

Online Math Databases on the Cheap

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The La Jolla Combinatorial Repository

A quick history

- Started in 1996 as a database of covering designs, one per HTML page
- Grew, rewrote as a MySQL database
- Hundreds of contributors of covering designs from all over
- Over the years added difference sets, circulant weighing matrices, Steiner systems

Issues

- I had to learn HTML, PHP, SQL, and AWS system administration
- Location changed from `http://sdcc12.ucsd.edu/~xm3dg/cover.html` to `http://www.ccrwest.org/cover.html` to `https://dmgordon.org`.
- How to make sure the data will always be available?

Many mathematicians face this issue

October 2021 Email from Robert Craigen

- Sent to 10 researchers interested in “Hadamardish” material
- Led to a zoom discussion of how to make data available online
- Wanted systematic, permanent, comprehensive databases
- No consensus about how to achieve that

For a paper published in DCC this year:

- github repo with data, basic code to use it
- jupyter notebook to run the code in
- zenodo gave it a permanent home with a DOI
- mybinder.org lets you run it without installing anything

Issues

- binder is slow
- can this scale up to larger (several GB) databases?
- Are there better solutions?