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Advanced Software Engineering – Task 2, TaskID: EMF

Abstract: This document is used to collect all assumptions/considerations used to develop the necessary artifacts of this task and also acts as the result report.

Assumptions and considerations are used in the following as synonymous, meaning an own interpretation of the actual situation has been applied

Implementation Step a: "Implement the model using EMF"

For the modelling, Eclipse IDE including EMF has been used in the currently available version (Eclipse Mars, available online https://eclipse.org/modeling/emf/).

The initial model in task 1 has been already developed in EMF. In light with step 2 of this task, the initial model has been simplified:

    a. Introduce Wikipedia class and composition links
    b. Simplify user hierarchy
    c. Add derived attributed and inverse, derived relations (author -> revisions)
    d. Cardinalities have been relaxed
    e. registrationDate for users and wikiTime (as the current time in the Wikipedia) have been introduced at the respective nodes

Implementation Step b: "Implement OCL rules"

1. At all times, there must be at least one sysop and one administrator accounts active before users canbe registered.
   This has been solved with an invariant OCL, on Wikipedia level. In case a registered user exists in the model, at least one :Admin and one SysOp user must also be available.

2. A newly registered user is autoconfirmed one week after his registration and after at least 20 edits. This has been implemented by adding derived attributes and properties for the user context. The authorship relation to revisions is used for the content restriction, the wikidate and registrationdate are compared for the necessary timeframe. To overcome the limitation of non-existing date functions in OCL, the date is represented as Integer, following the Julian Calender approach (https://en.wikipedia.org/wiki/Julian_calendar, http://www.onlineconversion.com/julian_date.htm).
   A restriction is not implemented, as the userType is a derived attribute that is dynamically set based on the above derived attribute. The only check for validaty is done that the dates are correct (wikitime must be larger then registrationtime.

3. Only autoconfirmed users (and above) are allowed to create new content items (articles, project pages,talk pages), and only administrators (and above) are allowed to delete them.
   Similar as above, a derived attribute that represents the functionality by user, depending on the user type.

4. Suggest and implement one more constraint based on your comprehension of the Wikipedia model. Explain why you chose this particular constraint.
   Proposal to have a quality criteria/constraint: in average 1 edit per user or above means high quality model.