

Mutation-based testing of model transformations

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Outline

Mutation-based Testing

Higher-Order Transformations

Mutation-based Testing of Model Transformations

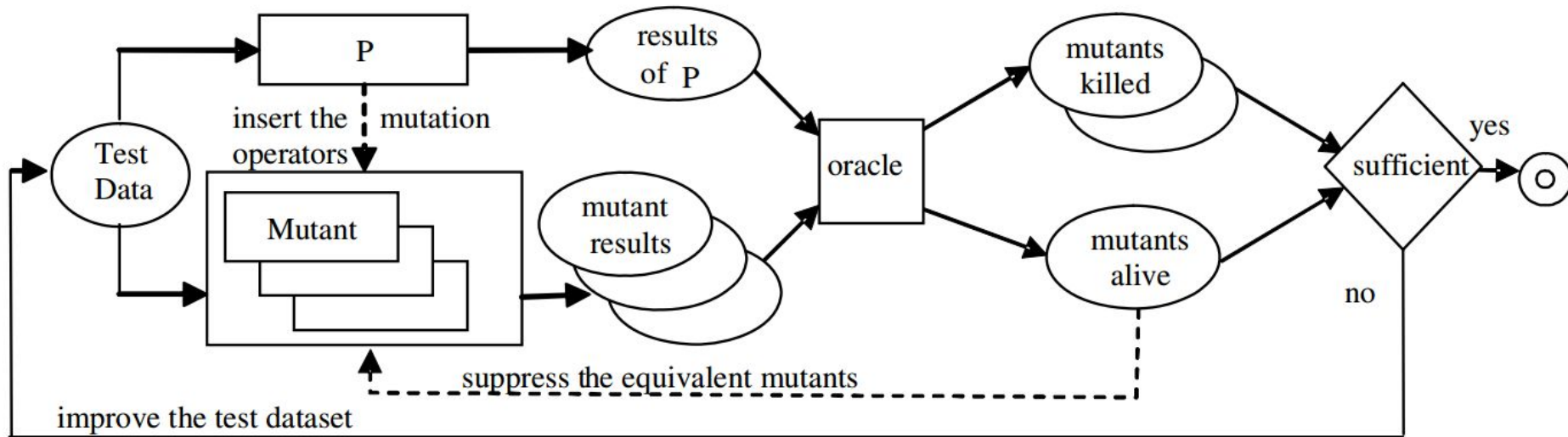
Mutation-Based Testing

Software needs testing

- But the testing suite needs testing too

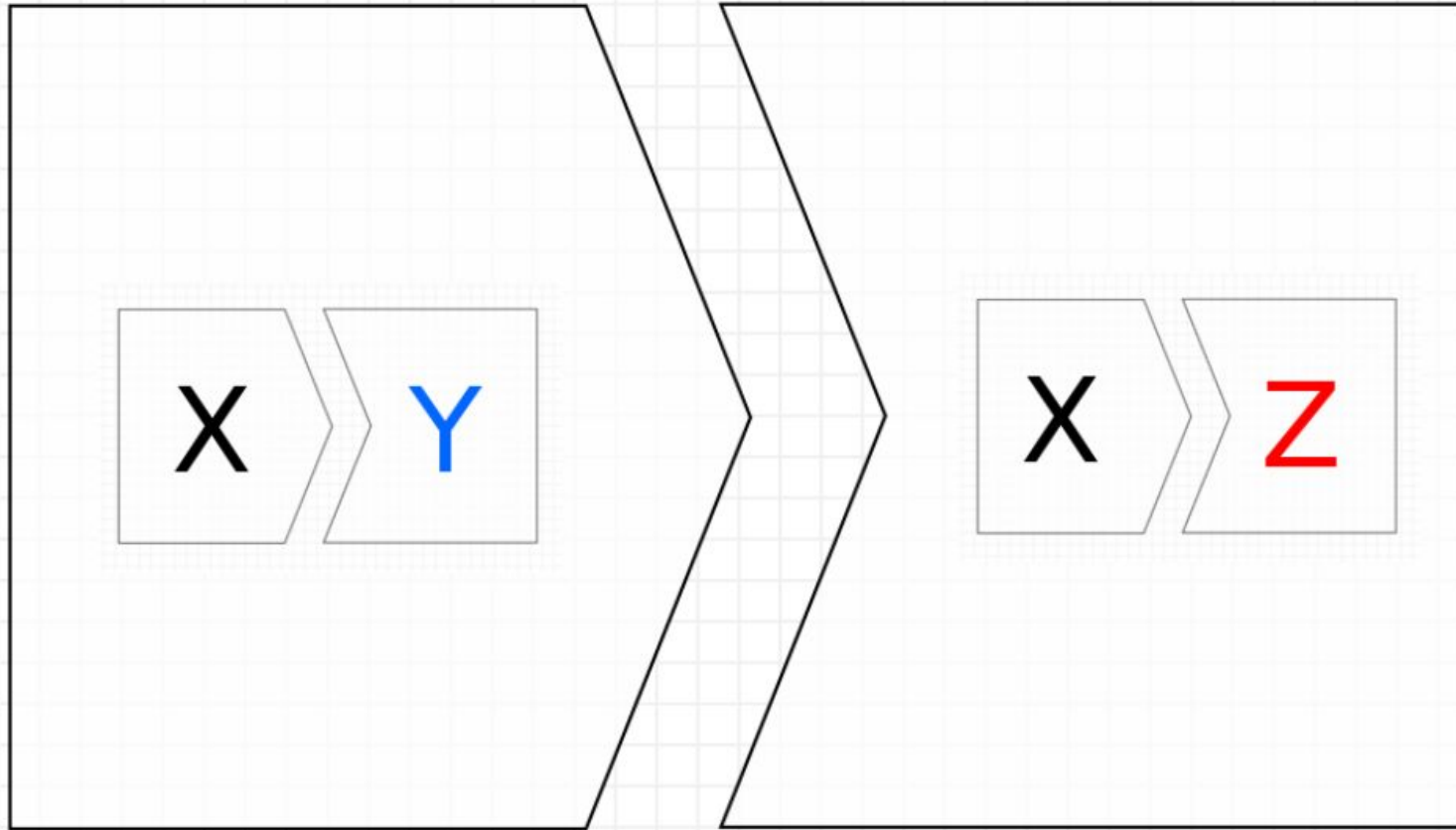
How do we do this?

Mutation-Based Testing



J. Andrews, L. Briand, Y. Labiche, Is mutation an appropriate tool for testing experiments? [software testing], in: Software Engineering, 2005. ICSE 2005. Proceedings. 27th International Conference on, 2005, pp. 402–411. doi:10.1109/ICSE.2005.1553583.

Higher-Order Transformations



A. Parsai, Mutation-based testing of model transformations (using hot), [Online; accessed 10-December-2015, <http://msdl.cs.mcgill.ca/people/hv/teaching/MSBDesign/201314/projects/Ali.Parsai/>] (2013).

Mutation-based Testing of Model Transformations

Different operators than classic programming:

- navigation
- filtering
- creation
 - output model creation
 - input model creation

Mutation analysis testing for model transformations, in: A. Rensink, J. Warmer (Eds.), Model Driven Architecture Foundations and Applications, Vol. 4066 of Lecture Notes in Computer Science, 2006. doi:10.1007/1178704428.

References

1. J. Andrews, L. Briand, Y. Labiche, Is mutation an appropriate tool for testing experiments? [software testing], in: *Software Engineering, 2005. ICSE 2005. Proceedings. 27th International Conference on, 2005*, pp. 402–411. doi:10.1109/ICSE.2005.1553583.
2. Mutation analysis testing for model transformations, in: A. Rensink, J. Warmer (Eds.), *Model Driven Architecture Foundations and Applications, Vol. 4066 of Lecture Notes in Computer Science, 2006*. doi: 10.1007/1178704428.
3. On the use of higher-order model transformations, in: R. Paige, A. Hartman, A. Rensink (Eds.), *Model Driven Architecture - Foundations and Applications, Vol. 5562 of Lecture Notes in Computer Science, 2009*. doi:10.1007/978-3-642-02674-43.
4. A. Parsai, Mutation-based testing of model transformations (using hot), [Online; accessed 10-December-2015, <http://msdl.cs.mcgill.ca/people/hv/teaching/MSBDesign/201314/projects/Ali.Parsai/>] (2013).
5. E. Syriani, H. Vangheluwe, R. Mannadiar, C. Hansen, S. Van Mierlo, H. Ergin, Atomp: A web-based modeling environment., in: *Demos/Posters/StudentResearch@ MoDELS, 2013*, pp. 21–25.

Questions?

