Abstract

This paper extends data flow testing techniques to Web applications, and presents a proposed approach to data flow testing of ASP.NET Web applications. It discusses the data flow analysis of ASP.NET Web applications, which have different structure than traditional programs. The proposed approach involves the construction of a Web application data flow model to support data flow analysis of ASP.NET Web applications. In this approach, testing is performed in four levels, Function, Interprocedural, Page, and Inter-Page levels. In each level, the definition-use (def-use) chains of the variables of interest are computed, then test data can be generated to cover these def-use chains, in order to fulfill the all-uses criterion. The application of the proposed approach is illustrated through a case study.

References

1. Liu, C., Kung, D. C., Hsia, P., and Hsu, C. 2000 Object-based data flow testing of Web
interactions using mutation analysis. In Proceedings of the 12th International Symposium on 
Software Reliability Engineering.
the International Conference on Software Engineering.
In Proceedings of the Sixth IEEE Workshop on Web Site Evolution.
Technology. 48 (2006), 31–42.
Pearson Education Inc.

Index Terms

Computer Science    Software Engineering

Keywords

Web applications testing, ASP.NET Web applications testing, Data flow testing, Data flow 
testing techniques, Web applications data flow model.