Appendix for "Browse and Cite Stata Manuals Easily"

This appendix outlines the development process and challenges encountered in creating `wwwhelp.ado`. The first part discusses the method of constructing the URL for online help file, the second part explains the approach to handling command abbreviations, and the third part describes the implementation of automatic copying to clipboard.

1 the URL

We will first post some URLs of the online help files as examples, and then describe how to establish the association between the official commands and the URLs of the corresponding online help file, including the URLs of the `htmlV` (hereinafter referred to as `htmlURL`) and those of the `pdfV` (hereinafter referred to as `pdfURL`). These efforts are made possible by Stata's well-established help system.

The following are the `htmlURL` for several official commands:

(1) regress: https://www.stata.com/help.cgi?regress
(2) graph: https://www.stata.com/help.cgi?graph
(3) string functions: https://www.stata.com/help.cgi?string_functions

The corresponding `pdfURL` are as follows:

(1) regress: https://www.stata.com/manuals/rregress.pdf
(2) graph: https://www.stata.com/manuals/g-2graph.pdf
(3) string functions: https://www.stata.com/manuals/fnstringfunctions.pdf

The URL of an online help file can roughly consist of `[prefix] + [kws] + [suffix]`, where the `htmlURL` is composed of `https://www.stata.com/help.cgi?  + [kws]` and the `pdfURL` is composed of `https://www.stata.com/manuals/ + [kws] + .pdf`.

For `htmlURLs`, `[kws]` is relatively easy to determine and can be converted from the official command by replacing spaces in the command with underscores. For example, the `[kws]` of the `regress` command is `regress`, and the `[kws]` of `string functions` is `string_functions`. Unfortunately, the `[kws]` of `pdfURLs` cannot be obtained directly in this way because it contains the shorthand notation of the Stata manual corresponding to the official command. We require support from the index of the offline PDF version in the `.sthlp` suffixed help file, which displays in the first line when opening via `help command`. For example, the index content in the `regress.sthlp` file looks like

> [R] regress - Linear regression (View complete PDF manual entry)

and in the `progress.sthlp` appears

> [FN] String functions (View complete PDF manual entry)

These index literals can be easily combined to obtain `[kws]`, such as `rregress` for `regress` command and `fnstringfunctions` for `string functions`.

Once the `[kws]` is determined, the association between the official command and the corresponding URL is established by adding prefixes and suffixes (if any) according as the online help file is HTML or PDF. For example, the `htmlURL` for `string functions` command is structured as follows,

[**prefix**]: https://www.stata.com/help.cgi?
[**kws**]: string_functions

which can come together as https://www.stata.com/help.cgi?string_functions. The `pdfURL` for `string functions` command is structured as follows,

[**prefix**]: https://www.stata.com/manuals/
[**kws**]: fnstringfunctions
[**suffix**]: .pdf

which can come together as https://www.stata.com/manuals/fnstringfunctions.pdf.

2 Command abbreviation

Stata has a well-developed help system that can effectively handle command abbreviations. Non-stata users will find it amazing to type `reg y x` instead of `regress y x`, and `ge x = 3` instead of `generate x = 3`. One may wonder how it works. In fact, it is owe to the `chelp_alias.maint` index files.

There are 27 such index files, starting with a letter or an underscore (i.e. a-z and _) and named in the format of `?help_alias.maint`, such as `ahelp_alias.maint`. The file `help_alias.maint` is located in the `base` folder under the `ado` directory in the Stata installation path and can be viewed with the command `viewsource ?help_alias.maint`. The file contains two columns, the first of which lists all abbreviated commands, while the second lists the corresponding full names. For example, the abbreviated commands `reg`, `regr`, `regre` and `regres` all correspond to the full name `regress`.

The index file provides the correspondence between the full name of the command and all its abbreviations, with which we solve the abbreviation problem encountered by `wwwhelp`. Then it is possible to use `wwwhelp reg` instead of `wwwhelp regress`. The specific operations are: (1) determine the abbreviated command index file (e.g. `rhelp_alias.maint`) corresponding to the abbreviated command (e.g. `reg`) based on first letter, (2) find the full name (e.g. `regress`) in the index file for the abbreviated command (e.g. `reg`), (3) construct `htmlURL` or `pdfURL` from the full name.

On top of this, we have also added the `similar commands` feature, which lists all similar commands for an abbreviation on the Stata *Results Window* when the abbreviation does not uniquely identify the full name of the command.

3 Clipboard

`wwwhelp` supports outputting the linked text in various formats by setting options such as `markdown`, `txt` and `texfull`. For the convenience of users, we have incorporated a feature in `wwwhelp` that enables automatic copying the formatted text to the clipboard. Once the `wwwhelp` command is executed, users can paste the output directly into the editing interface of various software such as TexLive and Markdown (`Ctrl+V` or `Command+V`) without performing the `select text` → `copy` operation. For example,

On Windows system:

```
. wwwhelp xtreg, texfull
\href{https://www.stata.com/manuals/xtxtreg.pdf}{\bfseries{[\MakeUppercase{xt}] xtreg}}
Text is on clipboard. Press ´Ctrl+V´ to paste
```

Then, users can paste the resulting content using the `Ctrl+V` shortcut into desired text editor, without manually selecting and copying the text.

On MacOS system, the corresponding shortcut is `Command+V`, as noticed as following.

```
. wwwhelp xtreg, texfull
\href{https://www.stata.com/manuals/xtxtreg.pdf}{\bfseries{[\MakeUppercase{xt}] xtreg}}
Text is on clipboard. Press ´Command+V´ to paste
```

This capability primarily relies on the interaction between Stata and the Operating System (e.g., Windows, macOS). Stata provides the `shell` command (see **[D] shell**) which allows for interaction with the operating system, enabling users to execute operating system commands directly within Stata. For instance, the clipboard functionality of the operating system enables users to copy data to the clipboard and quickly paste it between different applications. On Windows system, the `clip` command can copy the output or specified text content to the clipboard. On MacOS system, the same operation can be done with the `pbcopy` command. The specific commands are as follows.

```
On Windows system: shell echo "text" | clip
On Mac system: shell echo text | pbcopy
```

The following setting is better as it will not add a newline.

```
On Windows system: shell echo | set /p=text| clip
On Mac system: shell echo -n text| pbcopy
```

The functionality is an embedded feature of `wwwhelp`, which by default automatically copies the text content to the clipboard without any additional operations. To disable this feature, one can add the `clipoff` option, as follows.

```
. wwwhelp xtreg, texfull clipoff
\href{https://www.stata.com/manuals/xtxtreg.pdf}{\bfseries{[\MakeUppercase{xt}] xtreg}}
```