Erin Phillips

CSCI320

Assignment 3 Part 2

JavaScript Language Analysis

Efficiency:

JavaScript is dynamically typed meaning that the type of variables is determined at runtime. This can produce less optimized code and possible runtime errors since type errors are detected later during execution, rather than sooner. This can, however, be avoided by writing more optimized code, but to the average user, this can decrease its efficiency.

Regularity:

JavaScript holds well in this category. An example of orthogonality is that the .length function can be used on different structures like lists, arrays, and strings. This simplifies the language of the code making it much easier to use, and common sense-like. JavaScript has great generality as well since it treats functions as first-class objects.

Security:

Failure to recycle dynamic storage can cause memory leaks (not good!) however, JavaScript uses a method of automatic garbage collection that helps to avoid this. However, JavaScript is considered a weakly typed language. Considering Python, that is also dynamically typed but is much stronger in comparison.

Extensibility:

JavaScript is certainly extensible within the language itself – you can define new data types and operations, like most languages. While JavaScript does offer extensions of its features by releasing new versions, backwards compatibility is a huge concern and a “must” when evolving the language. Thus, making the evolution of the language fairly slow.