West LA Crime

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1. Crime frequency by Reporting District

```
library(rgdal)
library(classInt)
library(RColorBrewer)
library(maptools)
library(tidyverse)
# Import Data
crime=read.csv("C:/Users/wangb/Downloads/Crime_Data_from_2010_to_Present.csv")
districts=readOGR(dsn="C:/Users/wangb/Downloads/LAPD_Reporting_Districts.shp")
```

```
## OGR data source with driver: ESRI Shapefile
## Source: "C:\Users\wangb\Downloads\LAPD_Reporting_Districts.shp", layer: "LAPD_Reporting_Districts"
## with 69 features
## It has 10 fields
## Integer64 fields read as strings:  OBJECTID REPDIST PREC
```

```
freq=as.data.frame(table(crime$Reporting.District))
#crime frequency in different reporting districts in west LA
freq %>%
  arrange(desc(Freq)) %>%
  head(10)
```

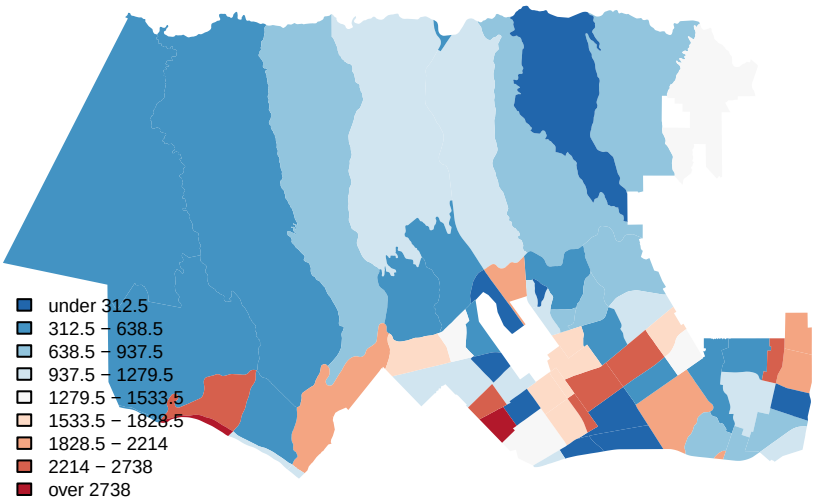
```
##    Var1 Freq
## 1   884 3036
## 2   889 3011
## 3   853 2465
## 4   839 2446
## 5   859 2413
## 6   849 2396
## 7   881 2353
## 8   835 2289
## 9   831 2139
## 10  842 2029
```

```
# number of reporting districts in west LA
length(freq$Var1)
```

```
## [1] 70
```

```
districts@data=merge(districts@data,freq,by.x="REPDIST",by.y="Var1",all.x=TRUE)
# plot spatial distribution of crime in west LA
districts$Freq[is.na(districts$Freq)]=0
var=districts@data[,"Freq"]
breaks=classIntervals(var, n = 9, style = "fisher")
color=rev(brewer.pal(9, "RdBu"))
plot(districts, col = color[findInterval(var, breaks$brks, all.inside = TRUE)],
```

```
     axes = FALSE, border = NA)
legend(x = -118.6, y = 34.07, legend = leglabs(breaks$brks), fill = color, bty = "n", cex = 0.6)
```

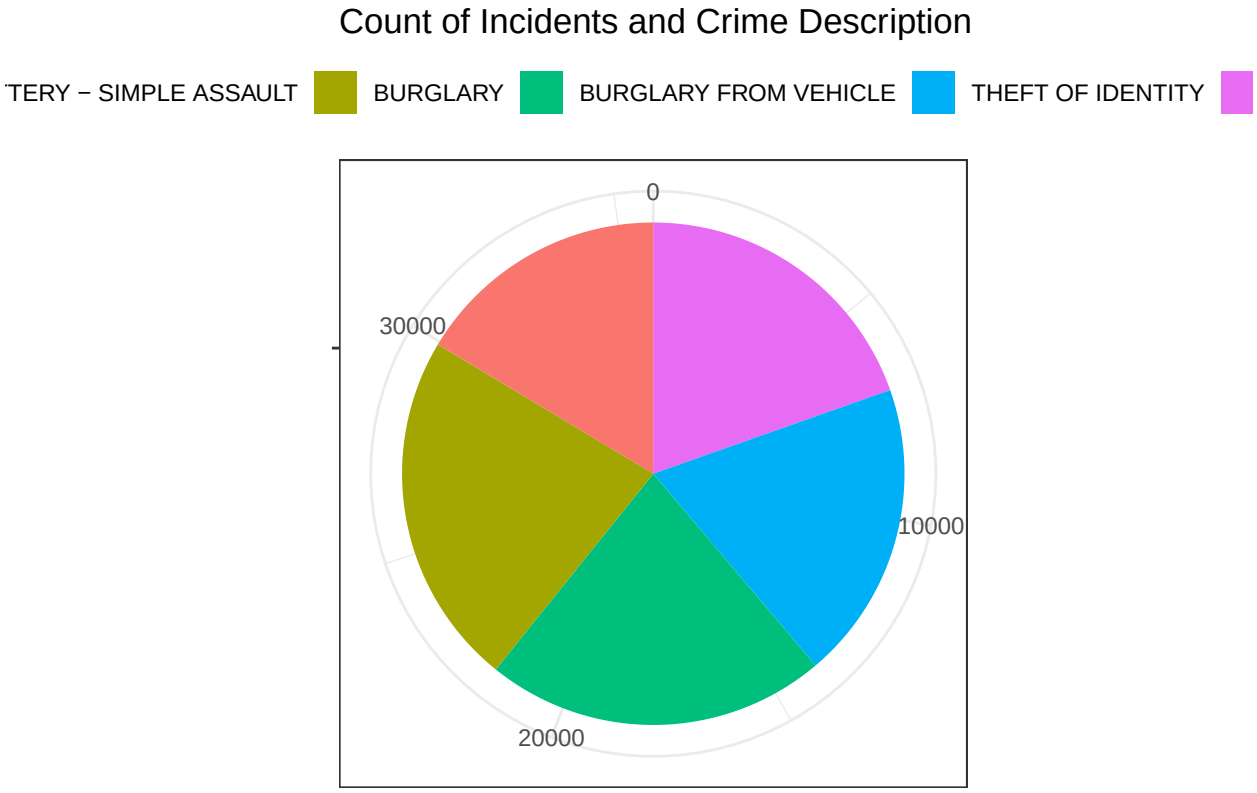


From the plot above, we can find the area with the largest number of crime incidents among 70 reporting districts in West LA.

2. Crime Types

```
crime %>%
  group_by(Crime.Code.Description) %>%
  tally() %>%
  ungroup() %>%
  arrange(desc(n)) %>%
  head(5) %>%

  ggplot(aes(x='', y= n,fill = Crime.Code.Description)) +
  geom_bar(stat='identity') +
  labs(x = '', y = '',
       title = 'Count of Incidents and Crime Description') +
  coord_polar(theta = "y") +
  theme_bw() + theme(legend.position="top")
```



Here, we list Top 5 crime types happened in West LA.

3. Crime and Age

```
breaks = seq(0,100,5)
crime %>%
  ggplot(aes(Victim.Age)) +
  geom_histogram(binwidth = 5,fill = c("blue")) +
  scale_x_continuous(limits = c(0, 100),breaks=breaks ) +
  labs(x = 'Victim Age', y = 'Count of Crimes',
       title = 'Age and Crimes') +
  theme_bw()
```

```
## Warning: Removed 5663 rows containing non-finite values (stat_bin).
```

```
## Warning: Removed 2 rows containing missing values (geom_bar).
```

It seems that 20-30 age groups are most affected.