Takoudes Independent Problem 1

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dist1940 <- read.csv(file="1940DistVal.csv", header=T)  
dist2020 <- read.csv(file="2020DistVal.csv", header=T)  
median1940 <- read.csv(file="1940MajorValue.csv", header=T)  
median2020 <- read.csv(file="2020MajorValue.csv", header=T)  
  
library(tidyverse)

## ── Attaching packages ─────────────────────────────────────── tidyverse 1.3.2 ──  
## ✔ ggplot2 3.4.0 ✔ purrr 1.0.1   
## ✔ tibble 3.1.8 ✔ dplyr 1.0.10  
## ✔ tidyr 1.2.1 ✔ stringr 1.5.0   
## ✔ readr 2.1.3 ✔ forcats 0.5.2   
## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()

median1940 <- median1940 %>%  
 select(-cntmedValu) %>%  
 select(iso\_major, featCount, avgmedValu)  
  
median2020 <- median2020 %>%  
 select(-cntmedValu) %>%  
 select(iso\_major, featCount, avgmedValu)  
  
median\_table <- left\_join(median1940, median2020, by = "iso\_major")  
  
dist1940 <- dist1940 %>%  
 select(-c(cntmedValu, featCount)) %>%  
 pivot\_wider(  
 names\_from = iso\_major,   
 values\_from = avgmedValu,  
 ) %>%  
 arrange(by=as.integer(substr(distgrp, 1, 2)))  
  
dist2020 <- dist2020 %>%  
 select(-c(cntmedValu, featCount)) %>%  
 pivot\_wider(  
 names\_from = iso\_major,   
 values\_from = avgmedValu,  
 ) %>%  
 arrange(by=as.integer(substr(distgrp, 1, 2)))

library(gt)  
gt\_median <- gt(median\_table) %>%  
 tab\_header(title = "Average of median home value for owner-occupied houses in St. Louis, MO in 1940 and 2020") %>%  
 cols\_label(  
 iso\_major = "Majority Group",  
 featCount.x = "Feature Count (1940)",  
 avgmedValu.x = "Average Median Home Value (1940)",   
 featCount.y = "Feature Count (2020)",   
 avgmedValu.y = "Average Median Home Value (2020)"  
 ) %>%  
 cols\_align(align = "center", columns = everything())  
  
gt\_dist1940 <- gt(dist1940) %>%  
 tab\_header(title = "Average of median home value for owner-occupied houses in St. Louis, MO in 1940") %>%  
 cols\_label(  
 distgrp = "Distance from CBD (km)",  
 count = "Feature Count",  
 ) %>%  
 cols\_align(align = "center", columns = everything())  
  
gt\_dist2020 <- gt(dist2020) %>%  
 tab\_header(title = "Average of median home value for owner-occupied houses in St. Louis, MO in 2020") %>%  
 cols\_label(  
 distgrp = "Distance from CBD (km)",  
 count = "Feature Count",  
 ) %>%  
 cols\_align(align = "center", columns = everything())  
  
gt\_median

Table 1: Average of median home value for owner-occupied houses in St. Louis, MO in 1940 and 2020

| Majority Group | Feature Count (1940) | Average Median Home Value (1940) | Feature Count (2020) | Average Median Home Value (2020) |
| --- | --- | --- | --- | --- |
| Isolated Black | 9 | 1357.889 | 71 | 75926.76 |
| Isolated White | 198 | 4144.904 | 144 | 274204.17 |
| Mixed Black | 3 | 1956.333 | 36 | 127780.56 |
| Mixed White | 6 | 1378.667 | 69 | 186571.01 |

gt\_dist1940

Table 1: Average of median home value for owner-occupied houses in St. Louis, MO in 1940

| Distance from CBD (km) | Feature Count | Isolated Black | Isolated White | Mixed Black | Mixed White |
| --- | --- | --- | --- | --- | --- |
| 0 to 3 | 24 | 904.8333 | 1331.846 | 1959.5 | 1405 |
| 3 to 5 | 25 | 2798.0000 | 2716.087 | NA | NA |
| 5 to 10 | 77 | NA | 4116.658 | NA | 2601 |
| 10 to 15 | 45 | NA | 5281.659 | 1950.0 | NA |
| 15 or more | 45 | 1196.0000 | 4658.286 | NA | 728 |

gt\_dist2020

Table 1: Average of median home value for owner-occupied houses in St. Louis, MO in 2020

| Distance from CBD (km) | Feature Count | Isolated Black | Isolated White | Mixed Black | Mixed White |
| --- | --- | --- | --- | --- | --- |
| 0 to 3 | 11 | 152475.00 | 179600.0 | 186700.0 | 208166.7 |
| 3 to 5 | 21 | 55328.57 | NA | 184550.0 | 245825.0 |
| 5 to 10 | 65 | 67704.35 | 213957.9 | 108466.7 | 210923.5 |
| 10 to 15 | 69 | 64321.74 | 257885.3 | 122316.7 | 213600.0 |
| 15 or more | 154 | 96928.57 | 295425.8 | 108418.8 | 154714.3 |