

Project Proposal

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```
library(tidyverse)
library(tidymodels)
library(patchwork)
library(ggplot2)
#install.packages("psych")
library(psych)
#install.packages("readxl")
library(readxl)
library(dplyr)
```

Introduction

Data description

```
ca_incarceration <- read_excel("data/California incarceration rate data.xlsx")
ca_lead <- read_excel("data/ZIPCodeData2022 (1).xlsx")

ca_demographic <- read_csv("data/demographic.csv", skip = 1)
ca_income <- read_csv("data/income.csv", skip = 1)
```

```
#transforming the data
```

```
#ca_demographic <- read_csv("data/demographic.csv", skip = 1)
```

```
ca_demographic <- ca_demographic |>
  select(!((contains("Estimate") | contains("Margin")) & !37)) |>
  select(c(1:6, 8:17, 40, 41, 42, 47, 55, 60)) |>
  rename_with(~ str_replace(., ".*!!", "")) |>
  mutate(`Geographic Area Name` = substr(`Geographic Area Name`, 7, 11)) |>
```

```

  rename(zip_code = `Geographic Area Name`) |>
  mutate(zip_code = as.numeric(zip_code))

#ca_income <- read_csv("data/income.csv", skip = 1)

ca_income <- ca_income |>
  select(c(1, 2, 25, 27)) |>
  rename_with(~ str_replace(., ".*!!", "")) |>
  mutate(`Geographic Area Name` = substr(`Geographic Area Name`, 7, 11)) |>
  rename(zip_code = `Geographic Area Name`) |>
  mutate(zip_code = as.numeric(zip_code))

#renaming the columns
ca_incarceration <- ca_incarceration %>%
  mutate(zip_code = `California ZIP codes` `)

ca_lead <- ca_lead %>%
  mutate(zip_code = `ZIP Code`) %>%
  mutate(zip_code = as.numeric(zip_code))

#left_join to pare down to least observation dataset
joined_data1 <- left_join(ca_lead, ca_incarceration, by = "zip_code")
joined_data2 <- left_join(joined_data1, ca_demographic, by = "zip_code")

joined_data <- left_join(joined_data2, ca_income, by = "zip_code")

joined_data %>%
  nrow()

```

```
[1] 1777
```

Exploratory data analysis

...

Analysis approach

...

Data dictionary

The data dictionary can be found [here](#) [Update the link and remove this note!]