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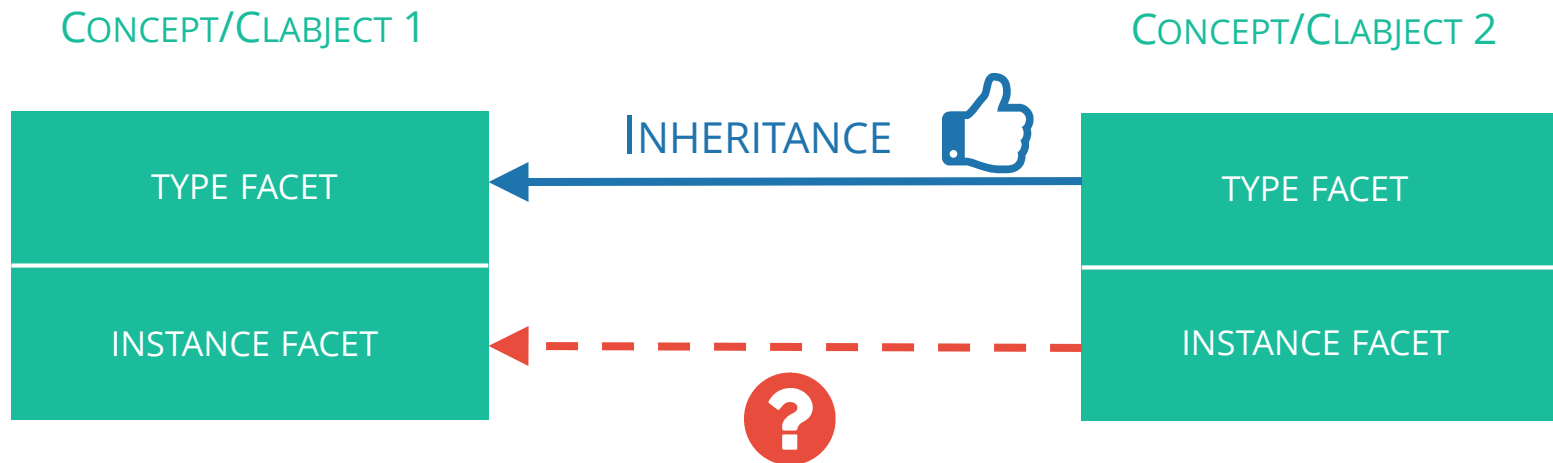
INSTANCE SPECIALIZATION – A PATTERN FOR MULTI-LEVEL META MODELLING

1ST INTERNATIONAL WORKSHOP ON MULTI-LEVEL MODELLING
VALENCIA, SPAIN

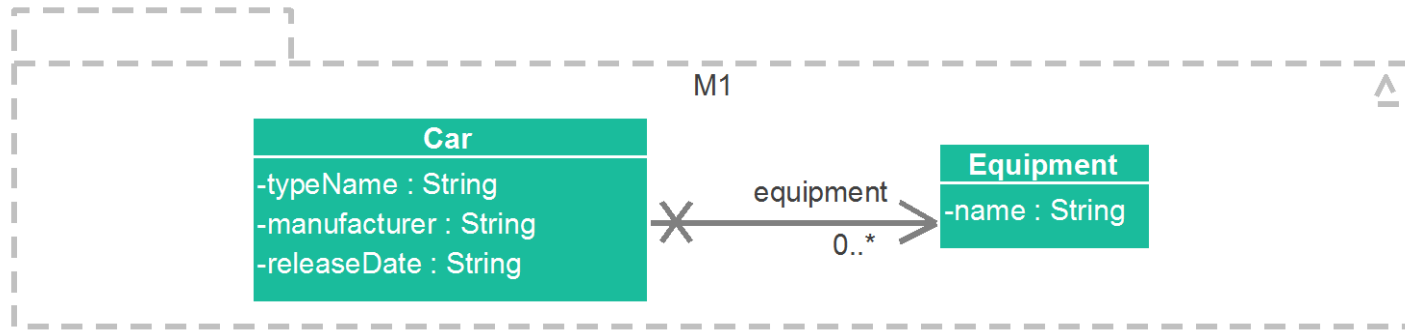
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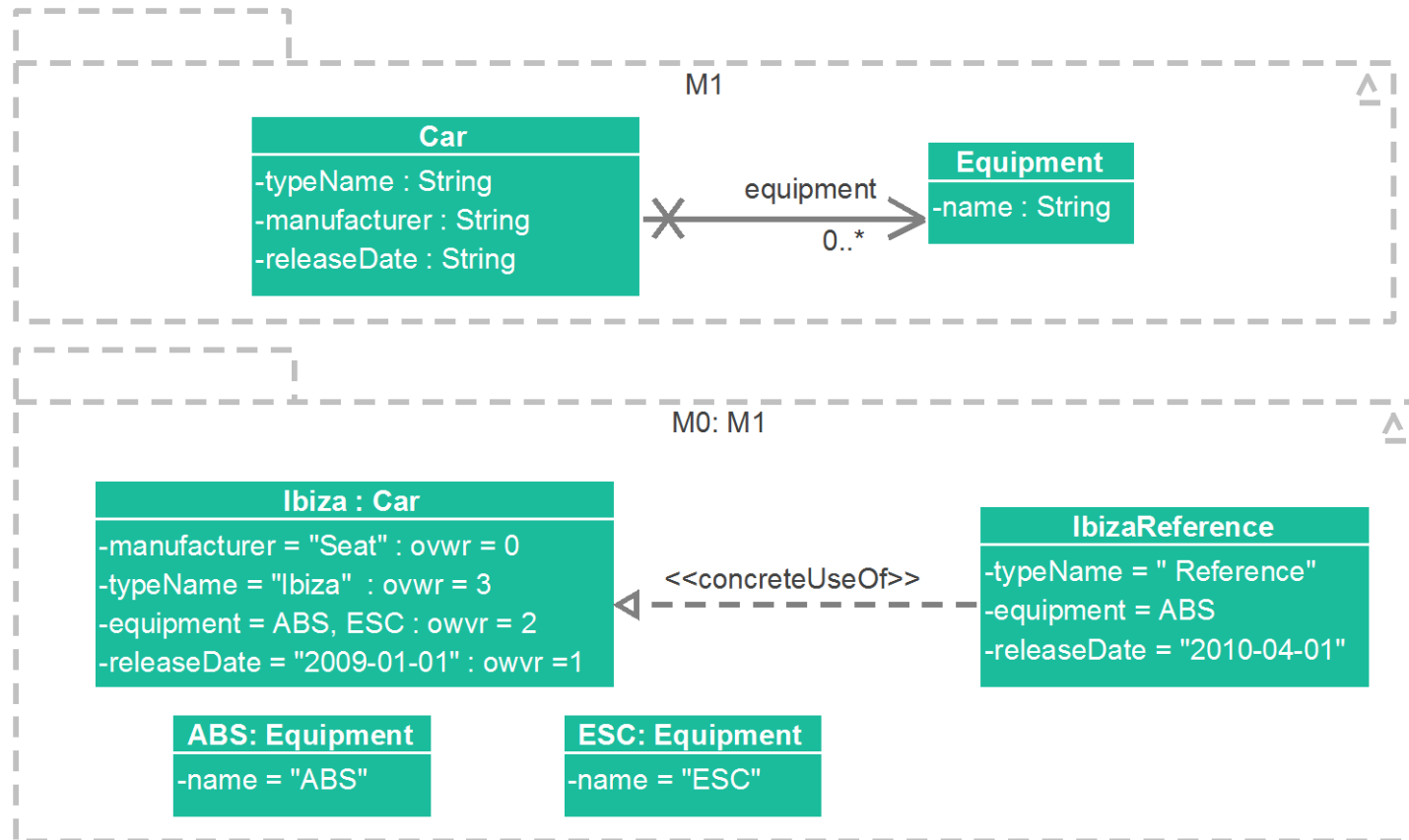
MOTIVATION



EXAMPLE



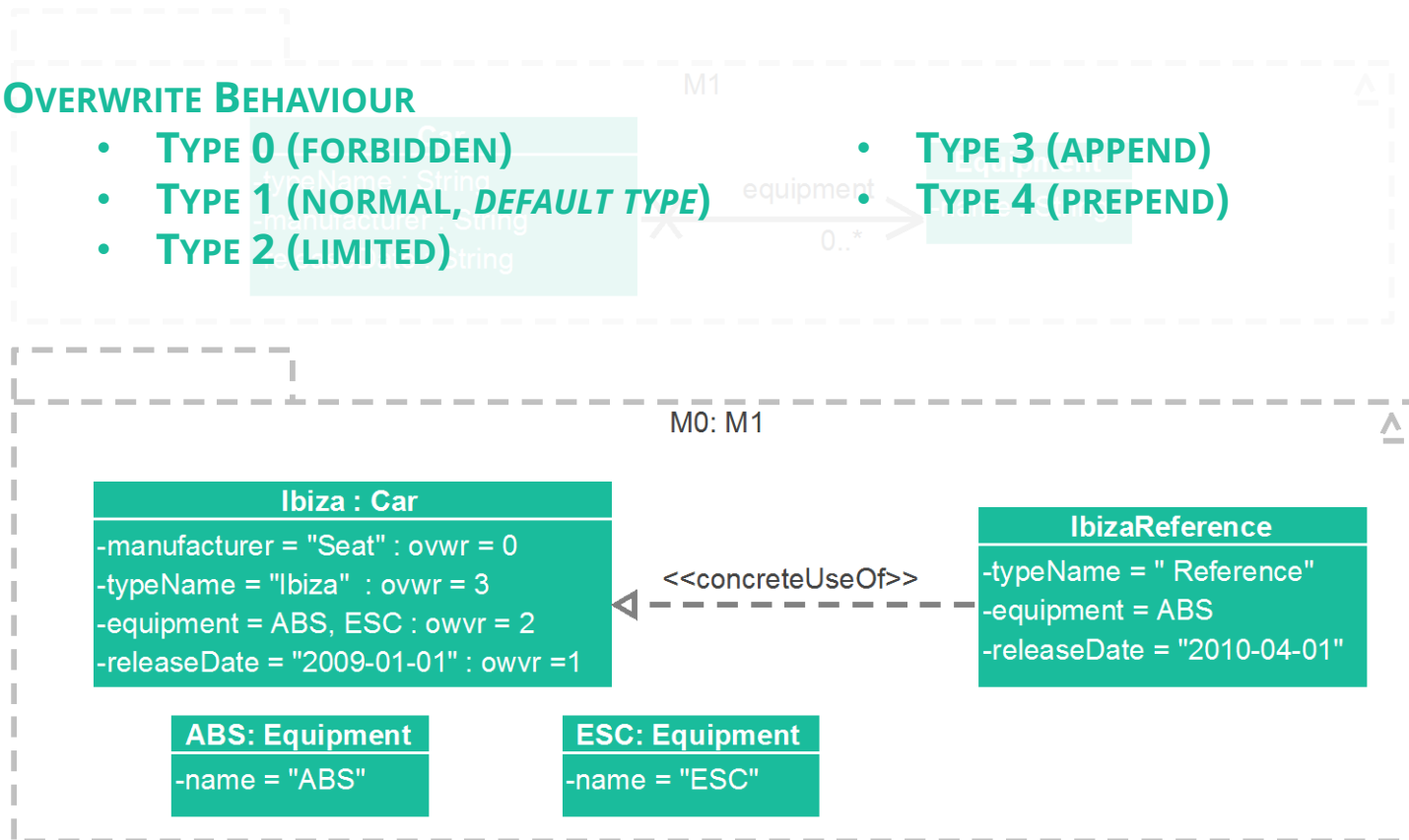
EXAMPLE



OVERWRITE BEHAVIOUR

OVERWRITE BEHAVIOUR

- TYPE 0 (FORBIDDEN)
- TYPE 1 (NORMAL, *DEFAULT TYPE*)
- TYPE 2 (LIMITED)
- TYPE 3 (APPEND)
- TYPE 4 (PREPEND)



MODEL WORKBENCH – A WEB-BASED MODELLING PLATFORM

The screenshot displays the Model Workbench web application interface. The browser address bar shows `localhost:8080/mowb-web/#`. The interface is divided into several panels:

- Workspace Explorer (Left):** A tree view showing the project structure. The selected element is `SampleInstInst` under `LevelTest`.
- Code Editor (Center):** Displays UML-like code for a package `P`. The code includes:


```

      package P
      public abstract concept Type deferredBy 1 extends
      GeneralType partitions
      integer bla
      string test
      concept Other
      0..* GeneralType type
      concept GeneralType partitions Part
      string general
      concept OtherSpecial extends Other
      Part powerInsts
      concept Part
      integer partitioned
      string blubb

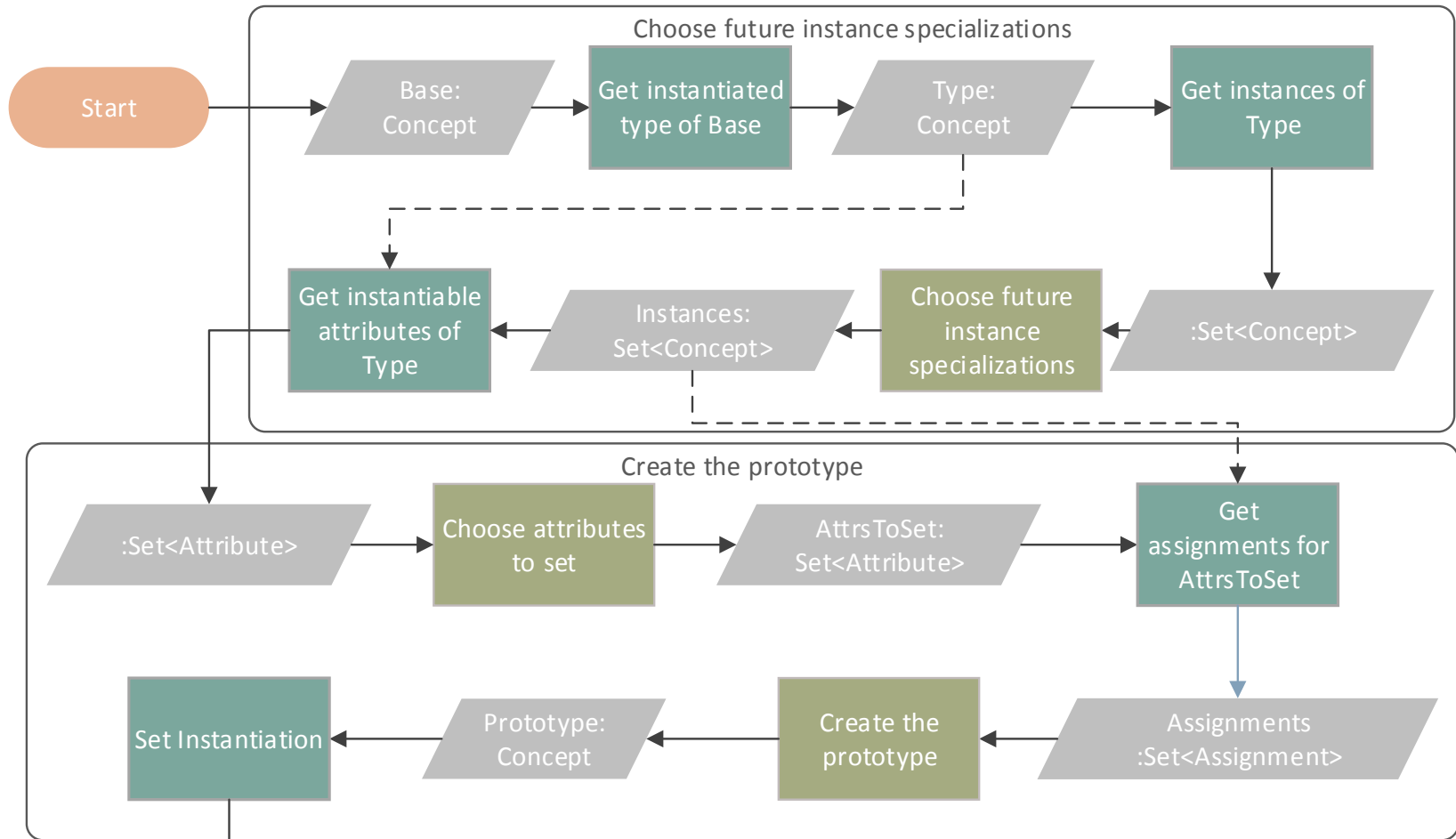
      level SampleInst instanceof Sample
      package PI
      /_global/LevelTest/LevelTest/Sample.P.Type Instance
      test = "Hallo"
      general = "Welt"
      bla = 1
      partitioned = 2
      Other OtherInst
      type = Instance2, Instance
      /_global/LevelTest/LevelTest/Sample.P.Type Instance2
      OtherSpecial OtherInst2
      type = Instance
      powerInsts = InstInst
      GeneralType InstanceGeneral
      general = "Welt"
      blubb = "test"
      partitioned = 1

      level SampleInstInst instanceof SampleInst
      package PII
      Instance InstInst
      
```
- Issues Panel (Bottom Left):** Shows an error message:

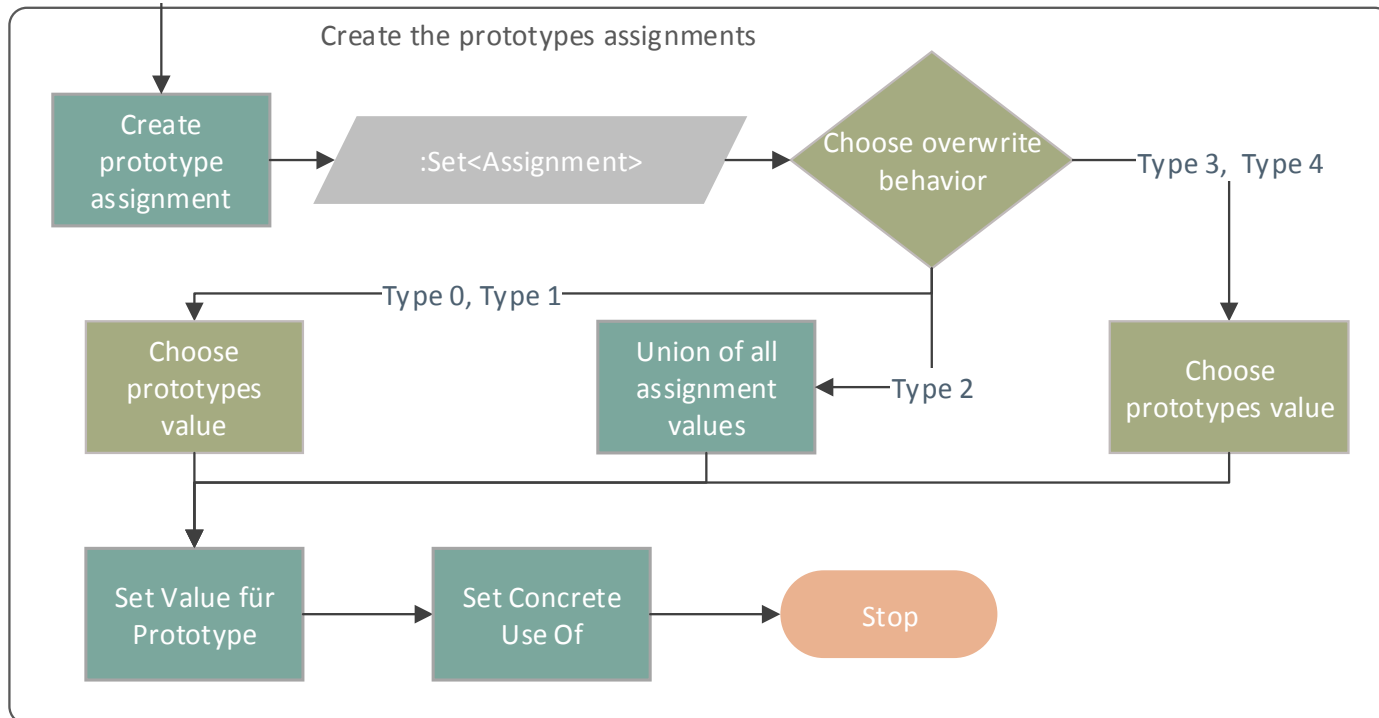

```

      Date: 2014-09-15
      Title: Concept /_global/LevelTest/LevelT
      Error #0
      Time: 09:49:04,443
      Title: Concept
      /_global/LevelTest/LevelTest/SampleIn
      .PI.Instance2 mustn't instantiate the
      abstract concept
      /_global/LevelTest/LevelTest/Sample.P
      type
      Affects: a68292b9-e541-477c-be4c-
      6bf943har32a
      
```
- Operators Panel (Right):** Lists applicable operators such as `Create Powertype For`, `Delete Instantiation`, `Delete Partition`, `Delete Specialization`, `Extract Super Type Operator`, `Introduce Materialization`, `Merge Types`, `Move Instances To Subclass`, and `Move Type To Upper Level`.

EXTRACT PROTOTYPE

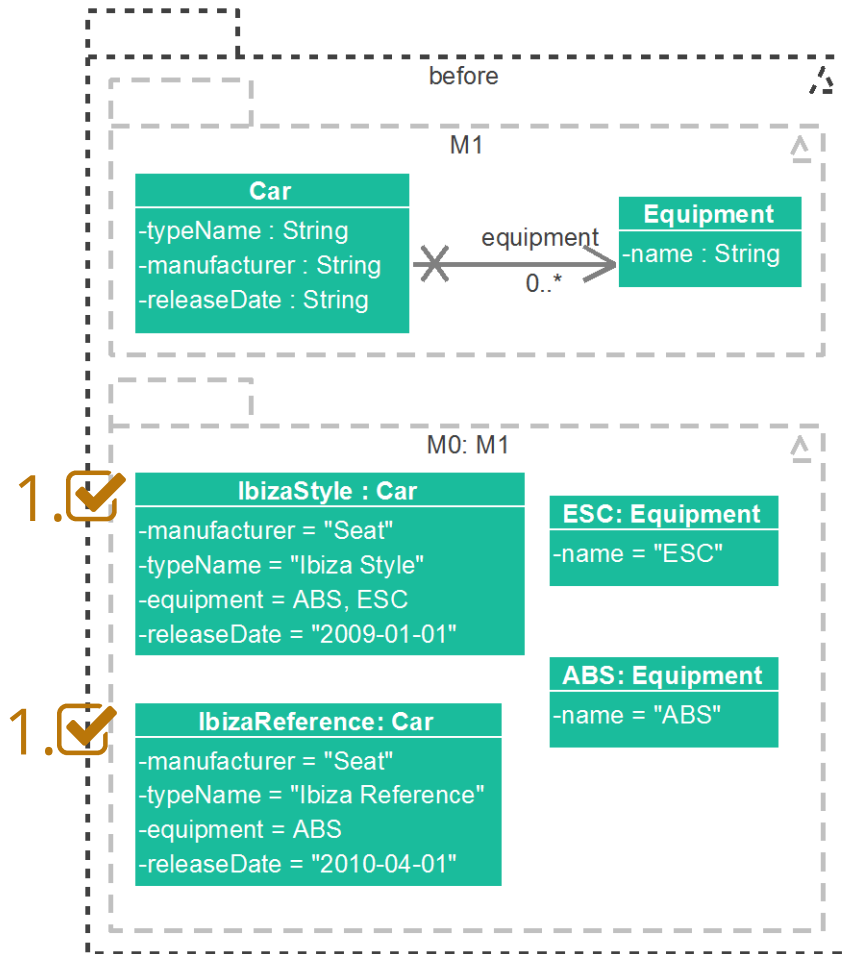


EXTRACT PROTOTYPE – CONT.



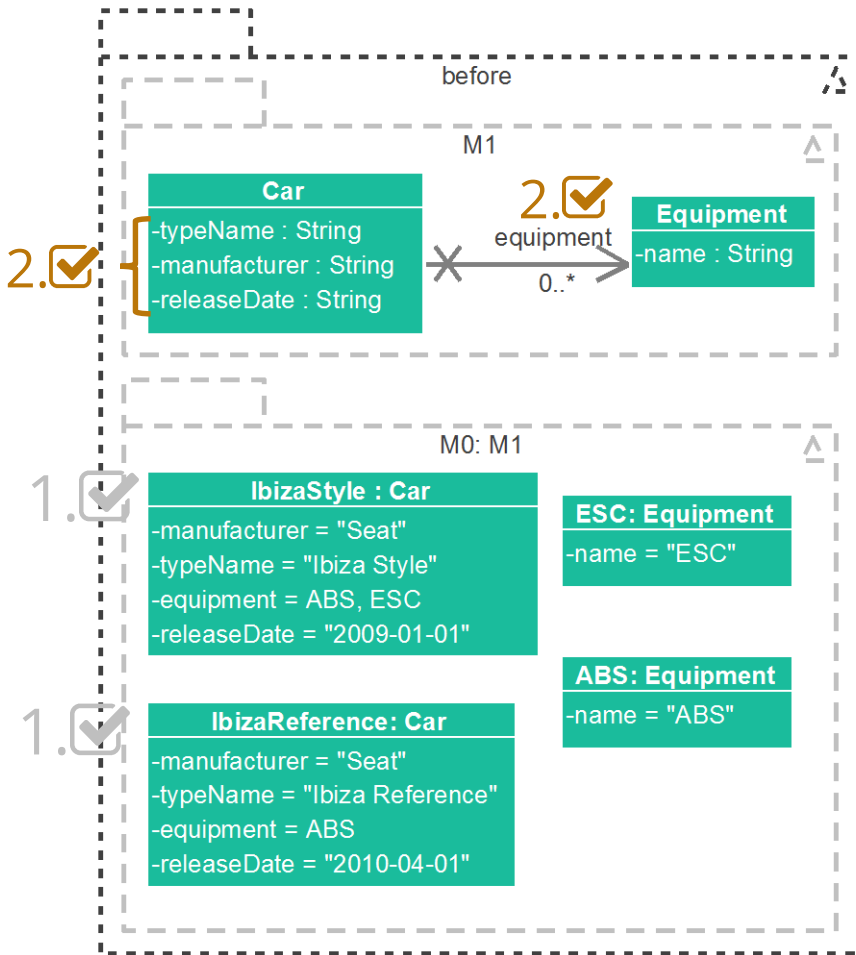
EXTRACT PROTOTYPE EXAMPLE

1. Choose instances for prototype extraction

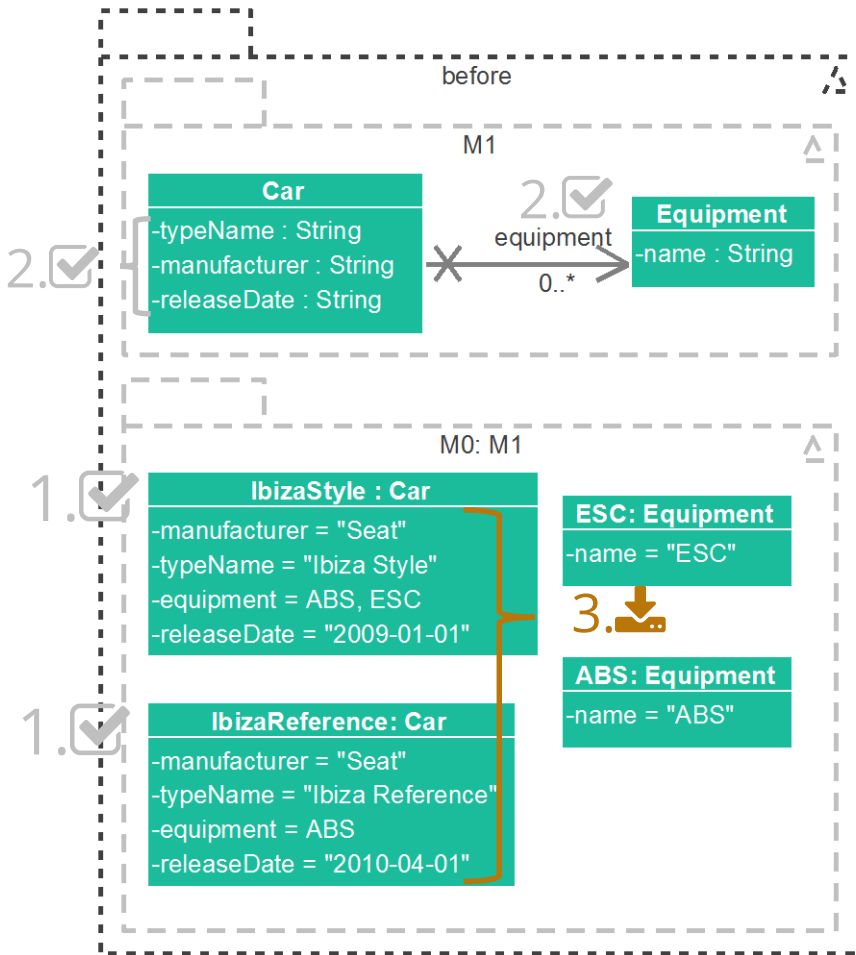


EXTRACT PROTOTYPE EXAMPLE

2. Choose attributes to set on the prototype

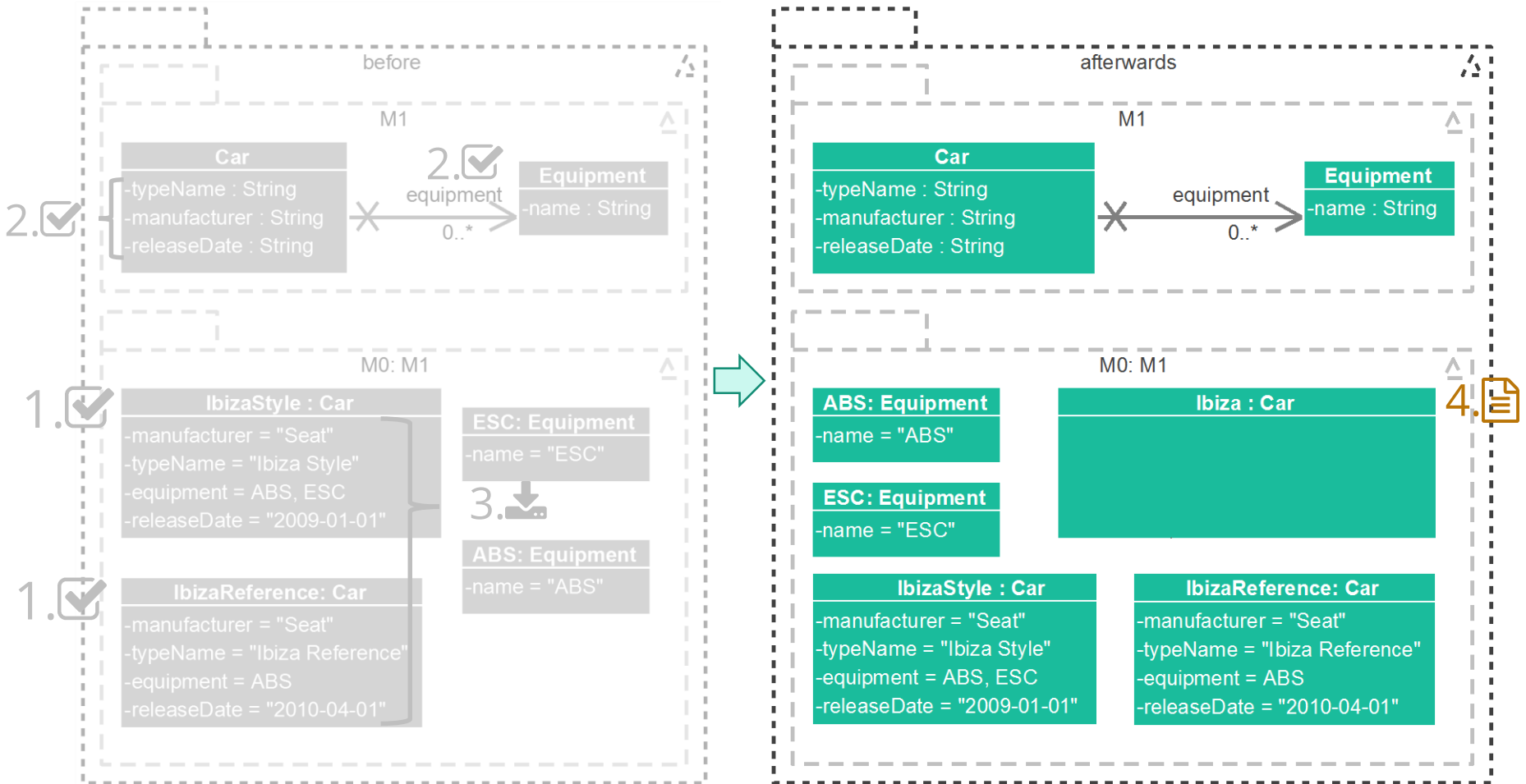


3. Automatic identification of according assignments

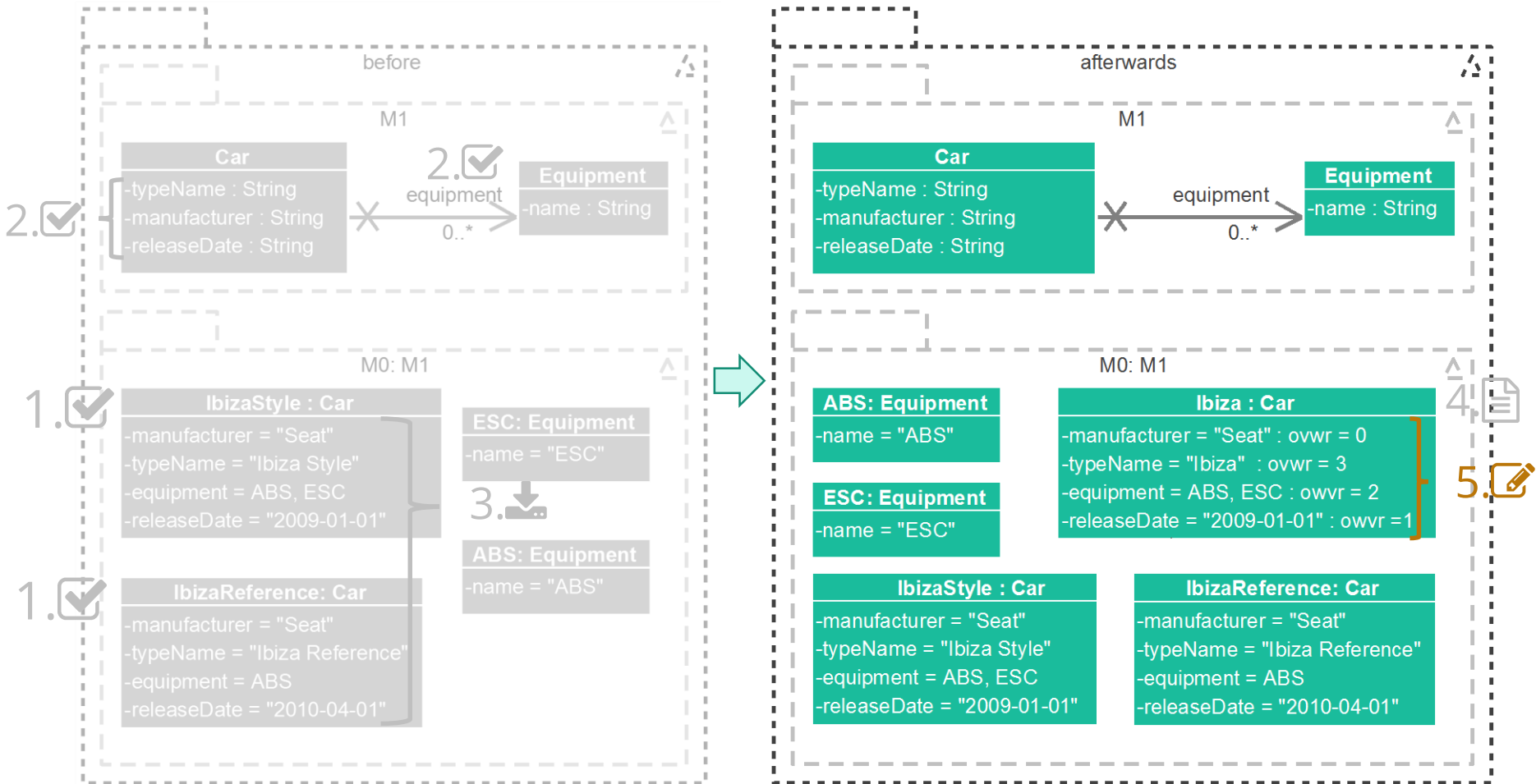


EXTRACT PROTOTYPE EXAMPLE

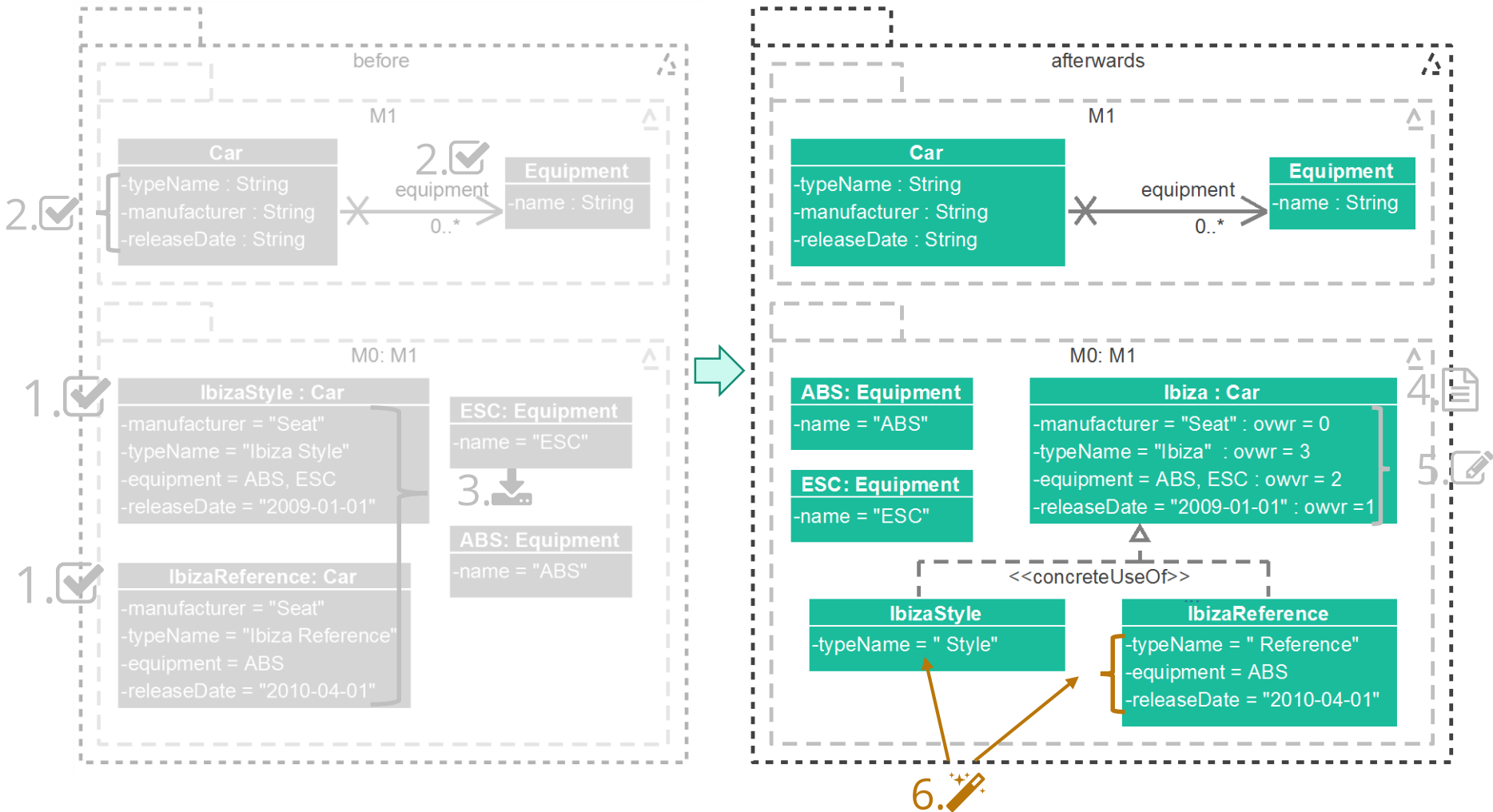
4. Automatic prototype creation



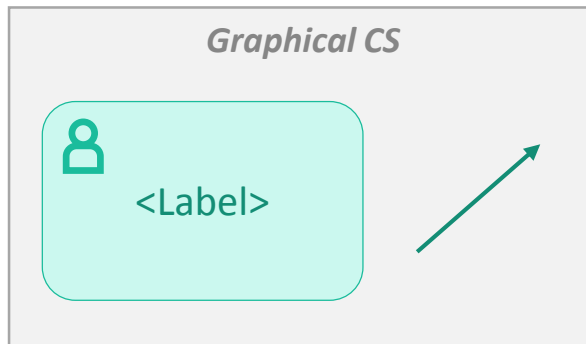
5. Manual specification of the overwrite behaviour and the prototype's values



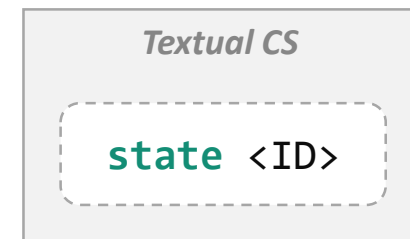
6. Automatic adaption of the original instances' assignments



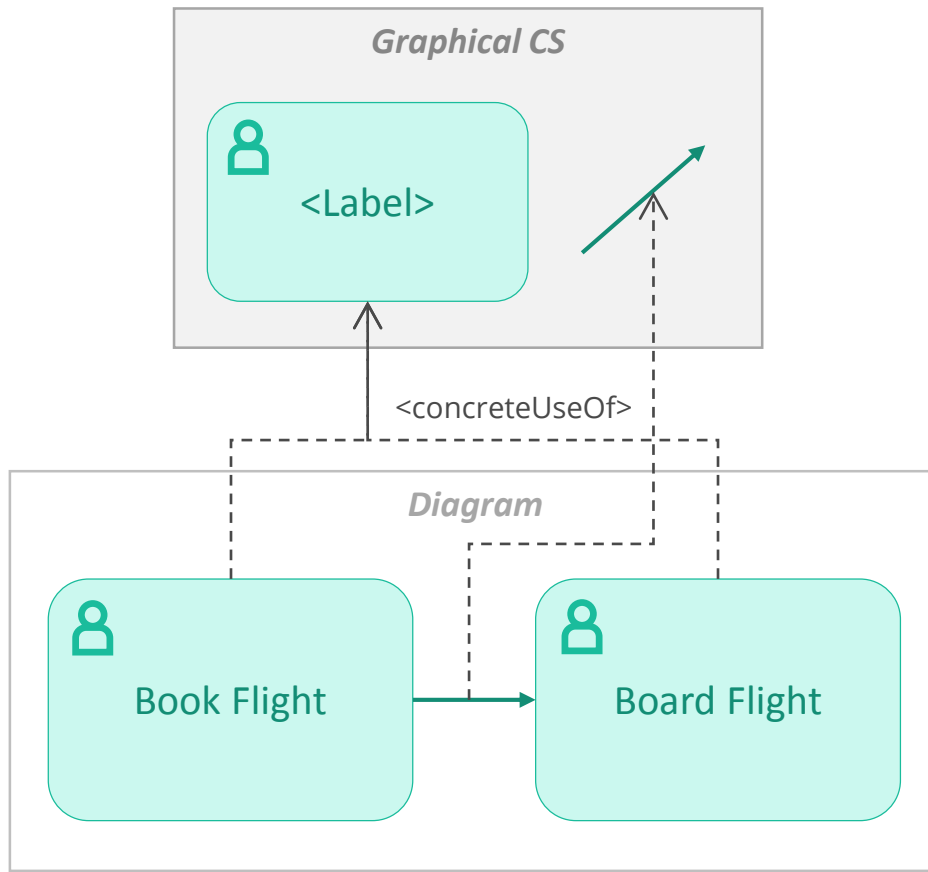
GRAPHICAL



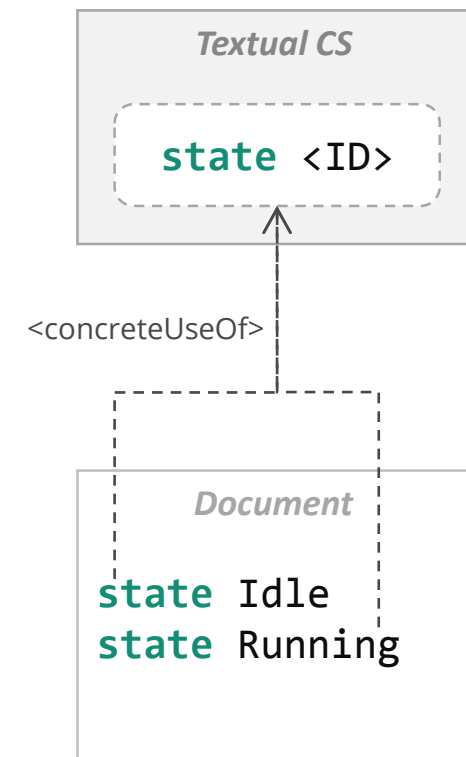
TEXTUAL



GRAPHICAL



TEXTUAL



THANK YOU FOR YOUR ATTENTION!

