

Annotated Bibliography

Kelsey DeJesus-Banos

Nov. 8, 2016

1 Early Web Scripting

```
@article {brabrand2002bigwig,  
    title={The< bigwig> project },  
    author={Brabrand, Claus and Møller, Anders and Schwartzbach, Michael I},  
    journal={ACM Transactions on Internet Technology (TOIT)},  
    volume={2},  
    number={2},  
    pages={79–114},  
    year={2002},  
    publisher={ACM}  
}
```

Summary: This paper introduces the <bigwig> project which aims at developing a high-level web scripting language for dynamic web applications. The shift from static to dynamic web programming gave rise to a variety of problems and new ideas. Motivated by these problems and change, the paper set out to summarize the key challenges for web development as follows: session-management, dynamic documents, concurrency control, form-field validation, database integration, and security. To tackle these challenges <bigwig> implements a session-centered model that allows for dynamic web page construction as well as high-level solutions which tackle on the various problems stated above. Some of the approaches <bigwig> uses to solve these issues include form field validation, use of syntax macros, a higher-order dynamic construction of html, use of temporal logic to synthesize concurrency controllers, and use of macro mechanisms to extend and combine languages.

Evaluation: Although the <bigwig> project did not result directly in a new popular web scripting language, it introduced elements of web scripting that are part of most modern web scripting languages. For example, it introduced the linguistic support for validating input fields of forms and integrated constructs for concurrency control. Moreover this paper presents an insightful overview of the evolution of web scripting. At the heart of the overview is a taxonomy of web-scripting languages as page-centered, script-centered, and session-centered. Page-centered languages, such as PHP, come with support for embedding code inside HTML pages. Script-centered languages come with libraries for writing scripts, such as Java Servlets, that build programmatically HTML pages. Session-centered languages, such as MAWL, come with constructs for defining a session, i.e., a complete sequential interaction between a server and any of its clients.