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Office 2007 Accessibility Tool

Introduction

The accessibility tool will help the user to analyze the degree of accessibility of his PowerPoint 2007 and/or Word 2007 projects. Once this analysis has been performed and the accessibility issues have been noted, the tool will help the user to fix these issues in order to transform the project into an accessible one. The tool will be implemented as an Office 2007 plug-in with help documentation. We will be working with Jon Gunderson of The Illinois Center for Instructional Technology Accessibility (CITA) as part of the senior project course in the Computer Science department.

Problem

As the computer becomes a more widely used device, it becomes increasingly important to make it universally accessible. Office productivity suites are among the most oft-used programs in the business world, meaning that it is of the utmost importance to render the media that is created by these programs (i.e. documents, spreadsheets, presentations, etc.) accessible. Currently, there are several tools that exist (i.e. screen-readers) that will help users who would otherwise be incapable of interacting with this media to view it efficiently.

For such tools to be effective, however, it is necessary that certain accessibility guidelines be followed while the media is being created. Only when these guidelines are met can these tools truly reach their full potential. Such guidelines are, however, not widely known and thus are not widely utilized by the general user.

Existing Solutions

In an effort to make more widespread the knowledge of these guidelines (and therefore the use of those guidelines), CITA has formalized and published "Best Practices"[1] for making Word documents and PowerPoint presentations more accessible. However, only providing online documentation of these

[1] http://www.accessiblewizards.uiuc.edu/bestpractices.php

'Best Practices' requires the user to actively seek them out; it does not present the information directly to the user. Clearly, a vessel to transport these 'Best Practices' to the user in an interactive manner is needed.

In order to accommodate this need, an accessibility wizard was created for pre-2007 versions of Microsoft Office. This wizard analyzed the project and told users what (if any) accessibility guidelines had been violated. In doing this, the user was not required to have explicit familiarity with the 'Best Practices' themselves; rather he was notified of violations as they occurred. This notification system not only provided a means for the project to be transformed into an accessible project, it also helped the user to learn the 'Best Practices' in an interactive manner. With the introduction of the Office 2007 suite, however, this tool was rendered obsolete.

Proposed Solution

Our solution will allow users to analyze a document for accessibility error and provide a means to correct these accessibility errors. The entirety of the analysis and error checking process will take place within Word 2007 and PowerPoint 2007 in order to maintain a consistent workflow. This will manifest itself as a plug-in.

One of the most important features of this plug-in is to allow users to determine the accessibility level of their document. The tool will analyze a document/presentation and provide a summarized view of the current accessibility level. In addition, the user will be provided with the means to locate a given accessibility error.

Analyzing the document/presentation is only half of the ultimate goal (making documents/presentations more accessible). Allowing the user to correct accessibility errors is equally important. We will also provide a means to correct accessibility errors as they are discovered.

After this tool is created, the functionality that was present in the previous iteration of the CITA Office accessibility plug-in will be ported to the Office 2007 platform.

Requirements

- Assess the use of best practices through analysis of a document/presentation

- Provide a summary of the accessibility level of the document/presentation
- Allow the user to obtain pertinent information about individual accessibility errors
- Aid must be provided to the user in order to help fix a given accessibility error
- Provide documentation on how to deploy and use the plug-in
- Implement the tool with an accessible interface

How it solves the problem

Our solution provides a means for the user to make his documents/presentations compliant with the 'Best Practices' guidelines set forth by CITA. This is achieved by providing the users with a summary of accessibility errors as well as the ability to fix these errors.

End Users

The main group of people who could potentially benefit from such a tool would be the accessibility community. The accessibility community includes individuals who interact with those who have disabilities or other issues that might otherwise render documents inaccessible to them, and also those with accessibility issues who need to view accessible documents/presentations. The latter are direct beneficiaries of the tool as they are the primary users of the output (accessible documents/presentations). This tool would provide a necessary service for members of the accessibility community upgrading to future releases of the Office suite.

Technical Constraints

Development-Side

Our primary development environment will be Visual Studio 2005 since it is the currently the most full-featured tool available for Windows development. In addition, we will make use of the Visual Studio Tools for Office Second Edition to create the plug-in. These tools were recently released to streamline the developer's workflow in creating Office plug-ins. The only technical constraint on the tool itself is that it must operate in user-time (i.e. no noticeable slowdown to the user). Though our tool need not

be performance-optimized, it is important that it provides an intuitive user interface. By providing such an interface, people will actually make use of the tool.

User-Side

The only requirement of the user of the tool is that he be working in either Word 2007 or PowerPoint 2007. The reason Microsoft Office development was chosen was due to the fact that it would affect the widest user base. In addition, the tool itself should be accessible in order to accommodate users that themselves have disabilities which inhibit them from accessing documents in a standard manner.

Particular Benefits of the Proposed Solution

- Interaction with the tool does not disallow the user from editing the document
- Users are aided in not just finding accessibility errors, but fixing them as well
- Through use of the tool, the user will learn how to better create accessible documents