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**Title: GIS Analysis of Average Airbnb rentals per Median Household Income in Texas Counties.**

**Field:** Business/Information Systems

**Description**

Airbnb has been instrumental in sharing economy and vacation rentals and currently operating in more than 191 countries. Dataset contains 18,000 plus records but, the records used in this analysis will contain June 2017 rentals to get a fresh picture. Median Household Income data (2016) will be normalized with Average Rentals to answer the question whether rentals in high income area are high as always?

**Geographic Extent**

The geographic extent of the GIS model will be Counties in Texas State, United States.

**Geographic granularity**

The analysis will compare Average Airbnb rentals with Median Household Income in counties where Airbnb operates to analyze whether rentals in wealthier counties are high or vice versa.

**Data layers:**

State Base Layer:

h<ttps://www.census.gov/geo/maps-d>ata/data/cbf/cbf\_couwithinua.html

Airbnb Data:

h<ttps://www.kaggle.com/PromptCloudHQ/airbnb-property-d>ata-from-texas

Median Income Data:

<https://www.census.gov/search->results.html?page=1&stateGeo=&searchtype=web&cssp=Typeahead&q=Texas+income&search.x=0&search.y=0&search=submit

**Processing:**

1. Upload the shp file base layer of Texas with counties into Arcmap. Name it Texas.
2. Upload Airbnb rentals per cities X-Y plot using Add XY Data function with Latitude and Logitude.
3. Upload Median household income by county csv data using Add function.
4. So as to make the join with the base layer possible, convert XY Data into shp file with export function (right click the layer -> data export). Then click ‘OK’ to add the resulting shp file in the current map.
5. Similarly convert the Median Income data into dbf format and add it to the map.
6. Name the new shp file as Airbnb cities and dbf file as Median Income.
7. Join the Median Income layer with the base layer (right click Texas -> join-> join with table attributes. )
8. Now join the Airbnb layer with the base layer (right click Texas -> join-> join data with spatial location ). This will result into a new layer altogether and will contain all the required data in the attribute table including Median Income and Sum, Average and Count of Airbnb rents assigned to their specific location. Name this new output as Texas Counties.
9. Now make a new layer which highlights only those counties where the Airbnb points fall. Use Selection by Location function, Target layer : Texas Counties, Source Layer: Airbnb , method: intersect the source layer
10. Name this new Layer as Counties with Airbnb.
11. Change the Symbology to show a heat map of Average of Airbnb city rent by County in properties. Field: - Avg\_AvgRte Normalization: - None. Set Purple Color Ramp.
12. Now make a copy of this Layer and in Symoboly set Normalization: - Income to get our Final Analysis Output, i.e. Average Rent per Average County in Texas. Set Yellow to Red Color Ramp.
13. Export jpeg and pdf after adding Aesthetics in Layout mode.

**A Representative Image (.jpg)**

