Zwischenvortrag der Diplomarbeit

Design and Evaluation of User-Interfaces for Mobile Applications Development

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- Introduction
  - Mobile Applications Development
  - Related Work and Literature
  - Thesis Problem Statement
  - Goals

- Realization
  - Preparation
  - Planned Implementation
  - Design Ideas

Mobile Application Development:

- Definition: Development of software for mobile devices
- Motivation
    – Opened Application Development Interfaces (API) of mobile devices
    – Creation of own, novel software for mobile devices
    – Discovery of new ideas generated by end-users
- Problems
    – Only little support for non-programmers
    – Little experience in mobile applications development
    – Specific constraints of mobile devices (screen size, CPU power, connectivity etc.)

Related Work and Literature

- Integrated Development Environments (IDE) Supporting Mobile Application Development
    - EclipseME
    - NetBeans → Mobility Pack
    - XCode → GUI-Framework Cocoa
    - Android → DroidDraw
- Modeling Tools
    - MetaEdit+
    - SMS
    - IdealXML
    - Mobile application modeler from SAP
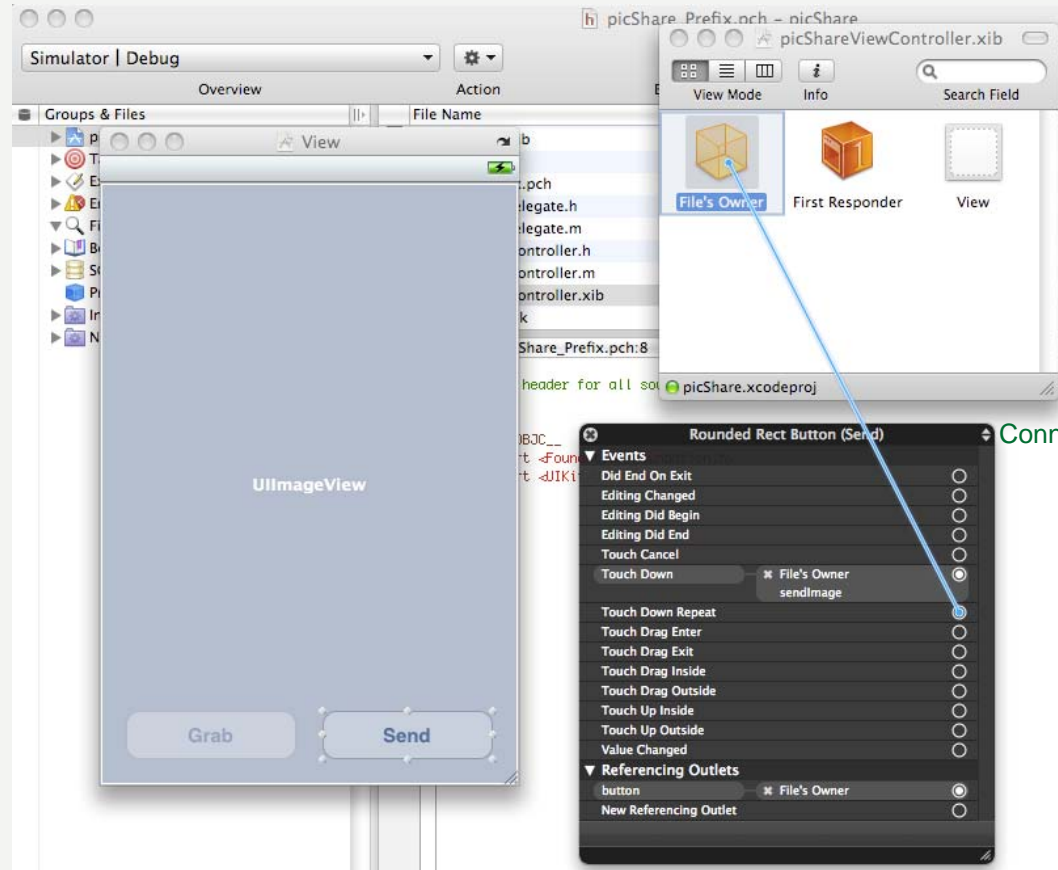- Guidelines for Designing User Interfaces
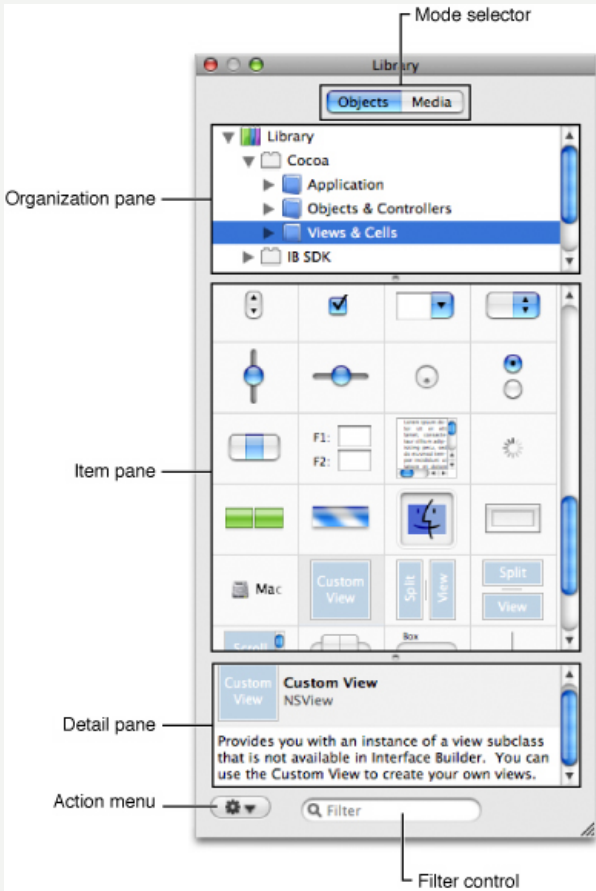
Netbeans Mobility Pack 5.5

http://www.netbeans.org/kb/55/quickstart-mobility.html
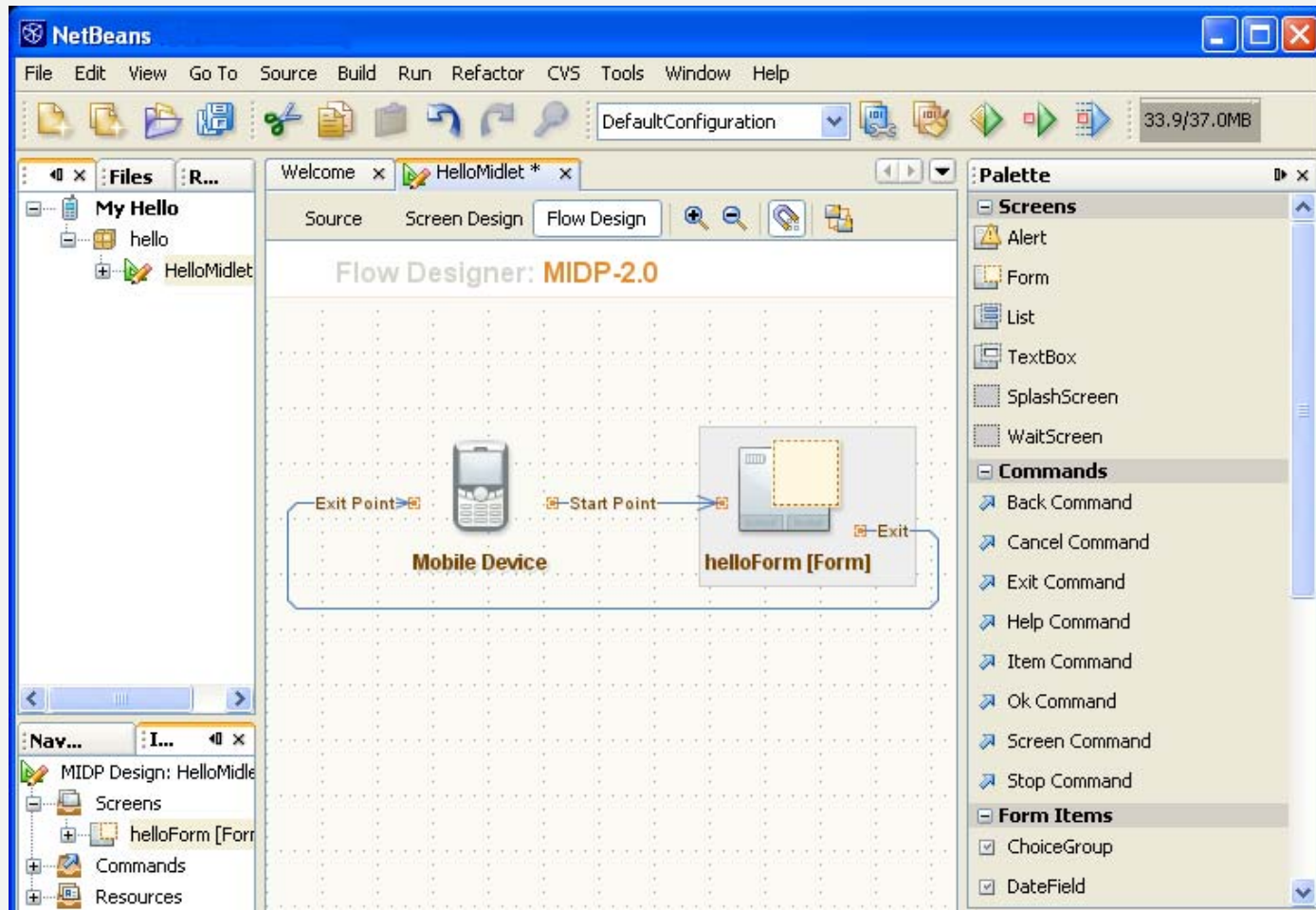
XCode - InterfaceBuilder with GUI-Framework Cocoa

Library

Window callout

Connections panel

http://www.jroller.com/mert/entry/iphone_dev_binding_methods_to

http://developer.apple.com/documentation/developertools/conceptual/IB_UserGuide/ApplicationBasics/ApplicationBasics.html
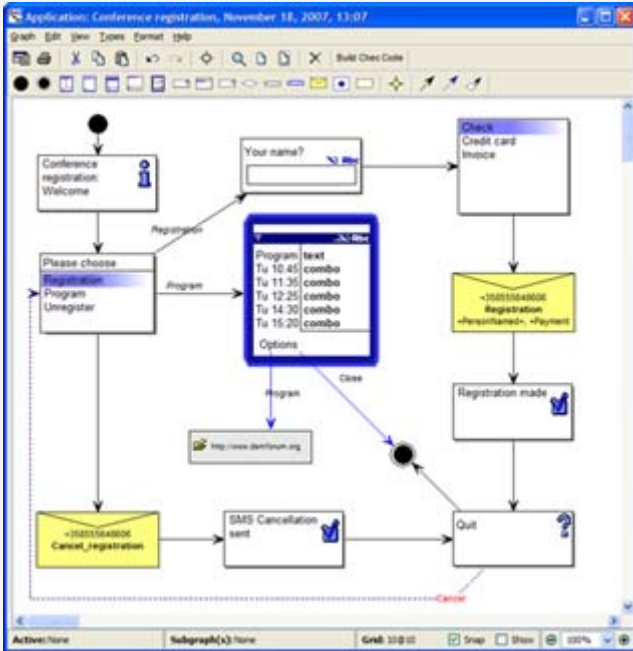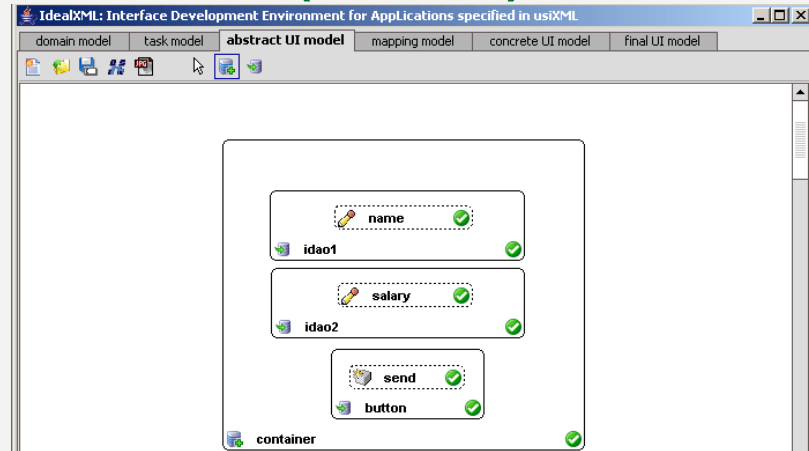
Android with DroidDraw Beta

http://droiddraw.org

MetaEdit+ and IdealXML (UsiXML)

MetaEdit+ Symbian series60

http://www.metacase.com/cases/phone_example.html
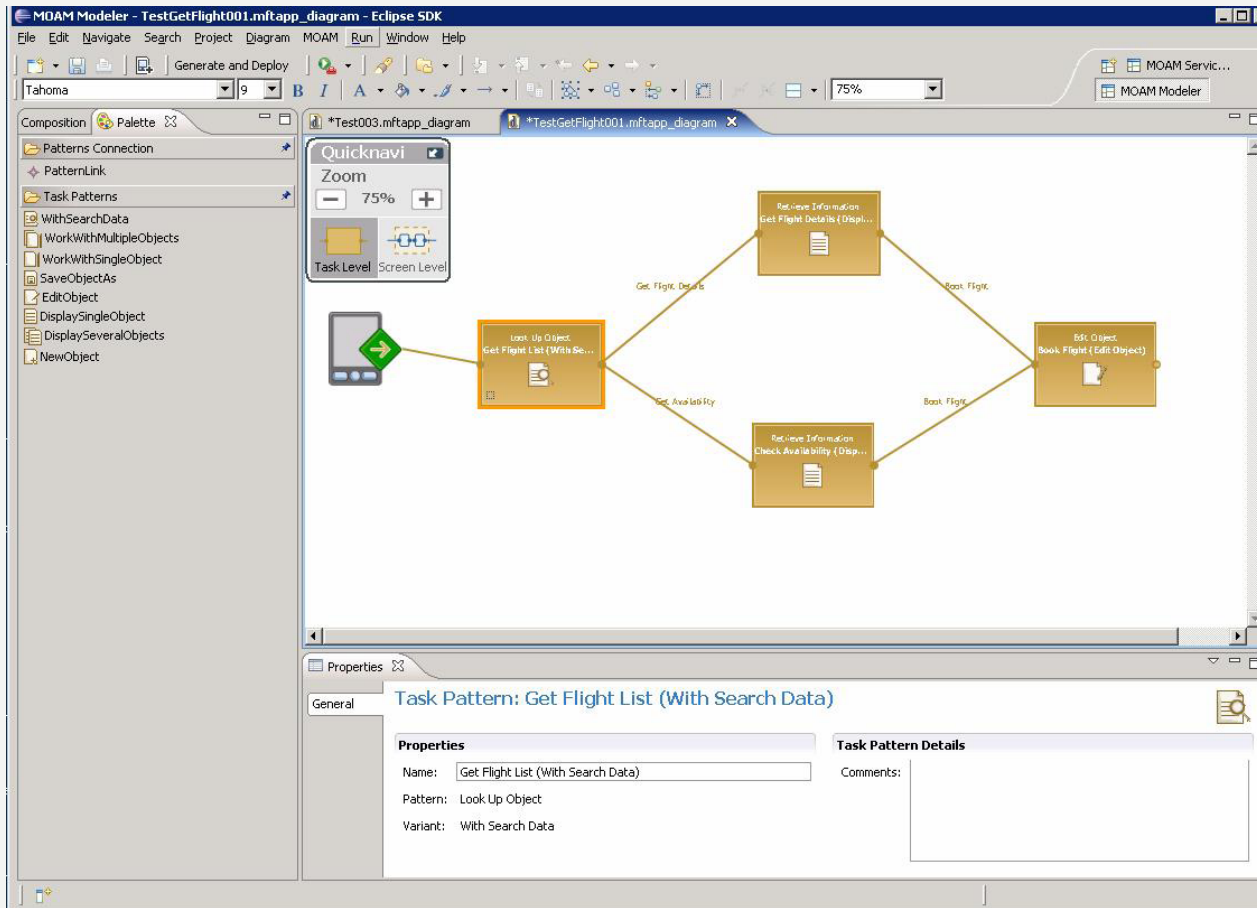
IdealXML

http://www.usixml.org/index.php?mod=pages&id=15

SAP Mobile Application Modeler

https://www.sdn.sap.com/irj/sdn/go/portal/prtroot/docs/library/uuid/5045b3cc-acbe-2910-2bab-8d930cb31a33
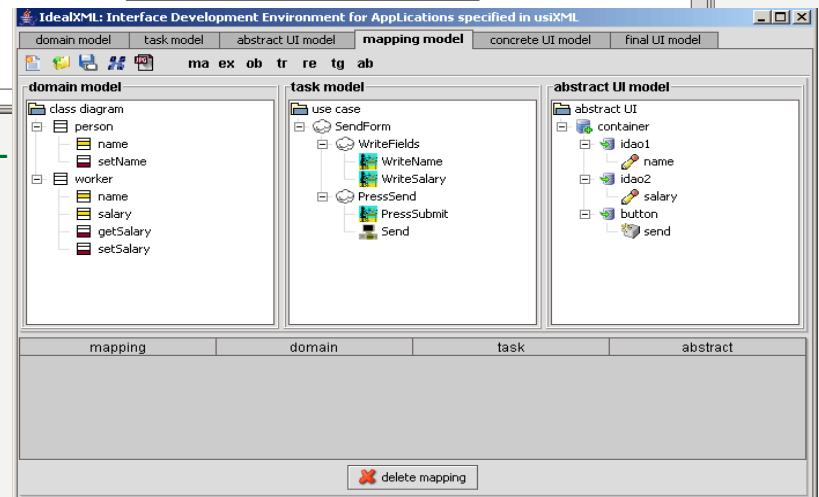
Guidelines for Designing User Interfaces

- Consistency
- Redundancy
- Structure / Grouping
- Feedback
- Simplicity / Clarity
- Understandable Widgets
- Tolerance

⇨　　Usability

Problem Statement

- Design and evaluation of high-fidelity user interfaces for the Mobile Applications Modeler (Mobia)
  - Acting as prototypes of Mobia
- Mobia: Model Driven Development of mobile software
  - Project at LFE Medieninformatik
  - Focuses on mobile health
  - Platform independent
- Generation of domain specific mobile applications
- Results should be applicable to other modeling tools in order to support non-expert users
- Evaluation through user studies and observation
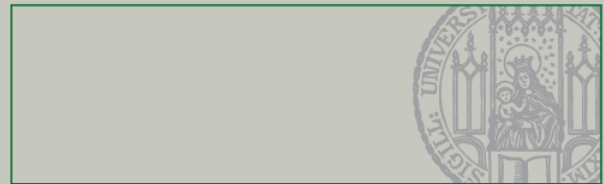
Goals

- Open the domain of mobile software development for novices
- Creation of user interfaces which support this kind of users
  - Simple usage / good usability
  - Modeling of software by visual means
  - Without needing to code
  - Delivering good support by hints
  - Directing users towards right actions and preventing erroneous ones
- Evaluation
  - Conducting on-site and off-site user studies with an additional survey
  - Results and the observations will deliver facts to improve and modify GUIs for better support of novices

Preparation

- Research on current and former related works
- Research on design guidelines
- Sketching first ideas for the GUI for Mobia
  - Eventually creation of paper mockups
- UML like modeling the prototypes

Planned Implementation

- Flash CS3 with ActionScript 3.0
- Object-Oriented programming language
- Each interaction element as an object
- Different classes for Model, View, Controller
- View will mainly be included in the Flash environment
- Model will mainly be implemented in the objects, making use of inheritance
- Some further classes for drawing and support of other functions

Design Ideas

- Usage of familiar widgets (buttons, text fields, dropdown lists etc.)
- Usage of familiar symbols for the provided domain
- Interaction and modeling by drag and drop
- Combination of UI design and UML like modeling
  - Arrows indicating transitions
  - Hierarchical view of screens and menus
- Visual and textual cues directing users to accomplish their ideas

First Sketches
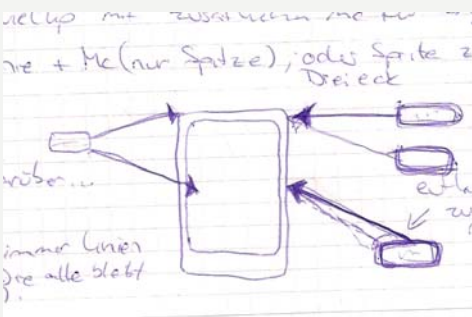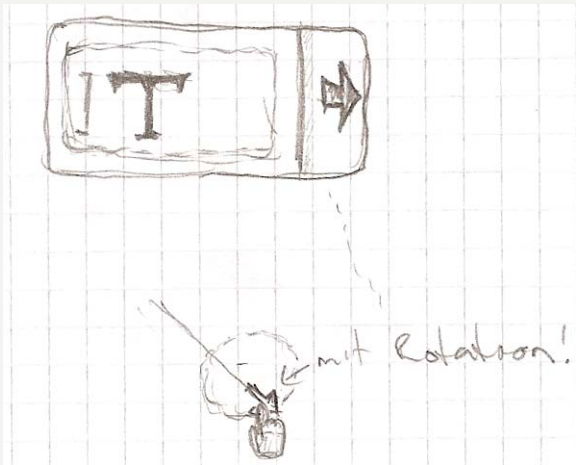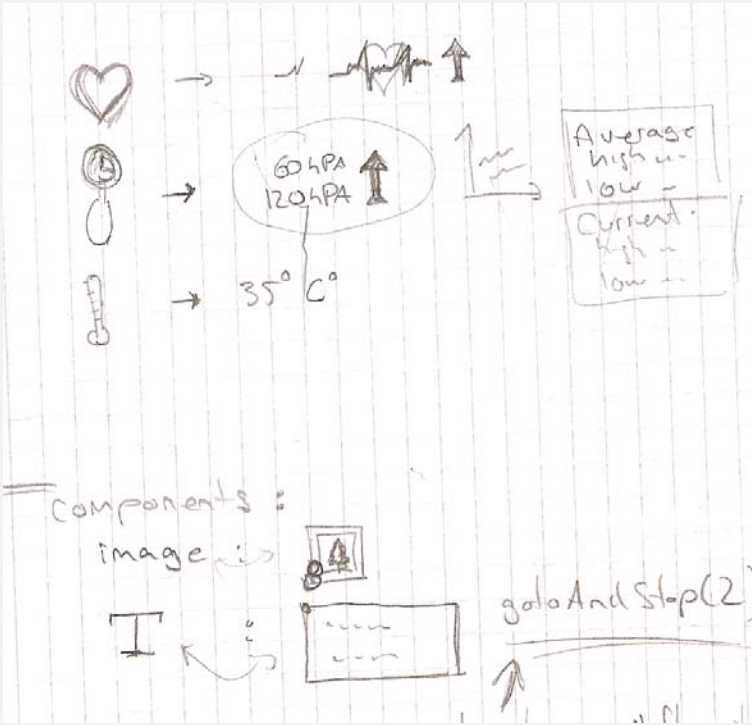
Thank you for your attention

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Questions are welcome…