```
#Summarise data
summary(crimesstl)

#Make a data frame (a data structure) with crimes by crime type
dt <- data.frame(cnt=crimesstl$count, group=crimesstl$crimetype)
#save these grouped data to a variable so you can use it other commands
grp <- group_by(dt, group)

#Summarise data from library (dplyr)
#Summarise the number of counts for each group
summarise(grp, sum=sum(cnt))
#transpose the table
tapply(crimesstl$count, crimesstl$crimetype,sum)

#Descriptive analysis
#Barchart of crimes by month
countsmonth <- table(crimesstl$month)
barplot(countsmonth, col="grey", main="Number of Crimes by
Month",xlab="Month",ylab="Number of Crimes")

#Barchart of crimes by year
countsyr <- table(crimesstl$year)
barplot(countsyr, col="darkcyan", main="Number of Crimes by
Year",xlab="Year",ylab="Number of Crimes")

#Barchart of crimes by crimetype
counts <- table(crimesstl$crimetype)
barplot(counts, col = "cornflowerblue", main = "Number of Crimes by Crime
Type", xlab="Crime Type", ylab="Number of Crimes")

#BoxPlots are useful for comparing data.
#Use the dataset crimeStLouis20132014b_agg.csv.
#These data are aggregated by neighbourhood.
agg_crime_file <-paste(file_dir_crime,"crimeStLouis20132014b_agg.csv", sep
= "")
#check everything worked ok with accessing the file
file.exists(agg_crime_file)
crimesstlagg <- read.csv(agg_crime_file, header=TRUE,sep=",")
```

```
#Compare crimetypes
boxplot(count~crimetype, data=crimesstlagg,main="Boxplots According to
Crime Type",
            xlab="Crime Type", ylab="Number of Crimes",
            col="cornsilk", border="brown", pch=19)


#Create an interactive map that plots the crime points on a background
map.

#This will create a map with all of the points
gis_file <- paste(file_dir_gis,"stl_boundary_ll.shp", sep="")
file.exists(gis_file)

#Read the St Louis Boundary Shapefile
StLouisBND <- readOGR(gis_file, layer = "stl_boundary_ll",
GDAL1_integer64_policy = FALSE)

leaflet(crimesstl) %>%
  addTiles() %>%
  addPolygons(data=StLouisBND, color = "#444444", weight = 3, smoothFactor
= 0.5,
                    opacity = 1.0, fillOpacity = 0.5, fill= FALSE,
                    highlightOptions = highlightOptions(color = "white",
weight = 2,
                                                        bringToFront =
TRUE)) %>%
  addCircles(lng = ~xL, lat = ~yL, weight = 7, radius = 5,
      popup = paste0("Crime type: ", as.character(crimesstl$crimetype),
                                  "; Month: ",
as.character(crimesstl$month)))
```