Do You See What I See?:
Technical Documentation in Digital Humanities


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Technical diagrams are wonderfully compact ways of conveying information about extremely complex systems. However, they only work for people who have been trained to read them. Humanists might never see the technical diagrams that underlie the systems they work on, reducing their ability to make realistic plans or demands for their software needs. Conversely, if you design a database for a historian, and then hand him or her a basic E-R (Entity-Relationship) or UML (Unified Modeling Language) diagram, you will end up explaining the diagram's nomenclature before you can talk about the database (and oftentimes you run out of time before getting back to the research question underlying the database). Either scenario removes the major advantage of technical diagrams and leads to an unnecessary divide between the technical and non-technical members of a digital humanities development team.

True collaboration requires documentation that can be read and understood by all participants. This is possible even for technical diagrams, but not without additional design work. Using the principles of information design, these diagrams can be enhanced through color coding, positioning, and annotation to make their meaning clear to non-technical readers. The end result is a single diagram that provides the same information to all team members. Unfortunately, graphical and information design are specialized fields in their own right, and not necessarily taught to people with backgrounds in systems architecture.

A tool that I have recently designed may provide some first steps in that direction. The program is called DAVILA, an open source relational database schema visualization and annotation tool. It is written in Processing using the toxiclibs physics library and released under the GPLv3. DAVILA comes out of my work on several history database projects, including my own dissertation research on the Early American Foreign Service. As a historian with a background in database architecture and a strong interest in information design, I have tried several ways of annotating technical diagrams to make them more accessible to my non-technical colleagues and employers. However, as the databases increased in complexity making new diagrams by hand became a time-consuming and frustrating process. The plan was to create a tool that would create these annotated diagrams quickly to accommodate the workflow used in rapid application development.

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With DAVILA you fill out a CSV file to label your diagram with basic information about the program (project name, URL, developer names) and license the diagram under the copyright or copyleft of your choice. You can then group your entities into modules, color code those modules, indicate which entity is central to each module, and provide annotation text for every entity in the database. Once DAVILA is running, users can click and drag the entities into different positions, expand an individual module for more information, or hide the non-central entities in a module to focus on another part of your schema. All in a fun, force-directed environment courtesy of the toxiclibs physics library. Pressing the space bar saves a snapshot of the window as a timestamped, vector-scaled pdf.

I now use DAVILA to describe databases and have received positive feedback on their readability from programmers and historians. I have little training in visual theory or graphic design and would welcome comments from those with more expertise in those fields. DAVILA also only works with database schemas, but similar tools would be extremely useful for other types of technical diagrams. Collaboration would undoubtably be improved if, when looking at a technical diagram, we could all see the same thing.

For more on the project see: http://www.jeanbauer.com/davila.html

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