

## A Replication of Managing data constraints in database-backed web applications

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The replication package includes the code and data used to answer the four research questions discussed in our paper: 1) the source code of our data-constraint analysis scripts; 2) the source code of 12 open source applications used in our study; 3) the data-constraint related issues collected from 12 applications (especially for RQ3); 4) the questionnaires and de-identified results of our user study.

Making the tools and data available will allow others to verify the results of our paper. We also hope that it will facilitate further study of data-constraint related issues, as well as allow real-world developers to detect constraint inconsistencies in their applications.

The results used in our paper were generated by running the analysis scripts on the real-world applications included in the package, all of which are open-source and publicly available.

All our analysis scripts are available on GitHub with detailed comments (<http://bit.ly/constraints-checker-278>), as well as instructions to reproduce each of the figures and tables (<http://bit.ly/materail-list>) in our paper.

We include all the raw data collected in the paper at <http://bit.ly/replication-package-278> (also with reproduction instructions).

For convenience, all of our source code is also deployed on a docker image (<http://bit.ly/docker-image-278>), which allows for reproduction of results with minimal set-up.

Our replication package makes it reasonably easy to reproduce the results. The only environment required is an installed docker instance since our artifact is packaged as a docker container image. Other than that, no further specialized environment, or knowledge of any specific programming languages, is necessary.