Criteria for identifying pattern usages

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The following can be used as criteria for identifying if particular transformation patterns are present in a transformation:

Phased Construction Non-cyclic data dependencies within a transformation or rule set. At least one case where a rule r precedes a rule r' in execution order and writes a target entity T which r' reads.

Structure Preservation Separate source and target models. A group of rules each map 1 source entity to 1 target entity, with no source entities used in 2 or more rules, and no target entities used in 2 or more rules.

Entity Splitting (Horizontal) Two rules map the same source entity to different target entities, with disjoint application conditions.

Entity Splitting (Vertical) A rule maps one source entity to a group of two or more target entities.

Entity Merging Two rules each create/update instances of the same target entity, using different source entities.

Map Objects before Links One rule r maps a source entity E to target entity F prior to a rule r' which maps association end features of E to corresponding features of F.

Auxiliary Metamodel The transformation uses additional entities and/or features which are not defined in the source or target metamodels.

Recursive Descent Transformation rules use invoked subordinate rules/operations to carry out mappings.

Rule Inheritance A rule is defined as a specialisation of another.

Object Indexing Objects are looked-up by means of an index or key value.

Restrict Input Ranges A rule restricts its source elements to be in a subset of a source entity type, based on other necessary application conditions.

Remove Duplicated Expression Evaluations A rule or function is invoked from two or more distinct locations.

Implicit Copy A transformation uses an implicit mechanism to copy source entity data to target entities.

Text Templates Text-generation rules use text templates which combine fixed text with variable text derived from source entity data.

Simulating Universal Quantification A logical condition $not(X \rightarrow exists(not(P)))$ is used in a rule.

Transformation Chain The transformation involves the sequential composition of two or more subtransformations.