

f IDE eature

Development of Eclipse Plug-Ins

Introduction to SE Projects | Thomas Thüm, Tobias Heß | January 29, 2020

Development of Eclipse Plug-Ins

The facts

- **What is the subject?**

Eclipse, integrated development environments, plug-in development, black-box frameworks, design patterns

- **How is development organized?**

agile software development, extreme programming, pair programming, story cards, code reviews, test-driven development, unit tests, GUI tests, git, forking, pull requests, Github, continuous integration, Travis

- **Who are we looking for?**

inquiring students with good Java skills

Development of Eclipse Plug-Ins

Results from previous years (in Braunschweig/Magdeburg)

The screenshot displays the Eclipse IDE interface for a feature model. The main window shows a hierarchical tree of features and constraints for a 'Movie' model. The tree structure is as follows:

- Movie
 - Actors
 - Rocky
 - Sharknado
 - AdultMovie
 - Romance
 - Comedy
 - Action
 - Documentary
 - Male
 - LeonardoDiCaprio
 - SylvesterStallone
 - LeonardoDiCaprio
 - ScarlettJohansson
 - MeghanFox
 - BlakeLively
 - MichelleYeoh
- Awards
 - Oscar
 - GoldenGlobe
 - DeutscherFilmpreis
 - AcademyAward

The 'Female' constraint is highlighted in green, and a context menu is open over it, showing the following options:

- Create Constraint
- Focus on contained Features
- Focus on Explanation
- Edit Constraint
- Delete (Del)

The bottom of the image shows a video player interface with a progress bar at 1:19 / 3:47.

Development of Eclipse Plug-Ins

Results from previous years (in Braunschweig/Magdeburg)

The screenshot displays the Eclipse IDE interface with the title "New Layout Algorithms for Feature Diagrams (v3.6.0)". The main workspace shows a Feature Diagram for an "Elevator" model. The diagram is a tree structure where the root node is "Elevator", which branches into "Behavior", "VoiceOutput", "CallButtons", "Security", and "Safety". "Behavior" further branches into "Modes" and "Services". "Modes" includes "Sabbath", "FFD", and "ShortestPath". "Services" includes "RushHour", "FloorPriority", and "PersonPriority". "VoiceOutput" branches into "DirectedCall" and "UndirectedCall". "CallButtons" branches into "DirectedCall" and "UndirectedCall". "Security" branches into "Permission" and "Overloaded". "Permission" includes "FloorPermission" and "PermissionControl". A legend on the right side of the diagram defines the symbols: Mandatory (filled circle), Optional (open circle), Or (circle with a vertical line), Alternative (circle with a triangle), Abstract (circle with a square), and Concrete (circle with a rectangle). Below the diagram, there is a note: "CallButtons v Sabbath", "DirectedCall = Sabbath", and "UndirectedCall = FFD v ShortestPath". The right-hand side of the IDE shows the "FeatureIDE Outline" view, which lists the nodes of the diagram in a hierarchical tree structure. The bottom of the IDE shows a toolbar with various icons and a status bar with a play button and the text "0:41 / 1:08".

Development of Eclipse Plug-Ins

Results from previous years (in Braunschweig/Magdeburg)

The screenshot displays the Eclipse IDE interface. On the left, a text editor window titled 'myDocument.tex' contains the following LaTeX code:

```
1 \input{head.tex}
2 \begin{document}
3 \iffamily
4 \input{myFeatureDiagram.tex}
5 \end{document}
```

On the right, a UML class diagram is shown. The diagram has a 'Root' node at the top, which branches into four nodes: 'Content_Handler', 'Base', 'User_Interface', and 'OS'. 'Content_Handler' has three subclasses: 'HTML', 'TXT', and 'LATEX'. 'User_Interface' has two subclasses: 'GUI' and 'Commandline'. 'OS' has two subclasses: 'Windows' and 'Linux'. A legend on the right side of the diagram explains the symbols: a square for 'Abstract', a rectangle for 'Concrete', a circle for 'Mandatory', a triangle for 'Or', a diamond for 'Alternative', and a box with a vertical line for 'Collapsed Nodes'. The 'GUI' node is marked with a '10' in a box, indicating a collapsed node.

At the bottom of the IDE, a console window shows the following output:

```
Meldungen | Log | Vorschau | Suchergebnisse
Prozess gestartet: pdflatex -synctex=1 -interaction=nonstopmode "body".tex
Prozess endete normal
Prozess gestartet: pdflatex -synctex=1 -interaction=nonstopmode "body".tex
Prozess endete normal
```

The status bar at the bottom indicates 'Seite 1 von 1', '155', 'UTF-8', and 'Fertig'.

Development of Eclipse Plug-Ins

Screencasts available on Youtube

The screenshot shows the YouTube channel page for 'FeatureIDE', which has 74 subscribers. The channel is subscribed to. The 'Uploads' section displays a grid of six video thumbnails with their titles and view counts:

- LaTeX/TikZ Export for Feature Diagrams and...** (4:35, 34 views • 3 months ago)
- New Layout Algorithms for Feature Diagrams (v3.6.0)** (1:09, 33 views • 3 months ago)
- Extended Menu Bar in Feature Diagram...** (1:23, 222 views • 1 year ago)
- Comfortable Creation and Selection of Features (v3.6.0)** (1:41, 126 views • 1 year ago)
- A New View for Constraints (v3.6.0)** (3:48, 212 views • 1 year ago)
- VariantSync: Change Synchronization from...** (1:08, 110 views • 2 years ago)

The 'Created playlists' section shows five playlists:

- v3.3.0 (April 2017)** (4 videos, VIEW FULL PLAYLIST)
- v3.5.0 (April 2018)** (3 videos, VIEW FULL PLAYLIST)
- v3.6.0 (August 2019)** (4 videos, VIEW FULL PLAYLIST)
- Software Project @ University of Magdeburg (September 2018)** (2 videos, VIEW FULL PLAYLIST)
- Team Project @ TU Braunschweig (October 2018)** (3 videos, VIEW FULL PLAYLIST)
- VariantSync** (5 videos, VIEW FULL PLAYLIST)

Development of Eclipse Plug-Ins

Feedback by participants (in German)

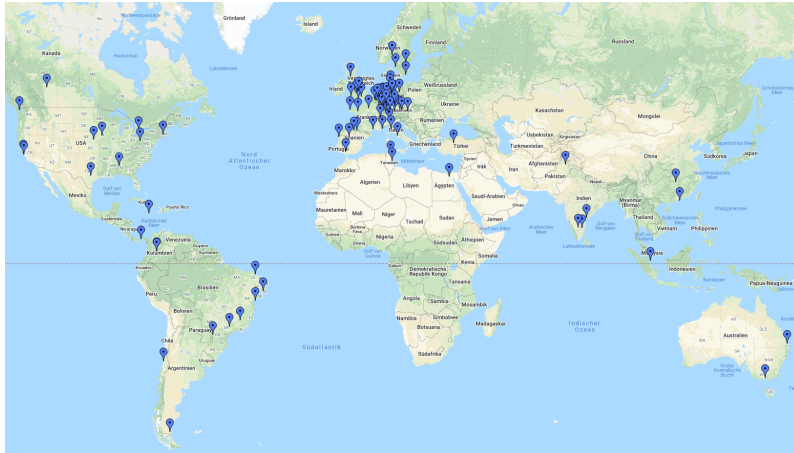
„Man wird sehr schnell lernen, wie man produktiv arbeitet, welche Probleme man zu bewältigen hat und ob seine Arbeit wirklich gut ist. Und das Beste ist, dass man etwas handfestes erstellt! Das Projekt hat Zukunft und auch viele Interessenten - es ist wirklich ein Projekt was die Arbeit und Zeit wert ist.“

„Insgesamt, hat es mir viel gebracht und ich kann es jedem weiterempfehlen. [...] Man arbeitet an einem großen, bestehendem Projekt, dass auch tatsächlich eingesetzt wird. Man lernt etwas darüber sich in fremden Code zurecht zu finden.“

„Ich würde dieses Projekt jedem Studenten, mit genügend Java Kenntnissen und Willen zum Vertiefen dieser Skills, empfehlen.“

FeatureIDE is used world-wide

Hundreds of support requests between 2007 and 2020



Interested?

Get more information on our project page



<https://www.uni-ulm.de/index.php?id=101458>