

Reusing Conceptual Models with CML

Quenio Cesar Machado dos Santos & Raul Sidnei Wazlawick

Computer Sciences | Universidade Federal de Santa Catarina | Brazil

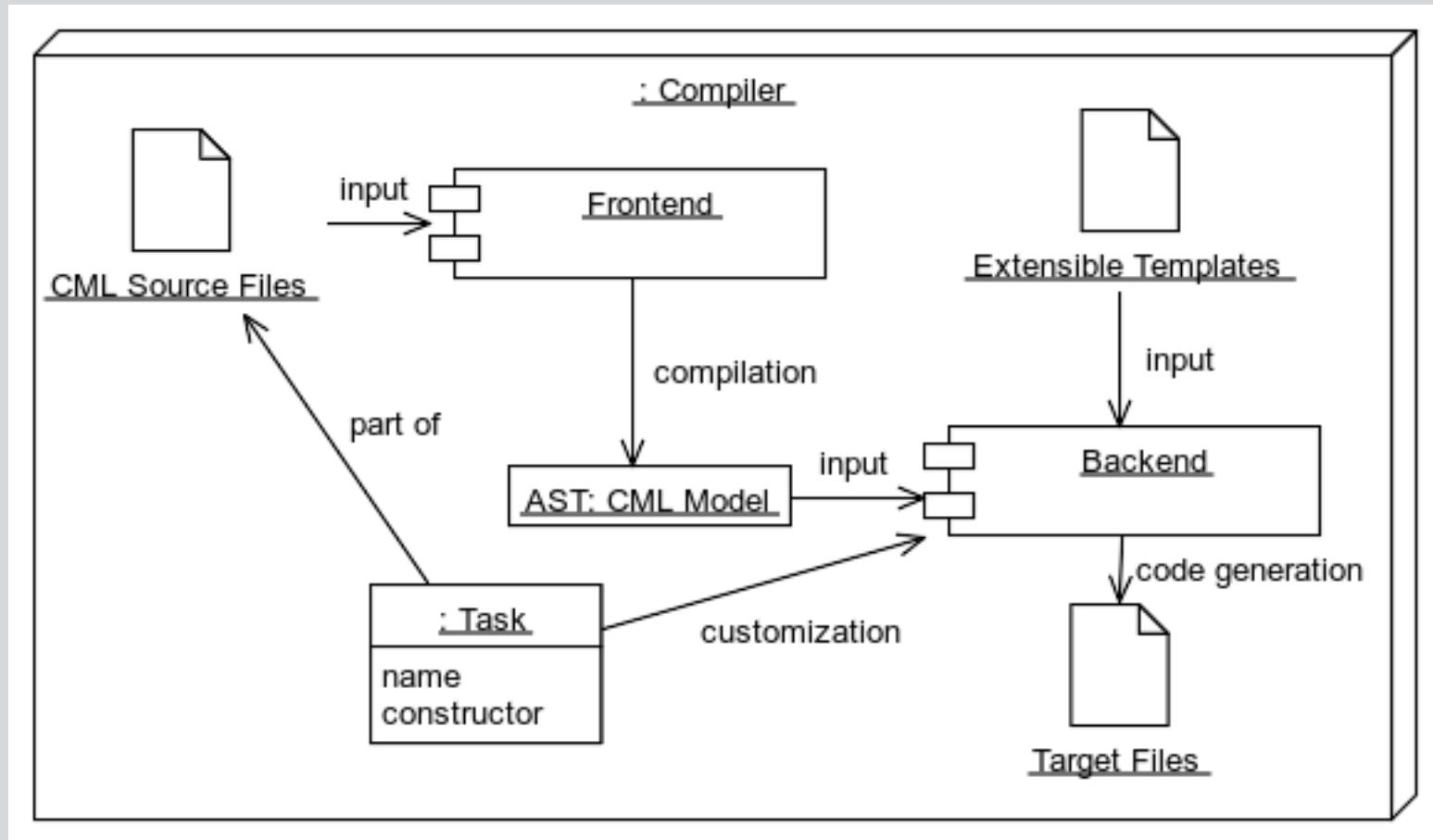


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CML

- Textual Modeling Language
 - Think of Light-UML + OCL in One Language
 - Concepts
 - Generalization / Specialization
 - Associations
 - Derived Attributes & Associations
 - Functions
- Extensible Compiler
 - Supports Modules
 - Extensible Templates
 - Targets Any Programming Language / Technology

Overall Architecture



Generalization / Specialization

```
@concept Square : Rectangle , Rhombus
{
    side_length : Double ;

    / width = side_length ;
    / height = side_length ;

    / p = side_length * 1.41421356237d ;
    / q = p ;

    / area = side_length ^ 2.0d ;
}
```

Associations

```
@association Employment
```

```
{
```

```
    Employee.employer;
```

```
    Organization.employees;
```

```
}
```

```
@association VehicleOwnership
```

```
{
```

```
    Vehicle.owner: Organization;
```

```
    Organization.fleet: Vehicle*;
```

```
}
```

Extensible Templates

```
model_files(task, model) ::= <<
pom_file | pom.xml
>>

concept_files(task, concept) ::= <<
concept_file | <task.packagePath>/<concept.name>.java
>>

...

import "/design/poj.stg"

concept_file(task, concept) ::= <<
package <task.packageName>;

import java.util.*;

public <class(concept)>
>>
```

Development Status

Compiler: Very Early Alpha Version

- But Supports
 - Generalization / Specialization
 - Associations
 - Derived Attributes / Associations
- Bootstrapped: Metamodel being modeled in CML

Language: Specification In Progress

- Very Detailed
 - Metamodel
 - Model Synthesis
 - Model Validation
 - Type Inference / Conformance
 - Model Translation

Would you like to see more?

Quenio

quenio.santos@grad.ufsc.br



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