

**IKT-415 - Generative Programming**

## **Exercise 3 - COOL Constraints**

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# 1 Cool constraints

## Class

- A class cannot inherit from itself
- A class cannot have a parent class that already inherits from child
- A class must have a name
- The name of the class must start with an uppercase letter
- The name of the class cannot start with a number
- The class cannot contain multiple methods with the same name
- The class cannot contain multiple attributes with the same name
- Method and attributes may have the same name
- A class can only inherit from a maximum of 1 other class
- A class can have 0 or more features (methods/attributes)

## Method

- A method must have a name
- The name of the method must start with a lowercase letter
- The name of the method cannot start with a number
- A method must have a maximum of one expression
- A method can have 0 to  $n$  parameters

## Attribute

- An attribute cannot be named 'self'
- The name of the attribute must start with a lowercase letter
- The name of the class cannot start with a number
- An attribute can have 0 or 1 expression.

## Case

- Case can contain one to  $n$  case-expressions

## Assignment

- An assignment can only contain one expression

## **2 Description of constraints in stash**

The constraints are defined in the 'constraints' folder within MPS. Multiplicity constraints are defined in the 'structure' folder. Some constraints, such as integers, strings and booleans are set by MPS due to them using the primitive type of MPS.

### **3 Work distribution**

Firstly, we worked individually when figuring out what constraints that the Cool Programming Language had. We all went through the manual to see what each of us came up with. After this we sat down together and created a list of all the unique constraints we had. Once the list was complete, we worked together on one computer and implemented this in the MPS constraint language.