

# DSL for Synthesizer Configuration

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# Implementation

- DSL
  - External (Xtext)
  - “Internal” (Java)
- Code generation
  - Java
  - Xtend string templates
  - Whole program
    - Derives from provided base class
    - Helper methods to simplify generated code
      - => uses “internal DSL”

# Features

- Circuits
  - Group multiple generators
  - Multi-target properties
  - Connect circuits
- Layout
  - Grid-based
  - Support Java Swing GridBagLayout
    - Define rows and columns
    - Place controls using indices
  - Nested grids
- Generators
  - Oscillators, filter, combiner, audio scope

# Shortcomings

- Circuit properties not fully implemented
  - Only auto-generated “input” and “output”
- Syntax
  - Column and row definitions as arrays
- Placeholders missing
  - Dummy objects for empty rows/columns

# Demo