Application for the Localization of Resource Script Files

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1 Introduction

Applications written in C/C++ for Microsoft Windows operating systems use resource files to define dialogs, menus, strings and other resources such as icons and various metadata. These resource files are compiled and linked with the application binary and resources contained inside are accessible in runtime by calling a subset of Application Programming Interface (API) functions. Usually, each application contains only one resource file that is created by the developer and that defines strings in the main application language. In order to add support for multiple languages, the resources must be translated.

The main reason to build this tool is to help with the Czech localization of the OpenAFS client for Microsoft Windows operating systems. This software is being continuously improved and all resource files that had already been localized in the previous versions of the application are usually not compatible with the latest version due to the changes in the original Resource Script.

The tool is supposed to make the localization of resource files easier by comparing the current and previous versions of the original and localized resource files. It is supposed to build a list of items to localize, then use previous versions of the localization to translate strings that have not changed and highlight only strings that need user's attention. It should also help with the translation of the remaining strings using the Bing Translator, an online translator from Microsoft.

2 Resource Script

The Resource Script file is a text file with the extension .rc. This file includes a set of definitions that describe various resources, such as a dialogs or string tables. The Resource Script supports a subset of preprocessor directives, defines and pragmas in the script. Resources such as an icon or bitmap can exist in a separate file; the Resource Script only contains a link to an external file along with the definition of its resource type.

Resource files are compiled by the Microsoft Windows Resource Compiler. This tool is commonly used in the building process of Windows applications. The output of this compiler is stored in a .res file. Compiled resources are linked into the application executable where they are accessible in runtime by calling a subset of Win32 API functions.

3 Implementation

The application was created in C# and it is using the Windows Presentation Foundation (WPF) framework. The architecture of the application is based upon the Model-View-ViewModel (MVVM) architecture that helps to separate the view and the business logic of the application while taking advantage of all features provided by the WPF such as data binding.

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The application consists of two parts: the parser and the localizer. The parser parses the Resource Script and builds a tree structure in the memory that can be easily accessed and modified while providing a way to reconstruct the original script with only small changes in its formatting. The localizer traverses the parsed tree structure to build a list of localizable items that are translated using the previous versions of the localization. The user interface of the application is shown in the Figure 1.

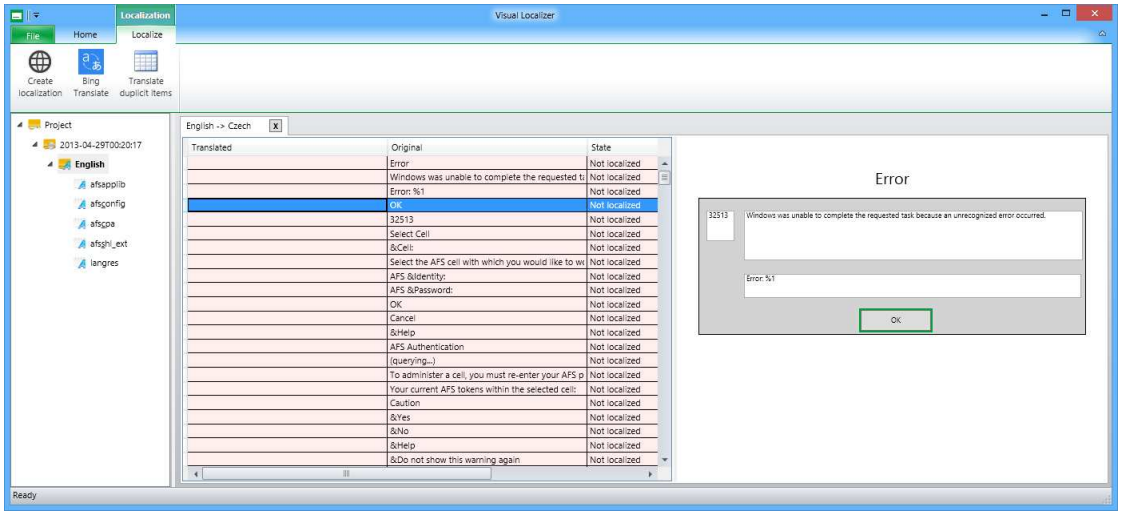

Figure 1: User interface of the application

3 Conclusion

The tool is aimed to make the localization of resource files easier by comparing the current and previous versions of the original and localized resource files. It builds a list of items to localize, then uses previous versions of the localization to translate strings that have not changed and highlights only strings that need user's attention. It can also translate the remaining strings using the Bing Translator, an online translator service from Microsoft.

The application is supposed to simplify the process of updating the localization to the latest version of the OpenAFS by matching all previously translated strings with the ones in the latest version of the software. After that, it presents a list of items that need to be translated or corrected by the user. This makes the localization process easier as the user does not have to compare both versions of the script manually and can fully focus on the translation instead. To help with the localization of the dialogs, the tool displays a dialog preview that allows the user to change the size and position of the translated controls in order to fit the window correctly and not to overlap.

References

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