# Assignment_Two_Salameh

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## Part One: Load Libraries

```
setwd("~/Downloads/GIS/Assignment_Two")

library(tidyverse)
```

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
## v ggplot2 3.4.0     v purrr   0.3.4
## v tibble  3.1.7     v dplyr   1.0.9
## v tidyr   1.2.0     v stringr 1.4.0
## v readr   2.1.2     v forcats 0.5.1
## Warning: package 'ggplot2' was built under R version 4.1.2
## Warning: package 'tibble' was built under R version 4.1.2
## Warning: package 'tidyr' was built under R version 4.1.2
## Warning: package 'readr' was built under R version 4.1.2
## Warning: package 'dplyr' was built under R version 4.1.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

```
library(sf)
```

```
## Warning: package 'sf' was built under R version 4.1.2
## Linking to GEOS 3.10.2, GDAL 3.4.2, PROJ 8.2.1; sf_use_s2() is TRUE
```

```
library(tmap)
```

```
## Warning: package 'tmap' was built under R version 4.1.2
```

```
library(RColorBrewer)
```

```
## Warning: package 'RColorBrewer' was built under R version 4.1.2
```

```
library(tidycensus)
```

```
## Warning: package 'tidycensus' was built under R version 4.1.2
```

```
options(tigris_use_cache = TRUE)
```

## Part Two: Census Data

```
ACS21var <- load_variables(2021, "acs5", cache = TRUE)

# view(ACS21var)

Cali_county_income <- get_acs(
  geography = "county",
  variables = c(per_capita_income = "B19301_001"),
  state = "CA",
  year = 2021
)
```

```
## Getting data from the 2017-2021 5-year ACS
```

```
Cali_county_sp <- get_acs(
  state = "CA",
  geography = "county",
  variables = c(per_capita_income = "B19301_001"),
  year = 2021,
  geometry = TRUE
)
```

```
## Getting data from the 2017-2021 5-year ACS
```

```
Cali_tracts_income <- get_acs(
  geography = "tract",
  variables = c(per_capita_income = "B19301_001"),
  state = "CA",
  year = 2021
)
```

```
## Getting data from the 2017-2021 5-year ACS
```

```
Cali_tracts_sp <- get_acs(
  state = "CA",
  geography = "tract",
  variables = c(per_capita_income = "B19301_001"),
  year = 2021,
  geometry = TRUE
)
```

```
## Getting data from the 2017-2021 5-year ACS
```

```
Cali_tracts_sp <- na.omit(Cali_tracts_sp)

Cali_county_sp <- na.omit(Cali_county_sp)
```

## Part Three: Mapping

```
CA_counties <- tm_shape(Cali_county_sp) +
  tm_fill("estimate",
    n = 5, palette = "BuPu", style = "quantile",
    title = "2021 Income Per-Capita
         by County"
```

```
  ) +
  tm_borders(alpha = .5, col = "black") +
  tm_scale_bar(position = c("left", "bottom")) +
  tm_compass(text.size = 0.5, position = c("RIGHT")) +
  tm_layout(legend.text.size = .6, legend.title.size = .9, legend.position = c("right", "top"), frame =


CA_tracts <- tm_shape(Cali_tracts_sp) +
  tm_fill("estimate",
    n = 5, palette = "BuPu", style = "quantile",
    title = "2021 Income Per-Capita
         by Census Tract"
  ) +
  tm_borders(alpha = .2, col = "black") +
  tm_compass(text.size = 0.5, position = c("RIGHT")) +
  tm_scale_bar(position = c("left", "bottom")) +
  tm_layout(legend.text.size = .6, legend.title.size = .9, legend.position = c("right", "top"), frame =


# tmap_save(tmap_arrange(CA_counties, CA_tracts),
#  filename = "my_plot.png", width = 7, height = 5
# )
```

**END**