

Final Project

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04/28/2021

```
# settings for tidycensus
options(tigris_class = "sf")
options(tigris_use_cache = TRUE)
census_api_key("7da13c910d6b0d231eff70a1168b636ee281edd3", overwrite = TRUE)

## To install your API key for use in future sessions, run this function with
`install = TRUE`.

setwd("C:/Users/vival/Documents/GES 486/Lab8")

# This gets African American Population and MHHI in 2019
AA_Data <- get_acs(geography = "tract",
  variables = c("total_population" = "B01003_001", # Total population
    "black_pop" = "B01001B_001",
    "med_hh_inc" = "B19013_001" # Median household income
  ),
  year = 2019,
  survey = "acs5",
  state = c(24),
  county = c(003),
  geometry = TRUE, # download the shapefile with the data
  output = "wide")%>% clean_names() # need this 2019

## Getting data from the 2015-2019 5-year ACS

# Measuring census tract with highest AA. proportion
AA_black_pop = AA_Data$black_pop_e[!is.na(AA_Data$black_pop_e)]

# Measuring census tract with highest MHHI
AA_mhhi = AA_Data %>% filter(!is.na(AA_Data$med_hh_inc_e))

# Creating a Bi_class for A.A. County
AA_bi_data = bi_class(AA_mhhi, x= black_pop_e, y = med_hh_inc_e, style =
"quantile", dim = 3)

# Mapping Bivariate Data for AA County
AA_bi_map =
  ggplot()+
  geom_sf(data = AA_bi_data, mapping = aes(fill = bi_class), color = "white",
size = 0.5, show.legend = FALSE) +
  bi_scale_fill(pal = "DkViolet", dim = 3)+
```

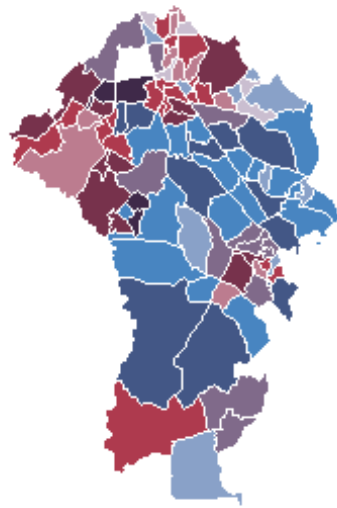
```

labs(
  title = "Proportion of Income and Race",
  subtitle = "Anne Arundel County")+
bi_theme()

ggplot()+
  geom_sf(data = AA_bi_data, mapping = aes(fill = bi_class), color = "white",
size = 0.5, show.legend = FALSE) +
  bi_scale_fill(pal = "DkViolet", dim = 3)+
  labs(
    title = "Proportion of Income and Race",
    subtitle = "Anne Arundel County")+
  bi_theme()

```

Proportion of Income and Race Anne Arundel County



```

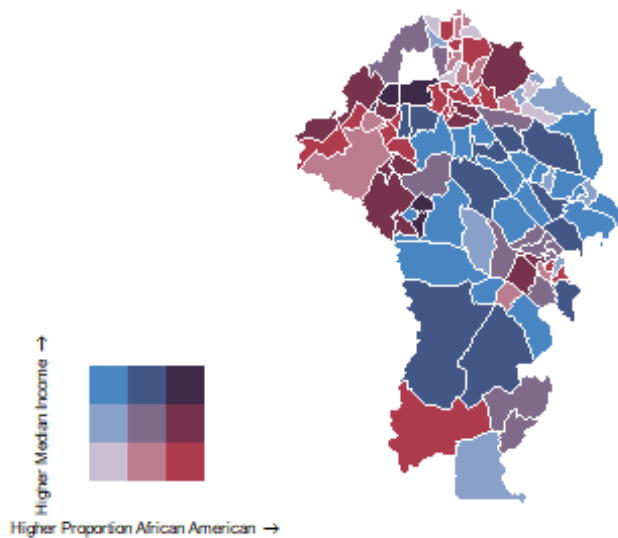
# Creating bivariate Legend using cowplot
AA_legend <- bi_legend(pal = "DkViolet",
                      dim = 3,
                      xlab = "Higher Proportion African American ",
                      ylab = "Higher Median Income ",
                      size = 6)

# Combining map with Legend
AA_legend_plot <- ggdraw() +
  draw_plot(AA_bi_map, 0, 0, 1, 1) +
  draw_plot(AA_legend, 0.01, .01, 0.3, 0.3)

```

```
AA_legend_plot
```

Proportion of Income and Race Anne Arundel County



8. Write the `bi_class` output to a geojson file. (1 points)

```
#st_write(AA_bi_data, "Patterson_AAcounty.geojson")
```

Add a new chunk by clicking the *Insert Chunk* button on the toolbar or by pressing *Ctrl+Alt+I*.

When you save the notebook, an HTML file containing the code and output will be saved alongside it (click the *Preview* button or press *Ctrl+Shift+K* to preview the HTML file).

The preview shows you a rendered HTML copy of the contents of the editor. Consequently, unlike *Knit*, *Preview* does not run any R code chunks. Instead, the output of the chunk when it was last run in the editor is displayed.