Is the UML appropriate for Interaction Design?

Giorgio Brajnik

Dip. di Matematica e Informatica
University of Udine, Italy
www.dimi.uniud.it/giorgio

Future Standards for Model Based User Interfaces
MDE: some examples

- OOH, OOH4RIA: Object Oriented Hypermedia
- WebML
- UWE: UML Web Engineering
- UMLi
UML-IDEA: UML for Interaction Design Approach

1. Focus on interaction first: state machines
2. Focus on details that affect usability: for conceptual model of the UI but also for the concrete UI
3. Provide more detailed models as needed: domain, code fragments, presentation models, platform-dependent refined models
4. Focus on usability: platform for wireframes
5. Automatic generation of prototypes
6. Focus on accessibility: at the PSM level(s); eg. ARIA widgets
7. Automatic identification of usability anti-patterns
8. Automatic generation of functional test scripts
9. Analysis of interaction graph
Case study: Task Manager

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Top level State Machine

LoginLogoutSM

not logged in

activate(exit)
activate(return)
activate(creds)

login error
Internal Activities
output error msg
Internal Transitions

entering credentials
Internal Activities
Internal Transitions

logged in
Internal Activities
output username
Internal Transitions

submit[valid]

submit[not valid]
A more detailed state machine
### Listing predefined categories

#### Conditions

1. role = admin
2. selected tasks=all tasks

#### Outputs

1. Display user's name
2. Display all tasks
3. Display folder list

#### Commands

**Folder list:**

- `out of date tasks`
- `pending tasks`
- `all tasks`
- `usuario1`
- `usuario2`
- `(folder a)`
- `(folder b)`
- `(folder c)`
- `(folder d)`
- `new folder`

**All tasks:**

- `task1`
- `task2`
Interaction graph

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Usability problems

1. Login form does not set the focus on username
2. No "remember" credentials in login form
3. Useless "return" user action
4. ...

Summary
Out of 25 usability problems, 14 (56%) could be identified from state machine diagrams.
Conclusion

1. So far no expressivity limits of State Machines
2. Useful for static usability investigations (anti-patterns) on PIMs
3. Viable for generating code for the "wireframe" platform

Next steps:
Too many ’things to do’ to list them here :-)

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