

A Lightweight Statistics Package for Interactive Publications

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Abstract:

An interactive publication (IP) is a self-contained multimedia document that enables reader control over media objects and reuse of media content for further analysis. Often, biomedical publications contain tables and graphs summarizing the results of a particular study or experiment. Unfortunately, this presentation only allows the reader a static view of a summary or small subset of the underlying data. A publication presented as an IP enables reader interaction with and further analysis of the entire dataset, providing a better understanding of the study findings. The goal of this work is to develop a lightweight statistical analysis package to provide a biomedical researcher a means for data analysis within an IP. The presented statistics package is implemented as a plugin to an easy-to-use Java application ITAG+ (Interactive Tables and Graphs). ITAG+, a tool for data viewing and analysis that may be invoked from within an IP, is under development at NLM. Currently implemented functions include basic descriptive statistics, multinomial and ordinal logistic regression, and ROC analysis, among others. The tool also enables data export into formats easily importable into other packages, such as SAS, S, R, etc. An evaluation of interactive publications containing ITAG+ statistical tools is underway.