

## Comments on “Scripting: Higher Level Programming for the 21 st Century”

by  
Ousterhout

In this paper, Ousterhout tries to emphasize the growing advantages of script languages over system programming languages and to explain why this advantage will keep growing. His argument against system programming languages centers on several points: that scripting languages are made for gluing components together, while system programming languages are for implementing components from scratch, that script languages are weakly typed and thus more flexible, and that scripting languages do more work per statement than system languages.

For his first argument, Ousterhout notes that scripting languages usually rely on complex data structures and algorithms to be already implemented as components and just make use of these tools. He notes that the same could be done with systems programming languages if they had an extensively developed library but that almost no such libraries exist. Unfortunately, I think that here the article is dated, since currently the Java API is extremely rich and excellent frameworks exist for C++, such as Qt and wxWidgets. Ousterhout also explains that weak typing allows for more code reuse. Though this might be so, many modern systems languages include facilities such as templates to overcome this problem. Overall, though the author points out several great advantages of scripting languages, like their ability for on-the-fly creation and execution of code without a compile phase, his comparison is clearly biased towards the scripting languages.

Ousterhout admits to one shortcoming of scripting languages – they are 10-20 times slower than an equivalent program written in a systems programming language. However, he claims that scripting languages make programmers 5-10 times more efficient, and thus as computer time becomes cheaper and cheaper and programmer cost rises, eventually scripting languages will be economically viable in all situation. This is of course, not true; scripting languages rely on components written in systems programming languages. Sometimes performance is just critical and a systems language can only do the job. Ousterhout also makes the outrageous claim that the best GUI systems are the scripting-based ones, while today the Java, .NET, Qt, and wxWidgets are excellent examples of outstanding GUI frameworks based on systems languages. Overall, I agree that the popularity of scripting programming is rising because of its ease and ability for rapid development; however, scripting programming will never cross a certain threshold of usage – there are tasks, which will always require a compiled language.

The presenter this week, XXX, was great. His slides were very detailed and even included funny graphics, which managed to keep the class entertained, and thus paying attention. He cited other sources, such as Wikipedia, and seemed informed enough to answer most questions directed at him. His slides covered pretty much the whole paper, and I was very satisfied both with this depth and with this breath of coverage.