TkGecko: A Frill-Necked Lizard

Steve Ball
Zveno Pty Ltd
Eolas Technologies, Inc
Steve.Ball@zveno.com

Abstract

The Mozilla Open Source project has made a full-featured, fast Web browser, Netscape's Navigator, available in source form to the Internet community. A major component of the project, and an early released package, is the NewLayout (a.k.a. Gecko) HTML/XML rendering engine. One feature of this module is that it is designed to be embeddable in any application. This characteristic is quite compatible with Tcl/Tk.

TkGecko is a project to create a Tk extension that allows the NewLayout rendering engine to be embedded in a Tk application as a Tk widget. Ideally, this new widget will be as completely configurable as all other Tk widgets, with all configuration options able to be queried and changed at run-time. The widget features methods and configuration options that allow the functions of the NewLayout rendering engine to be accessed and changed from a Tcl script.

Currently the TkGecko project is still in its infancy. This paper aims to define the goals of the project and expected milestones.

Keywords

Netscape Navigator, Mozilla, NewLayout, NGLayout, Gecko, Tcl, Tk, TEA.

1. Introduction

In 1997 Netscape Communications Corporation [1] released the source code for their Netscape Navigator Web browser to the Internet community, under the Netscape/Mozilla Public License (NPL or MPL) [2], a license that allows free use of the source, redistribution and modification. Netscape has setup an independent organisation to develop the next release of Netscape Navigator under the Open Source banner called Mozilla.org [3]. Currently, the majority of developers working on Mozilla are employed by Netscape (approximately 120 engineers), but there are some employed by the other organisations (about 25 engineers).

The first major "product" release from Mozilla.org is Gecko, the core HTML/XML page rendering engine for the browser. Gecko is known more formerly as the NewLayout module. This module is written in C++ (in fact, all of Mozilla is written in C++, but there does exist a separate project to reimplement Mozilla in Java), and is designed to be embeddable inside other applications, for example as a HTML-based help viewing system. There are a few examples of Gecko being embedded in applications, such as an ActiveX component [4] (which entirely replaces the Internet Explorer control!) and the DocZilla viewer [5].

Eolas Technologies, Inc. [6] are sponsoring work to create a Tk extension which embeds Gecko as a Tk widget. The working title for this project is "TkGecko". The extension defines a new Tk widget class called "newlayout". The availability of this extension will provide a high-quality viewer of HTML and XML documents to be used by Tk applications, with full support for all of the current Web standards, such as CSS, JavaScript, DOM and XSL. While most of the major Web standards will be supported, it is not clear at this stage whether the extension will be able to handle Java applets or browser plugins. The former will require a Java Runtime Engine (JRE) to be included in the extension.

Although TkGecko will allow the creation of a general-purpose Web browser, that is not the primary motivation for this project since at least two general-purpose Web browsers already exist. Instead, the aim is to support application developers wishing to incorporate a HTML/XML viewer into their products, often for the purpose of displaying help documents. It is certainly now the case that Web browsers are now so ubiquitous that an application developer can assume their availability and simply launch a browser to display a document. However, many developers wish to have a tighter integration of the display of help documents, particularly for context-sensitive help, with their application. An embedded viewer is necessary to satisfy this requirement.

This approach to displaying documents has been already been anticipated by Microsoft, who have made their Internet Explorer browser available not just as a