DRASIL

A Knowledge-Based Approach to Scientific Software Development

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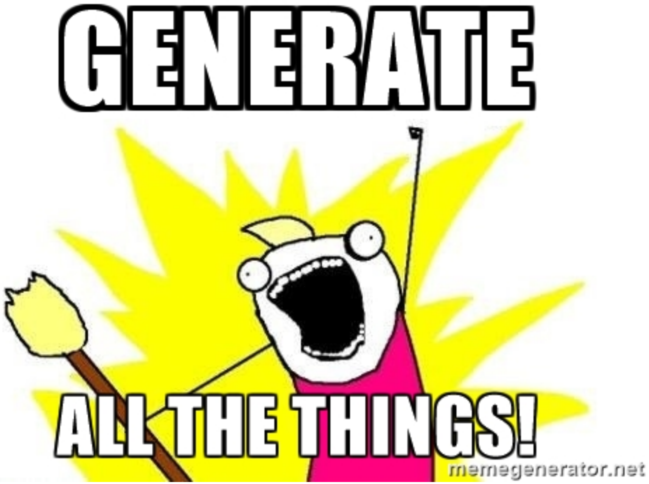
Background Context

- $\exists$ problems $\in$ D where
- $D = \{$ scientific computing, engineering computing $\}$
- Problems = (
    - Inconsistent Software Requirement Specifications (SRS) across D
    - Inconsistency between code and documentation
    - Documentation is annoying to make and maintain
    - Hard to reuse code for different applications

)

The Goal



Purpose of Drasil

- Solve the four issues
- Promote
  - Reusability
    - Examples have fully documented code
    - Data base to build new examples
  - Maintainability
    - Make changes in one place, gets updated everywhere

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- Language and Rendering (Language.Drasil)
  - Code Generation: transition from Drasil to working code
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- Case Studies (Example.Drasil)
  - This part is where you would input equations, requirements, and output code and documentation

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- Drasil is intended to simplify the generation of documentation and code for scientific software
- Also to facilitate desirable software qualities such as traceability, verifiability, and reproducibility
- case study from which structural patterns and implicit relationships can be extracted, data can be captured, and core systems can be tested and implemented

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- Opening/closing issues

Case Study Contributions

- SWHS
- NoPCM
- GlassBR
- HGHC
- SSP
- GamePhysics

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