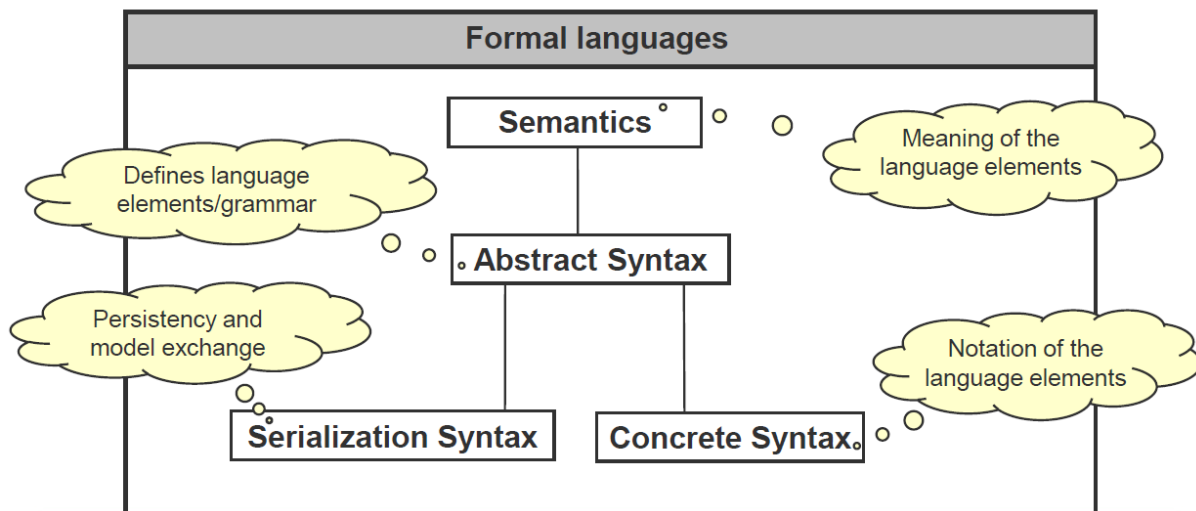


Model Engineering Midterm Exam Group B(?)

December 2013

1) 4 common concepts of formal languages:



2) Three general single(?) choice questions (which I can't remember)

3) A few OCL constraints on the model (see appendix)

e.g. something like: context EntityModel: entities -> collect(name) -> size() = entities -> collect(name) -> asSet() -> size()

or context EntityModel: entities.attributes -> forall(lower < upper and)

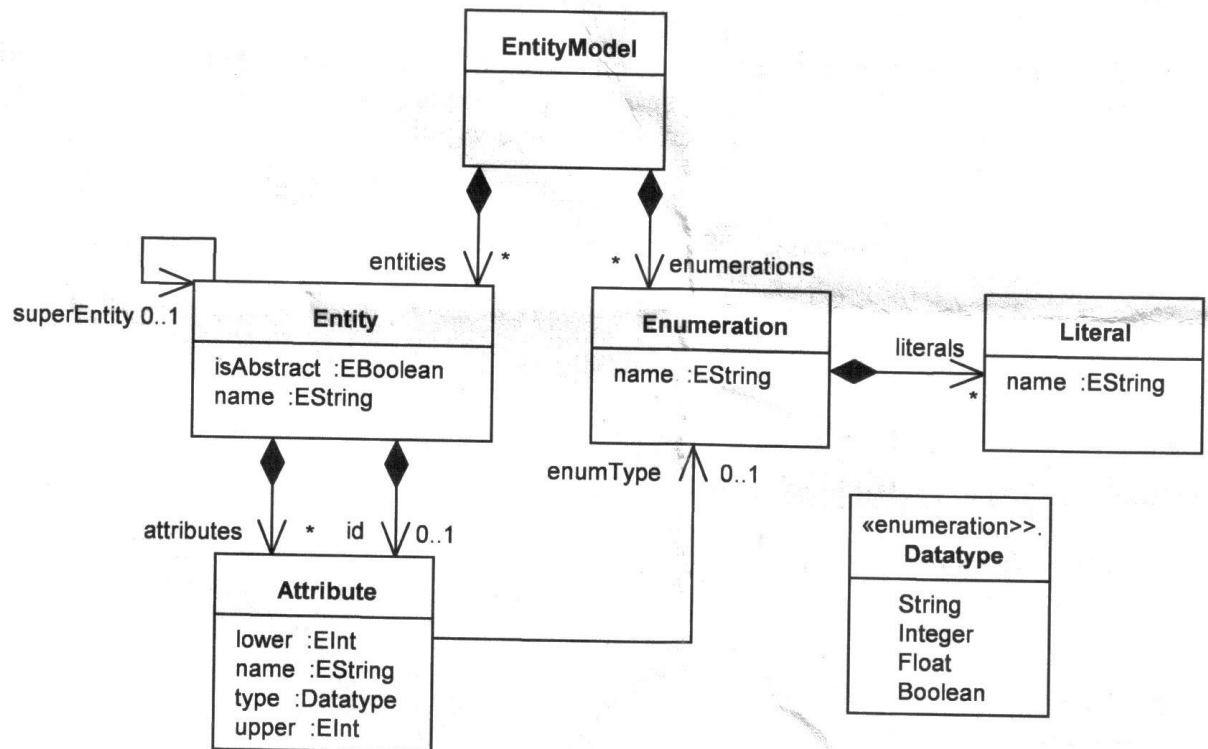
4) given use case diagram for which a metamodel had to be designed

5) writing an OCL expression

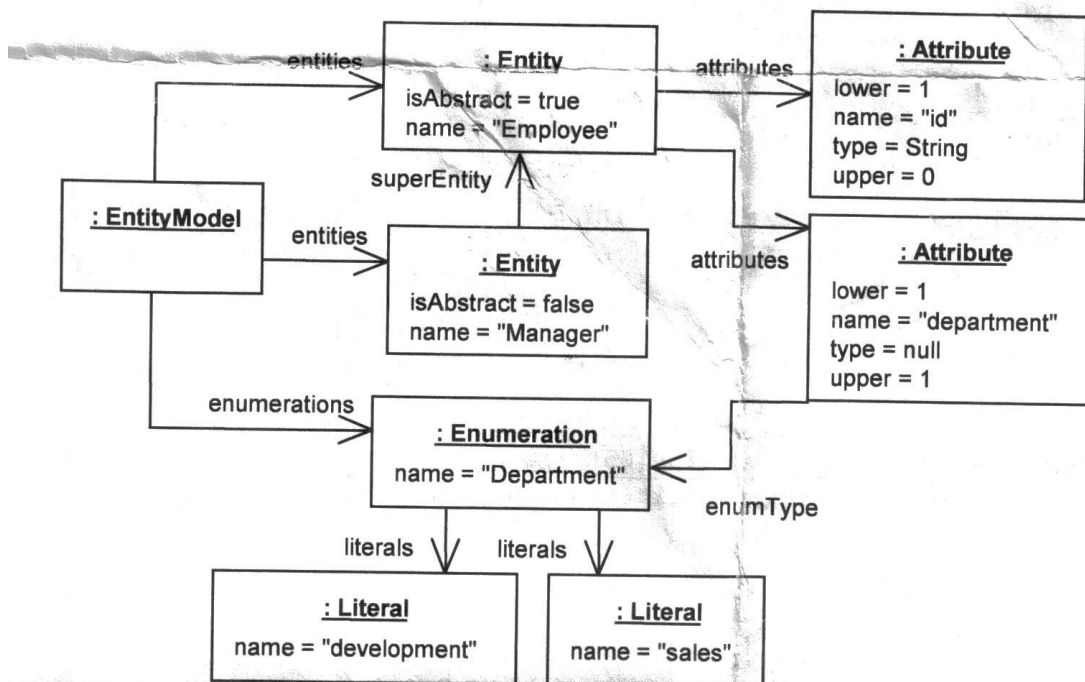
6) finding 5 inconsistencies between a given metamodel and the xtext grammar (see appendix)

Appendix Task 3

Metamodel



Model



Appendix Task 4

Xtext Grammar

```
grammar at.ac.big.tuwien.Gradingdsl with org.eclipse.xtext.common.Term
generate gradingdsl "http://www.ac.at/big/tuwien/Gradingdsl"
import "http://www.eclipse.org/emf/2002/Ecore" as ecore
```

Lecture:

```
'lecture' name=EString semester=EString
'{'
    grading=Grading 5)
    (exercises+=Exercise)+
'}';
```

Grading:

```
'grading' '(' negativeMark=Mark ')'
'{'
    (marks+=Mark)+ 4)
'}';
```

Mark:

```
name=EString ':'
bounds=MarkBounds 6)
';';
```

MarkBounds:

```
'(' lowerBound=EInt '-' upperBound=EInt ')'; 3)
```

Exercise:

```
ConcreteExercise | Group;
```

ConcreteExercise:

```
name=EString 'compulsory'? 2) '(' maxPoints=EInt ')'
( ':' minPoints=ExerciseRequirement)?
';';
```

Group:

```
name=EString
'{'
    (groupExercises+=[ConcreteExercise|EString])
    ( '@all' ':' minGroupPoints=ExerciseRequirement ';' )?
'}';
```

ExerciseRequirement:

```
'min' value=EInt;
```

EInt returns ecore::EInt: '-'? INT;

EString returns ecore::EString: ID;