Hw04

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```
library(plyr)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:plyr':
##
##     arrange, count, desc, failwith, id, mutate, rename, summarise,
##     summarize
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(tidyr)
library(lubridate)
```

```
##
## Attaching package: 'lubridate'
```

```
## The following object is masked from 'package:plyr':
##
##     here
```

```
## The following object is masked from 'package:base':
##
##     date
```

```
library(ggmap)
```

```
## Loading required package: ggplot2
```

```
library(ggplot2)
library(grid)
library(reshape2)
```

```
##
## Attaching package: 'reshape2'
```

```
## The following object is masked from 'package:tidyr':
##
##     smiths
```

```
violence <- readRDS('./crime_data.rds')

violence1 <-filter(violence, (Primary.Type == "ASSAULT"| Primary.Type == "HOMICIDE") )
```

```
library(ggmap)
location <- unlist(geocode('4135 S Morgan St, Chicago, IL 60609'))+c(0,.02)
```

```
## Information from URL : http://maps.googleapis.com/maps/api/geocode/json?address=4135%20S%20Morgan%20S
```

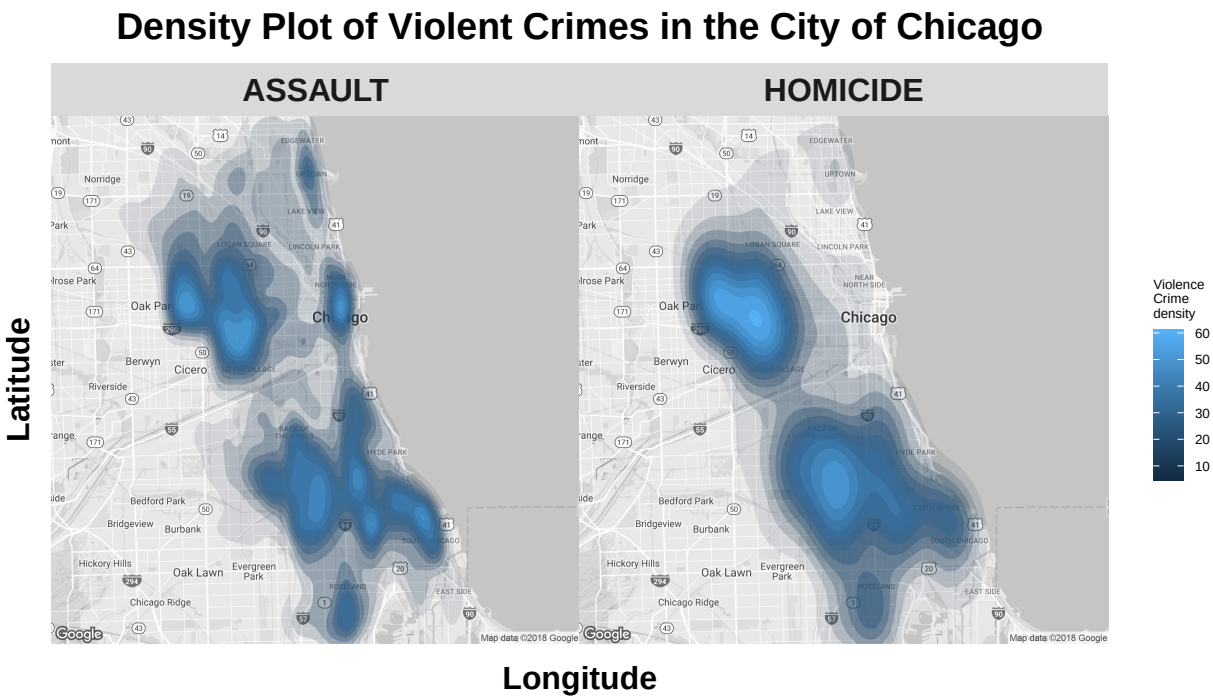
```
map<-get_map(location = location, zoom = 11, scale = "auto", maptype = "terrain", source = "google", col
```

```
## Map from URL : http://maps.googleapis.com/maps/api/staticmap?center=41.839191,-87.6504&zoom=11&size=6
```

```
contours<- stat_density_2d(data = violence1,aes(x = Longitude, y = Latitude, fill = ..level.., alpha =
```

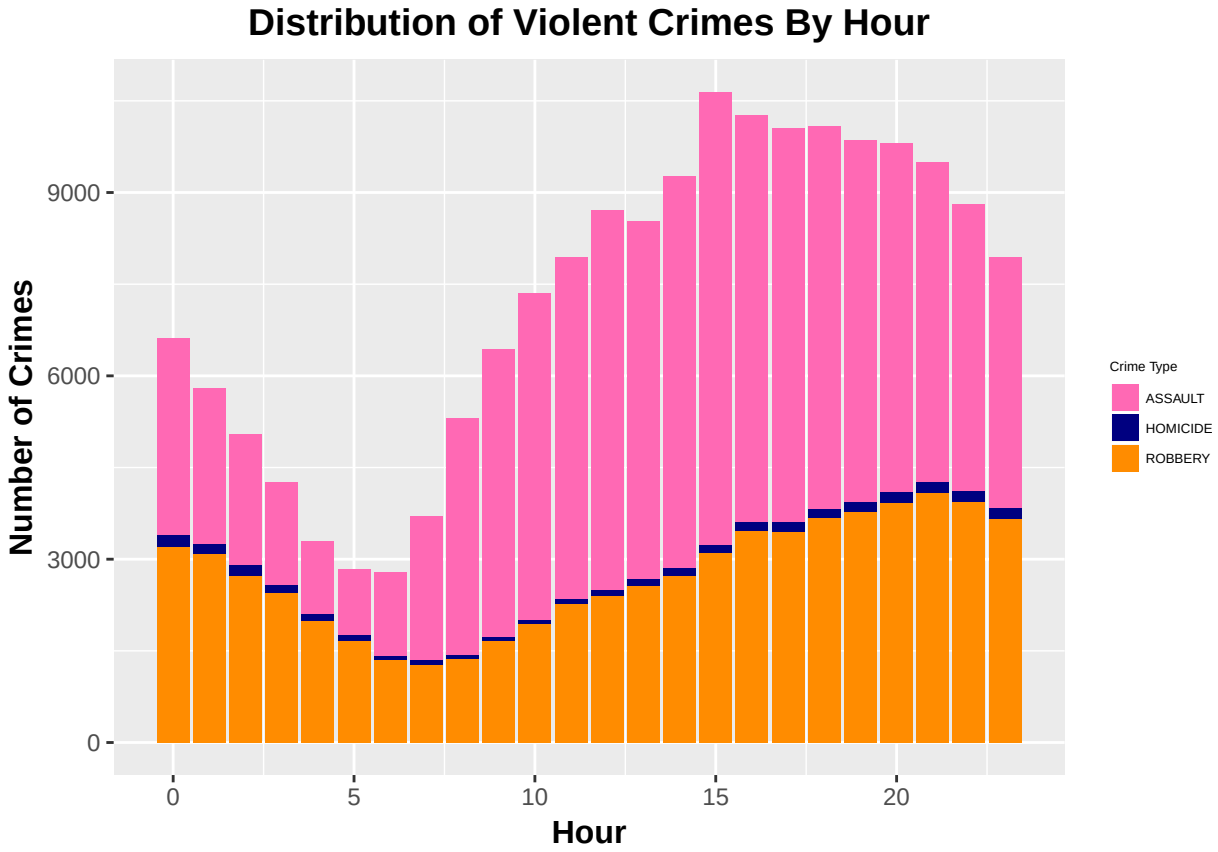
```
ggmap(map) +
 contours+
 theme(panel.spacing =unit(0, "cm"),
       legend.title = element_text(size = 5),
       legend.key.size = unit(0.4, "cm") ,
       legend.text = element_text(size = 5),
       plot.title = element_text(size = 14, face = "bold",hjust = 0.5),
       axis.title =element_text(size = 12, face= "bold"),
       axis.text = element_blank(),
       axis.ticks = element_blank(),
       strip.text = element_text(size = 12, face = "bold"))+
  scale_fill_continuous(name="Violence\nCrime\ndensity")+
  scale_alpha_continuous(guide = FALSE)+
  xlab("Longitude")+
  ylab("Latitude")+
  ggtitle("Density Plot of Violent Crimes in the City of Chicago")+
  facet_grid(.~Primary.Type)
```

```
## Warning: Removed 4112 rows containing non-finite values (stat_density2d).
```



```
h<-hour(as.POSIXct(violence$Date,format = "%m/%d/%Y %I:%M:%S %p"))

ggplot(violence, aes(h, fill = Primary.Type))+ geom_bar() +   scale_fill_manual("Crime Type", values = c
'#000080','#FF8C00'))+
ggtitle("Distribution of Violent Crimes By Hour")+
xlab("Hour")+
ylab("Number of Crimes")+
theme( legend.title = element_text(size = 5),
       legend.key.size = unit(0.4, "cm") ,
       legend.text = element_text(size = 5),
       plot.title = element_text(size = 14, face = "bold",hjust = 0.5),
       axis.title =element_text(size = 12, face= "bold")
       )
```




```
violence1<-filter(violence, (Primary.Type == "ASSAULT"| Primary.Type == "HOMICIDE"))
violence2<- within(violence1, { Date <- date(as.POSIXct(violence1$Date, format = "%m/%d/%Y %I:%M:%S"))
             rm( Latitude, Longitude, Year)})

ASS<-subset(count(violence2, Primary.Type, wt_var = Date), Primary.Type == "ASSAULT")
HOM<-subset(count(violence2, Primary.Type, wt_var = Date), Primary.Type == "HOMICIDE")
AH <- inner_join(ASS, HOM, by = "wt_var")

VIO <- data_frame(Date = AH$wt_var,
                  NAss = AH$n.x,
                  NHomi = AH$n.y)
```

```r
Viom <- melt (VIO, id.vars = "Date", variable.name = "type")


ggplot(Viom, aes(Date, value, colour = type)) +
geom_line()+
theme(
  plot.title = element_text(size = 13, hjust = 0.5, face = "bold"),
  axis.title = element_text(size = 12, face = "bold"),
  strip.text.x = element_text(size = 12, face = "bold"),
  legend.title = element_text(size = 8),
  legend.key.size = unit(0.5, "cm"),
  legend.text = element_text(size = 6))+
labs(  x = "Date",  y = "Number of Crimes Per Day", shape = "Transmission" )+
scale_colour_manual(values = c("darkblue", "orange"), name = "Crime Types", labels = c("Assault", "Homi
ggtitle("Time Series Plot of Violent Crimes from 2012 to 2017")
```