

Experimenting with a `tty` connection for *R*

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The Portable Operating System Interface (POSIX; IEEE, 2004) offers a standard concept of the *computer terminal* and an associated Application Programming Interface (API). Operating systems that natively support the POSIX concept include GNU Linux, BSD, and Mac OS X. Support for Microsoft Windows is provided by third-party software, such as Cygwin (Red Hat, 2011). The POSIX terminal serves as a common mechanism for asynchronous data transfer, including keyboard input, USB and other hardware communications, and software-to-software connections. We present a parsimonious extension to *R* that implements the POSIX terminal API as an *R connection*. The new feature is styled as a ‘`tty` connection’.

Applications of the `tty` connection are broad in scope. This presentation highlights applications to the *useR* interface, and in hardware communications. We demonstrate how the `tty` connection facilitates common user interactions, such as ‘press any key to continue’ functionality, and password entry without displaying the password text. A live demonstration is prepared using *R* to control an external USB temperature sensor, as well as a GPS navigation device. We conclude with a discussion of integrated data collection and signal processing in medical devices.

References

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