

Distributed Access to Parcel-Level City Databases

Part A: Introduction to 'Zoning Variance' data base

During the next month, you'll be analyzing, cross-referencing, and mapping a dataset created by Clark Broida (MCP, 1987) of some 1800 zoning variances that were requested for Boston properties during a two-year boom-period in the mid 1980s. The [SQL Notes](#)* section of the class web page contains more information about all the databases used in the class. Thus far, we have only referenced one of the zoning variance links - the [Zoning Variance data dictionary](#)*. Shortly, we will use another: [SQL examples using zoning variances](#)*. Often, the data that we wish to study cannot be linked to mappable objects in a straightforward (one-to-one) manner. For example, we may wish to study those zoning variances involving vacant land under city control that are proposed for use as housing. Figuring out which variances are controlled by the city is a database manipulation task in and of itself and understanding the neighborhoods proximate to the proposed site might require a side effort - using GIS - to tag each zoning variance with, say, the census tract that surrounds its location. We want to help you understand - and gain some hands-on experience - with relational and spatial database management techniques that can facilitate such multi-stage analyses. Moreover, we want to help you understand how the architecture of the city's information infrastructure can affect the types of analyses that are possible and the extent to which decentralized access to city data can be an effective empowerment tool.

Part B: Using lookup tables to merge local data with large, 'read-only' official databases.

The rest of today's lecture focuses on the use of locally-owned 'lookup' tables that can be used to interpret and cross-reference large, city-owned datasets that are shared as read-only databases with city agencies and NGOs. Our example uses parcel-level databases of land use and ownership - a very detailed data layer that has recently become much more standardized and accessible. To emphasize how often it is necessary to do extensive data processing before such data can be utilized effectively, we consider the problem of addressing the 'spelling errors' in owner names that complicate efforts to determine ownership patterns from typical parcel databases. For example, there are at least 17 different spellings of the Boston Redevelopment Authority in the 'owner' field of the official parcel database for Boston. As the class syllabus indicates, this lecture draws heavily on my paper: Ferreira, Joseph Jr., *Information Technologies that Change Relationships between Low-Income Communities and the Public and Non-profit Agencies that Serve Them*. This paper is Chapter 7 of *High Technology and Low-Income*

* Kindly refer to Lecture Notes section

Communities: Prospects for the Positive Use of Advanced Information Technology, Edited by Donald A. Schön, Bish Sanyal, and William J. Mitchell, MIT Press, 1997.

Much of the lecture explains how one can use local 'lookup' tables and SQL 'update' queries to correct the spelling errors (and construct other ownership groupings). After illustrating the techniques, we discuss how these methods can provide a useful alternative to 'top-down' and 'bottom up' strategies for fixing the spelling errors. In particular, they provide a 'middle-out' alternative that allows decentralized accumulation of useful knowledge that can be readily linked to official datasets outside the user's control. Here are the [queries that we will run](#)* in class and the [PowerPoint slides](#)* that outline the methods and ideas in the book chapter.

During next week's lab and homework set #2, you'll use similar methods to categorize the owners of the properties in the zoning variance database. A set of notes about these queries is available in the [SQL Notes](#)* section of the class web page as this link: [Grouping zoning applicants via 'lookup' tables](#)*.

* Kindly refer to Lecture Notes section