Energy Efficient Homes and GIS

Project Overview

- **Motivation**
  - Energy Star homes are at least 15% more efficient than those built to 2004 International Residential Code.
  - Should all new houses being built conform to more energy efficient standards, daily oil imports would be reduced by 6%.

- **Problem Statement**
  - Create a GIS application that allows a user to search and view parcels throughout Columbus.
  - Parcels will be displayed along with information pertaining to energy efficiency.

- **Goals**
  - Fast, easy-to-use search of all parcels located throughout Columbus.
  - Display by-parcel data that is pertinent to researchers who want to identify trends in energy efficiency.
  - The platform will be part of a larger project to increase community awareness about energy efficient building practices.

Tasks Completed

- **User Form**
  - Users are able to enter information on their home to allowing those who are interested to participate.

- **Data Management**
  - Once new information has been entered into the user form and submitted, that information can be approved or rejected.

- **Google Maps is used to Display Relevant Properties by**
  - Parcel ID
  - Address
  - Range of Years over which a set of homes were built
  - Home value range

System Architecture

Future Work

- **User Login**
  - Create user accounts for administrators and researchers.
  - Used to restrict access to privileged actions.

- **Aggregate Search**
  - Allow users to retrieve aggregated data (e.g., average appraised value).
  - Useful for data sets that are too large to be displayed effectively in Google Maps.

- **MySQL Spatial Support**
  - Incorporate the LineString capabilities of MySQL.
  - More effectively represent parcels.
  - Part of OpenGIS geometry model.
  - Will speed up queries.

- **Parcel Listings**
  - Provide links for parcel results returned by searches.
  - User can fly directly to the selected parcel in Google Maps.
  - Eliminates having to search around the map.
  - Especially helpful for large data sets.

- **More User Control Over Returned Data**
  - Allow user to restrict searches to specific areas (e.g., zip code or school district).

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