Building and maintaining form-based UIs for data entry efficiently

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Data conforms to a domain-specific data model
Data is often viewed/edited in a form-based UI
Data model needs to be mapped to UI
Modeling the UI

1. Data Binding with Controls
2. Modeling Structure with Layouts
Modeling UI Data Binding with Controls

Domain Model

View Model

UI

Domain Model References
Modeling UI Structure with Layouts

View Model

- Domain Model Instances
- User View Model
  - UserView
    - HorizontalLayout
    - VerticalLayout Left Column
      - Control firstName
      - Control weight
      - Control nationality
      - Control timeOfRegistration
      - Control active
    - VerticalLayout Column Right
      - Control lastName
      - Control heigth
      - Control gender
      - Control dateOfRegistration
      - Control eMails

UI

Maximilian Kögel [User]

- First Name: Maximilian
- Last Name*: Kögel
- Weight
- Gender: Male
- Date Of Birth: dd.MM.yyyy
- Time Of Registration: 27.10.2013

Standard View
Extensibility and Adaptability

- Custom Controls
  - e.g. Email-Control

- Custom View Model Elements and Renderers
  - e.g. Group
Custom Control: Email

![Image of custom email control]
Custom View Model Element

- Define new view model element in Ecore
  
  ![Ecore File](platform/resource/org.eclipse.emf.ecore.view.group.model/model/group.ecore)
  
  ![Ecore File](platform/resource/org.eclipse.emf.ecore.view.model/model/view.ecore)

- Generate model and edit plugins
- Create a Renderer

View Model Element  ➔  Renderer

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Exchangeable UI Technology

- UI Model is independent of Renderers
- Only renderers are UI technology dependent
- Renderers can be replaced
- Allows for parallel use of different UI technologies
- Existing renderers:
  - RCP/SWT
  - Web based on RAP
  - JavaFX (demo only)
Web-Renderer based on RAP
When to use/not use of UI Modeling

• Large Domain Model
• Many different Views
• Frequent Domain Model changes
• Homogenous UI
• UI Technology Independence
• Improved Customer Involvement
  • Fast Turnaround + Rapid Prototyping
  • Easy-to-grasp UI concepts
More Information

• Current Release 1.1: Minimal public view model API
• Roadmap:
  • Expose more view model API
  • JavaFX Renderer
  • Tooling
• **EMF Client Platform:** [http://eclipse.org/emfclient](http://eclipse.org/emfclient)
• Twitter: #emfcp [https://twitter.com/EMFCP](https://twitter.com/EMFCP)
Backup Slides
JavaFX Renderer
Embedding the editor
What is EMF?

“The EMF project is a modeling framework and code generation facility for building tools and other applications based on a structured data model. From a model specification described in XMI, EMF provides tools and runtime support to produce a set of Java classes for the model, along with a set of adapter classes that enable viewing and command-based editing [...]”

Source: http://www.eclipse.org/emf
What is EMF Client Platform?