

Favorite Folders: A Configurable, Scalable File Browser

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ABSTRACT

Microsoft Windows Explorer, the most widely used file browser in Microsoft Windows, shows almost all directories in the currently viewed part of the directory tree. However, most users usually access only a subset of the directories on their machine. This paper introduces an alternative file system explorer that allows users to hide undesired directories by collapsing them into a single *ellipsis node*. Users can redisplay those hidden items by expanding the respective ellipsis node.

Keywords: Windows Explorer, file browser, adaptive interfaces, customizable interfaces

INTRODUCTION

A typical modern computer has a hierarchical file system structure consisting of a large number of subdirectories. Over time, e.g. as new user accounts are added to a multi-user machine, the file system structure becomes more complex. However, a particular user will often be interested in only some of these directories. Yet, the most widely used file browser in Microsoft Windows, Windows Explorer (Figure 1), provides the user with a fixed view of the file system structure. It displays nearly all directories in the currently viewed subtree of the directory tree. Especially for directories used by both user and system, such as the root directory of the main hard drive, this flood of information may potentially distract users, making the task of selecting a directory cumbersome.

In the related field of menu selection, there are a number of adaptive systems that were designed to improve the users' selection performance by reducing the set of alternative to the most likely subset, such as Microsoft Office's adaptive menus. Adaptive systems have the advantage that they don't require additional work by the user to set it up. However, users may experience a loss of control and the adaptive

systems may be perceived as less predictable [1]. In order to address this issue, we have developed a technique we call Favorite Folders (Figure 1) that offers similar functionality but keeps the user in control by providing an easy-to-understand adaptable, customizable interface.

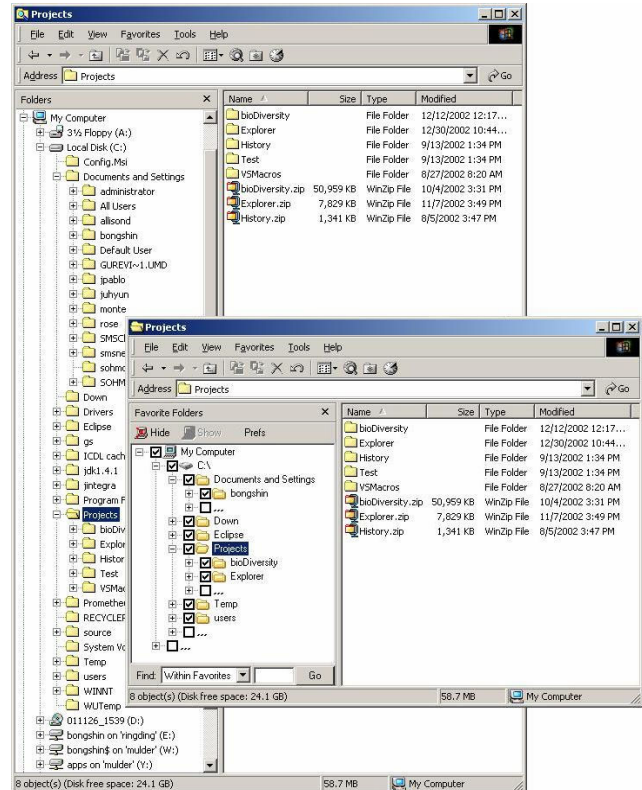


Figure 1: By collapsing irrelevant folders, Favorite Folders (front) can show the same directory subtree as Windows Explorer (back) in less space.

FAVORITE FOLDERS

Favorite Folders is a customizable Windows file system browser. By default, it limits the view onto the file system to the user's favorite folders.

Since what a user wants is impossible to predict perfectly and it changes over time, we believe that the best way is to enable users to fully control the behavior of the program. In Favorite Folders, users specify manually whether or not they want to see a directory.

Collapsing unused folders into an ellipsis node

Favorite Folders users can hide folders by unchecking the check box located at the left of each directory name, as shown in Figure 1. To indicate the presence of hidden directories, Favorite Folders introduces a special *ellipsis node* in the directory tree structure, a folder labeled "...". It is a virtual container hiding items that are not shown. Users can redisplay hidden items by expanding the respective ellipsis node with the mouse.

Favorite Folders provide two ways of indicating the presence of hidden directories. In the default mode, all hidden items are collapsed into a single ellipsis node located at the bottom of the list. Alternatively, Favorite Folders can be configured to show an ellipsis node at each position where items were hidden.

Continuous editing

By keeping the checkboxes for hiding directories visible at all times, Favorite Folders allows users to continuously update their personalized file structure; this way Favorite Folders allows users to use the system right away, without the need for users to annotate directories upfront. Favorite Folders integrates the annotation process into the user's navigation and allows users to update favorite folders incrementally. Whenever users find an irrelevant directory either by browsing or by searching, they can hide it by unchecking the corresponding checkbox, immediately reducing the number of alternatives on the screen, thus reducing clutter.

Since the checkboxes themselves add clutter to the screen, users can hide the check boxes in order to save space on the screen, once they feel like they have reached a stable state.

Fast directory search

Since Favorite Folders indexes directories by name and stores that information in a relational database, it provides fast search on directories. The 'within favorites search' is the search restricted to the favorite folders. Users can also search for non-favorite folders in the file system with 'everywhere search'.

In order to provide users with context, Favorite Folders opens the paths to all found folders and highlights them (see Figure 2). It automatically selects the first search result directory so that its content shows in the browser pane. So, it is more useful when the search has only one result. Figure 2 shows both search results with "Explorer" keyword done by Favorite Folders and Windows search.

The high speed of Favorite Folders search makes this feature useful even for case where users already know the path to the directory they are looking for. Searching for a directory is often significantly faster than opening the sequence of sub-

directories in the path from the root especially for deeply nested directories.

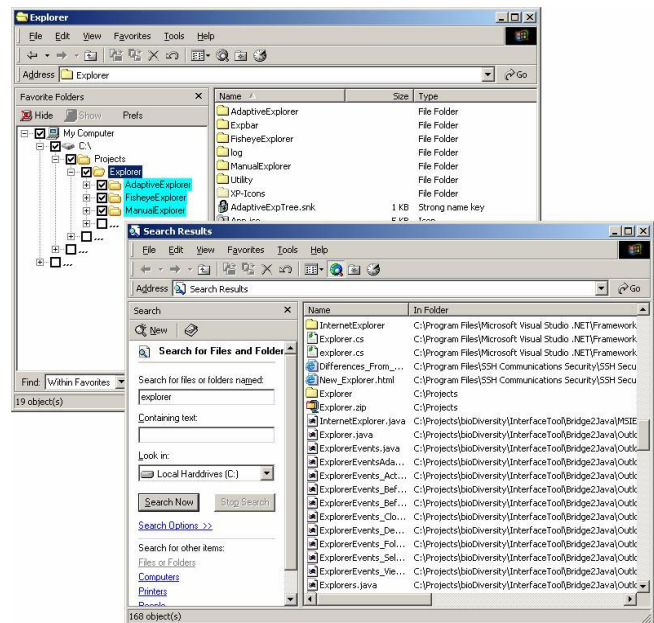


Figure 2: Favorite Folders Search (back) vs. Windows Search (front)

File system watching

It is necessary to update Favorite Folders properly when users or other programs change the file system structure. To catch up with changes in the file system, we implemented a file system watcher. The watcher is launched when the user starts Windows and updates the database when the file system changes. It can handle directory creation, renaming, and deletion.

CONCLUSION

In order to validate our design we ran a preliminary user study with five participants. First results look promising. Participants had no problems learning how to use Favorite Folders and acknowledged that this approach would help them save time when browsing directories.

While the presented work focused on the file system, we plan to generalize the approach to menus and other places where there are many items to be selected from and some are more commonly selected than others. The application to menu selection is particularly interesting because it offers a direct replacement for the adaptive solution currently implemented by Microsoft Office with potential benefits and similar functionality.

REFERENCES

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