

# Mini-DSL

## 1. Goal

- Support roman numbers within the host-language:  
`III + IV = VII`
- Keep syntax of host-language.
- Avoid boilerplate of any kind.

## 2. Implementation

- Show method `RomanDSL class>>#romanToArabic:.`
- Implement the transformation on the class side:

```
RomanDSL class>>transformation
  <transform>

  ^ DSLTreePattern new
    expression: '`var';
    action: [ :context |
      | arabic |
      arabic := self romanToArabic: context node name.
      arabic notNil
        ifTrue: [ context node replaceWith: arabic lift ] ]
```

- `<transform: 100>` tells the compiler that this is a transformation rule.
- `DSLTreePattern` defines the scope ``var` of an action to be performed on the parse tree.
- The action block calls `#romanToArabic:` to transform the roman number to an `Integer` object.

- If the node is actually a roman number (`#notNil`), replace the it (`#replaceWith:`) with the arabic number.
- `#lift` turns the `Integer` into a `LiteralNode`.

## 3. Test it

- Implement a test-case on the instance-side:

```
RomanDSL>>testAdd  
  self assert: III + IV = VII
```

- The test passes.
- Show decompiled code.

## 4. Other Examples

- `CUInterpolateExample`  
Similar, but more realistic use-case.
- `CUSwapExample` / `CUCastingExample`  
Add new features to host-language.
- `FLFactorialExample`  
Completely new language within the host-language.