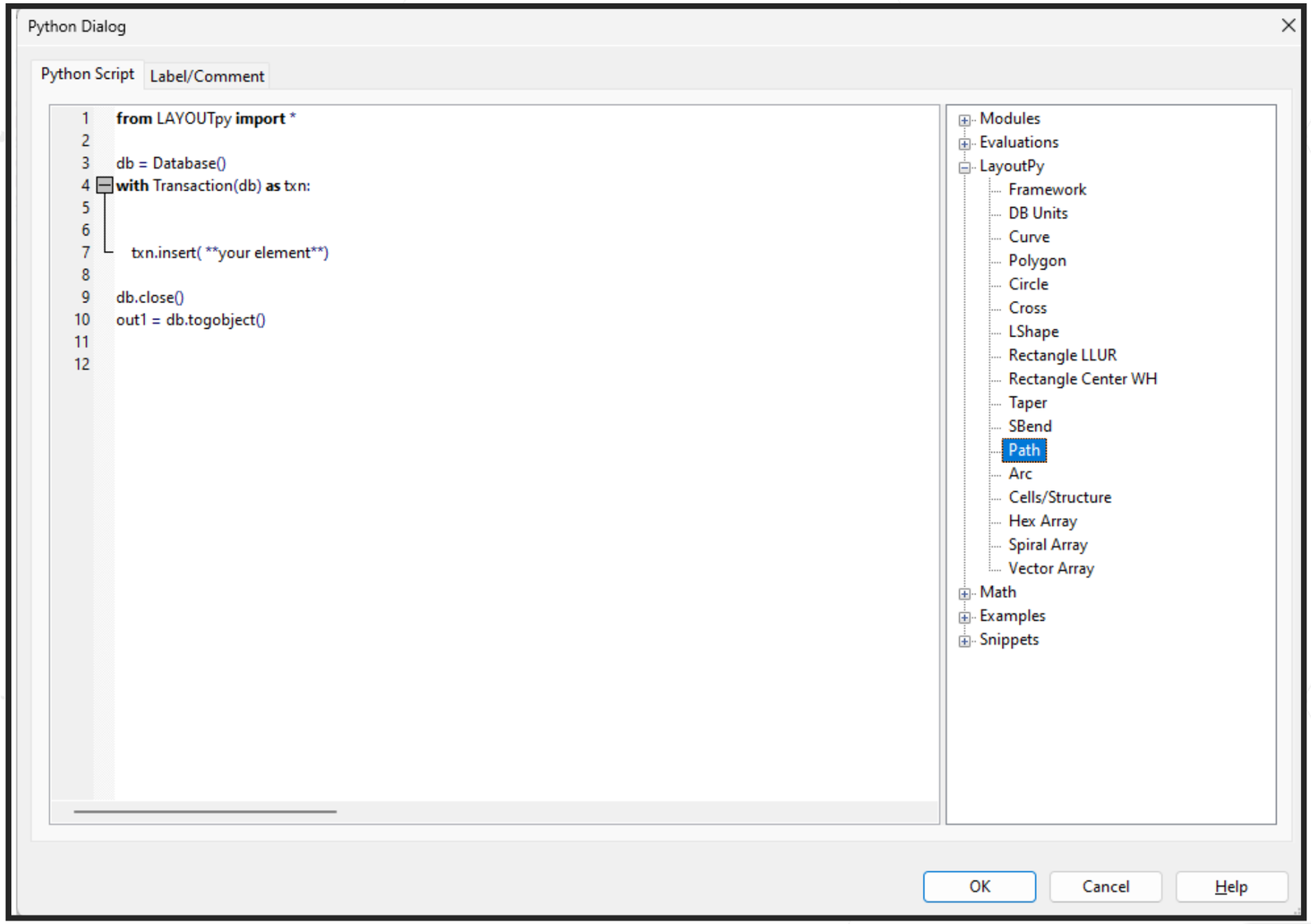
- Create you own templates and code snippets
- use a drag & drop to store and retrieve code snippets



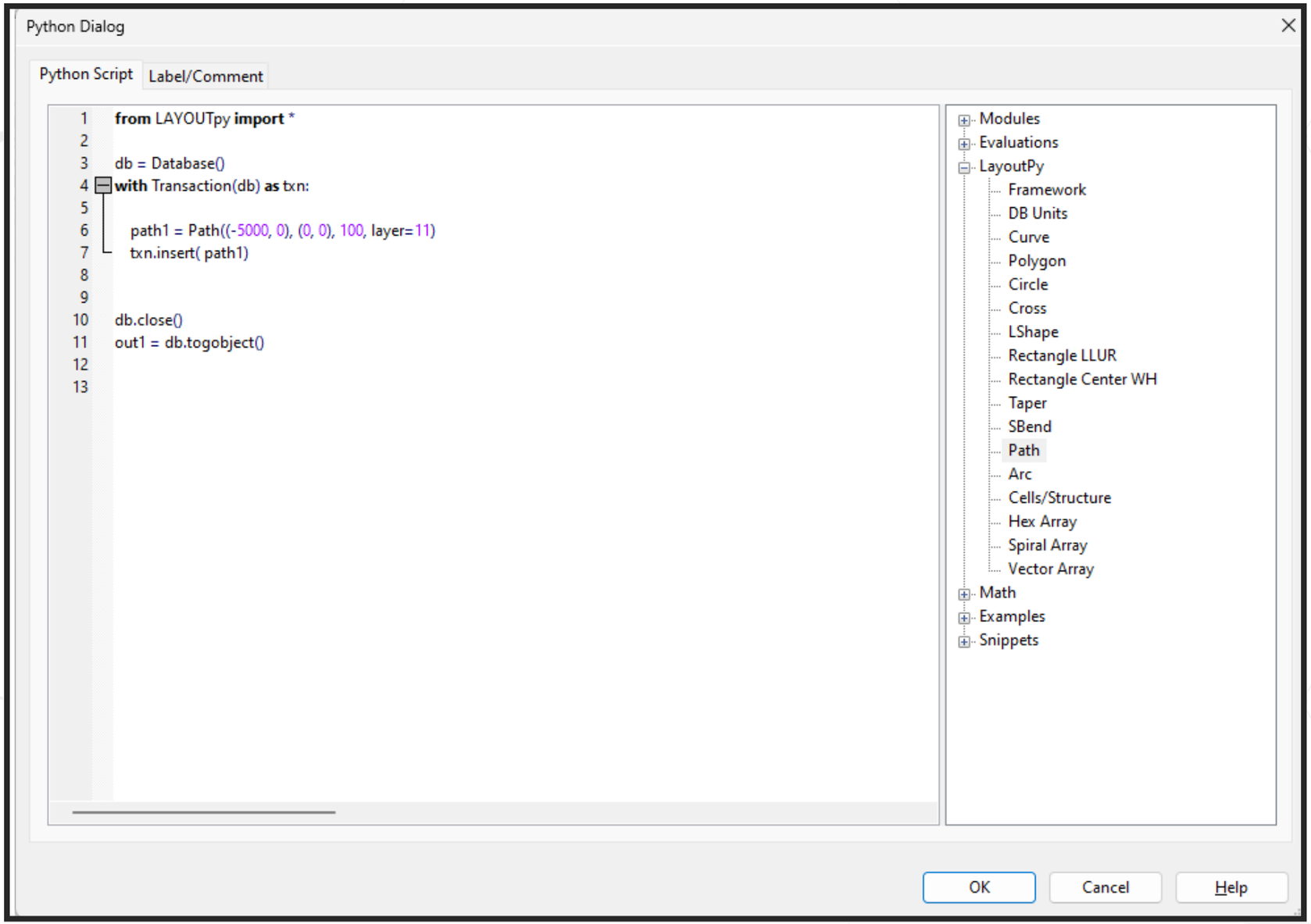
In Action - LayoutPy



In Action - LayoutPy



In Action - LayoutPy



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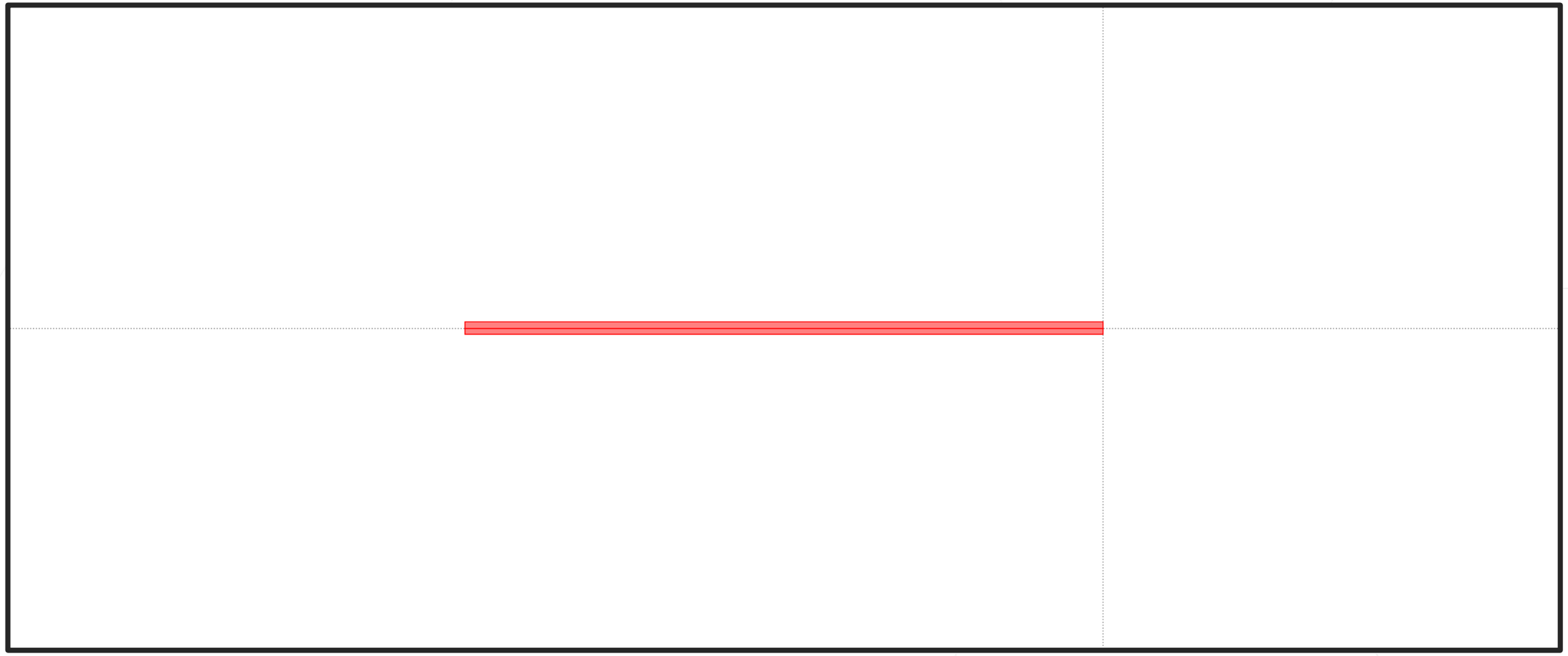

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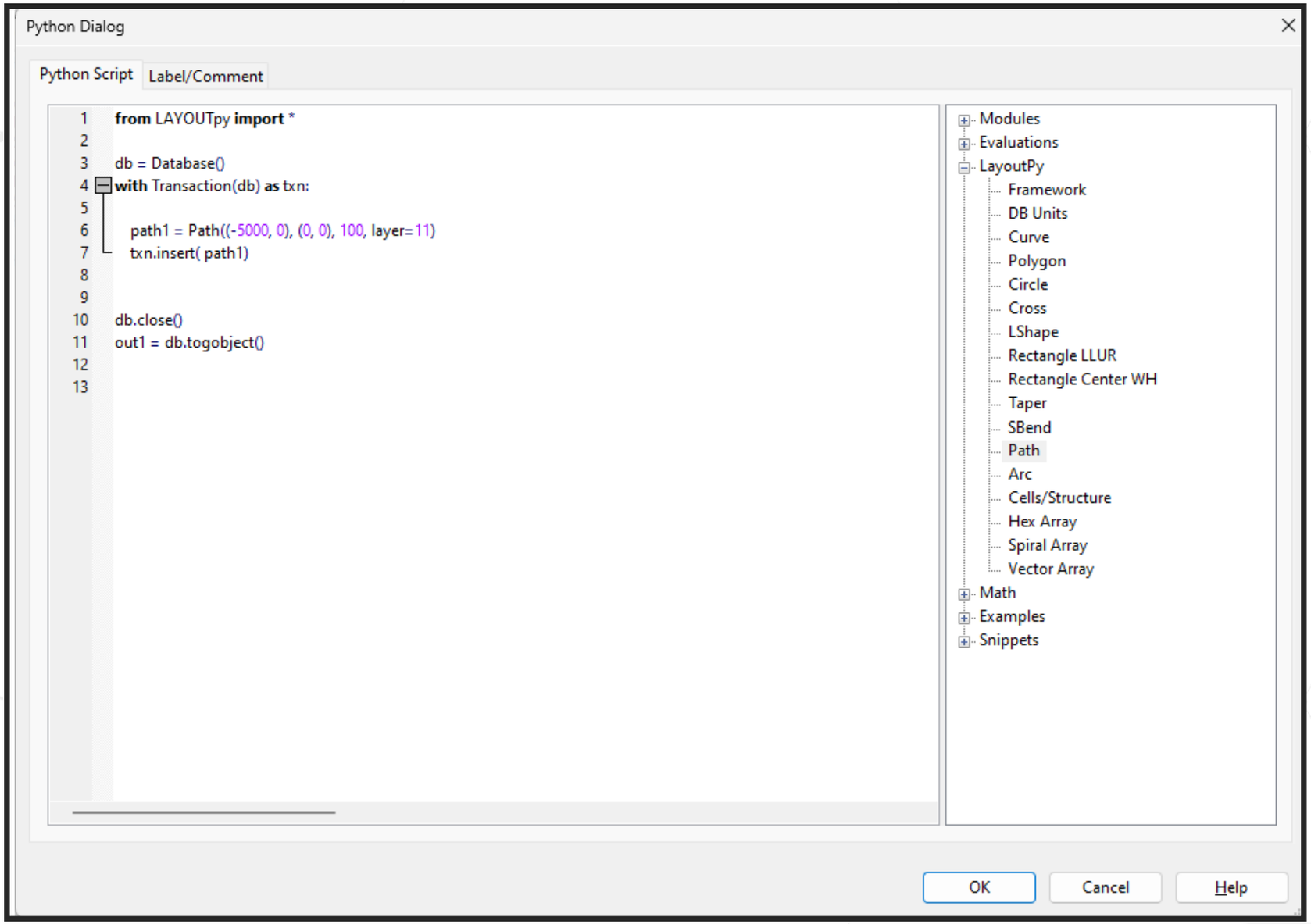
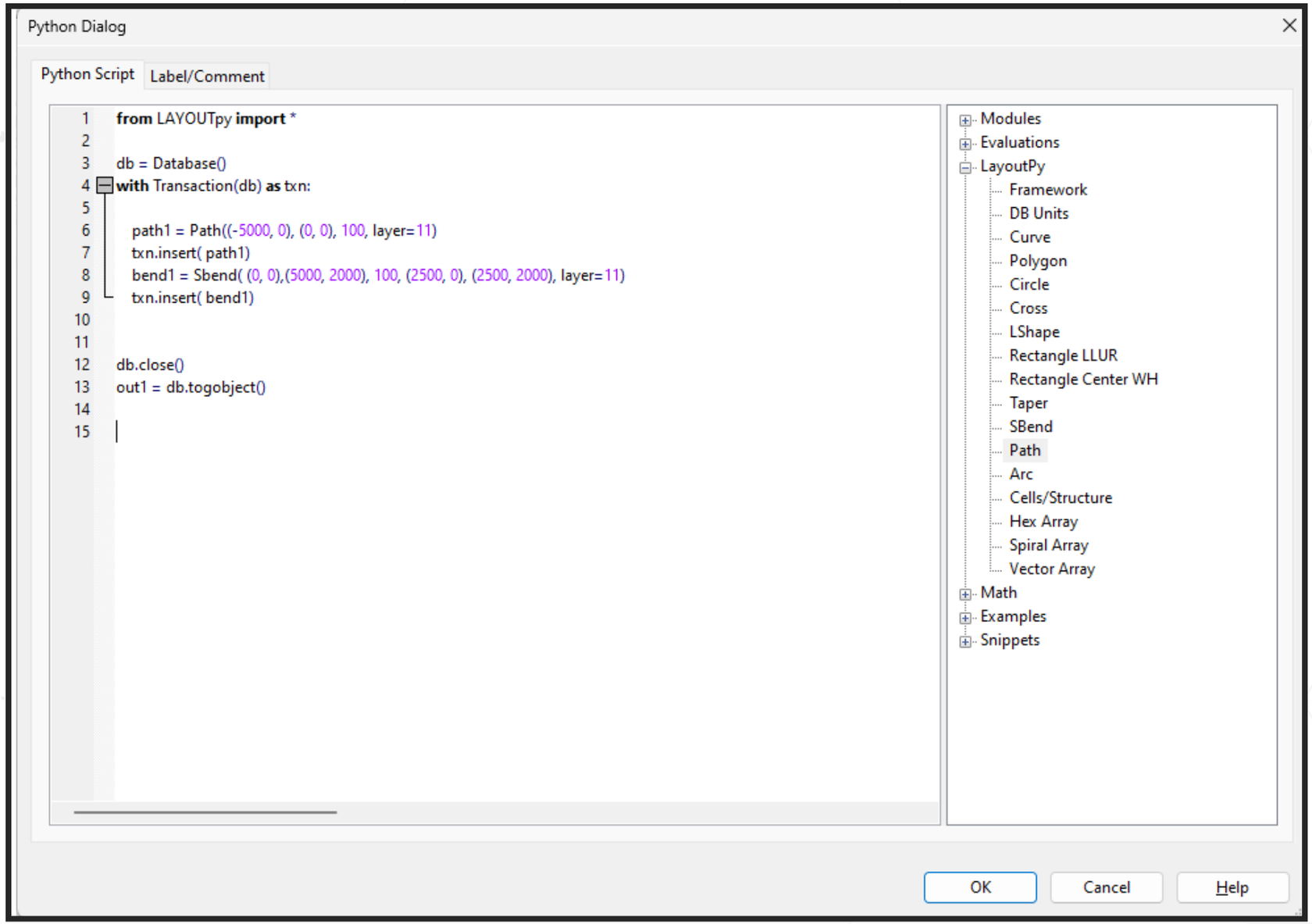


In Action - LayoutPy



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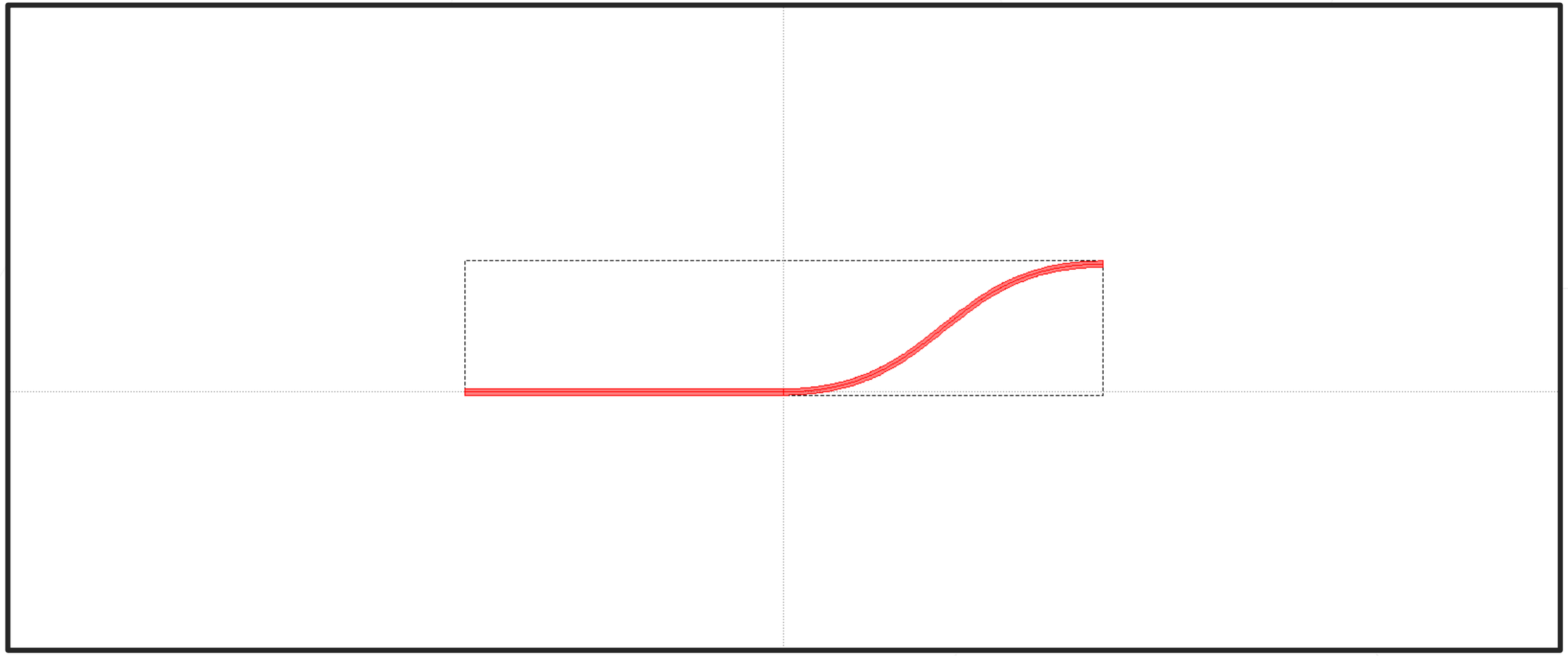

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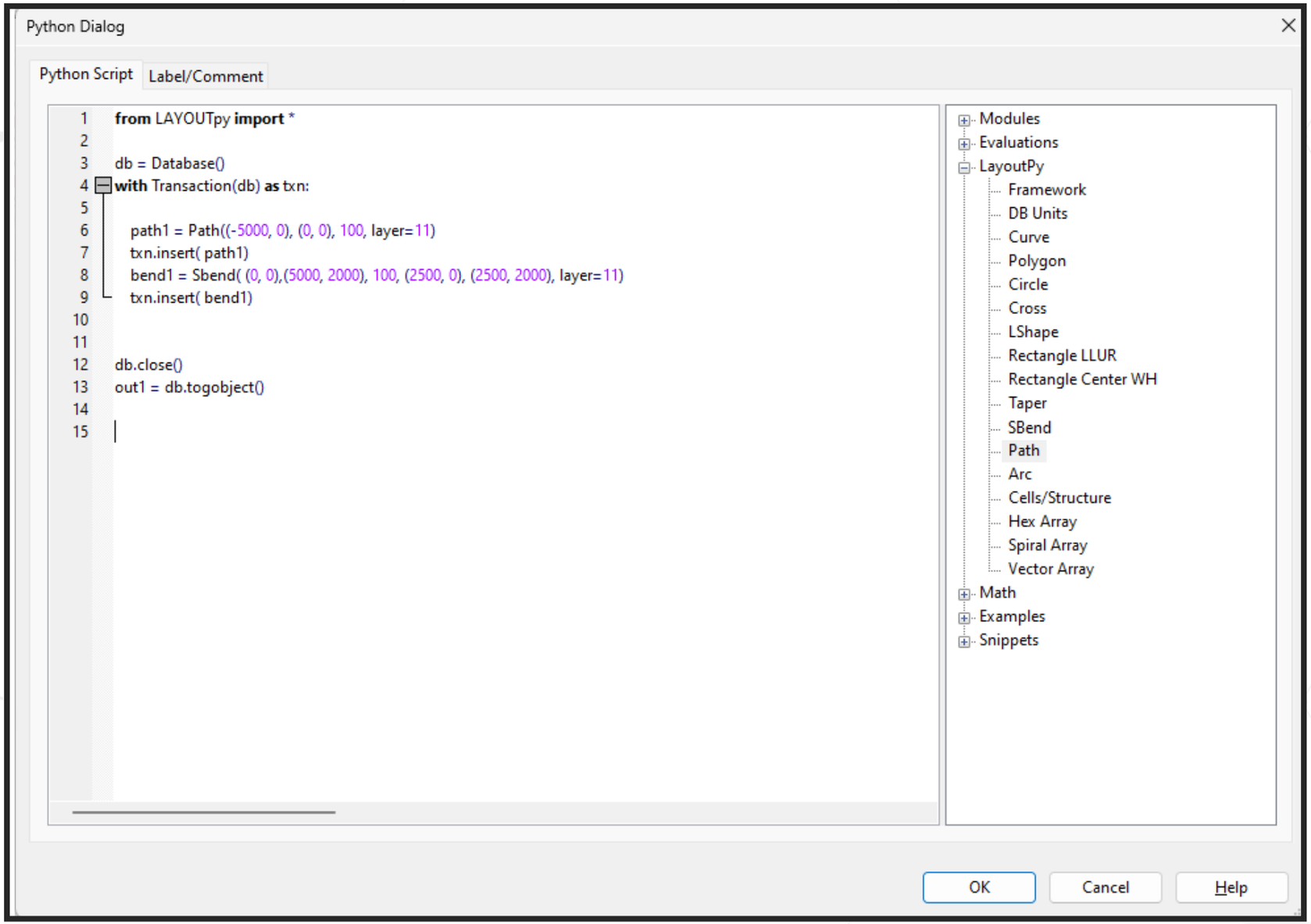

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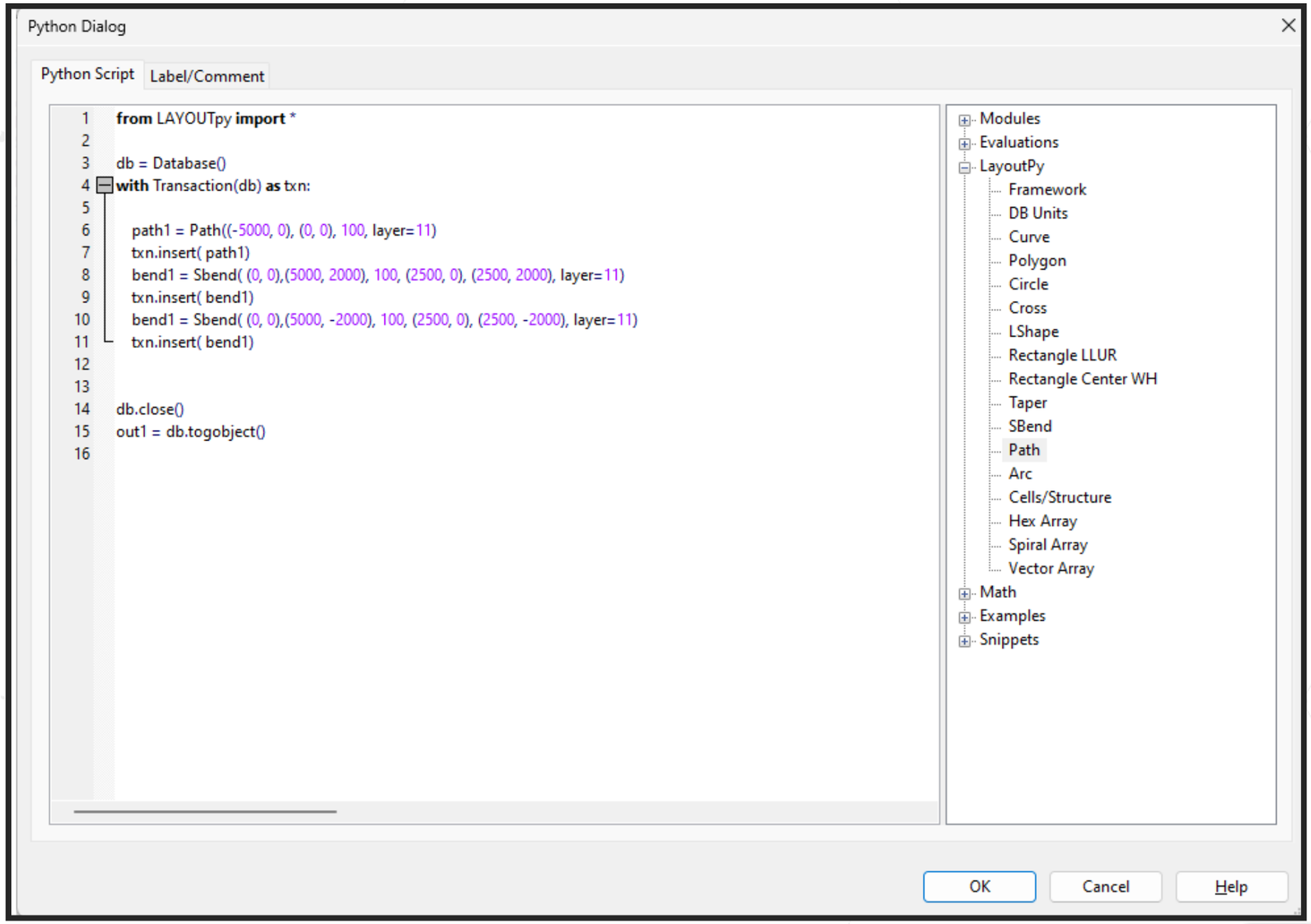
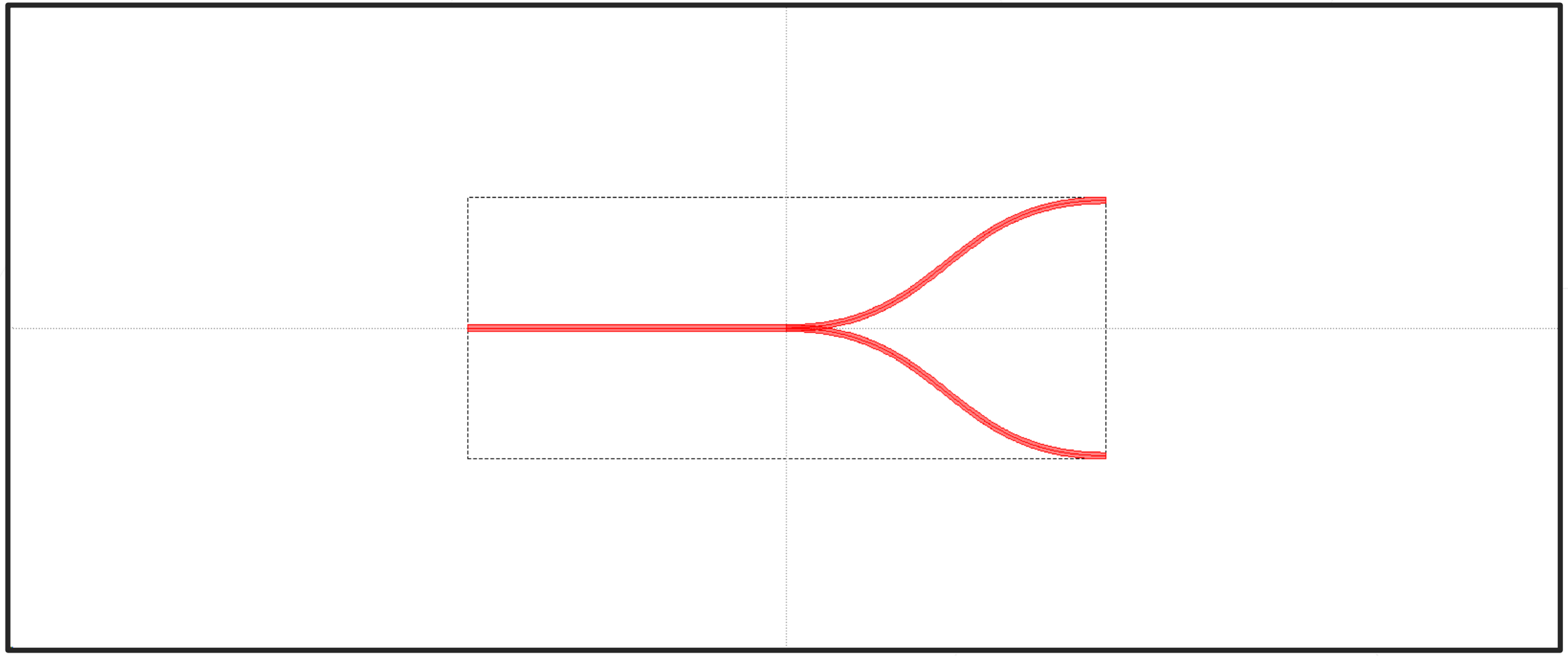


In Action - LayoutPy



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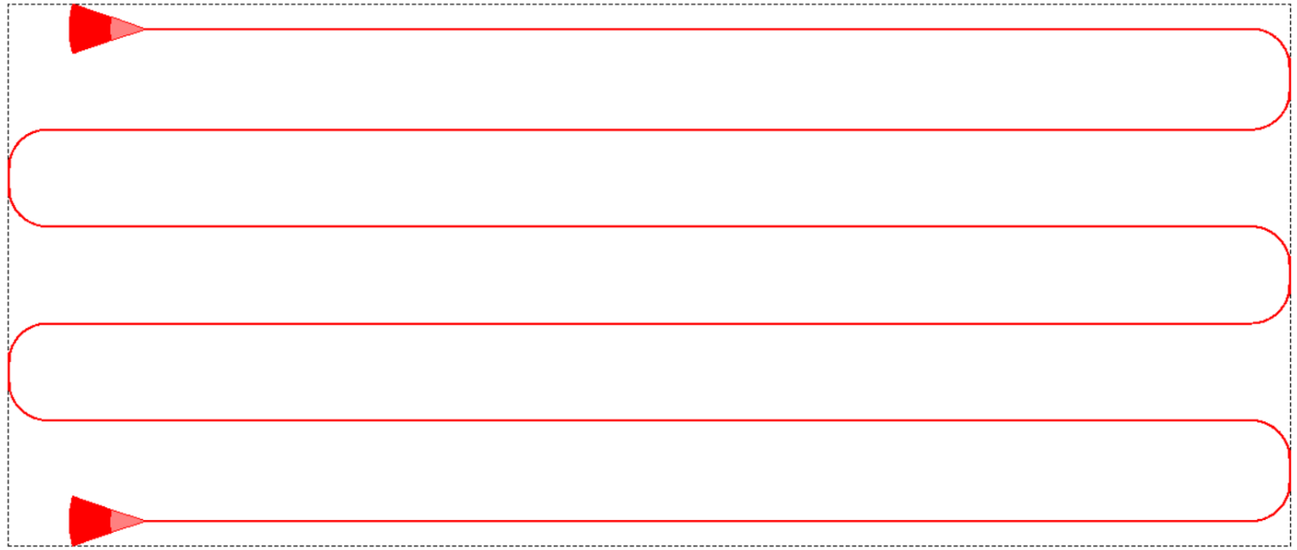
Check for frequencies

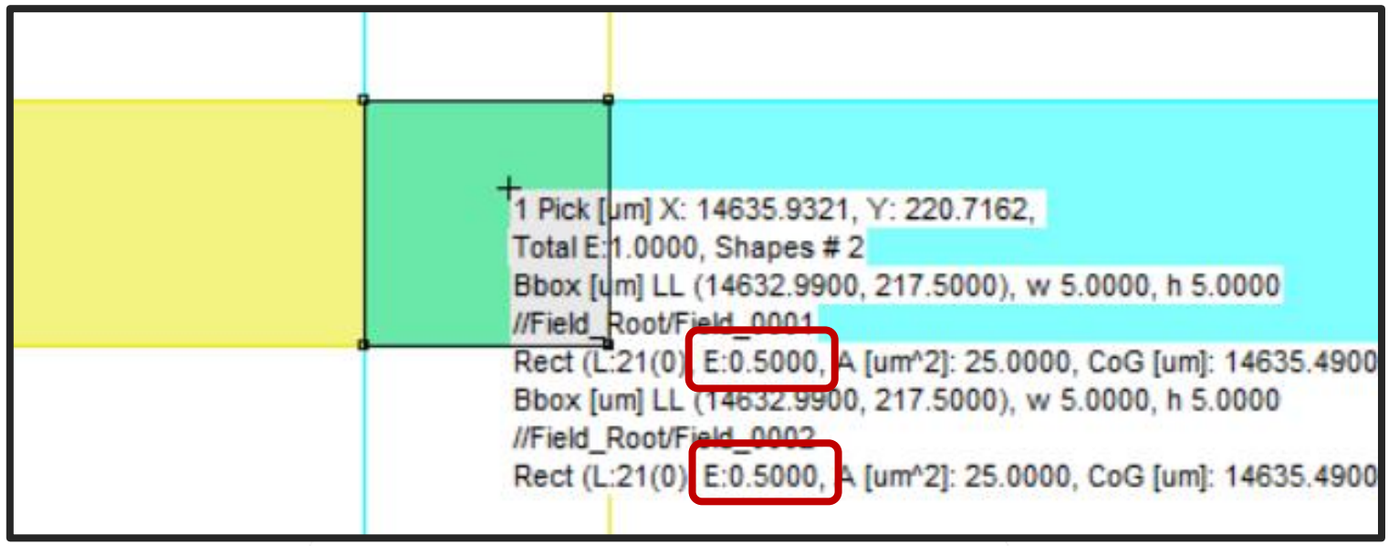
- Use Case :
  - Overlap method –
    Split dose between fields

  To mitigate stitch issue, the overlap region is written 2 times with half dose from each field.



- Issue :
  - The dose factor becomes 0.5
  - Leading to use max frequency of the tool

  Lets go to BEAMER



Live demo

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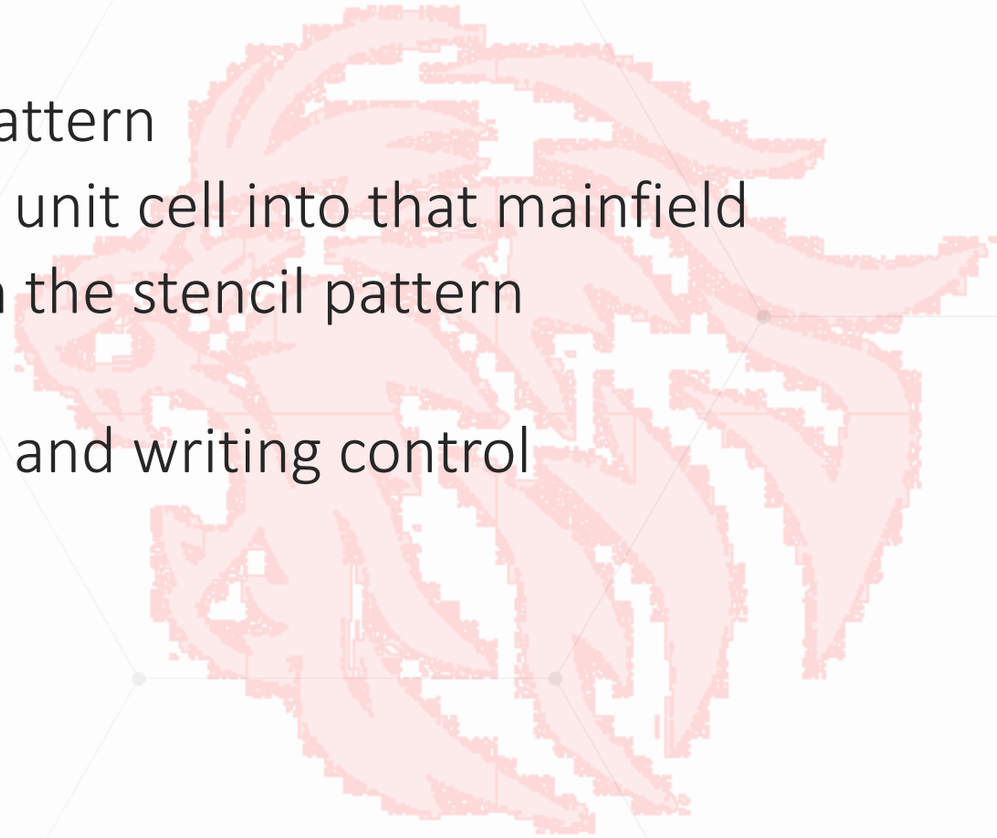
Populating arbitary shapes with patterns

- Photonics is a growing field of applications and often you are faced with the challenge to write large areas with a predefined pattern.
- This sample case will show:
  - A way to generate a unit cell like reference pattern
  - Take a given main field size and populate the unit cell into that mainfield
  - Generate a pattern automatically pending on the stencil pattern dimensions
  - Generate the final pattern using field control and writing control



Live demo

Q & A

Let us know your questions …

Thank You!

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