An automated R tool for identifying individuals with difficulties 
in a large pool of raters

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R is used extensively by the analysts at Google for analyzing everything from very small to 
very large datasets, from one-off analyses to regular production runs. In this talk we describe 
the use of R in flagging raters involved in the assessment of ad quality, who appear to be 
having difficulty performing their rating tasks. The use of this R script has resulted in an 
increase in system efficiency, improved timeliness of responding to rater needs, and 
decreased burden on those managing the raters.

The package RMySQL allows R to seamlessly integrate with MySQL databases, enabling 
data access directly to the production databases containing rater scores. Likewise, the 
R2HTML package provides output in a browser supported format, enabling report generation 
that can display web content and which enables movement between summary tables and 
supporting documentation using hyperlinks. Leveraging these features of R, we describe 
generating flags for three warning signs of rater difficulty:

1. excessive run lengths of repeated values,
2. the repetitive use of identical values for two distinct measures, and
3. identifying sequences of scores that appear to be assigned randomly rather than 
specific to the ads involved.

These tests could not be done by eye, either because of the large number of tasks involved or 
because they depend upon comparisons to reference distributions that are not visually 
apparent. However, those managing the raters easily grasp the conceptual basis for the tests 
and the summary tables contain hyperlinks to documentation that enables them to quickly 
find, cut and paste constructive feedback to the raters into emails in a simple and efficient 
manner. While these flags would be difficult to program in SQL, they are straightforward in R.