

Langauge Definitions Demo

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Chapter 1

Eclipse OCL

1.1 Invariant - Examples

```
context Meeting inv: self.end > self.start
— "self" always refers to the object identifier from which the constraint is evaluated.
context Meeting inv: end > : end > start
— Names can be given to the constraint
context Meeting inv startEndConstraint:
self.end > self.start
```

1.2 Precondition - Examples

```
context Meeting::shift(d: Integer)
pre: self.isConfirmed = false

context Meeting::shift(d: Integer)
pre: d>0 pre: d>0

context Meeting::shift(d: Integer)
pre: self.isConfirmed = false and d>0
```

1.3 Postcondition - Examples

```
context Meeting::duration(): Integer
post: result = self.end - self.start
— keyword result refers to the result of the operation

context Meeting::confirm()
post: self.isConfirmed = true
```

1.4 Examples for Collection Operations

```
context Teammeeting
inv: participants->forAll(team=self.for)

context Meeting inv: oclIsTypeOf(Teammeeting)
implies participants->forAll(team=self.for)

context Teammember::numMeeting(): Integer
post: result=meetings->size()
context Teammember::numConfMeeting(): Integer context
Teammember::numConfMeeting(): Integer
post: result=meetings->select(isConfirmed)->size()
```

Chapter 2

OClinECore

Taken from the OCLinECore example page

```
import ecore : 'http://www.eclipse.org/emf/2002/Ecore#';

package tutorial : tut = 'http://www.eclipse.org/mdt/ocl/oclinecore/tutorial'
{
    class Library
    {
        attribute name : String;
        property books#-'library' : Book[*] { composes };
        property loans : Loan[*] { composes };
        property members#-'library' : Member[*] { composes };
    }

    class Book
    {
        invariant SufficientCopies :
            library.loans->select(book=self)->size() <= copies;
        attribute name : String;
        attribute copies : Integer;
        property _'library'#books : Library;
        property loans : Loan[*] { derived, volatile }
        {
            derivation: library.loans->select(book=self);
        }
        property _'library'#books : Library[?];
        operation isAvailable() : Boolean[?]
        {
            body: loans->size() < copies;
        }
    }

    class Member
    {
        attribute name : String;
        property _'library'#members : Library;
    }

    class Loan
    {
        property book : Book;
        property member : Member;
        attribute date : ecore::EDate;
    }
}
```