

## Building a minimal-invasive model repository for EMF / GMF based diagram editors

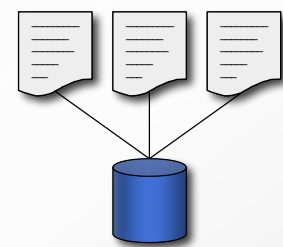
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# Model Repository

- General idea
  - Reuse of model elements
  - Central storage
  - Consistency
  - Persistent views
- Use of EMF / GMF toolchain for diagram editor generation
- Desire to implement a repository with minimal or no change to the EMF / GMF toolchain



# Graphical Modeling Framework

- GMF maps 1 model element to 0..1 diagram elements
- Type based mapping
- Diagram root element contains elements
- One diagram element is insufficient for big models
- Mapping of 1 model element to 0..n diagram elements required

## GMF II

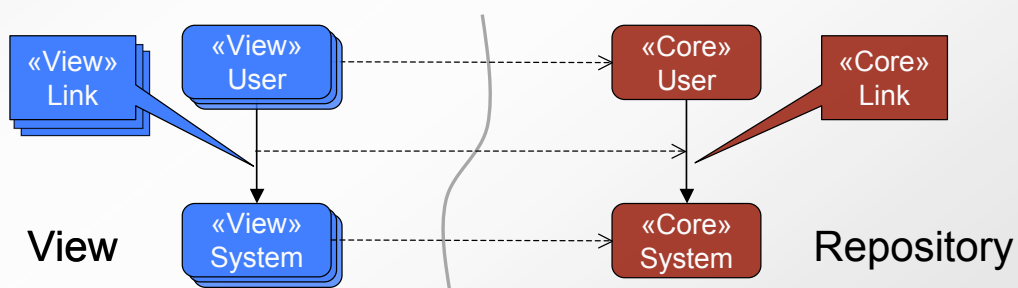
- If the mapping is 1 to 0..n, a direct mapping is not possible
  - instances could be stored in a map.
- Instance based diagrams needed

# Instance based diagrams

- In an instance based diagram, only a subset of repository elements is present
  - Only selected instances of a type are displayed
  - Opposed to type based standard GMF diagrams, where all elements are displayed
  - The diagram root does not hold all model elements
- Many diagrams are based on the same repository

# Introducing Facades

- Divide your metamodel into two parts: **Core** and **View**
- **Core** and **View** elements are uniquely identifiable
- The GMF Diagram element is a **Core** element
- Every diagram element is a **View** element
- Every **View** element is a *facade* for a **Core** element and references that **Core** element



# Arising challenges

- Facades need to resolve the core elements
  - Uniquely identify model elements
- Element creation
  - For every facade, a core element has to be created
- Resolving edges connecting any two nodes
  - View Elements keep references to their core counterparts
  - An edge in the core package knows the core elements but not the view elements in the editor
  - Additional tooling for resolving edges
- Additional tooling for repository access
  - Views, Wizards, ...

# Remove / Delete

- **Remove**: deletion of a facade only.
- **Delete**: deletion of a facade and the corresponding core element.
  - only possible, if no facades for a core element remain
  - not feasible: EMF only supports references
- Solution: always use **remove** and install a garbage collector.

# Thank you.

References?  
*Eclipse Article is in the making.*