Uber Data Analysis
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Importing the libraries need for this analysis.

```
library(ggplot2)
library(ggthemes)
library(lubridate)
library(dplyr)
library(tidyr)
library(DT)
library(scales)
```

Creating vector of colours to be implemented in our plots.

```
colors = c("#CC1011", "#665555", "#05a399", "#cfcaca", "#f5e840", "#0683c9", "#e075b0")
```

Reading the Data into their designated variables.

```
apr_data <- read.csv("uber-raw-data-apr14.csv")
may_data <- read.csv("uber-raw-data-may14.csv")
jun_data <- read.csv("uber-raw-data-jun14.csv")
jul_data <- read.csv("uber-raw-data-jul14.csv")
aug_data <- read.csv("uber-raw-data-aug14.csv")
sep_data <- read.csv("uber-raw-data-sep14.csv")
data_2014 <- rbind(apr_data,may_data, jun_data, jul_data, aug_data, sep_data)
data_2014$Date.Time <- as.POSIXct(data_2014$Date.Time, format = "%m/%d/%Y
%H:%M:%S")
data_2014$Time <- format(as.POSIXct(data_2014$Date.Time, format = "%m/%d/%Y
%H:%M:%S"), format="%H:%M:%S")
data_2014$Date.Time <- ymd_hms(data_2014$Date.Time)
data_2014$day <- factor(day(data_2014$Date.Time))
data_2014$month <- factor(month(data_2014$Date.Time, label = TRUE))
data_2014$year <- factor(year(data_2014$Date.Time))
data_2014$hour <- factor(hour(hms(data_2014$Time)))
data_2014$minute <- factor(minute(hms(data_2014$Time)))
data_2014$second <- factor(second(hms(data_2014$Time)))
```

Plotting the trips by the hours in a day

```
hour_data <- data_2014 %>%
  group_by(hour) %>%
  dplyr::summarize(Total = n())
datatable(hour_data)
```

Show 10 entries

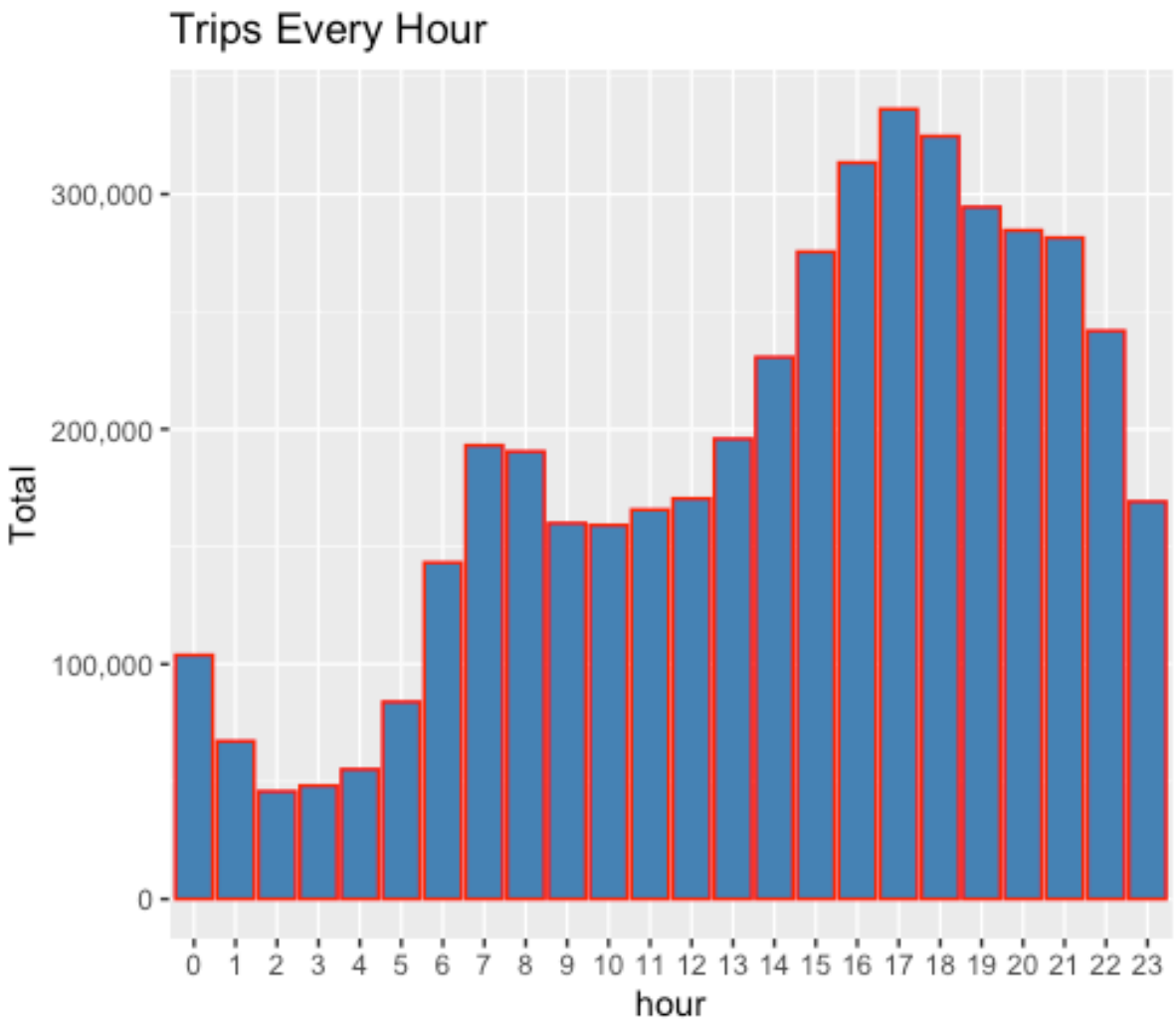
Search:

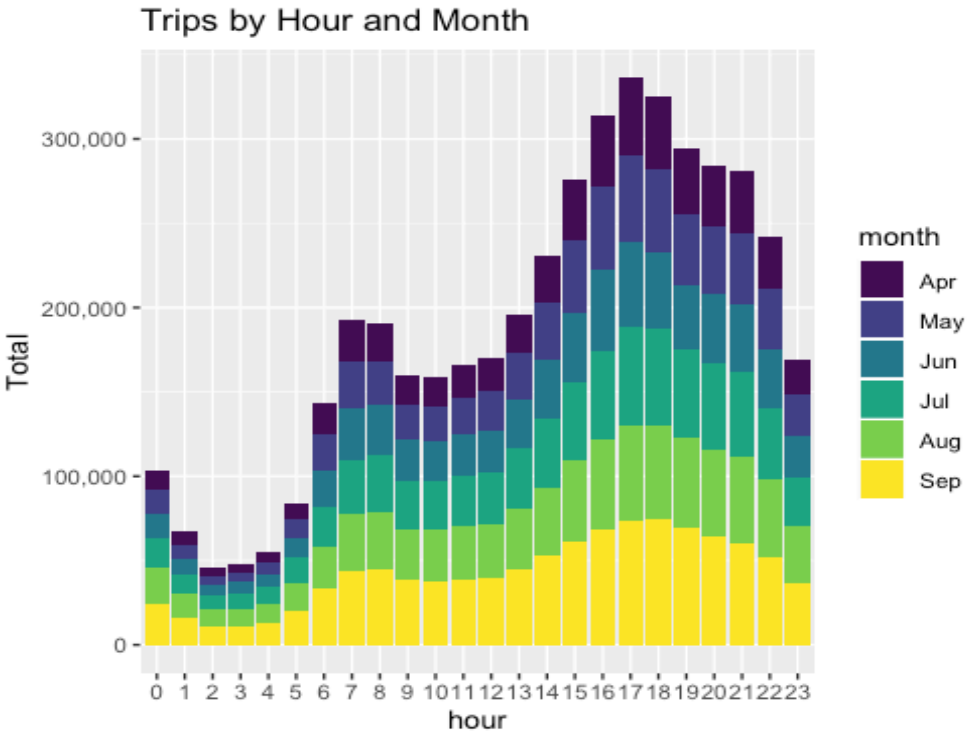
	hour	Total
1	0	103836
2	1	67227
3	2	45865
4	3	48287
5	4	55230
6	5	83939
7	6	143213

Showing 1 to 10 of 24 entries

Previous 1 2 3 Next

```
ggplot(hour_data, aes(hour, Total)) +
  geom_bar( stat = "identity", fill = "steelblue", color = "red") +
  ggtitle("Trips Every Hour") +
  theme(legend.position = "none") +
  scale_y_continuous(labels = comma)
month_hour <- data_2014 %>%
  group_by(month, hour) %>%
  dplyr::summarize(Total = n())
ggplot(month_hour, aes(hour, Total, fill = month)) +
  geom_bar( stat = "identity") +
  ggtitle("Trips by Hour and Month") +
  scale_y_continuous(labels = comma)
```


Trips Every Hour
300,000
200,000
100,000
0
Total
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
hour


Trips by Hour and Month
300,000
200,000
100,000
0
Total
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
hour
month
Apr
May
Jun
Jul
Aug
Sep

Plotting data by trips during every day of the month.

```
day_group <- data_2014 %>%
  group_by(day) %>%
  dplyr::summarize(Total = n())
datatable(day_group)
```

Show 10 entries

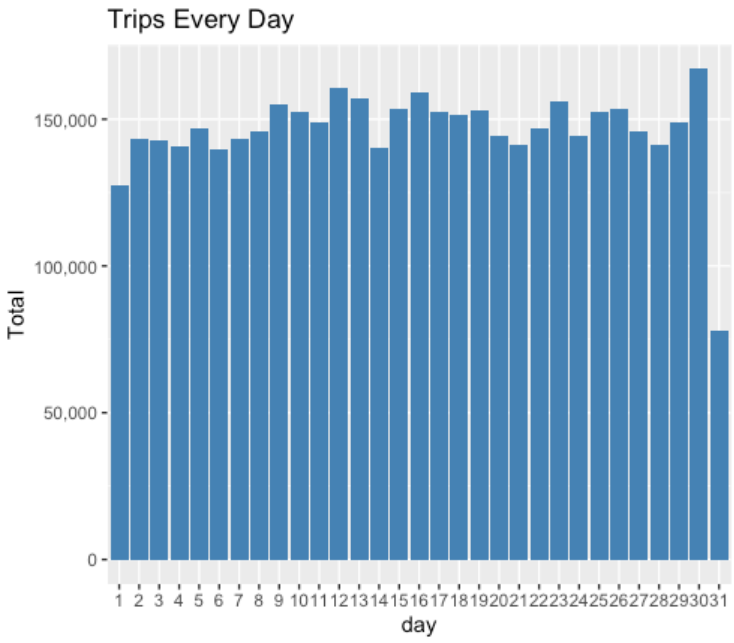
Search:

	day	Total
1	1	127430
2	2	143201
3	3	142983
4	4	140923
5	5	147054
6	6	139886
7	7	143503

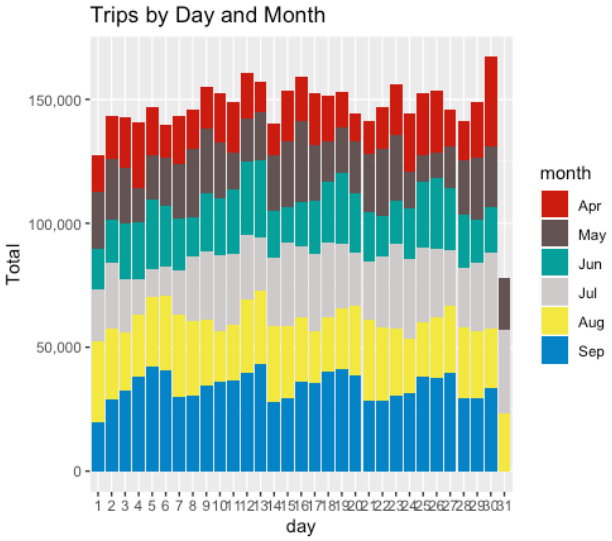
Showing 1 to 10 of 31 entries

Previous 1 2 3 4 Next

```
ggplot(day_group, aes(day, Total)) +
  geom_bar( stat = "identity", fill = "steelblue") +
  ggtitle("Trips Every Day") +
  theme(legend.position = "none") +
  scale_y_continuous(labels = comma)
```



```
day_month_group <- data_2014 %>%
  group_by(month, day) %>%
  dplyr::summarize(Total = n())
ggplot(day_month_group, aes(day, Total, fill = month)) +
  geom_bar( stat = "identity") +
  ggtitle("Trips by Day and Month") +
  scale_y_continuous(labels = comma) +
  scale_fill_manual(values = colors)
```




```
month_group <- data_2014 %>%
  group_by(month) %>%
  dplyr::summarize(Total = n())
datatable(month_group)
```

Show 10 entries

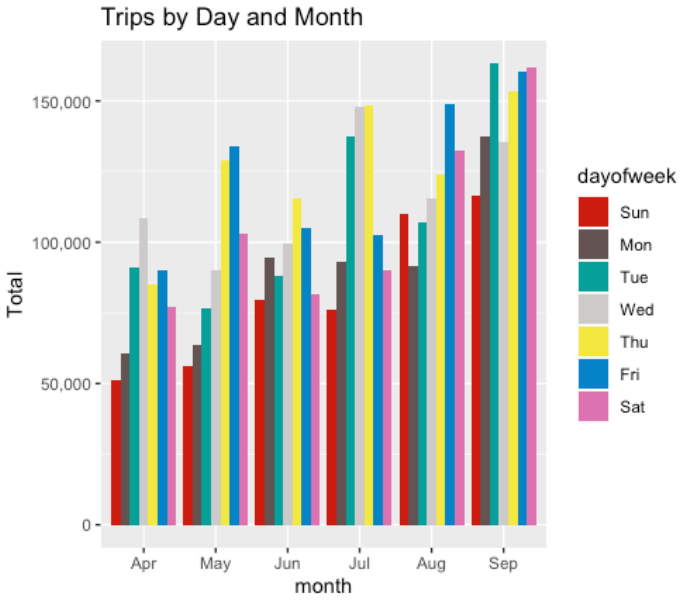
Search:

	month	Total
1	Apr	564516
2	May	652435
3	Jun	663844
4	Jul	796121
5	Aug	829275
6	Sep	1028136

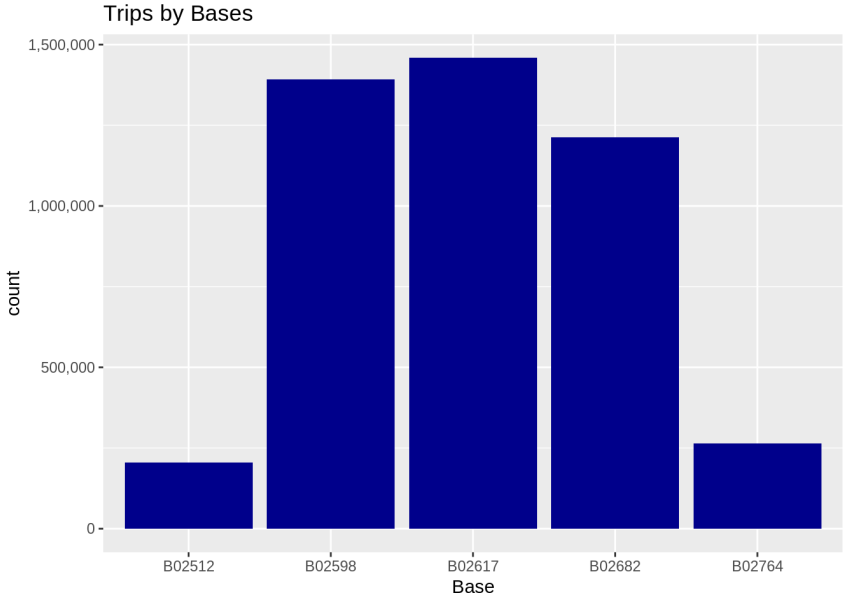
Showing 1 to 6 of 6 entries

Previous 1 Next

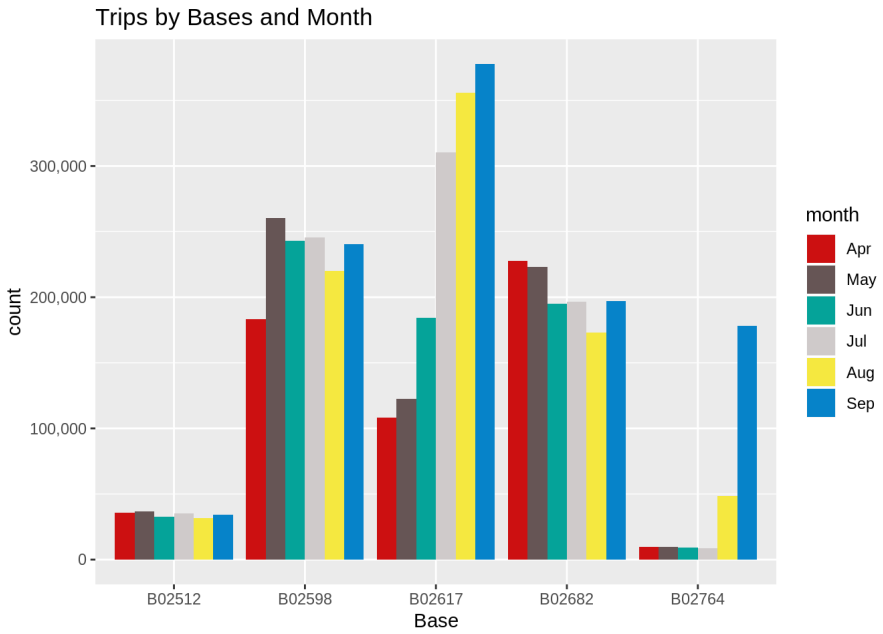
```
month_weekday <- data_2014 %>%
  group_by(month, dayofweek) %>%
  dplyr::summarize(Total = n())
ggplot(month_weekday, aes(month, Total, fill = dayofweek)) +
  geom_bar( stat = "identity", position = "dodge") +
  ggtitle("Trips by Day and Month") +
  scale_y_continuous(labels = comma) +
  scale_fill_manual(values = colors)
```



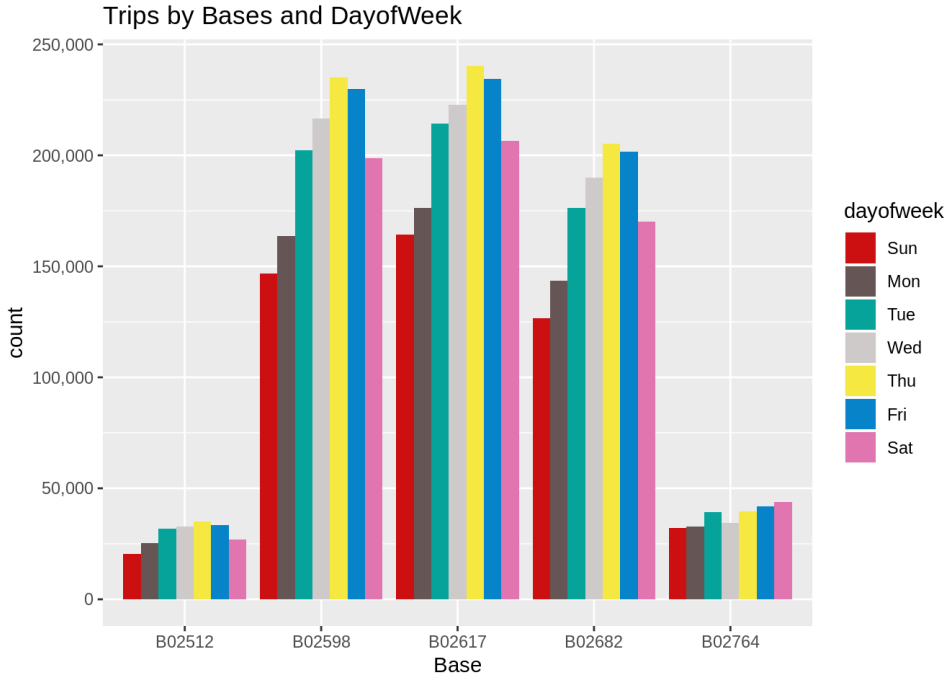

```
ggplot(data_2014, aes(Base)) +
  geom_bar(fill = "darkred") +
  scale_y_continuous(labels = comma) +
  ggtitle("Trips by Bases")
```



```
ggplot(data_2014, aes(Base, fill = month)) +
  geom_bar(position = "dodge") +
  scale_y_continuous(labels = comma) +
  ggtitle("Trips by Bases and Month") +
  scale_fill_manual(values = colors)
```




```
ggplot(data_2014, aes(Base, fill = dayofweek)) +
  geom_bar(position = "dodge") +
  scale_y_continuous(labels = comma) +
  ggtitle("Trips by Bases and DayofWeek") +
  scale_fill_manual(values = colors)
```



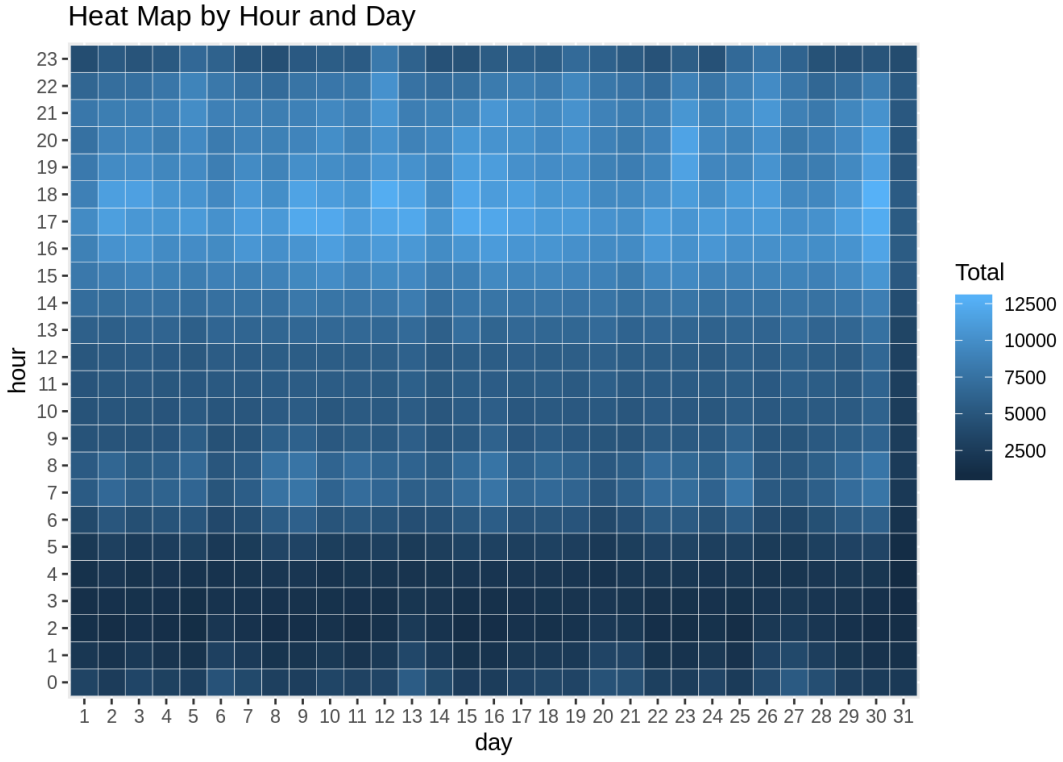
Creating a Heatmap visualization of day, hour and month

```
day_and_hour <- data_2014 %>%
  group_by(day, hour) %>%
  dplyr::summarize(Total = n())
datatable(day_and_hour)
```

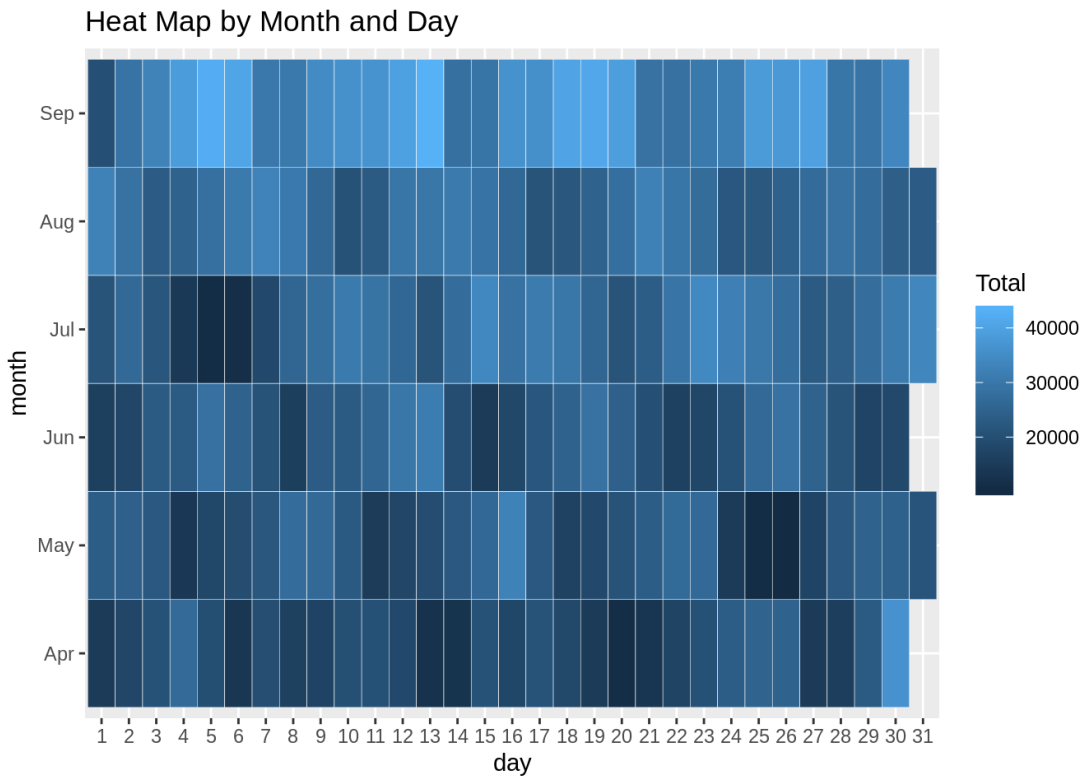
Show 10 entries Search:

	day	hour	Total
1	1	0	3247
2	1	1	1982
3	1	2	1284
4	1	3	1331
5	1	4	1458
6	1	5	2171
7	1	6	3717
8	1	7	5470
9	1	8	5376
10	1	9	4688

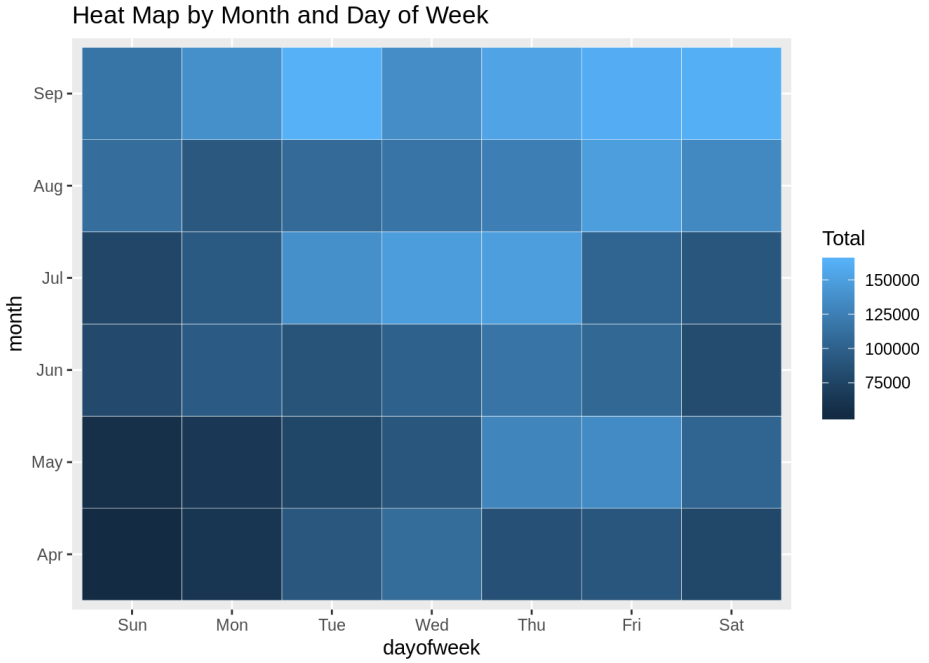
```
ggplot(day_and_hour, aes(day, hour, fill = Total)) +
  geom_tile(color = "white") +
  ggtitle("Heat Map by Hour and Day")
```



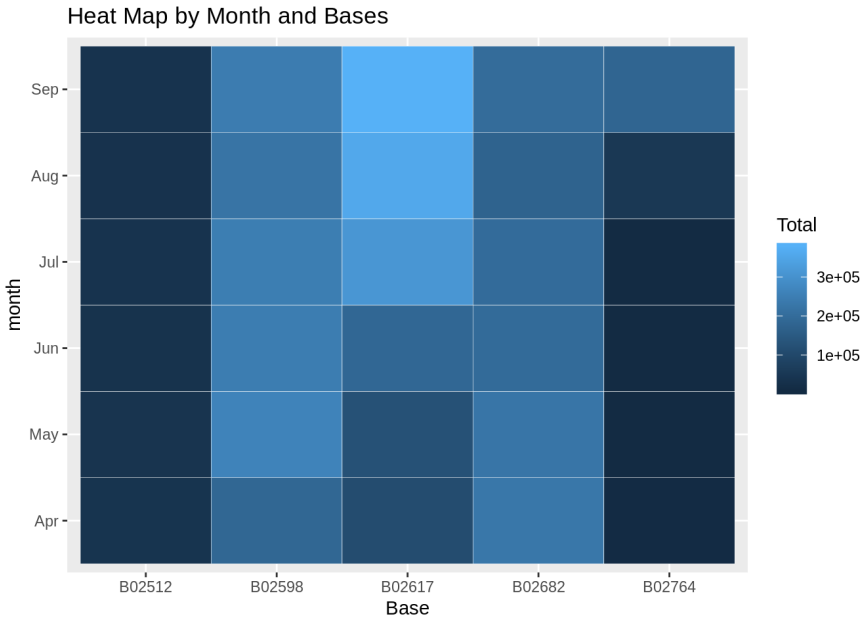
```
ggplot(day_month_group, aes(day, month, fill = Total)) +
  geom_tile(color = "white") +
  ggtitle("Heat Map by Month and Day")
```



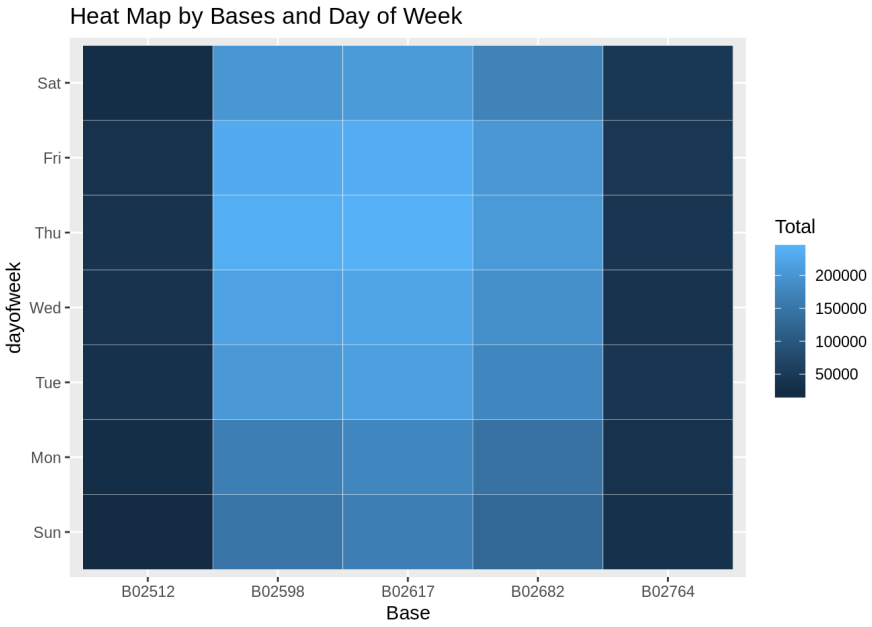

```
ggplot(month_weekday, aes(dayofweek, month, fill = Total)) +
  geom_tile(color = "white") +
  ggtitle("Heat Map by Month and Day of Week")
```



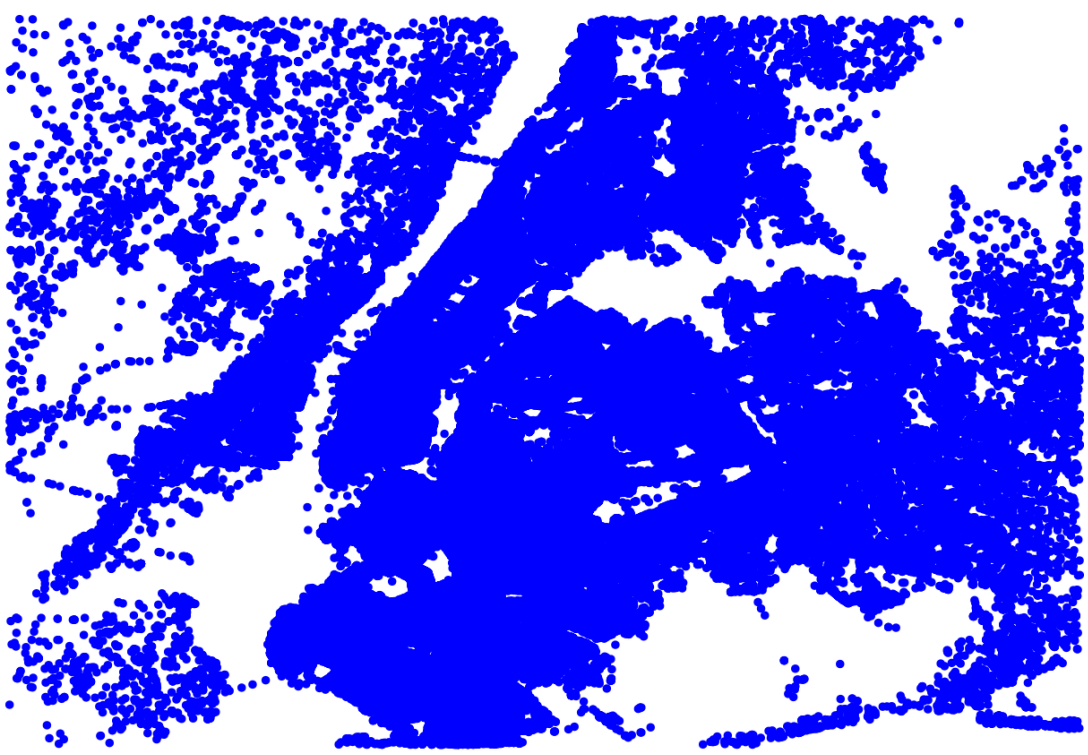
```
month_base <-  data_2014 %>%
  group_by(Base, month) %>%
  dplyr::summarize(Total = n())
day0fweek_bases <-  data_2014 %>%
  group_by(Base, dayofweek) %>%
  dplyr::summarize(Total = n())
ggplot(month_base, aes(Base, month, fill = Total)) +
  geom_tile(color = "white") +
  ggtitle("Heat Map by Month and Bases")
```




```
ggplot(day0fweek_bases, aes(Base, dayofweek, fill = Total)) +
  geom_tile(color = "white") +
  ggtitle("Heat Map by Bases and Day of Week")
```



```
min_lat <- 40.5774
max_lat <- 40.9176
min_long <- -74.15
max_long <- -73.7004
ggplot(data_2014, aes(x=Lon, y=Lat)) +
  geom_point(size=1, color = "blue") +
  scale_x_continuous(limits=c(min_long, max_long)) +
  scale_y_continuous(limits=c(min_lat, max_lat)) +
  theme_map() +
  ggtitle("NYC MAP BASED ON UBER RIDES DURING 2014 (APR-SEP)")
ggplot(data_2014, aes(x=Lon, y=Lat, color = Base)) +
  geom_point(size=1) +
  scale_x_continuous(limits=c(min_long, max_long)) +
  scale_y_continuous(limits=c(min_lat, max_lat)) +
  theme_map() +
  ggtitle("NYC MAP BASED ON UBER RIDES DURING 2014 (APR-SEP)
by BASE")
```



NYC MAP BASED ON UBER RIDES DURING 2014 (APR-SEP) by BASE