Overview

This dashboard utilizes 2023 American Community Survey (ACS) 5-year estimates. Key performance indicators (KPIs) and counts are calculated using a proportional weight based on the number of residential buildings selected within a census block group. Data is calculated from block groups bordering, overlapping, or within Huntsville city boundaries. If a drawn selection area covers 50% of a block group's residential buildings, 50% of that area's census data is apportioned to the total and distributed evenly among buildings. For median values, a weighted average is calculated based on the relevant population and residential buildings within the selected area. Percentages represent the census parameter's count divided by the appropriate denominator (e.g., "Total Population").

Instructions/Features

Map-related
- Plus/Minus symbols: Control zooming in and out (alternatively, the mouse scroll wheel can be used).
- Shapes (polygon/square/circle): Allow users to filter data based on the drawn shapes' boundaries.
- Address bar: Allows users to type a partial/full address, zoom to it, and input a radius in miles to filter data within that specified area.
- X-shaped 'Clear' button: Resets selections and drawn items to the default settings.
- Double-arrowed 'Expand Map' button: Increases map size. Click again to retract the map.
- 'Home' button: Zooms the map out to the default display.
- Orange lines: Indicate Huntsville's city border.
- Black-outlined shapes: Indicate census block group borders.
- Users can hover over or click within a block group boundary to view block group-level census data.

Selection filters
- Dropdown menus: User selects 'Category' from the dropdown menu, followed by selection from the 'Subcategory' dropdown menu to see relevant data visualized by a table and bar graph.
- Map Layer View: allows users to view a block-group-level color gradient of a subcategory division on the map (the darkest color indicates the highest count).

Calculations

How total counts are calculated (Example):

Block group 1 (map selection covers 40% of residential buildings).
Block group 2 (map selection covers 20% of residential buildings).

Block group 1 has 1000 people.
Block group 2 has 500 people.

Block group 1 population within map selection = (1000 x 0.4) = 400
Block group 2 population within map selection = (500 x 0.2) = 100
Total population within selection = 400 + 100 = **500.**

How weighted medians are calculated (Ex: Median Age):

Block Group 1 median age = 30.5 years old
Block Group 2 median age = 43.7 years old

Block Group 1 population within map selection = 400.
Block Group 2 population within map selection = 100.

Total age = (30.5 x 400) + (43.7 x 100) = 16,570.
Total population = 400 + 100 = 500.
Total age / Total population = 16570/500 = **33.14 years old**

How % of totals are calculated (Ex: Households with Computers):

Block group 1 (map selection covers 40% of residential buildings).
Block group 2 (map selection covers 20% of residential buildings).

Block group 1 has 300 households with computers.
Block group 2 has 120 households with computers.

Block group 1 has 1000 households.
Block group 2 has 750 households.

Block group 1 computer households within map selection = (300 x 0.4) = 120.
Block group 2 computer households within map selection = (120 x 0.2) = 24.

Block group 1 total households within map selection = (1000 x 0.4) = 400.
Block group 2 total households within map selection = (750 x 0.2) = 150.

Total computer households within map selection (numerator) = 120 + 24 = 144.
Total households within map selection (denominator) = 400 + 150 = 550.
% of computer households within map selection = (144/550) x 100 = **26.18%**

% of Total (Denominators Used)

Census Division	Denominator
Age & Gender / Race	Total Population
Employment	Population 16+
Education / Poverty / Veterans	Population 18+
Health Insurance	Population (non-institutionalized)
Family size / Income / Internet / Language / Marriage & Children & Living alone / SNAP & Disability	Total Households
Home value	Owner-Occupied Housing Units
Mobile homes	Population in Occupied Housing Units
Vehicle availability	Occupied Housing Units
Year housing built	Total Housing Units
Transportation method	Workers 18+
Travel time to work	Non-remote Workers 18+