Elements of a display-oriented interface for a quantitative analysis environment.

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July 7, 1992

Abstract

Statistical analysis systems are migrating towards becoming truly integrated programming/analysis environments. The goal is to achieve seamless integration between the programming language, the statistical methodology, and the visual display. Ultimately, the analyst should be able to communicate instructions and receive information from the computer in a simple and "natural" fashion. Interaction will typically be a mix of command line input (and output) and interaction (input and output) with various graphical elements of the visual display.

In this paper, some of the display-oriented facilities of a quantitative analysis environment, called Z, that has been developed at the University of Waterloo are described. Chief among these facilities are:

- interactive displays of the analysis history

- graphical programming

- highly modularized and easily extended statistical graphics

- data structure inspectors

- constraint-oriented programming as applied to statistical graphics.

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