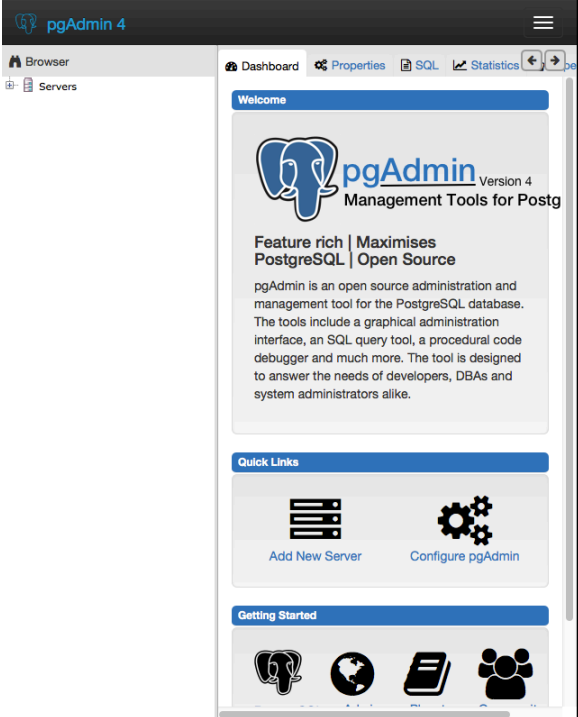



1. Installing PostgreSQL



Database Systems
CMPT 308



~ Lab 1: PostgreSQL - 20 points ~

Goals

- Install PostgreSQL and pgAdmin
- Practice getting around in the PostgreSQL and pgAdmin environments.
- Practice getting around in and using GitHub.
- Explain some key concepts we covered in class.
- Get some easy lab points.

Instructions

1. Download PostgreSQL from <http://www.postgresql.org> and install it on your computer.
2. Short essay: Data vs. Information - Select a database in use today (real or imagined) and identify the elements of "data" stored therein and describe how the database organizes the "data" into "information". Give contrasting examples of "data" and "information" that illustrate the meaninglessness of "data" without context and organization. Talk about the value the "information" provides once the component data is given context.
3. Short Essay: Data Models - Briefly describe the hierarchical and network pre-relational data models. Explain their shortcomings in relation to the relational model. Considering this, what do you think of XML as a model for data storage?


Resources

- PostgreSQL - <http://www.postgresql.org>
- Installation guides - https://wiki.postgresql.org/wiki/Detailed_installation_guides

Submitting

Take a screen shot of the pgAdmin tool up and running on your computer. Be creative as to how you will show that it's on your computer. Submit the screen shot and your essays as a PDF document. (Only PDFs will be accepted. Seriously.)

Push your work to your GitHub repository **before** the due date (see syllabus). Remember to include your name, the date, and the assignment in the (copious, meaningful, and accurate) check-in messages. Then e-mail Alan the url of your GitHub repository.



Three-color maze <D>
If this maze, get from the upper left to the lower right, avoiding going against the color red, yellow, blue. You must finish on a blue square in the maze.

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2. The EA SPORTS FUT Database is a catalogue of soccer players around the world that are part of the FIFA Ultimate Team for the EA FIFA franchise. The database holds data about players through categories such as name, club team, nationality, age, rating, position, and contract expiry. Data or simply a particular fact about a random player such as club team (ex. Barcelona) is not useful until it is assigned to a particular player. Data is usually a specific data point under a certain category/character that a player would hold. But one these specific data points are assigned to players as a characteristics, information is created a the players. A player profile has information due to the organization of his/her collection of data concerning the categories. Someone is able now to search or organize players by rating, nationality, and many other characteristics that may be important.

3. Hierarchal database model organizes data into a tree-like structure. The data is stored as records through links. With a record being a collection of fields, with each field holding one value. A record in this type of model is identified as a row in a visual representation of a hierarchal database. Each child record has one parent record. But each parent record can have one or more child records. This system allows there to be one one-to-many relationship between two types of data, a parent and many child records Network database model is very similar to hierarchal except it allows each record to have multiple parent and child records. The idea is that it allowed a more natural and easier modeling of relationships between data/entities.

Relational database model is superior to both hierarchal and network models due to the increased flexibility and independence of data. Organizing data into tables, the relational model allows for an easier and cleaner representation of linked data and the ability to link tables through the use of keys. By using tables, the ability to turn data into information is aesthetically easier to represent in the relational model.

XML concerning databases allows data to be specified and stored in XML format. The data in turn can be searched, transformed, exported and returned. It is under the category of NoSQL with means it is not a relational database. The main reason to use XML as a database storage system is due to the increasing use of XML as a data transport and a XML database increases the unity of the data storage.