



Reuse Based Refactoring Tools

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Reuse approaches

- Systematic
- Transformational

Automated refactoring tools

- Reuse refactoring definitions when adapting to new source language

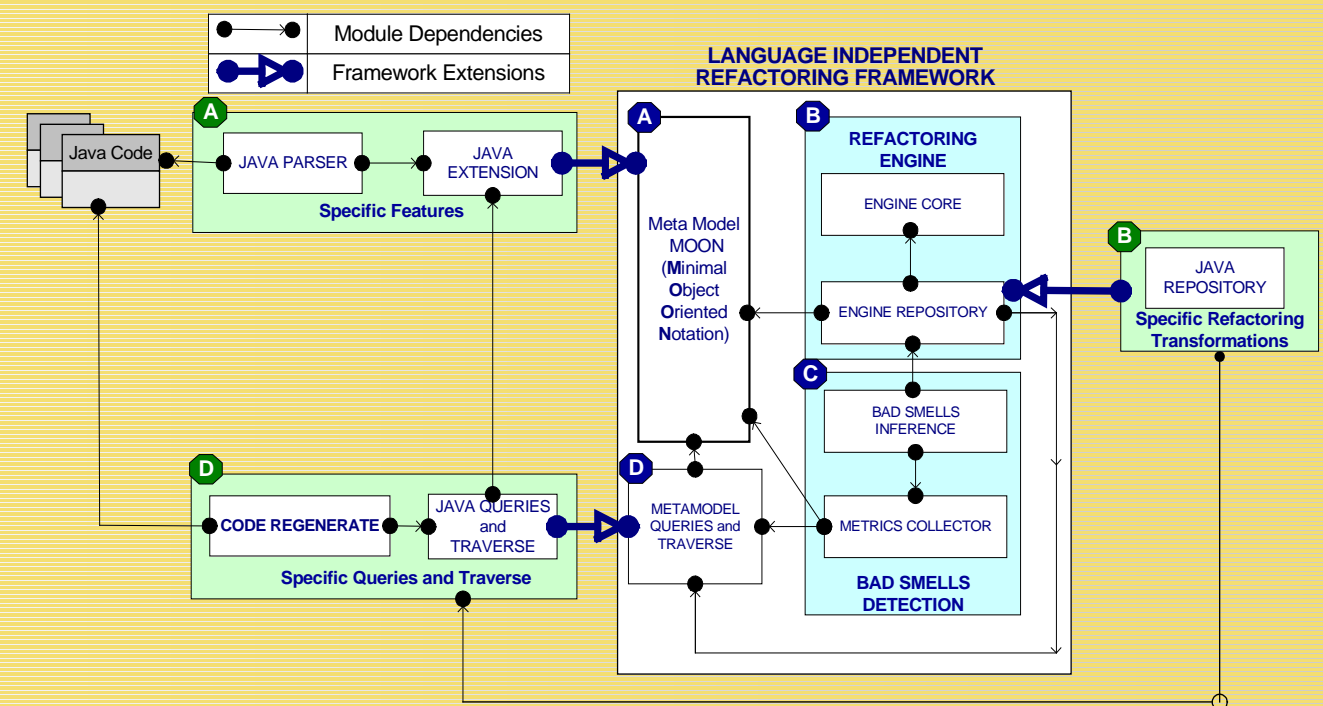
Refactoring is important in software reuse and software reuse is important for refactoring

Goals

- Language definition - independent refactorings
 - Object-Oriented programming languages: statically typed with or without genericity
- Software support definition

Solution

MOON as model language for defining refactorings and reuse based on frameworks



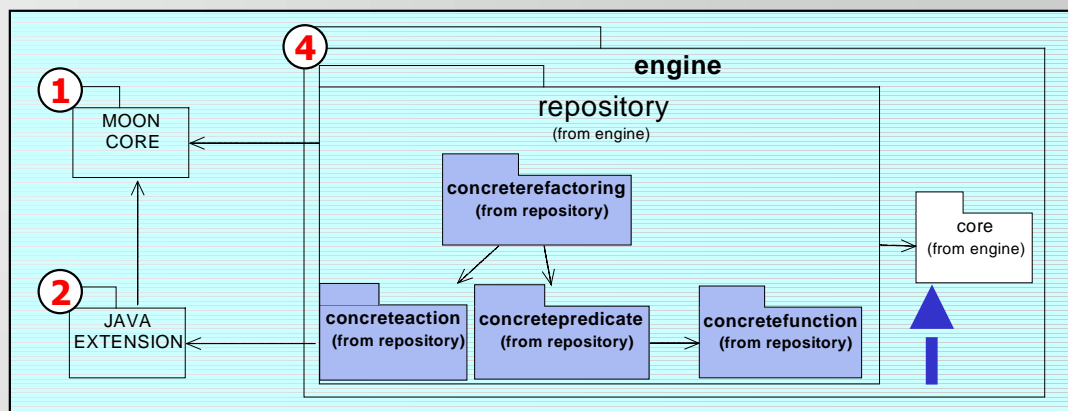
Framework Support

Language Independence – MOON Framework

- 1 Core – common language constructions
 - Model syntactic and semantic language rules
 - Define refactoring basic operations
- 2 Extensions – language variable constructions

Refactoring Run Environment – Engine Framework

- 3 Core
 - Provide template method to complete refactoring by checking preconditions, executing actions...
- 4 Extension
 - Concrete refactoring definitions based on concrete predicates, actions and functions.

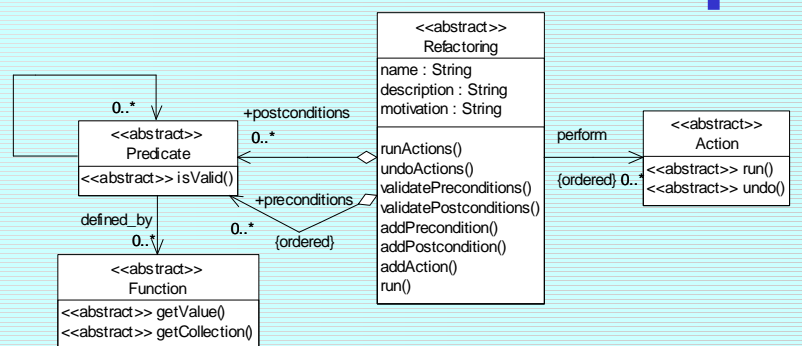


Refactoring Analysis on Model Language: Template

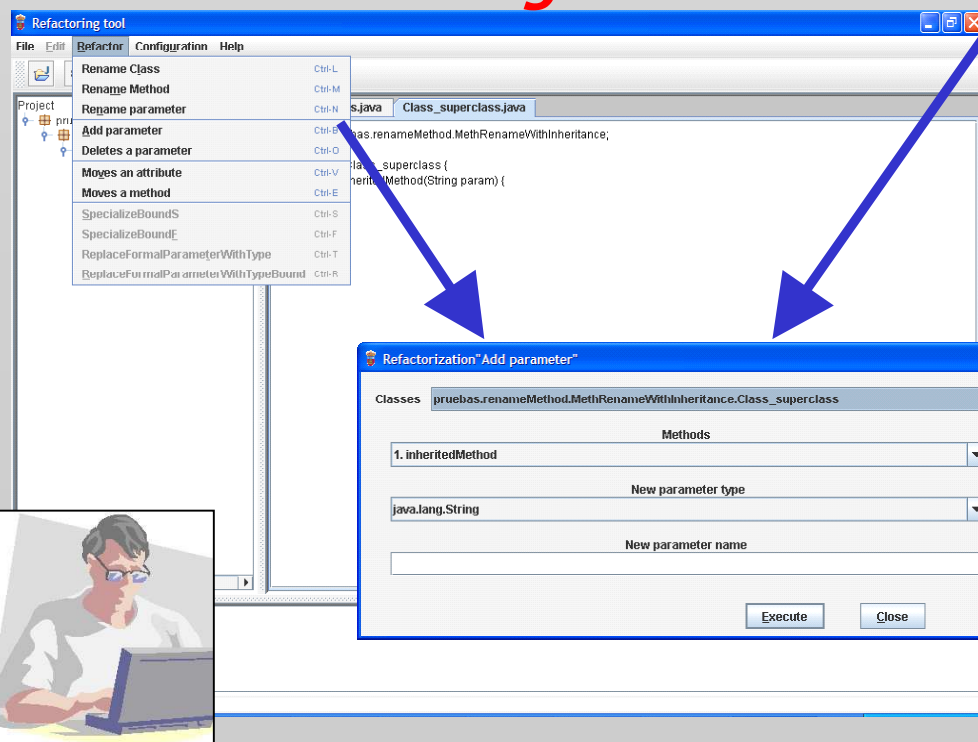
Description	A brief description explaining the refactoring
Motivation	When refactoring can be useful
Inputs	Inputs parameters supported in the MOON model language
Preconditions	Conditions to check before running refactorings. They are defined with predicates and functions on model language MOON
Actions	Set of edition primitives defined on MOON elements . They transform the model instances.
Postconditions	Conditions to check after running refactorings. They are defined with predicates and functions on model language MOON

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Engine Framework Core



Refactoring Tool



Current State

Java partial support
Including generic classes

Future Work

.NET support
Validate architecture
New refactorings
XML refactoring definition
Metric independent support

Refactoring Set

- Add Parameter
- Rename Parameter
- Remove Parameter
- Move Attribute
- Move Method
- Rename Class
- Rename Method
- Other generic refactorings