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Simultaneous Display Of User Interface Text Elements In Multiple Languages

Steffen Meschkat

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ABSTRACT

Many operating systems and other software applications include features that enable users to customize the language used for text elements in the user interface. At runtime, the software renders the UI using text elements corresponding to the language chosen by the user or a default language. Currently, it is a requirement that a single UI language be selected and active at any given time. In certain situations, e.g., when the user is learning a new language, users can find it beneficial to have the text elements of the UI displayed in more than one language at the same time. This disclosure makes UI text elements available in multiple languages at the same time. The text elements within the UI are then displayed in all of the chosen languages using suitable display mechanisms.

KEYWORDS

- Multilingual User Interface (UI)

- UI translation

- Text element

- Text label

- Internationalization

- I18n

- Language learning

- Language immersion

BACKGROUND

Many operating systems and other software applications include features that enable users to customize the language used for text elements in the user interface. For example, such

elements include menu options, buttons, warnings, error messages, etc. Typically, the text elements used by the UI are translated into all languages supported by the system as a part of the internationalization process (also known as i18n). The generated set of text in all supported languages is then included in the software or OS package. At runtime, the software or OS renders the UI using the text elements corresponding to the language chosen by the user. If the user has not made an explicit selection for the language of the UI text, then the default language is used.

Whenever the choice of language of the UI text changes, the text elements of the UI are changed accordingly by using the text in the corresponding language from the software package. The mechanisms for displaying the text elements within the UI are typically designed such that linguistic differences that result in the corresponding text elements differing in various properties, such as length, are handled appropriately. Currently, such customization of the language used by the UI text elements requires that only a single UI language be chosen to be active at any given time.

In certain situations, however, users can find it beneficial to have the text elements of the UI displayed in more than one language at the same time. For instance, a user that is learning a language may wish to activate the user interface in that language to increase immersion in the language being learned. However, changing the UI language to the language being learned can pose difficulties in understanding the UI text given the user's lower proficiency in that language. As a result, switching the UI text to the learned language can result in increased likelihood of errors and decreased productivity, thus creating a frustrating user experience (UX).

DESCRIPTION

This disclosure describes techniques that can be implemented as part of an operating system or other software to make the UI text elements of a system available to the user in

multiple languages at the same time. To this end, a user can select a set of one or more languages from those available for displaying the UI rather than choose a single language as is current practice.

The software is implemented such that various UI widgets, such as menus, dialogs, etc. are extended appropriately to have the capability to support multiple languages of the UI text being active at the same time. Specifically, the capabilities of the UI elements in the UI framework used for developing the software are enhanced. The enhancements allow these elements to access text corresponding to the multiple languages supported by the software package and, in turn, to accommodate simultaneous display of the UI text in more than one language.

Whenever a user indicates preference for multiple languages being simultaneously active for the UI, text elements corresponding to each of the languages are extracted from the software package. The text elements within the UI are then displayed in all of the user-specified languages using one or more of the following mechanisms:

- placing text in each language side-by-side;

- cycling through the text in each language in turn;

- displaying the UI text in another of the chosen languages upon relevant user action such as hovering the mouse, tapping, etc.;

- making the UI text in another of the chosen languages available via appropriate UI mechanisms such as tooltips, status bars, etc.
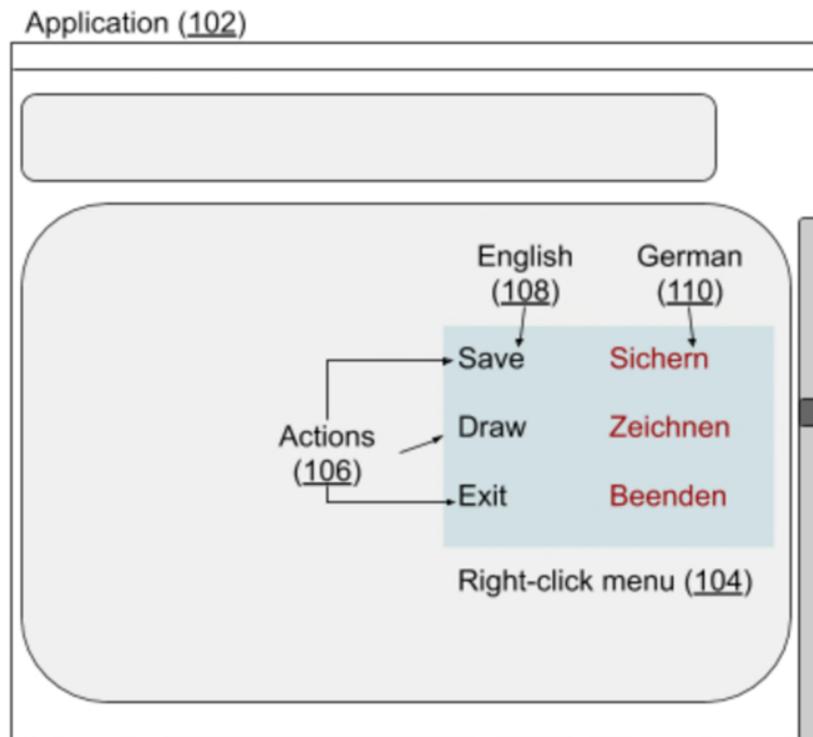
Fig. 1: Displaying UI text in multiple languages at the same time

Fig. 1 shows an example user interface with the techniques described in this disclosure as applied to a menu of options (104) invoked by right-clicking within an application (102). Each of the actions (106) available in the menu is displayed simultaneously in two languages: English (108) and German (110).

The operational mechanisms used to display multiple languages within the UI at the same time can be set by the developers and/or specified by the users. The operational mechanisms can also be chosen by the system based on prior choices made by the user or developer in similar contexts, i.e., by the use of machine learning techniques. For instance, the operation can be customized by assigning each of the active UI languages one or more parameters, such as a display order, priority, rendering mode, cycle time, etc. Moreover, the operation of the mechanisms can vary based on the number of languages chosen for the UI. As such, the

described techniques can support displaying the UI text in any number of simultaneous active languages up to a maximum limit as supported by the software package.

The techniques described in this disclosure obviate the need for users to choose whether to keep switching between UI languages or accept the limitations of working with UI text shown only in a single language. As such, implementation of these techniques can enhance the user experience in situations when it is beneficial to have the UI text available in multiple languages at the same time. Moreover, implementation of the techniques can result in enhanced support for internationalization, thus contributing to making systems broadly accessible.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs or features described herein may enable collection of user information (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used, so that personally identifiable information is removed. For example, prior user selections may be accessed with user permission to select operational mechanisms used to display multiple languages within the UI of the system. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure makes UI text elements available in multiple languages at the same time. The text elements within the UI are then displayed in all of the chosen languages using suitable display mechanisms. Such mechanisms can include, e.g., placing text in each language side-by-

side, cycling through the text in different languages, displaying the UI text in another language upon mouse click or tap, or as a tooltip, etc.