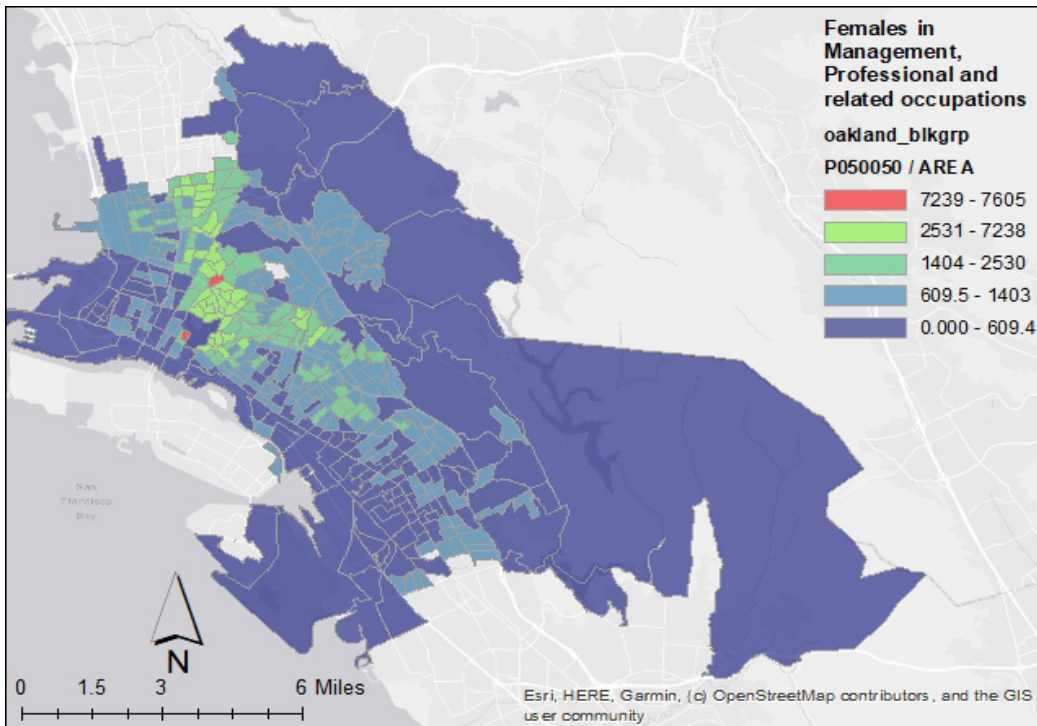


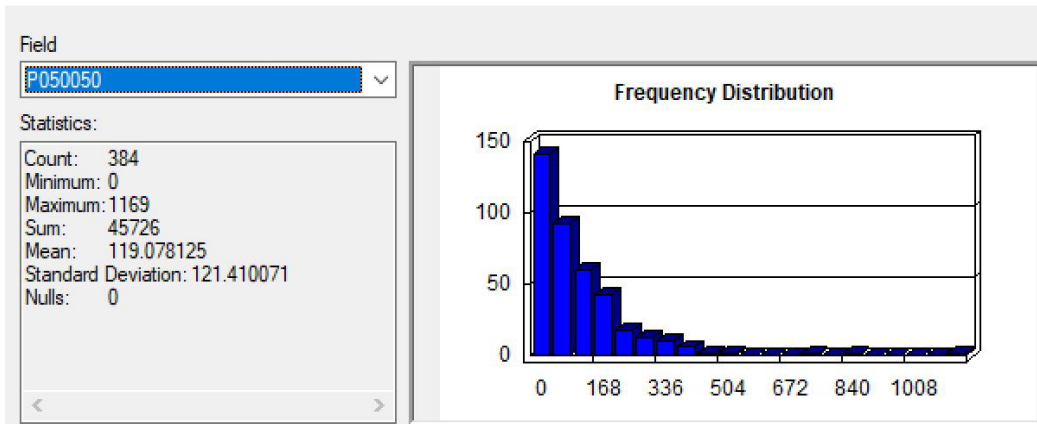
Lab 2: Data Base Management in ArcGIS 10.7- Creating and Managing Attribute Data



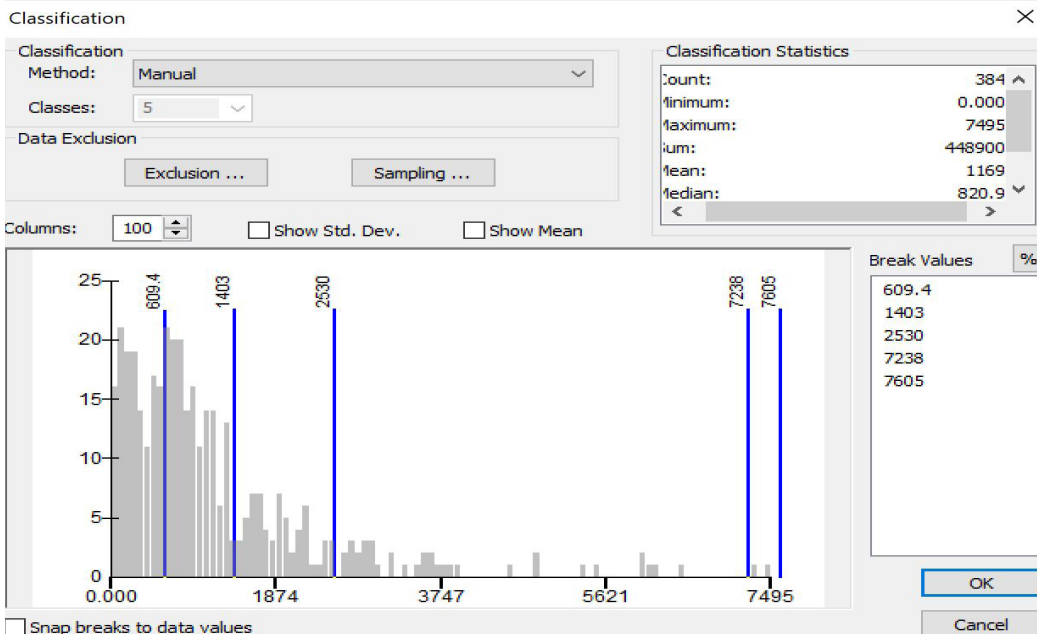
Question 1: Stats on females in management, professional and related occupations. Normalization over AREA of Oakland. P050050: Management, professional, and related occupations.

Notice the red polygons displaying the highest densities of females in the given field per squared mile. These polygons are located near Piedmont, specifically on Oakland Ave with a female median age of 36 years old and another located near the downtown area, Northeast of Merritt Lake with a female median at 40 years old.

Statistics of oakland_blkgrp_employmentdata

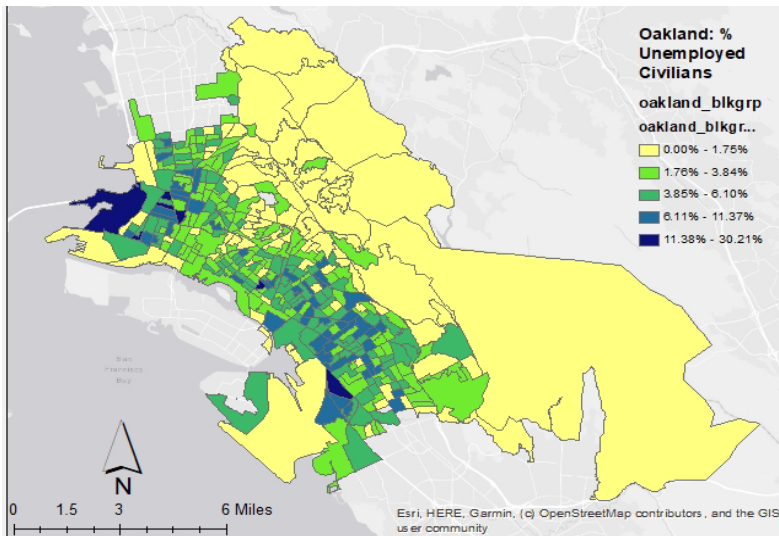


The statistics for Female in management professional and related occupations are listed in the left figure. Notice that these numbers are different than the statistics on female in this industry normalized over area on the bottom figure.



The maximum number of females in this field in any given polygon is 1169 but the maximum density of female in this field is 7495 females per squared mile.

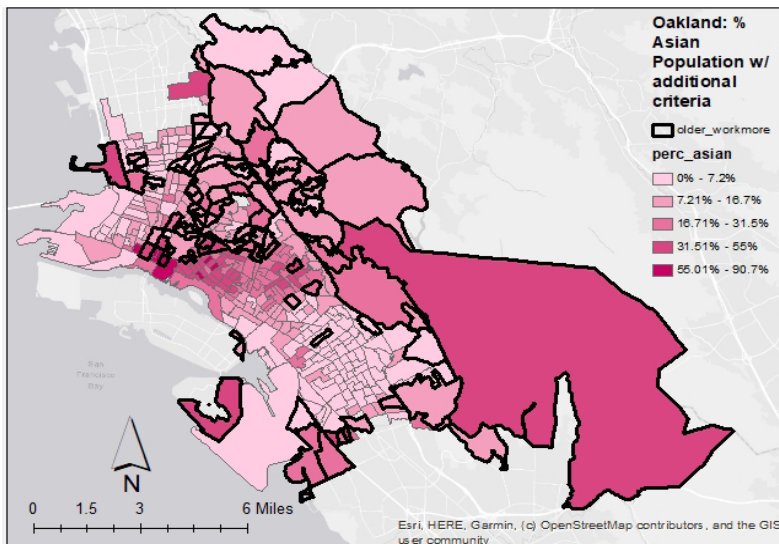
Question 2: Create 3 new variables in the employment dataset and block group. Spatial join the blockgroup and employment dataset.



Criteria 1: Percentage of unemployment
For this criteria, I added two columns from the employment data to find the total of unemployment from both male and female civilians.
[employmentdata.P043007] + [employmentdata.P043014]

The total employment is divided by total block group population to find the percentage of unemployment and normalized by area to find the density of unemployment rate.

Here we observe a strip of higher unemployment rate both North and South of downtown Oakland.

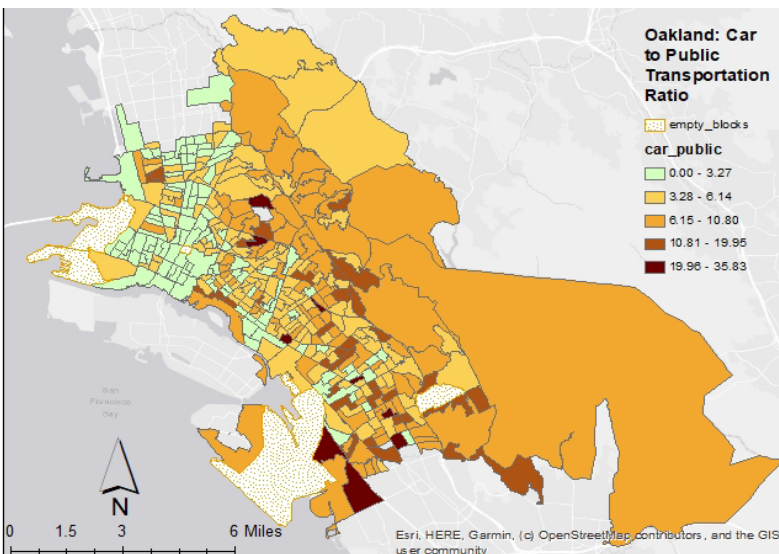


Criteria 2: Percentage of asian population with selected block groups that are have median age older than 34 AND males work 35 or more hours/week.

For this criteria, calculated the percentage of asian population using asian and total population columns. Then, to find medium age older than 34 (34 is the mean) and more than 270 males (270 is the mean) who usually worked 35 or more hours/week in 1999 I queried as followed:
“oakland_blkgrp.MED_AGE”>34 AND “employmentdata.P047004”>270.

You can see that polygons that fit the query are outliers of the central downtown area. This could mean that those who are older and worked

more don't have the mobility to live close to area of economic opportunities yet they need to work longer hours to make ends meet. Specifically the block groups that have higher asian population that fit the query are farther East, Northeast and South of central downtown. These individuals could be elders who are of low-income.



Criteria 3: Oakland: Car to Public Transportation Ratio.

For this criteria, I want to see where and how both means of transportation are used in Oakland. The ratio is calculated as followed:
[P030002] / [P030005]

While doing so, I notice the block groups with 0 values and labelled them with Cropland symbol. Further inspection show that they are public sites such as Oakland Zoo, Oakland Airport and industrial sites next to the highways.

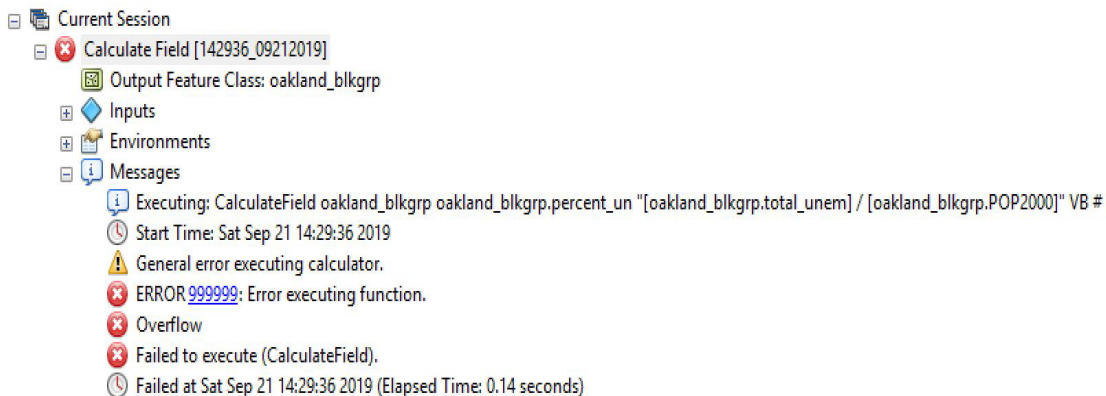
We observe a higher ratio of car to public transportation in certain polygons further South and East of Oakland.

Question 3: Describe and include narrative of any problems such as changing the classification can project a very different distribution and tell a different story within the city, creating an equity issue by reclassification.

Notice in map 1, it looks as though the block group furthest North of Oakland has the highest percentage of unemployment. That is further from the truth looking at map 3 where I found out that there is no housing unit in that block, the unemployment rate was calculated since there are some people that live there as recorded in the census block data, but this is an anomaly and should not be taken literally just from looking at map 1 as a block group of high unemployment. This could create an equity issue when policymakers are informed about the “intentional and unintentional lies” of maps.

To make an effective map, in map 3, I changed the default color of one of the intervals to deemphasize the block groups of low car to public transportation means and as a result encourages the viewers to look at the polygons of high ratio. Also, I deemphasized the polygons that are of public and industrial sites. This further narrows down the polygon of interest, ones with higher ratio and their locations in Oakland.

I decided to keep the classification method on these maps in Natural Breaks (Jenks) because it creates classes based on natural grouping of the data by minimizing between-class variations and maximizing the within-class variations.

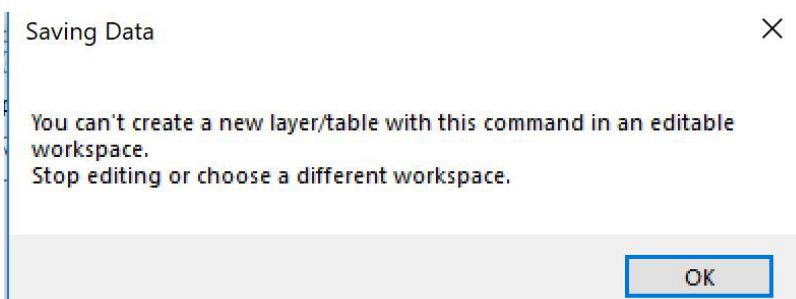


Question 4: Any problem experienced during this lab.

Problem 1: For question 3 creating the new variable task, I kept getting this error when I try to find the percentage of total unemployment rate in Oakland by calculated total unem-

ployment from males and females divided by total population in each block group.

Solution: Query for the variable with values higher than 0 as instructed.



Problem 2: Editor preventing operations. I tried adding a field but the add and delete field options were inactive. So, I decided to select the fields that I was interested in and I tried saving the data as a new shapefile as instructed by the lab, which yielded this error message to the right.

Solution: Clicked on “Stop Editing” in the Editor

toolbar.

Problem 3: Everytime I create a new field, the old field calculation formula carried over to the new field. I tried updating the new formula but when I checked, the old field now has the new calculation.

Solution: Closed Arcmap and reopened it and started over with new dataset.

Problem 4: Using the wrong data type

I used long integer when I tried to calculate percentage of Black population. I got back 1s and 0s, which I thought was very strange.

Solution: Use Double data type to represent decimals, set my own precision and scale for each calculation.