Author Models Textually – No Matter How Big They Are!

Stefan Winkler
Independent Software Developer and IT Consultant
CDO Committer

stefan@winklerweb.net

@xpomul on Twitter
“[An] advantage that textual representations have [...] is that expert users often find them faster and easier to modify, and that there is a rich set of existing tooling for dealing with text files”

(From the TMF project proposal)
learn more:

tonight @ 5pm

Grand Peninsula A
Combining &
Xtext

Diagram:
- FileEditorInput
  - IFile
  - XtextResource
  - EObject [root]
  - XtextDocumentProvider
  - XtextDocument
  - XtextEditor
  - Parser
  - Serializer
  - text file

Code:
```plaintext
Canvas (-1.0 -1.0 .. 1.0 1.0) {
  Color black (0.0,0.0,0.0);
  Color darkblue (0.0,0.0,0.7);
  Color green (0.0,0.5,0.0);
  Color yellow (1.0,1.0,0.0,0.8);
  Color red (1.0,0.0,0.0,0.0);
  Circle at 0.1 0.125 radius 0.625 line black fill darkblue;
  Circle at -0.5 0.4 radius 0.5 line black fill red;
  Circle at -0.5 -0.5 radius 0.5 line black fill yellow;
}
```

xtext-file.gfx

Project Explorer:
- test
  - xtext-file.gfx

CDO
The Model Repository
Editing

- **CDO:**
  - internally assigns ID to each EObject
  - change deltas on object and EStructuralFeature level

- **Xtext:**
  - document is completely re-parsed
  - EObject-hierarchy is recreated
We need a bridge!
EMF Compare to the rescue!

- CDO server
  - CDO Store
  - CDOLobEditorInput
    - CDOResource
      - EObject [root] [original]
      - EObject [root] [modified]
  - CDOSession
  - CDOTransaction
    - Parser
    - Serializer
      - XtextResource
      - CDOXtextDocumentProvider
        - XtextEditor
        - XtextDocument

EMF Compare
CDO-Xtext

- enables textual editing of models stored in CDO
- uses EMFCompare to detect changes
- Limitations:
  - always uses canonical formatting using Xtext formatter (looses individual formatting during EMF serialization)
  - Change detection is not exact (depends on distance function)
- MWE2 fragments and example code available on GitHub: https://github.com/xpomul/cdo-xtext