



# Agolearn MG+MIS

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## **Sources of Change**

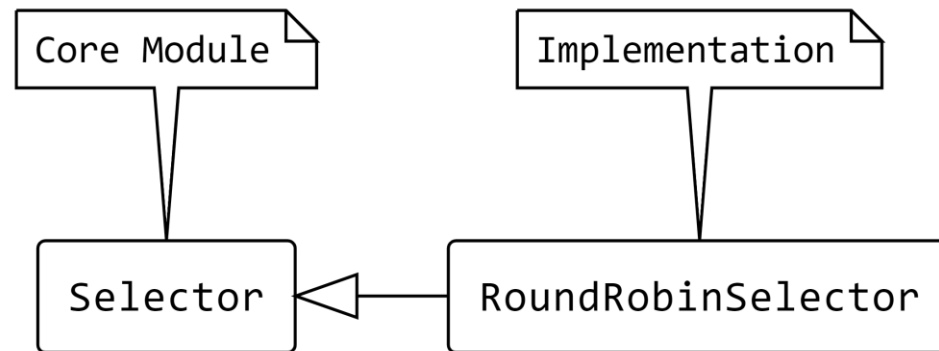
- User feedback
- Requirement to generalization
- Change of understanding
- Inevitable for research software

## **Response**

- Modularization
- Extreme Decoupling
- Abstractions

# Module Decomposition

- Behaviour-hiding: **core modules**
- Software-decision: **implementations**



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**Level 1**

**Level 2**

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Hardware-Hiding

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Behaviour-Hiding

Core modules (e.g. Selector)

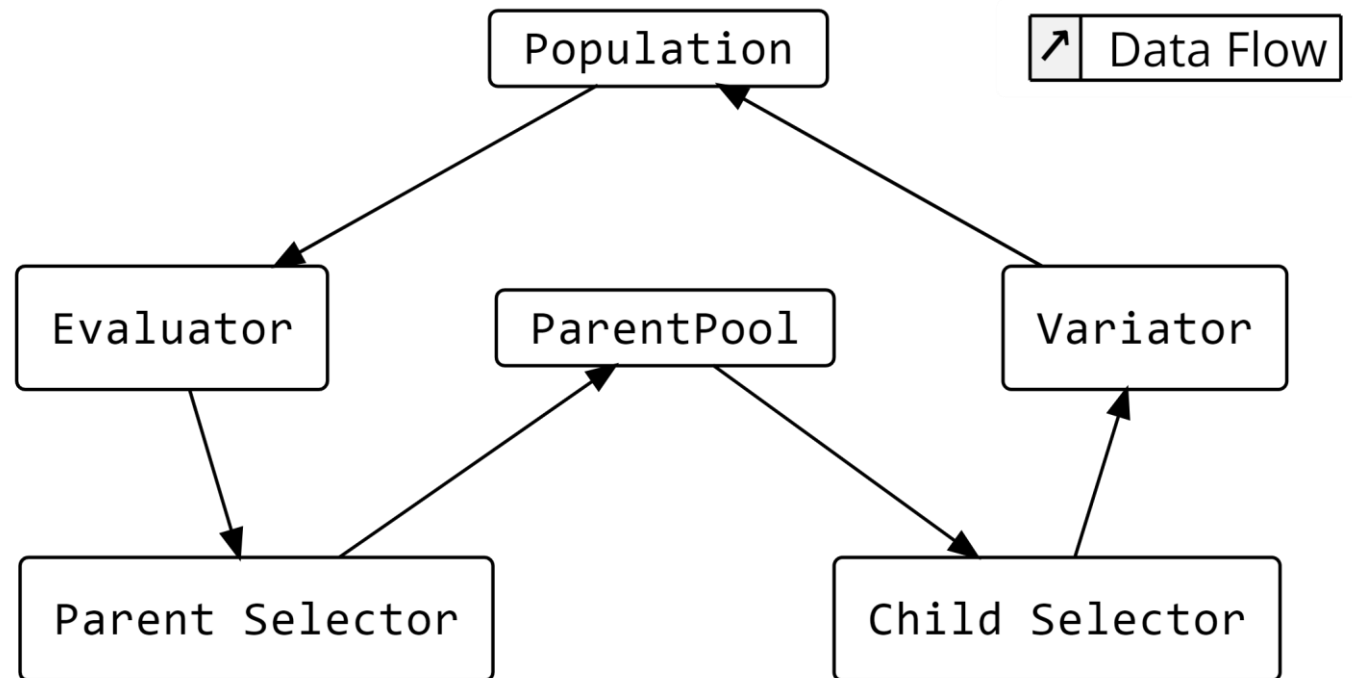
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Software-Decision

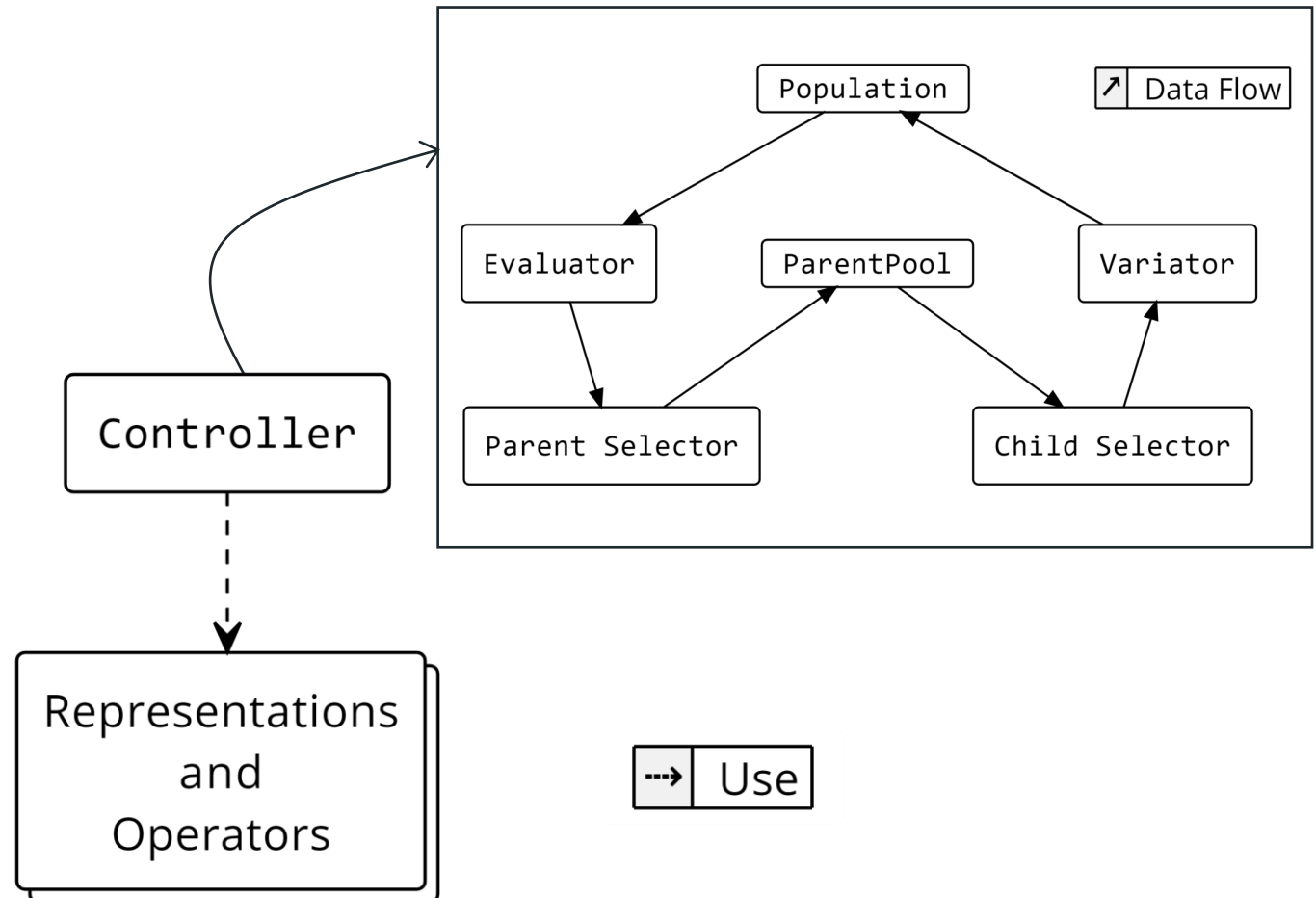
Evolutionary Operators (e.g. SimpleSelector)

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# Data Flow

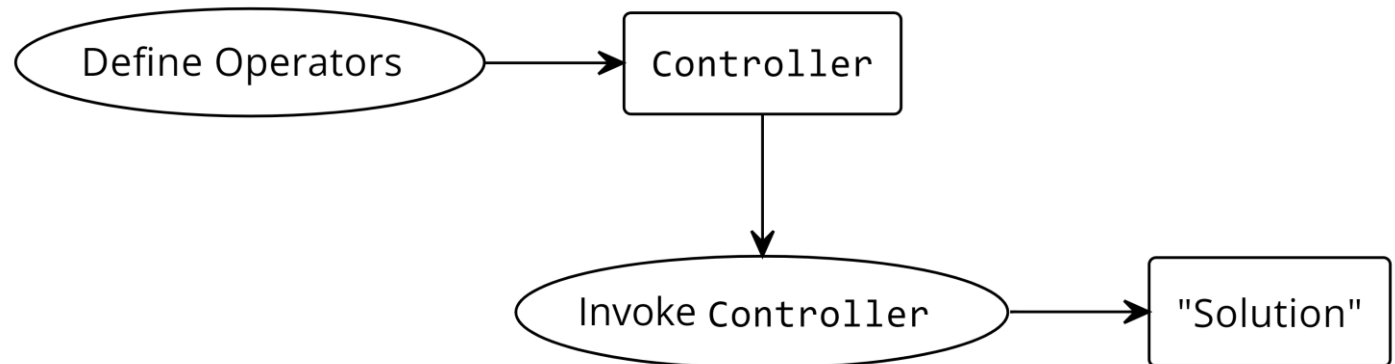


# Use Relation



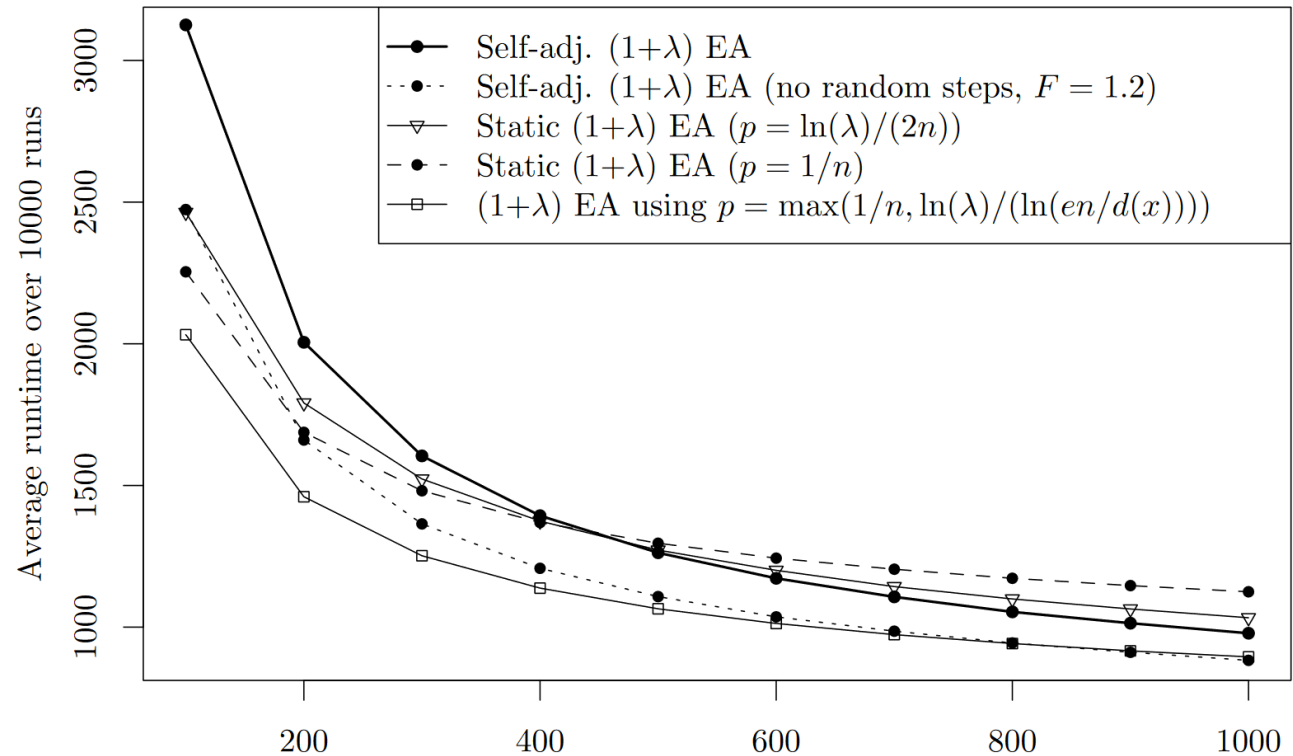
# Usage

1. Define and modify operators
2. Give operators to controller
3. Run the controller
4. Solution!



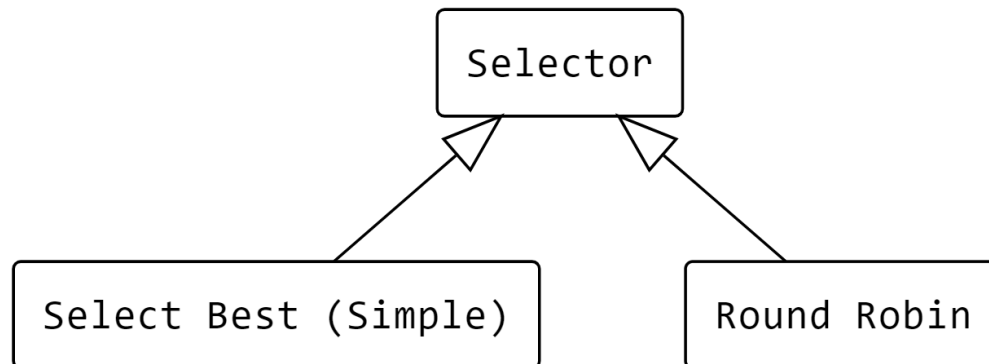
# Hidden Secrets: Strategy

- Different implementations: different results
- Think "step size"



# Hidden Secrets: Strategy

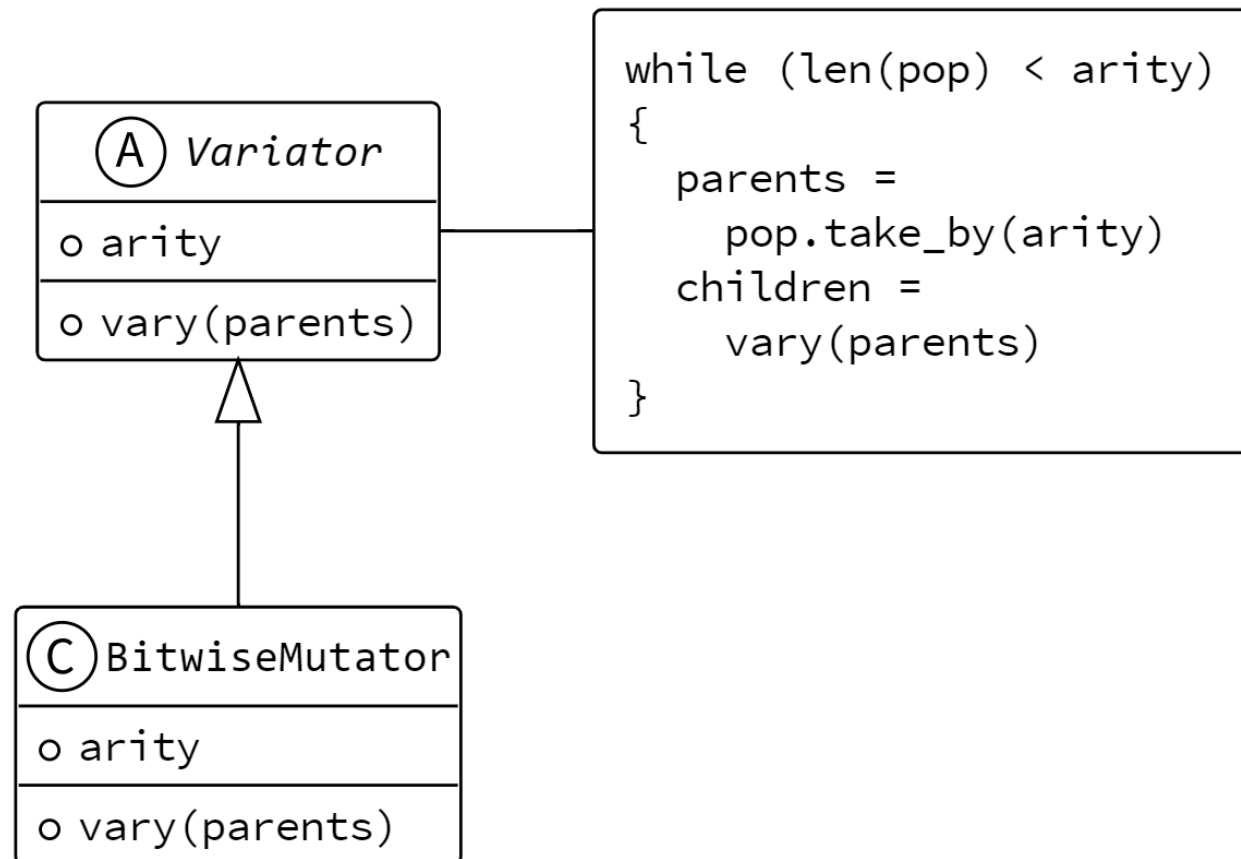
- Implementation of the same operator perform the same function
- Different implementations offer different trade-offs





# Hidden Secrets: Context

- Core modules give **context** (&assertions)
- Implementations give **strategies**



# Hidden Secrets: Use Cases

- Different "hiddenness" for different users
- Students
  - Core modules hide contexts
  - Implementations hide strategies
  - **Use existing modules**
- Researches require complete information
  - Everything is exposed
  - **Extend core modules**