Crime Scores by Zip

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Crime Scores by Zip

We need to calculate the crime score for each zip code using the crimes dataset and the crime scoring we create then normalized by population.

First read in the files.

```
# Read in crime data, crime reference scoring, zipcode populations,
fact_values table
loc <- "C:/Users/taylo/OneDrive/Documents/School/Data Engineering
Platforms/Final Project/Data/"
crimes <- read.csv(paste0(loc,"CrimeTable.csv"),
                   header = T,
                   stringsAsFactors = F)

crime.ref <- read.csv(paste0(loc,"CrimeScores.csv"),
                      header = T,
                      stringsAsFactors = F)

zip.pop <- read.csv(paste0(loc,"PopTable.csv"),
                    header = T,
                    stringsAsFactors = F)
fact_values <- read.csv(paste0(loc,"Fact_Values.csv"),
                        header = T,
                        stringsAsFactors = F)

# Add column to crime table for crime score
crimes$score <- rep(NA, nrow(crimes))
```

Next look up the crime score assigned to each crime type

```
# Look up crime score from the reference table
for (i in 1:nrow(crimes)) {
  for (j in 1:nrow(crime.ref)) {
    if (crimes$crime_type[i] == crime.ref$crime_type[j]) {
      crimes$score[i] <- crime.ref$score[j]
    }
  }
}
```

Then aggregate the total crime score for each zip code.

```
# Aggregate crime scores by zip
fact_values$crime_score <- rep(0, nrow(fact_values))

for (i in 1:nrow(crimes)) {
  for (j in 1:nrow(fact_values)) {
    if (fact_values$zip_code[j] == crimes$zip_code[i]) {
        fact_values$crime_score[j] <- fact_values$crime_score[j] +
crimes$score[i]
    }
  }
}
```

Finally normalize the total crime scores by dividing by each zip code's population and write to CSV.

```
# Normalize crime scores by dividing by population of each zip
for (i in 1:nrow(fact_values)) {
  fact_values$crime_score[i] <- fact_values$crime_score[i] /
    zip.pop$population[zip.pop$zip_code == fact_values$zip_code[i]]
}

write.csv(fact_values, file = "Zip Crime Scores v2.csv")
```