



Technische
Universität
Braunschweig



Iterative Model Based Generation of Test Cases for Graphical User Interfaces

Raimar Bühmann und Johannes Bürdek, 5. September 2012

Today We Will Show You...

1. Testing a Web Shop
2. Bob Uses Activity Diagrams to Generate Test Cases
3. Alice Uses Test Cases to Generate Activity Diagrams
4. Benefits and Risks
5. Summary and Outlook

Testing a Web Shop – Specifications Given to Bob

Happy Path

- Login
- Fill Shopping Cart
- Submit

Optional for customer

- Discount code
- Survey (for evaluation purposes)

Usability function

1. “Login” then “Fill Shopping Cart” or
2. “Fill Shopping Cart” then “Login”



Bob Uses Activity Diagrams to Generate Test Cases

Used tools



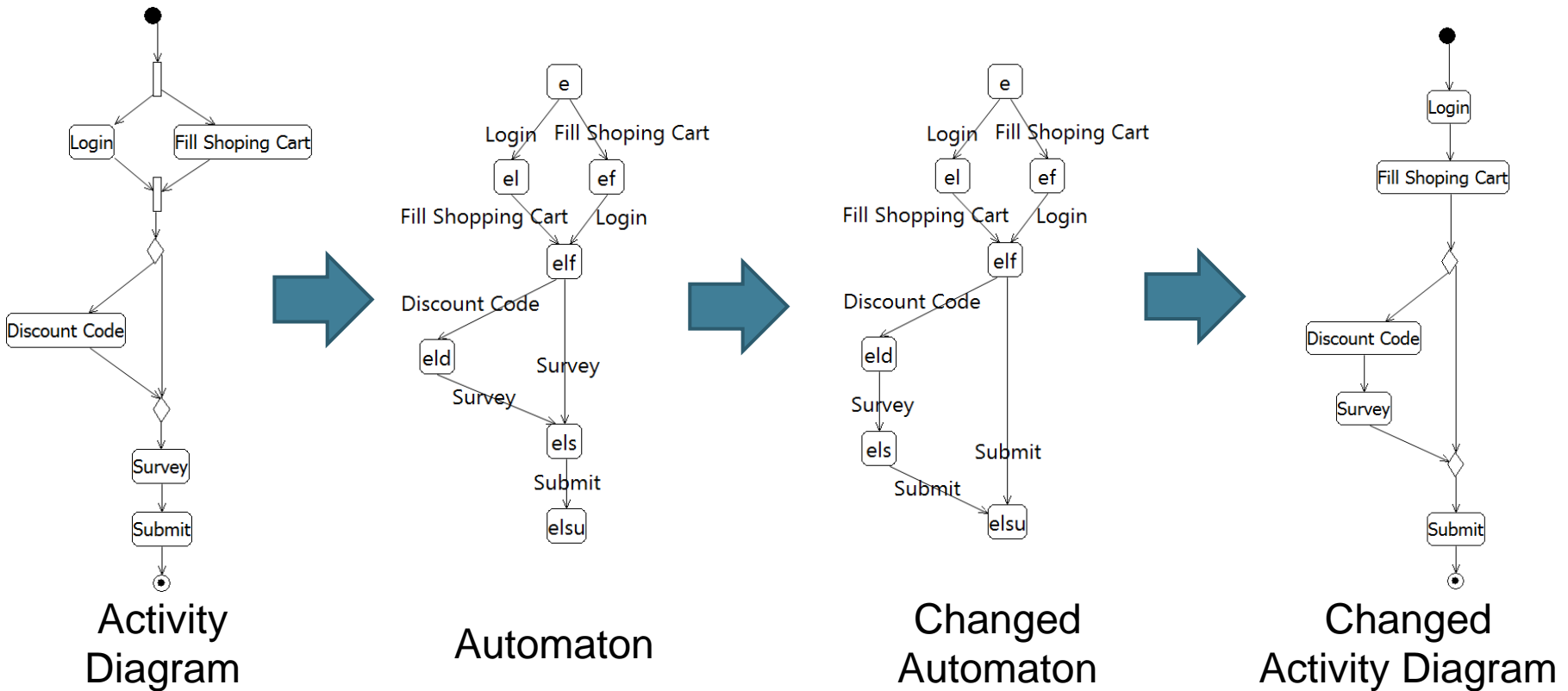
Alice Uses Test Cases to Generate Activity Diagrams

- Alice wants to create the test cases the same way she always has (using GUIDancer)
- Alice tasks
 1. Not all customers should have to participate in the survey
 2. Remove test cases with discount code



Alice Uses Test Cases to Generate Activity Diagrams

- Algorithm adapted from Javier Esparza et al.



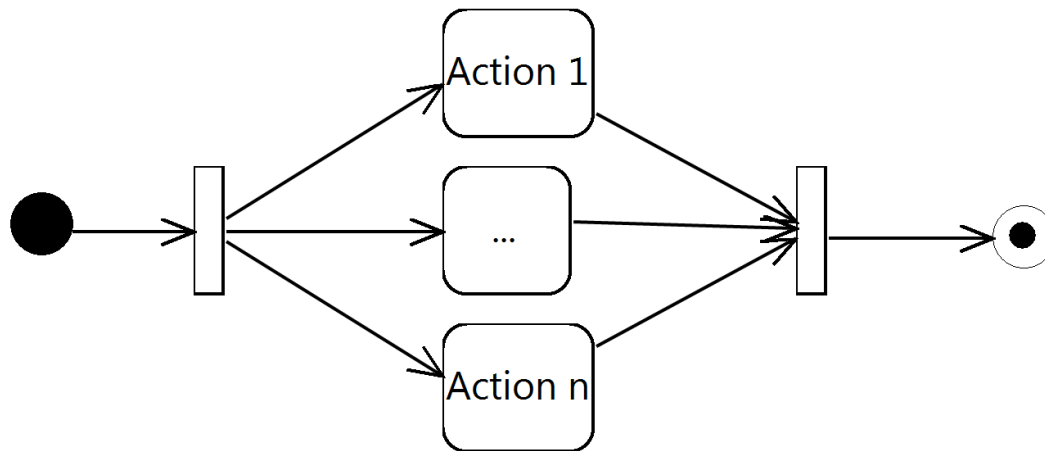
Benefits

- Better overview of test cases
- Diagrams are more understandable
- Automatic generation of test cases
- Changes in both directions possible (round-trip)
- Easier communication about test cases



Risks

- Changes can be lost if test cases and diagram are edited at the same time
- Complex diagrams can lead to a lot of test cases
- Test cases and diagrams do not contain the same information



Summary and Outlook

- Generation in both directions is possible
- Activity diagrams are more understandable and better for communication

Possible Improvements

- Decrease number of test cases using other coverage methods
- Diagram validation
- Visualize relationship between test cases and diagram entities

