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Title of the Invention

Dynamic Command Line Interface

Description of the Invention

A dynamic command line interface assists the user by suggesting appropriate commands, suggesting syntax corrections, and offering easily accessible help directly in the command line interface.

Problem or Opportunity

The command line is a powerful and efficient tool for executing commands and accomplishing tasks on Linux systems. However, average users are intimidated by the command line because of its cold appearance and reliance on perfect syntax. Finding help can be difficult and tedious from within the command line interface. Before a user may execute a command, advanced knowledge of the command and its usage are required. In addition, errors in syntax are not identified until the user attempts to execute the command, and even then the location of the error is often difficult to determine. A system is needed to give real time assistance to users of the command line interface.

Detailed Description of the Invention

The Dynamic Command Line Interface operates by offering suggestions to the user in real time, based on the text that the user types at the command line prompt. User input is compared to a list of commands, a description of their function, and their proper syntax that is stored in an index. The Command Line Interface can quickly search this index and display suggestion to the user in real time.

When users enter an incorrect command, the Command Line Interface searches the Command Index and displays suggested commands to the user. The user may also enter a description of the action he or she wishes to perform. When the Command Line Interface compares this with the Command Index, the Command Line Interface suggests commands whose descriptions most closely match the user's text. For example, if the user desires to move a set of files but does not know the command for moving files, he or she may type "move files" into the command line prompt. The Command Line Interface

does not recognize this as a command and so will suggest commands with similar spelling to “move files” and commands that contain “move files” in the description.

If the user enters a valid command into the command line prompt, the Command Line Interface will quickly search the Command Index and display the proper syntax for the command below the command line prompt. This allows the user to obtain help for a particular command very quickly. If the user begins to type the syntax incorrectly, the Command Line Interface will notify the user by highlighting the incorrect syntax in the command line prompt.

Figure 1 depicts the system for the Dynamic Command Line.

The User Machine is a computing device such as a desktop computer, laptop computer, or mobile device.

The OS is an operating system, such as Linux.

The Command Line Interface is a user interface through which the user communicates with the operating system by entering text based commands at the command line prompt.

The Command Index is a file containing a list of all possible commands, a description of their function, and their proper syntax. The Command Index is maintained by and stored within the Command Line Interface for fast searching.

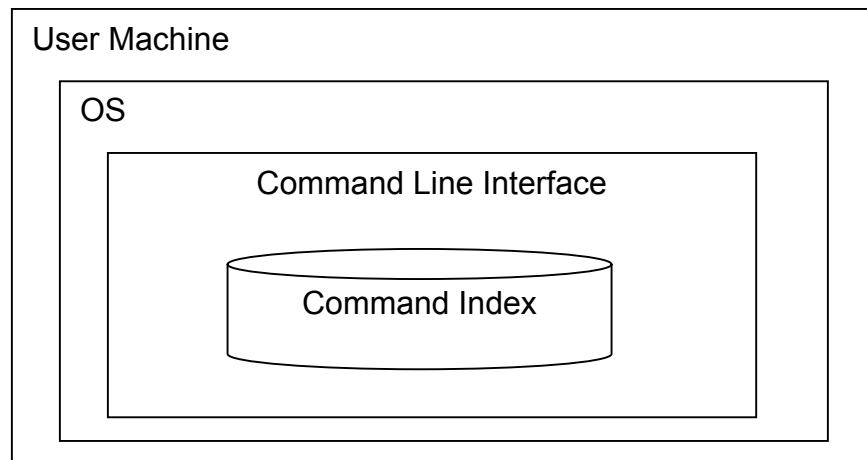


Figure 1. System of the Dynamic Command Line

Figure 2 depicts the method of operation for the Dynamic Command Line Interface.

In step 1, the User begins to type a command into the Command Line Interface.

In step 2, the Command Line Interface searches the Command Index for the command that the user has begun to type. If the command is found in the Command Index, the

method proceeds to step 4. If the command is not found in the Command Index, the method proceeds to step 3.

In step 3, if the command is not located in the Command Index, the Command Line Interface suggests commands that the user may be looking for. The Command Line Interface suggests similarly named commands found in the Command Index, as well as commands whose description is similar to the text typed by the user. The user may choose to select one of the suggested commands, or ignore the advice.

In step 4, the Command Line Interface displays the correct syntax for the command underneath the Command Line Prompt.

In step 5, the User continues typing the command into the Command Line Interface.

In step 6, the Command Line Interface compares the text that the user is typing to the Command Index to determine if the syntax is correct. If the syntax is correct, the method proceeds to step 8. If the syntax is incorrect, the method proceeds to step 7.

In step 7, because syntax is not correct, the Command Line Interface highlights the incorrect syntax in the command line prompt and indicates the correct form below the command line prompt.

In step 8, the user enters the command into the Command Line Prompt and the Command Line Interface executes the correct formulation of a command.

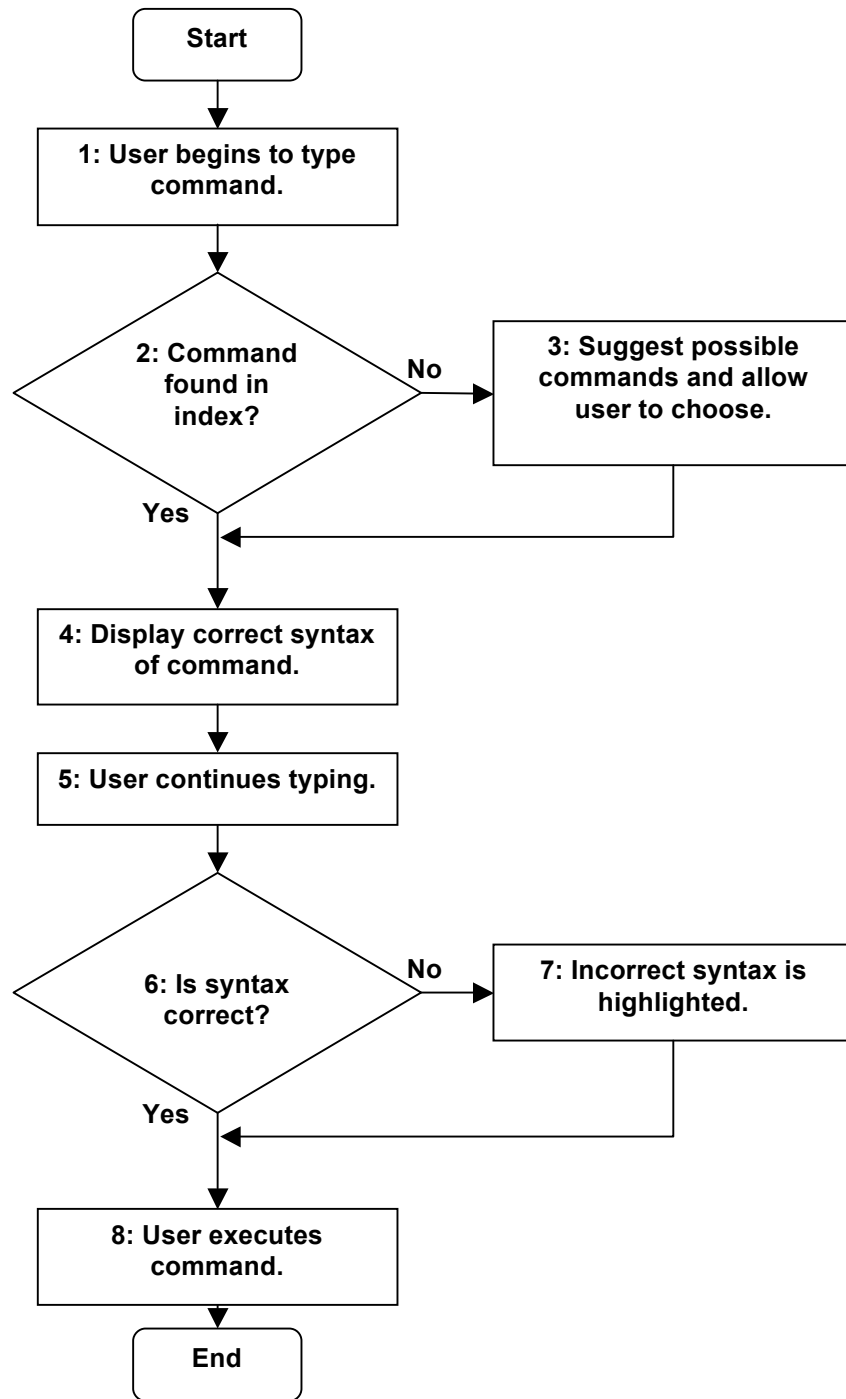


Figure 2. The Method of the Dynamic Command Line