

Restaurant

Nandavardhan Chirumamilla

31/10/2021

#Loading all data files

```
air_store_info <- read_csv("air_store_info.csv",show_col_types = FALSE,col_types = cols())
air_reserve_data <- read_csv("air_reserve.csv",show_col_types = FALSE,col_types = cols())
air_visit_data <- read_csv("air_visit_data.csv",show_col_types = FALSE,col_types = cols())
date_info <- read_csv("date_info.csv",show_col_types = FALSE,col_types = cols())
hpg_reserve <- read_csv("hpg_reserve.csv",show_col_types = FALSE,col_types = cols())
hpg_store_info <- read_csv("hpg_store_info.csv",show_col_types = FALSE,col_types = cols())
store_id_relation <- read_csv("store_id_relation.csv",show_col_types = FALSE,col_types = cols())

test <- read_csv("sample_submission.csv")
```

```
## Rows: 32019 Columns: 2
```

```
## -- Column specification -----
```

```
## Delimiter: ","
```

```
## chr (1): id
```

```
## dbl (1): visitors
```

```
##
```

```
## i Use 'spec()' to retrieve the full column specification for this data.
```

```
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.
```

Exploration of Air Store Data

Converting Dates to Date Type

```
air_reserve_data$visit_datetime <- as.Date(air_reserve_data$visit_datetime)
air_reserve_data$reserve_datetime <- as.Date(air_reserve_data$reserve_datetime)
```

```
air_visit_data$visit_date <- as.Date(air_visit_data$visit_date)
```

*# Performing Inner Join on air_reserve_data and air_store_info to create a single table
that contains information of all reservations along with corresponding store information*

```
air_reservation <- inner_join(air_reserve_data,air_store_info,by=c("air_store_id"="air_store_id"))
```

```
date_info$reserve_datetime = date_info$calendar_date
air_reservation <- inner_join(air_reservation,date_info)
```

```
## Joining, by = "reserve_datetime"
```

```
## Similarly on air_visit_data and air_store_info
```

```
air_visited<- inner_join(air_visit_data,air_store_info,by=c("air_store_id"="air_store_id"))
date_info$visit_date = date_info$reserve_datetime
air_visited <- inner_join(air_visited,date_info)
```

```
## Joining, by = "visit_date"
```

```
head(air_reservation)
```

```
## # A tibble: 6 x 11
##   air_store_id  visit_datetime reserve_datetime reserve_visitors air_genre_name
##   <chr>         <date>         <date>         <dbl> <chr>
## 1 air_877f79706~ 2016-01-01     2016-01-01             1 Japanese food
## 2 air_db4b38ebe~ 2016-01-01     2016-01-01             3 Dining bar
## 3 air_db4b38ebe~ 2016-01-01     2016-01-01             6 Dining bar
## 4 air_877f79706~ 2016-01-01     2016-01-01             2 Japanese food
## 5 air_db80363d3~ 2016-01-01     2016-01-01             5 Dining bar
## 6 air_db80363d3~ 2016-01-02     2016-01-01             2 Dining bar
## # ... with 6 more variables: air_area_name <chr>, latitude <dbl>,
## #   longitude <dbl>, calendar_date <date>, day_of_week <chr>, holiday_flg <dbl>
```

```
# Visualizing train,validation and test intervals
```

```
temp <- air_visit_data %>%
  rename(date = visit_date) %>%
  distinct(date) %>%
  mutate(dset = "train")
```

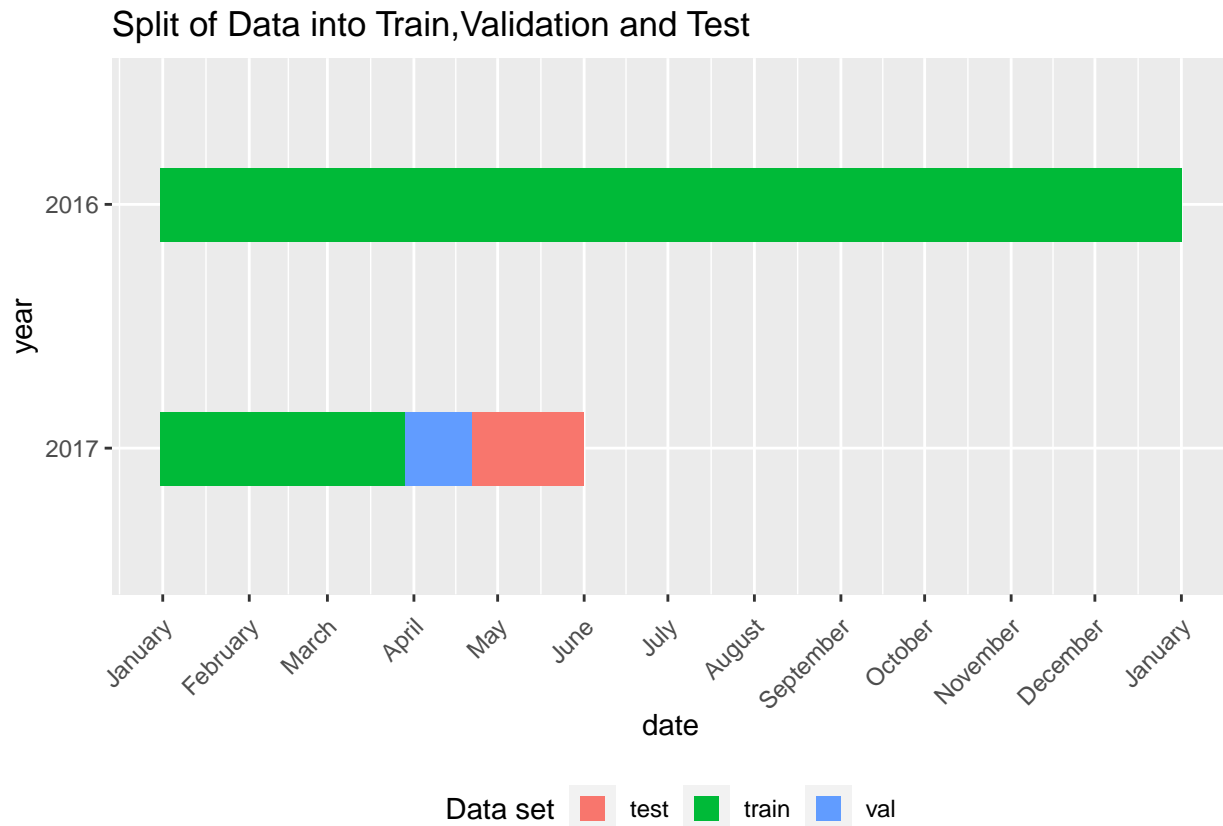
```
temp <- mutate(temp,dset = ifelse(date >= as.Date("2017-03-30"),"val","train"))
```

```
bar <- test %>%
  separate(id, c("temp", "bar", "date"), sep = "_") %>%
  mutate(date = ymd(date)) %>%
  distinct(date) %>%
  mutate(dset = "test")
```

```
temp <- temp %>%
  bind_rows(bar) %>%
  mutate(year = year(date))
year(temp$date) <- 2017
```

```
temp %>%
  filter(!is.na(date)) %>%
  mutate(year = fct_relevel(as.factor(year), c("2017","2016"))) %>%
  ggplot(aes(date, year, color = dset)) +
  geom_point(shape = "|", size = 10) +
  scale_x_date(date_labels = "%B", date_breaks = "1 month") +
```

```
#scale_y_reverse() +
theme(legend.position = "bottom", axis.text.x = element_text(angle=45, hjust=1, vjust=0.9)) +
labs(color = "Data set", title="Split of Data into Train, Validation and Test") +
guides(color = guide_legend(override.aes = list(size = 4, pch = 15)))
```



Exploration of Air Reservation Data

```
print(paste("Number of unique restaurants in the air reserve data ", length(unique(air_reservation$air_s
```

```
## [1] "Number of unique restaurants in the air reserve data 314"
```

```
print(paste("The air reserve data contains reservation from ", min(air_reservation$reserve_datetime), "to
```

```
## [1] "The air reserve data contains reservation from 2016-01-01 to 2017-04-22"
```

```
print(paste("In the above time period, the total number of reservations is ", length(air_reservation$air_r
```

```
## [1] "In the above time period, the total number of reservations is 92378 for a total of 414,015 c
```

```
print(paste("Total number of areas in which reservations were made through air reserve",length(unique(a
```

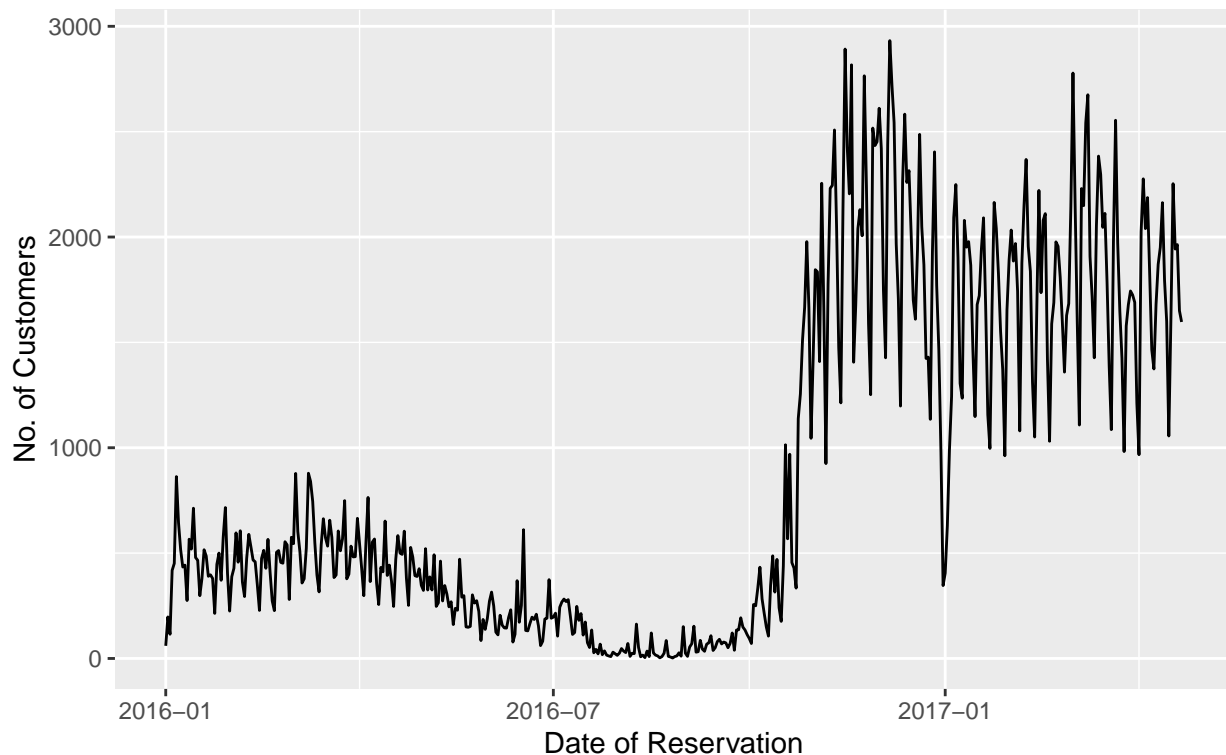
```
## [1] "Total number of areas in which reservations were made through air reserve 71"
```

```
print(paste("Total number of Genres in which reservations were made through air reserve",length(unique(o
```

```
## [1] "Total number of Genres in which reservations were made through air reserve 14"
```

```
# Reservation Datetime vs Number of Customers
group_by(air_reservation,reserve_datetime) %>%
  summarise(count= sum(reserve_visitors)) %>%
  ggplot()+
  geom_line(mapping = aes(x=reserve_datetime,y=count))+
  labs(title="Number of Customers who have reserved a table \n from 2016-01-01 to 2017-04-22",y="No. o
```

Number of Customers who have reserved a table
from 2016-01-01 to 2017-04-22

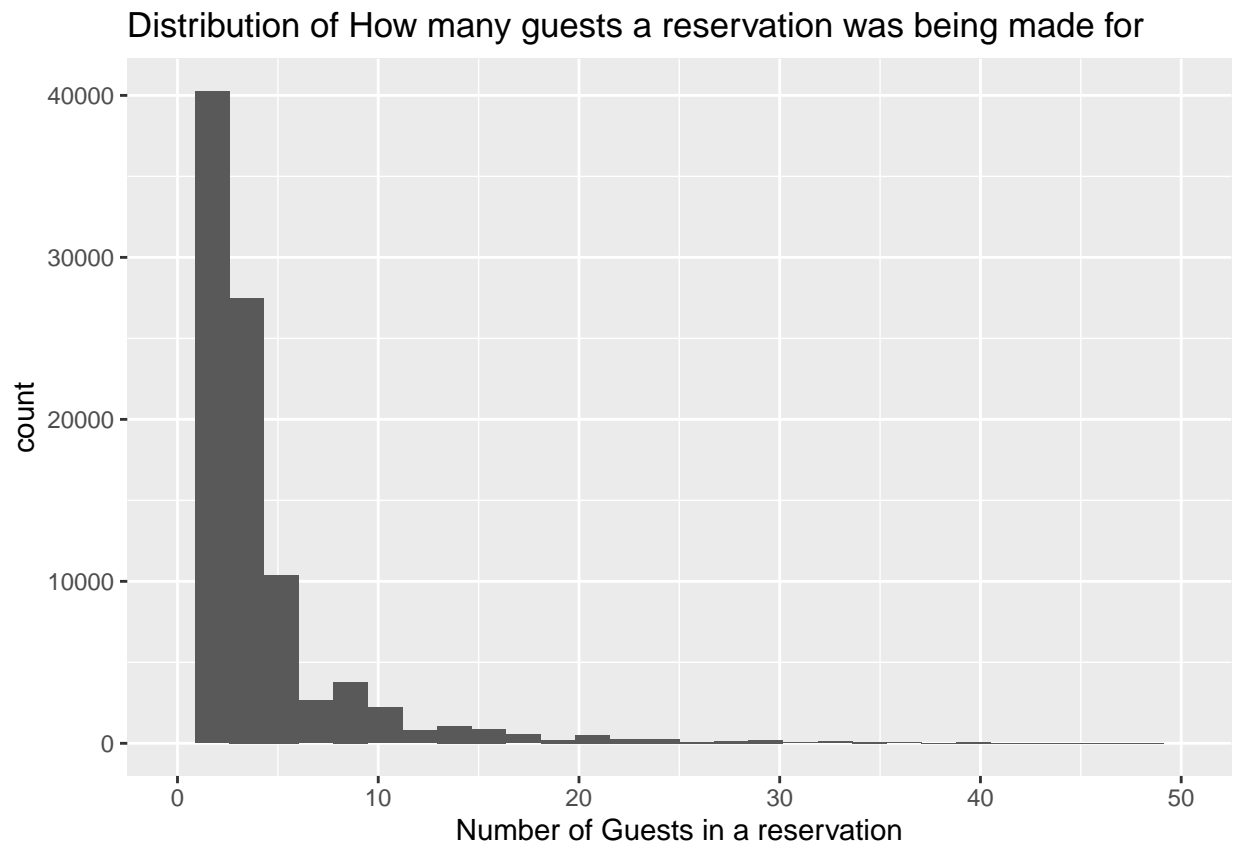


```
# Number of Visitors Per Reservation distribution
ggplot(air_reservation)+
  geom_histogram(mapping=aes(reserve_visitors))+
  xlim(0,50)+
  labs(title = "Distribution of How many guests a reservation was being made for",x="Number of Guests i
```

```
## 'stat_bin()' using 'bins = 30'. Pick better value with 'binwidth'.
```

```
## Warning: Removed 69 rows containing non-finite values (stat_bin).
```

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



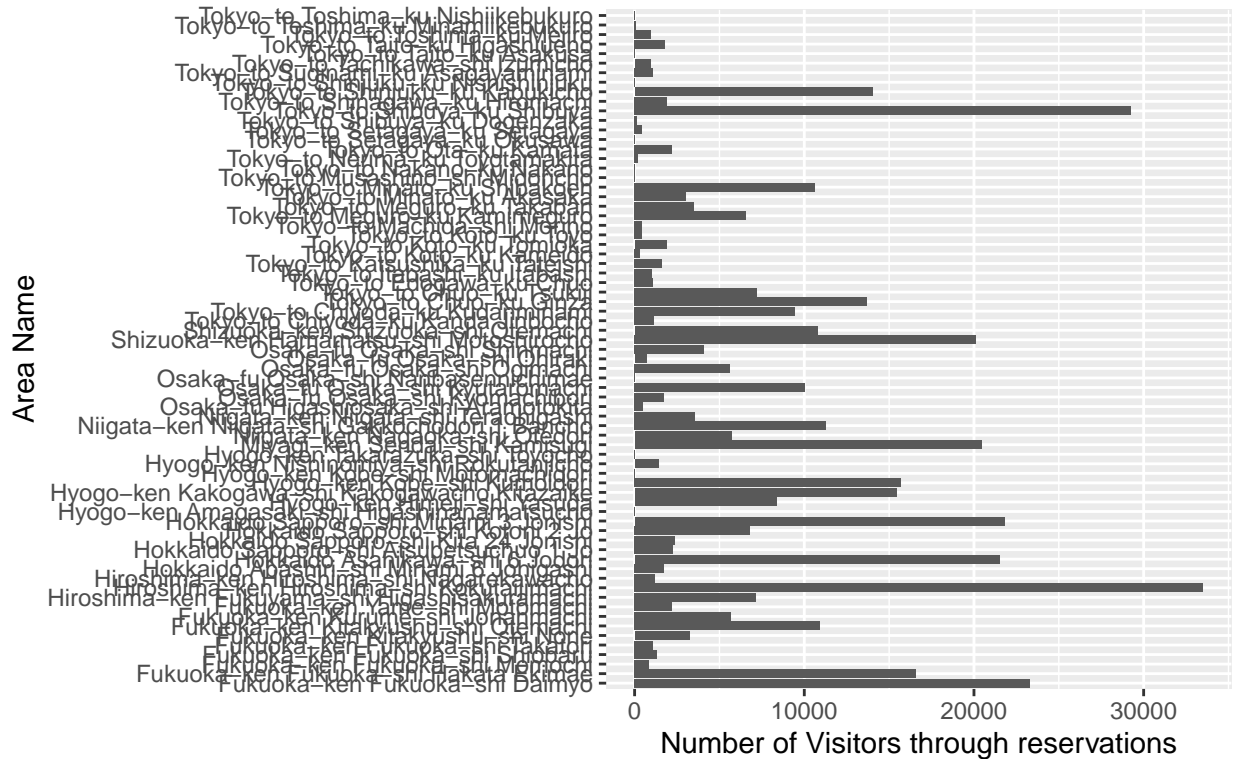
```
# Area vs vs Number of Reservations
group_by(air_reservation,air_area_name) %>%
  ggplot()+
  geom_bar(mapping = aes(x=air_area_name))+
  coord_flip()+
  labs(title="Distribution of reservations based on area name ",x="Area Name",y="Number of Reservations")
```

A horizontal bar chart titled 'Number of Reservations made' on the x-axis. The y-axis lists 20 destinations. The x-axis has major grid lines at 0, 2000, 4000, and 6000. The bars represent the number of reservations for each destination. The destinations and their approximate reservation counts are as follows:

Destination	Number of Reservations made (approx.)
1. London	500
2. New York	500
3. Paris	500
4. Tokyo	3500
5. Sydney	6200
6. Melbourne	500
7. Los Angeles	500
8. San Francisco	3300
9. Hong Kong	1000
10. Seoul	2300
11. Taipei	200
12. Osaka	500
13. Bangkok	500
14. Singapore	1500
15. Kuala Lumpur	4100
16. Jakarta	2400
17. Manila	4900
18. Hong Kong	1000
19. Seoul	1500
20. Taipei	2600
21. Osaka	4200
22. Bangkok	500
23. Singapore	2500
24. Kuala Lumpur	1500
25. Jakarta	3600
26. Manila	5600
27. Hong Kong	1500
28. Seoul	3900
29. Taipei	500
30. Osaka	1300
31. Bangkok	5500
32. Singapore	1000
33. Kuala Lumpur	400
34. Jakarta	5200

```
group_by(air_reservation,air_area_name) %>%
  summarise(num= sum(reserve_visitors)) %>%
  ggplot()+
  geom_bar(mapping = aes(x=air_area_name,y=num),stat="identity")+
  labs(y="Number of Visitors through reservations",x = "Area Name",title = "Number of visitors who have
  coord_flip()
```

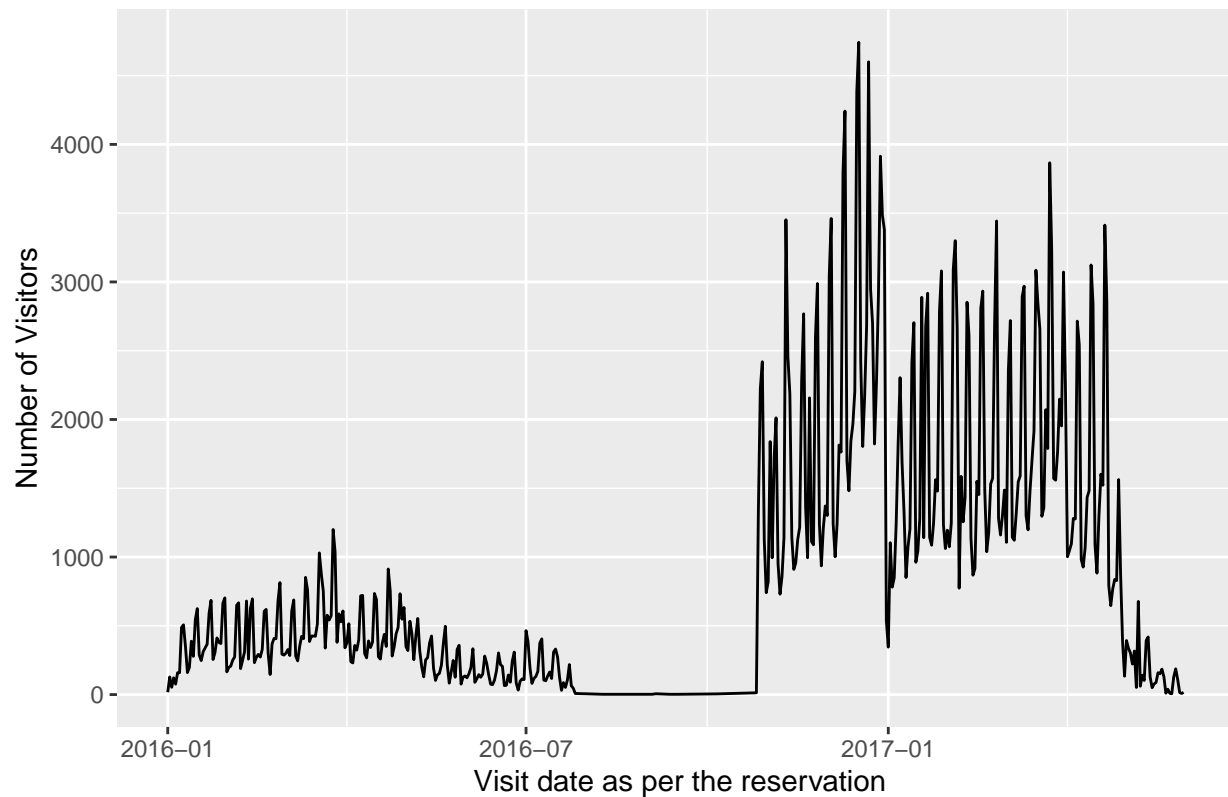
Number of visitors who have made reservations vs Area Name



Reservation Visit Date vs Number of Customers

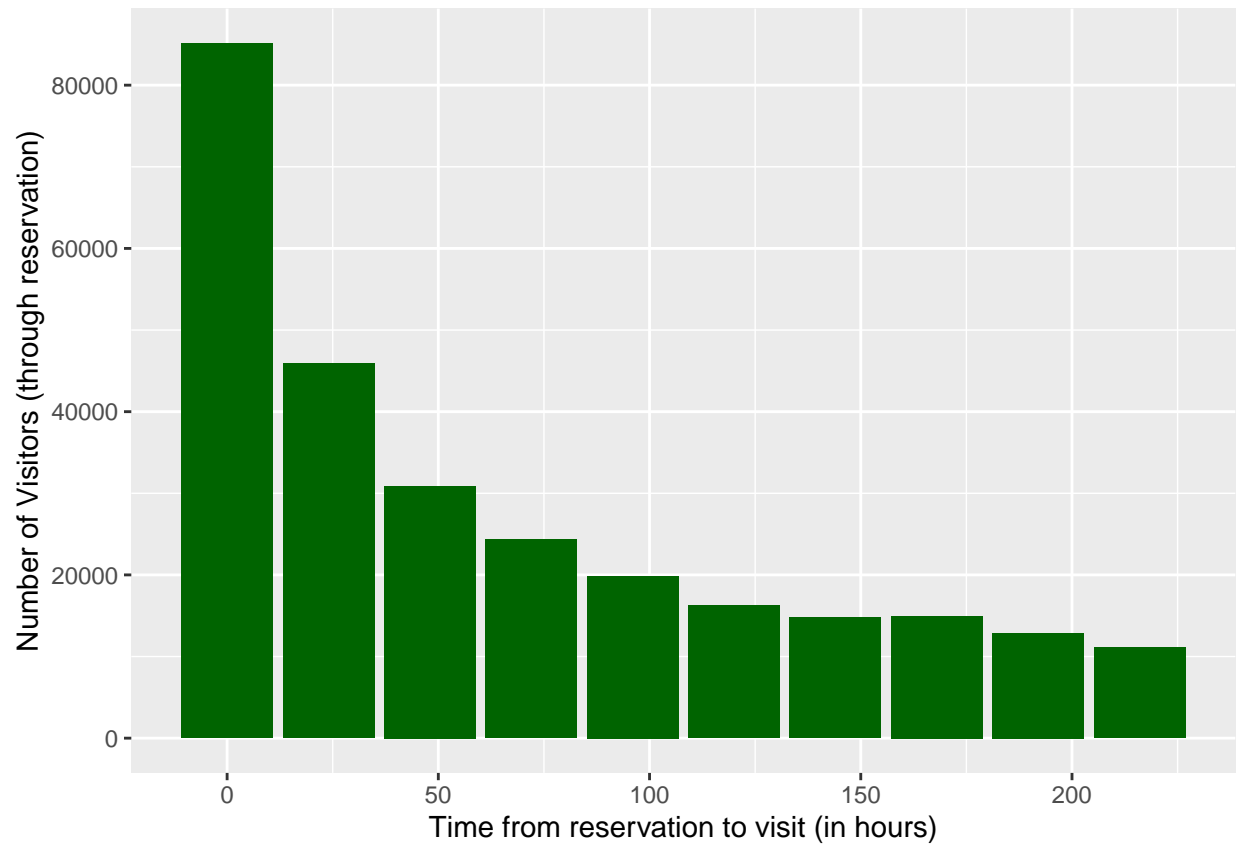
```
air_reservation %>%
  mutate(visit_datetime = as.Date(air_reservation$visit_datetime)) %>%
  group_by(visit_datetime) %>%
  summarise(all_visitors = sum(reserve_visitors)) %>%
  ggplot(aes(visit_datetime, all_visitors)) +
  geom_line() +
  labs(x = "Visit date as per the reservation", y = "Number of Visitors", title = "A sudden increase of the ")
```

A sudden increase of the Number of visitors is noticed

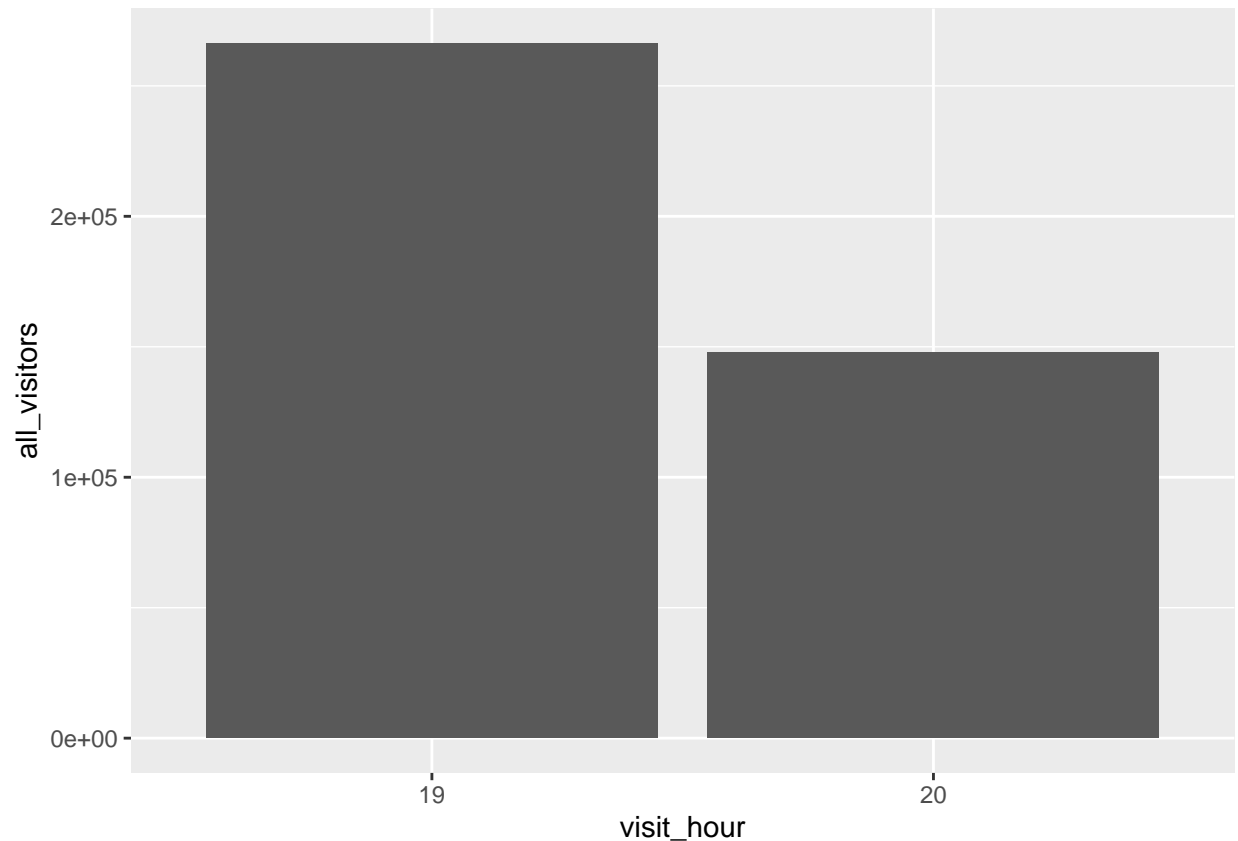


```
air_reservation %>%
  mutate(hourdiff = difftime(air_reservation$visit_datetime,air_reservation$reserve_datetime,unit="hour"))
  filter( hourdiff < 24*10) %>%
  group_by(hourdiff) %>%
  summarise(all_visitors = sum(reserve_visitors)) %>%
  ggplot(aes(hourdiff, all_visitors)) +
  geom_col(fill="darkgreen") +
  labs(x = "Time from reservation to visit (in hours)",y="Number of Visitors (through reservation)")
```

Don't know how to automatically pick scale for object of type difftime. Defaulting to continuous.



```
# Times for which the reservations are made
air_reserve_data %>%
  mutate(visit_hour = format(as.POSIXct(air_reserve_data$reserve_datetime), format = "%H")) %>%
  group_by(visit_hour) %>%
  summarise(all_visitors = sum(reserve_visitors)) %>%
  ggplot()+
  geom_col(aes(visit_hour,all_visitors))
```



Exploration of Air Visitation Data

```
print(paste("Number of air restaurants : ",length(unique(air_visited$air_store_id))))
```

```
## [1] "Number of air restaurants : 829"
```

```
print(paste("The air reserve data contains visitations from ",min(air_visited$visit_date),"to",max(air_v
```

```
## [1] "The air reserve data contains visitations from 2016-01-01 to 2017-04-22"
```

```
print(paste("In the above time period, the total number of visits are ",length(air_visited$air_store_id
```

```
## [1] "In the above time period, the total number of visits are 252108 for a total of 5,287,653 cus
```

```
print(paste("Total number of areas in which visits were made",length(unique(air_visited$air_area_name))))
```

```
## [1] "Total number of areas in which visits were made 103"
```

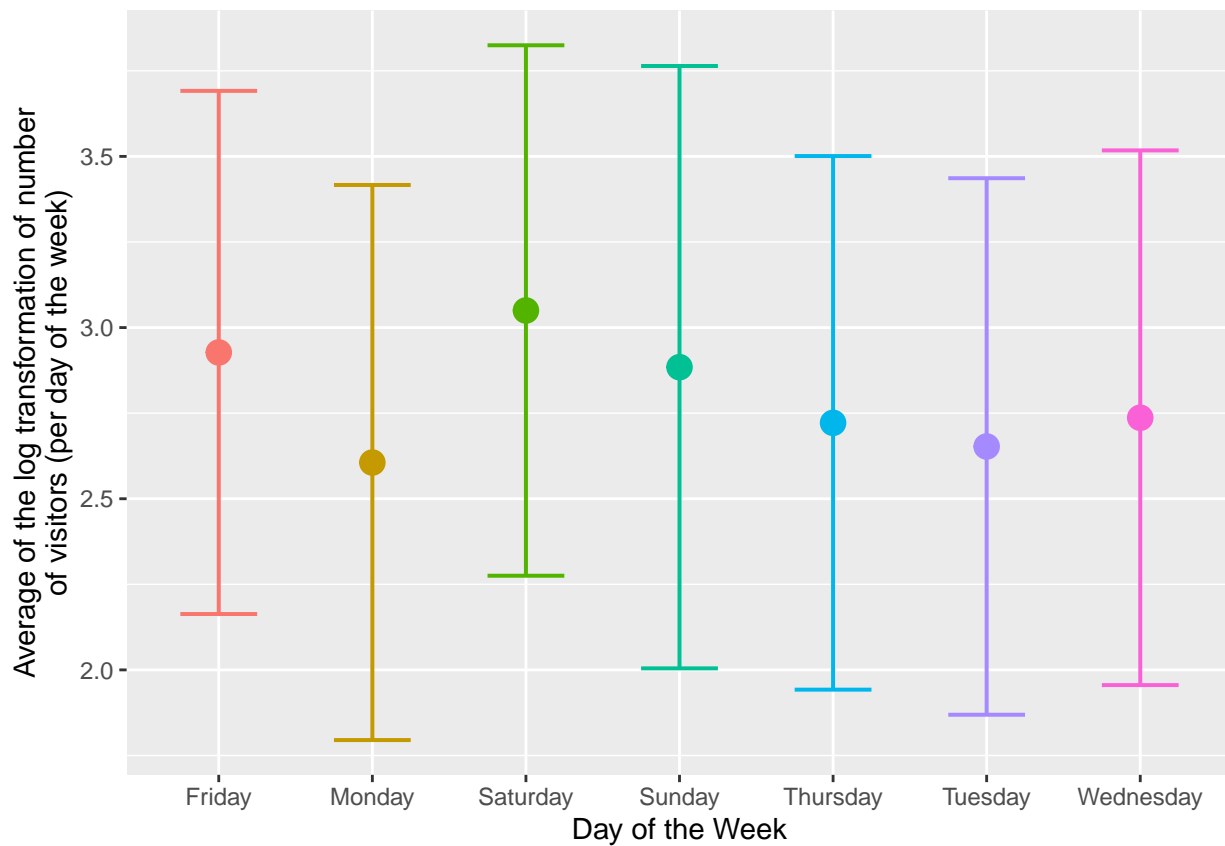
```
print(paste("Total number of Genres visited by customers",length(unique(air_visited$air_genre_name))))
```

```
## [1] "Total number of Genres visited by customers 14"
```

```

# Average of log transformation of Number of visitors vs Each day of the week
air_visited %>%
  group_by(day_of_week) %>%
  summarise(mean_log_visitors = mean(log1p(visitors)),
            sd_log_visitors = sd(log1p(visitors))) %>%
  ggplot(aes(day_of_week, mean_log_visitors, color = day_of_week)) +
  geom_point(size = 4) +
  geom_errorbar(aes(ymin = mean_log_visitors - sd_log_visitors,
                    ymax = mean_log_visitors + sd_log_visitors,
                    color = day_of_week), width = 0.5, size = 0.7) +
  theme(legend.position = "none")+
  labs(y="Average of the log transformation of number\nof visitors (per day of the week)",x="Day of the week")

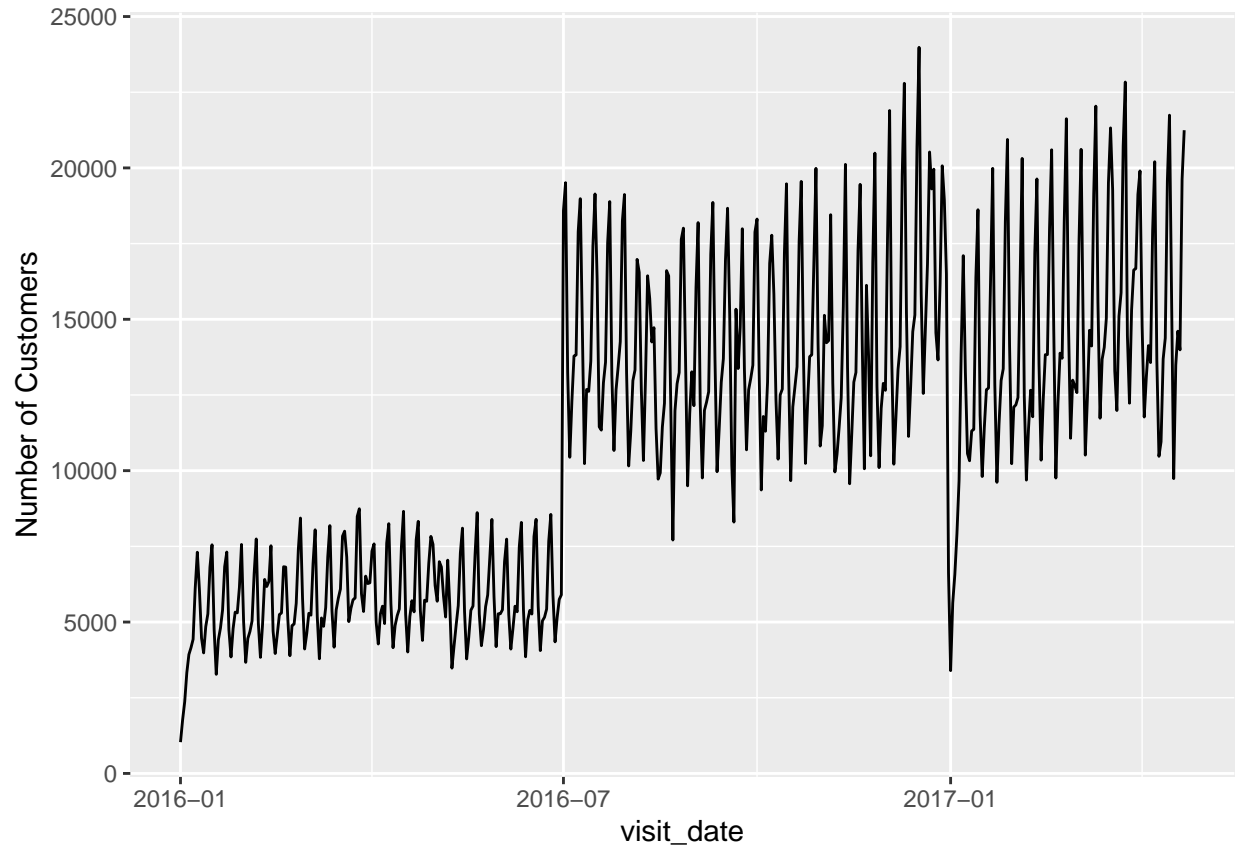
```



```

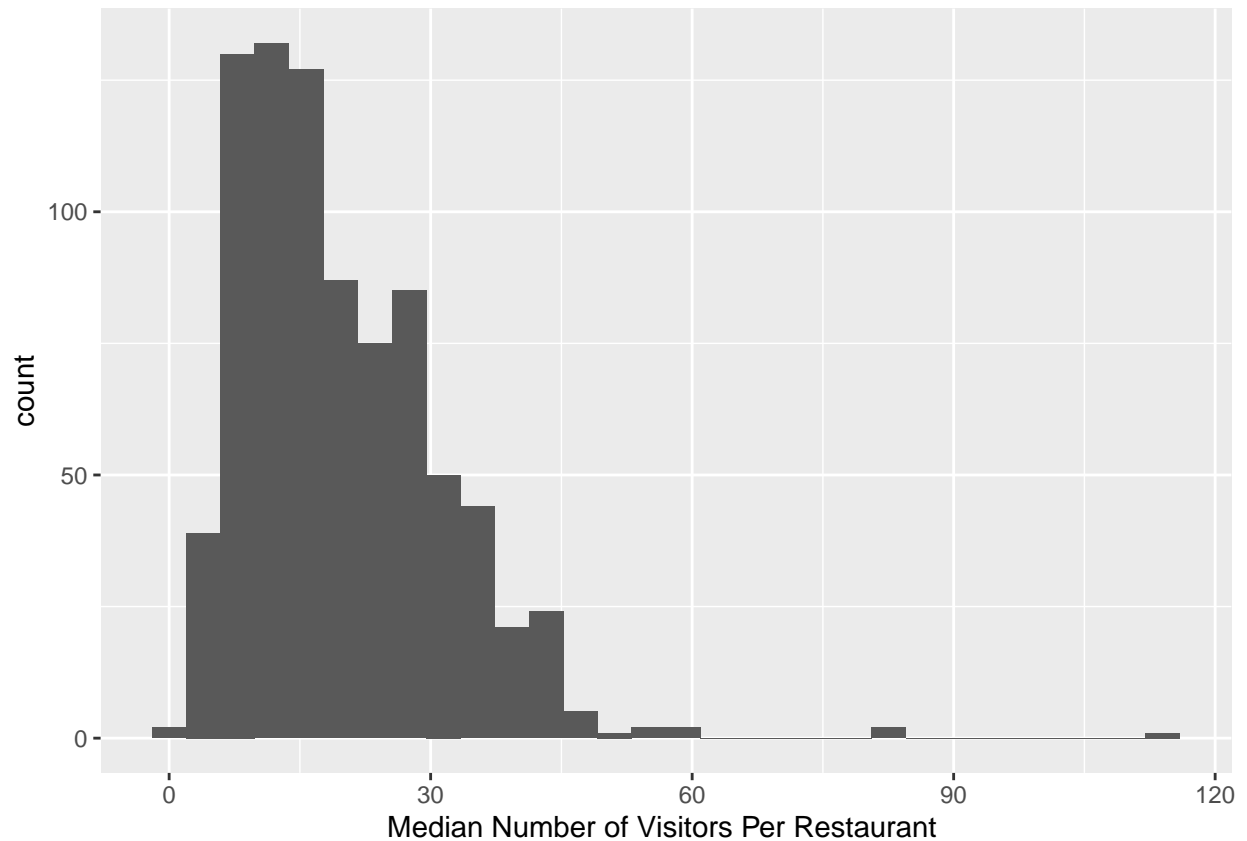
# Reservation Datetime vs Number of Customers
group_by(air_visited, visit_date) %>%
  summarise(count = sum(visitors)) %>%
  ggplot()+
  geom_line(mapping = aes(x=visit_date, y=count))+
  labs(y="Number of Customers")

```



```
# Median Number of Visitors Per Restaurant distribution
group_by(air_visited,air_store_id) %>%
  summarise(med = median(visitors)) %>%
  ggplot()+
  geom_histogram(mapping=aes(med))+
  labs(x="Median Number of Visitors Per Restaurant ")
```

```
## 'stat_bin()' using 'bins = 30'. Pick better value with 'binwidth'.
```

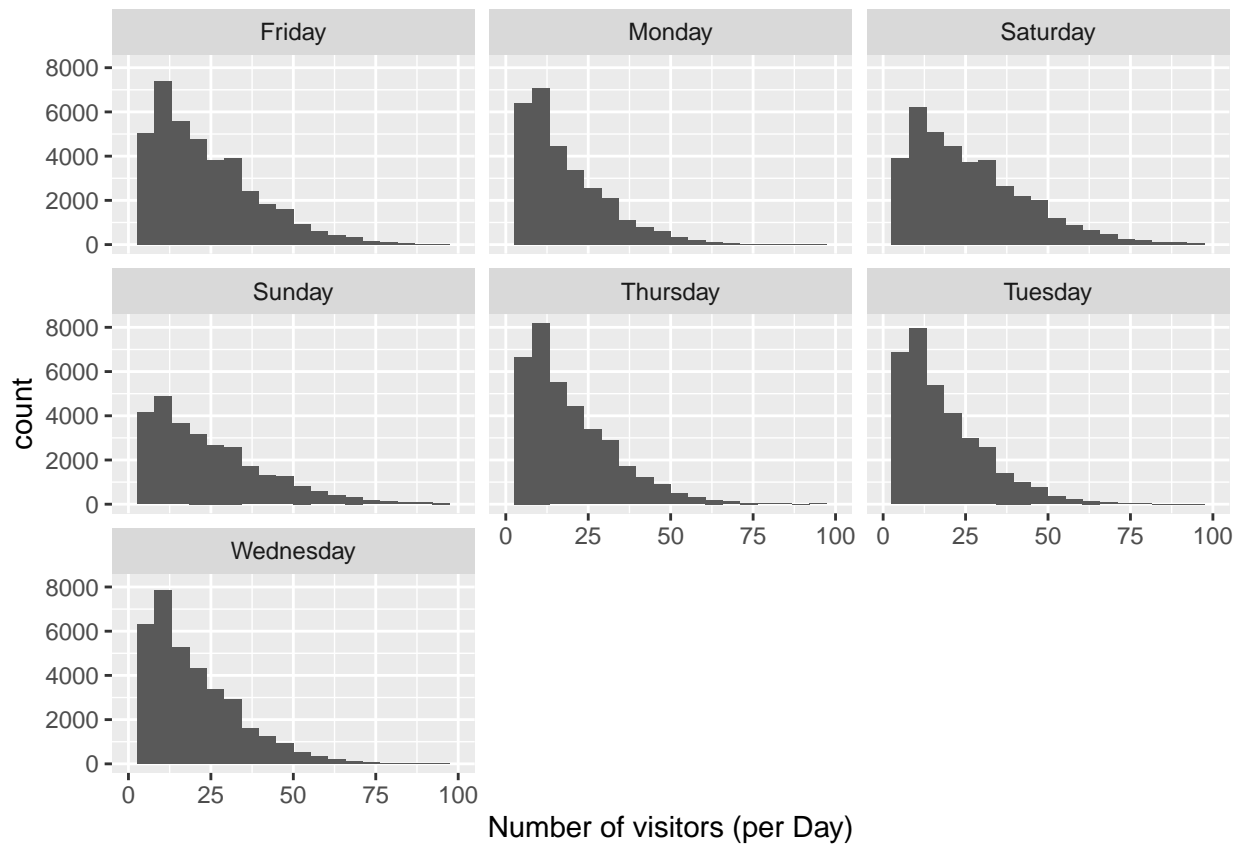


Histogram of Number of Visitors faceted by Day of the Week

```
air_visited %>%  
  ggplot(aes(visitors)) +  
  geom_histogram( bins = 20)+  
  facet_wrap(vars(day_of_week))+  
  xlim(0,100)+  
  labs(x="Number of visitors (per Day)")
```

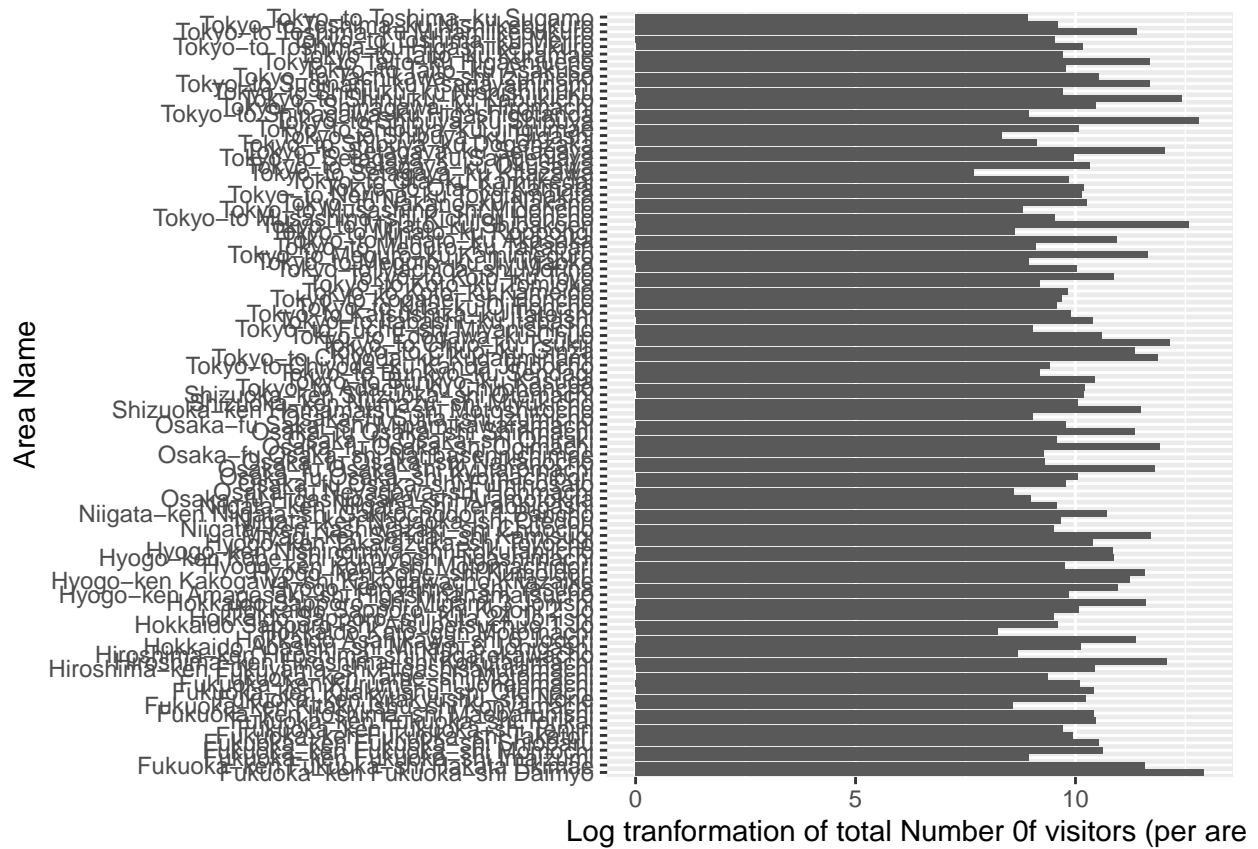
Warning: Removed 509 rows containing non-finite values (stat_bin).

Warning: Removed 14 rows containing missing values (geom_bar).



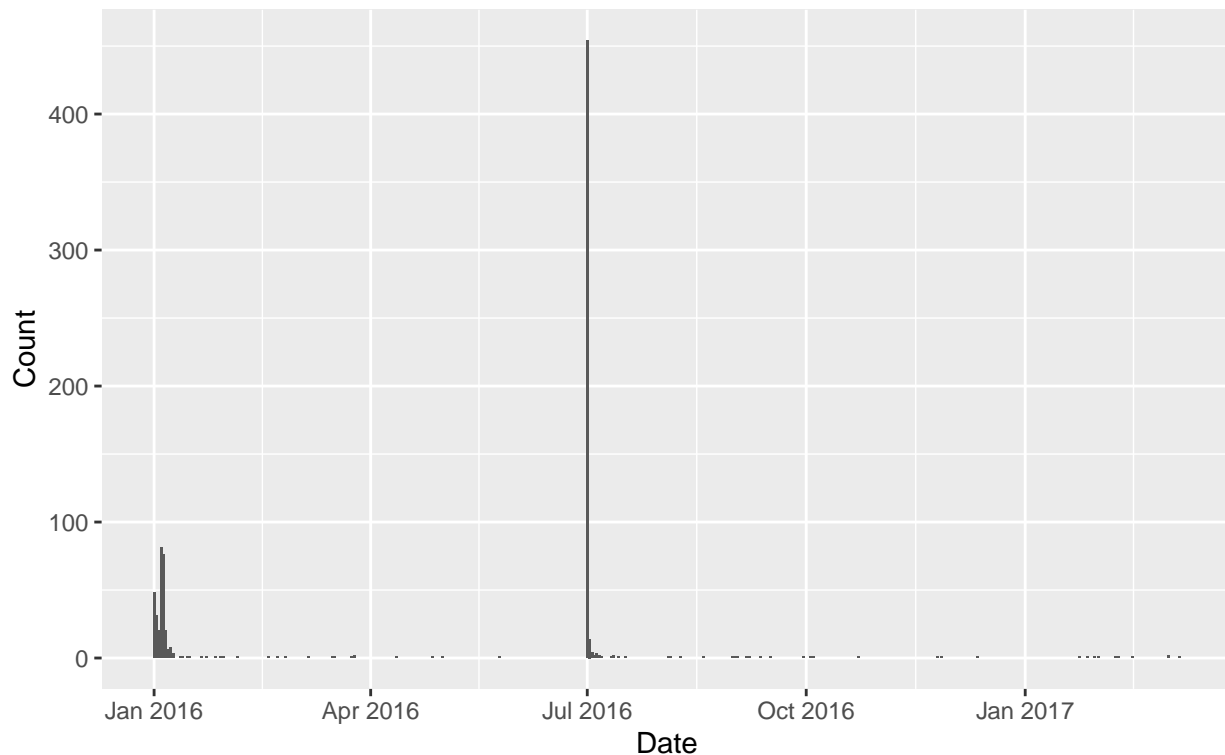
#Area vs number of People

```
group_by(air_visited,air_area_name) %>%
  summarise(num= sum(visitors)) %>%
  ggplot()+
  geom_bar(mapping = aes(x=air_area_name,y=log(num)),stat="identity")+
  coord_flip()+
  labs(y="Log tranformation of total Number Of visitors (per area)",x="Area Name")
```



```
# Distribution of the date of first entry of a restaurant
group_by(air_visited,air_store_id) %>%
  summarize(m = min(visit_date)) %>%
  ggplot()+
  geom_bar(mapping = aes(m))+
  labs(x="Date",y="Count",title = "Supports our assumption that a very significant \nNumber of restaura
```

Supports our assumption that a very significant
Number of restaurants were added in July 2016



Explains the step structure in visit Date vs Number of customers

Number of Visitors vs Day of the Week

```
temp <- air_visited
```

```
day_of_week <- factor(temp$day, levels = c("Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday", "Sunday"))
```

```
## Warning: Unknown or uninitialised column: 'day'.
```

```
temp %>%
```

```
  group_by(day_of_week) %>%
```

```
  summarise(pdv = median(visitors)) %>%
```

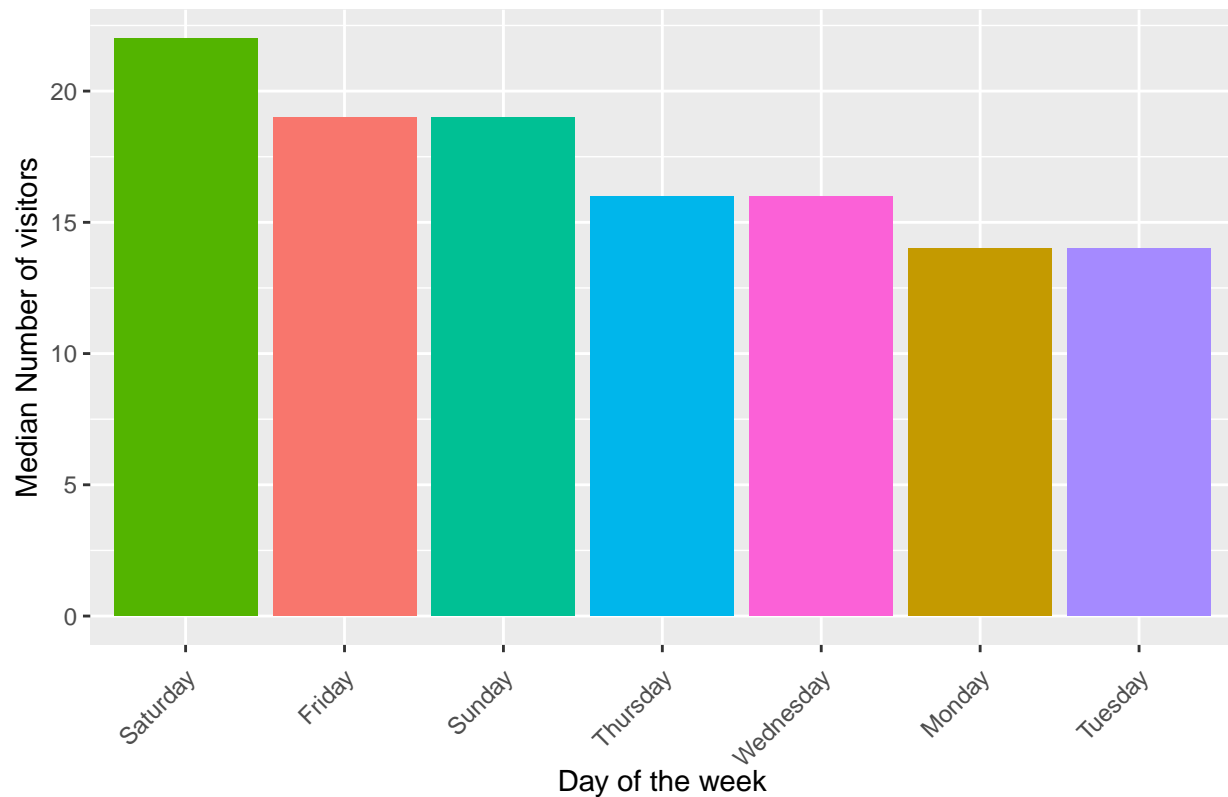
```
  ggplot(aes(x= reorder(day_of_week, -pdv), pdv, fill=day_of_week)) +
```

```
  geom_col() +
```

```
  theme(legend.position = "none", axis.text.x = element_text(angle=45, hjust=1, vjust=0.9)) +
```

```
  labs(x = "Day of the week", y = "Median Number of visitors", title="Median Number of Visitors increases over time")
```

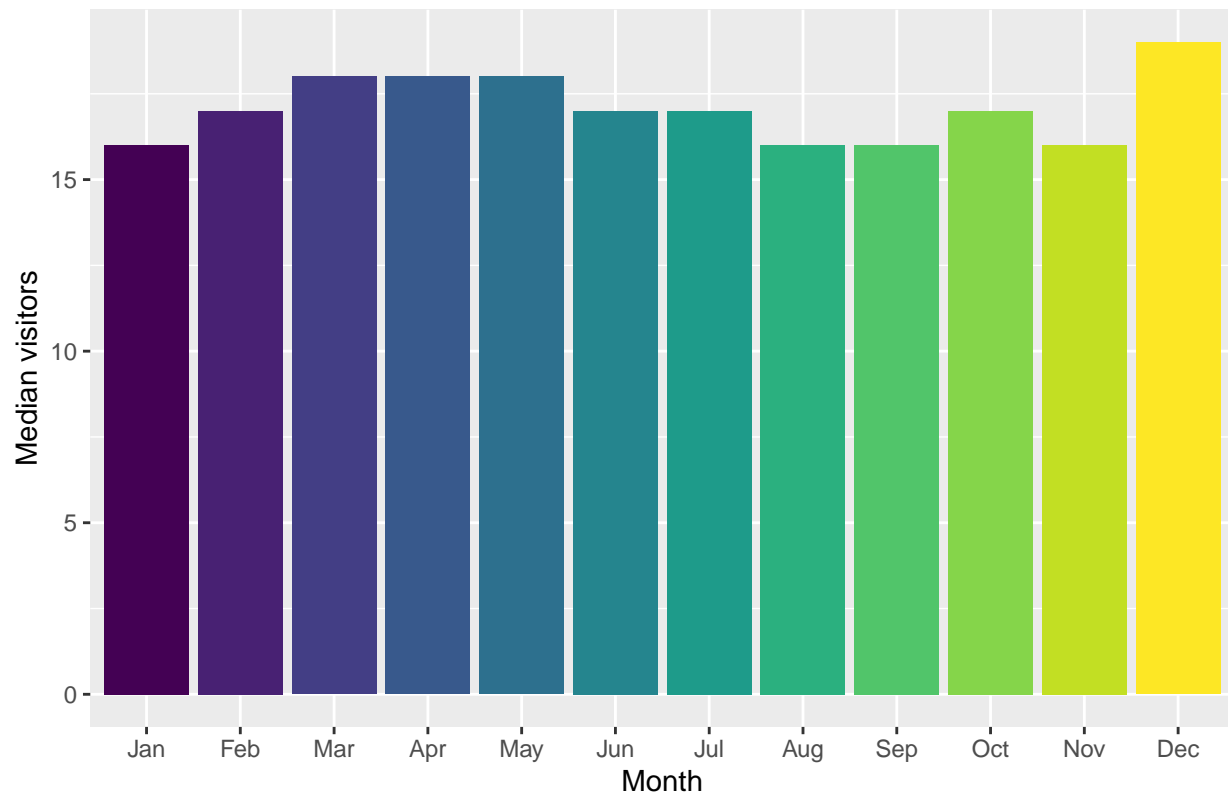

Median Number of Visitors increases during the weekend



#Number of Visitors vs Month of the Year

```
air_visit_data %>%
  mutate(month = month(visit_date, label = TRUE)) %>%
  group_by(month) %>%
  summarise(visits = median(visitors)) %>%
  ggplot(aes(month, visits, fill = month)) +
  geom_col() +
  theme(legend.position = "none") +
  labs(x = "Month", y = "Median visitors", title="Median visitors increase during the holiday months and
```

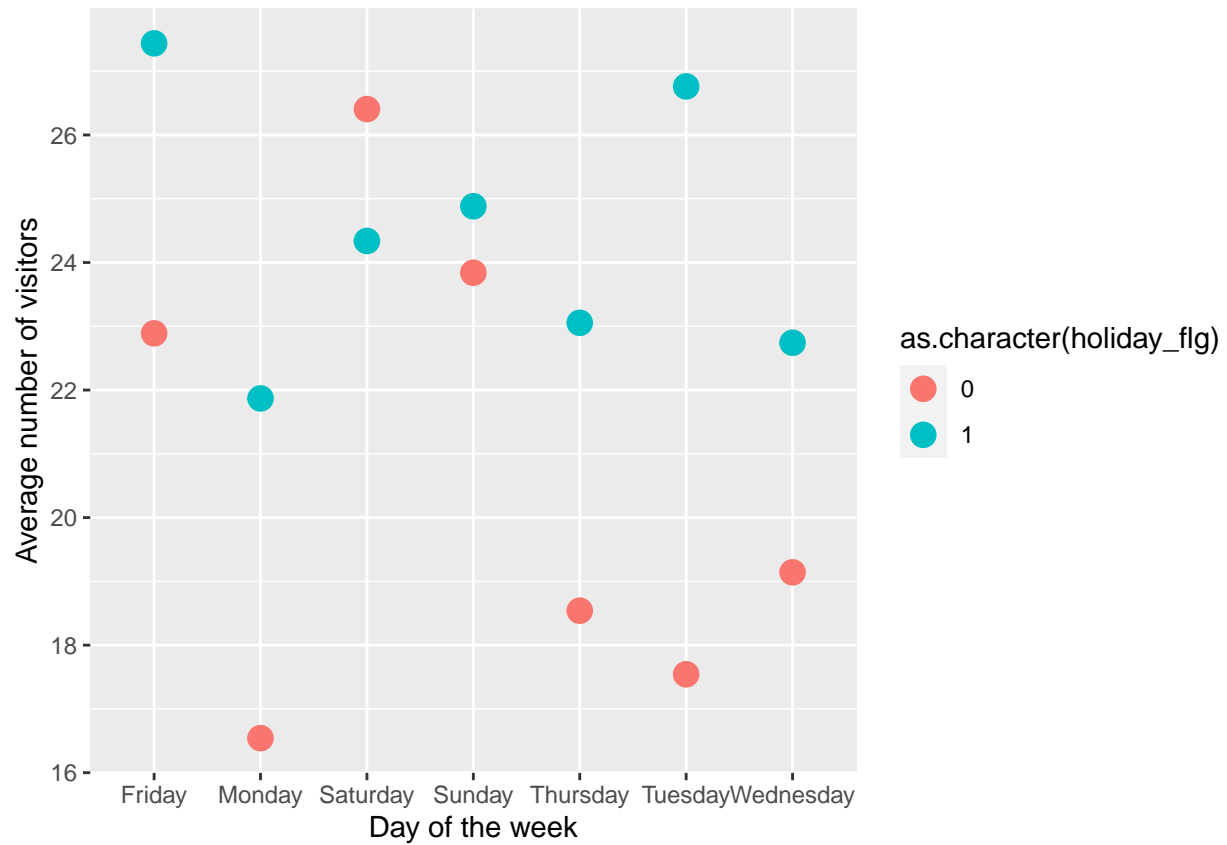
Median visitors increase during the holiday months and Summer



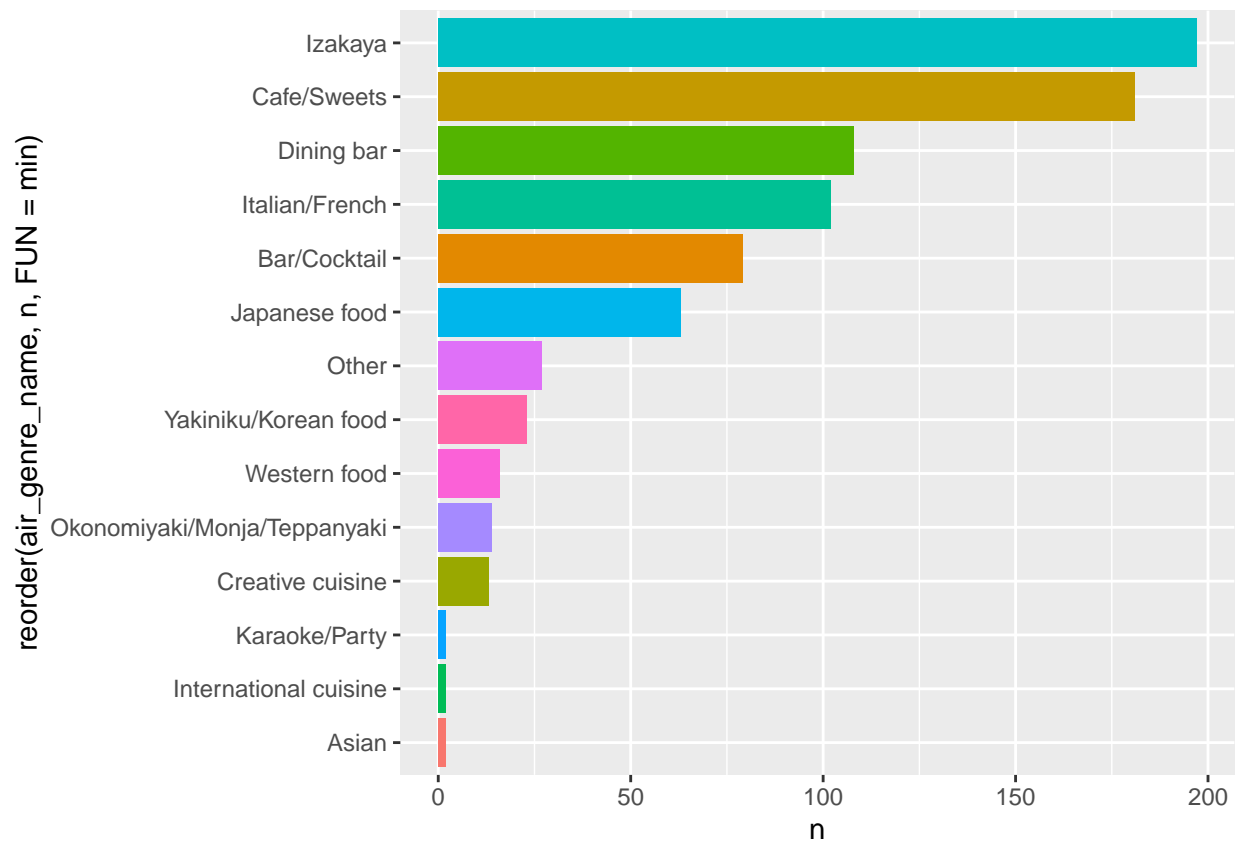
```
holidays <- read_csv('date_info.csv', col_types = cols())
temp <- air_visit_data %>%
  mutate(calendar_date = visit_date) %>%
  left_join(holidays, by = "calendar_date")

temp %>%
  mutate(wday = day_of_week) %>%
  group_by(wday, holiday_flg) %>%
  summarise(mean_visitors = mean(visitors)) %>%
  ggplot(aes(wday, mean_visitors, color = as.character(holiday_flg))) +
  geom_point(size = 4) +
  labs(y = "Average number of visitors", x = "Day of the week")
```

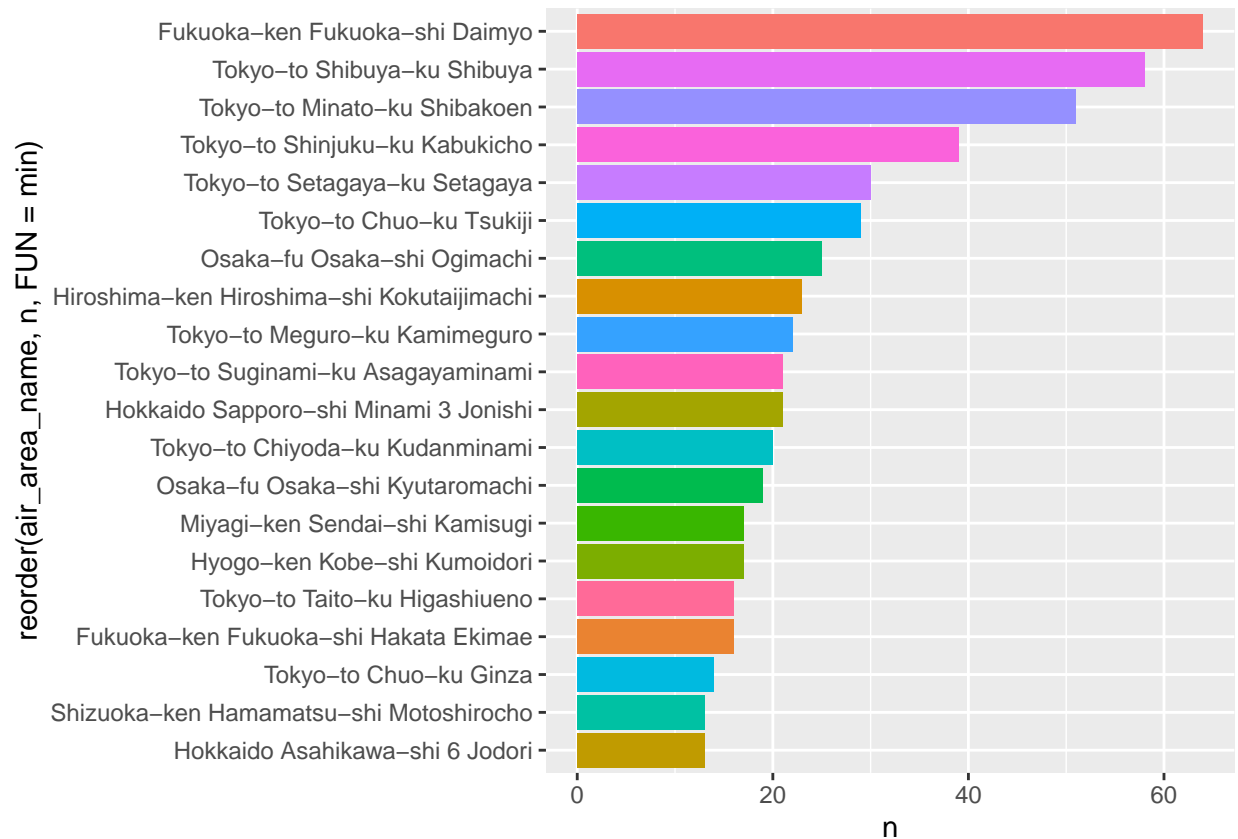
'summarise()' has grouped output by 'wday'. You can override using the '.groups' argument.



```
# Number of Restaurants per Genre
air_store_info %>%
  group_by(air_genre_name) %>%
  count() %>%
  ggplot()+
  geom_col(aes(reorder(air_genre_name,n,FUN = min),n,fill=air_genre_name))+
  coord_flip()+
  theme(legend.position = "none")
```



```
# Number of Restaurants per Area
# Only top 20 are displayed
air_store_info %>%
  group_by(air_area_name) %>%
  count() %>%
  ungroup() %>%
  top_n(20,n) %>%
  ggplot()+
  geom_col(aes(reorder(air_area_name,n,FUN = min),n,fill = air_area_name))+
  coord_flip()+
  theme(legend.position = "none")
```



HPG Data

```
print(paste("Number of unique restaurants in the hpg reserve data ",length(unique(hpg_store_info$hpg_store_name))))

## [1] "Number of unique restaurants in the hpg reserve data 4690"

print(paste("The hpg reserve data contains reservation from ",min(hpg_reserve$reserve_datetime),"to",max(hpg_reserve$reserve_datetime)))

## [1] "The hpg reserve data contains reservation from 2016-01-01 to 2017-04-22 23:00:00"

print(paste("In the above time period, the total number of reservations is ",length(hpg_reserve$hpg_store_name),
",format(sum(hpg_reserve$reserve_visitors),big.mark=",",scientific=FALSE)," customers"))

## [1] "In the above time period, the total number of reservations is 2000320 for a total of\n10,149,000 customers"

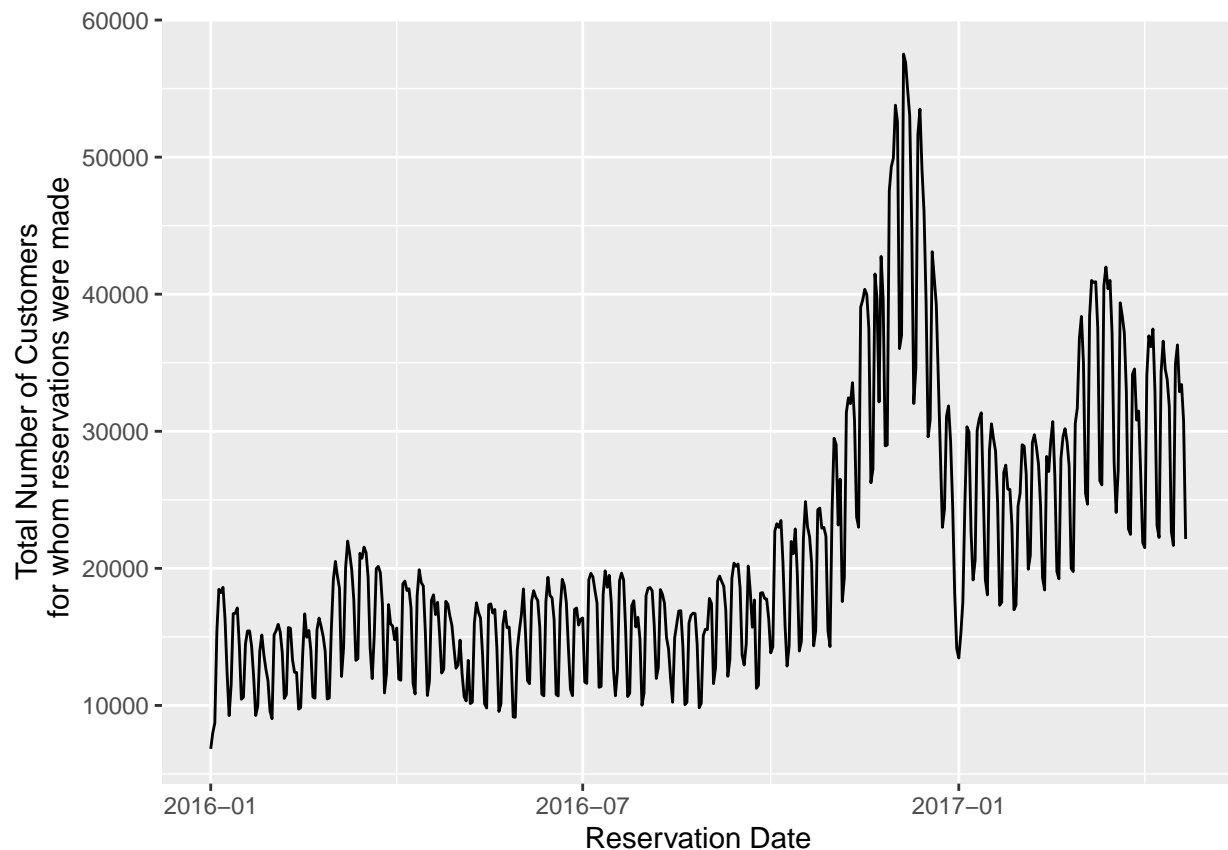
print(paste("Total number of areas in which reservations were made through hpg reserve",length(unique(hpg_reserve$hpg_store_name))))

## [1] "Total number of areas in which reservations were made through hpg reserve 119"
```

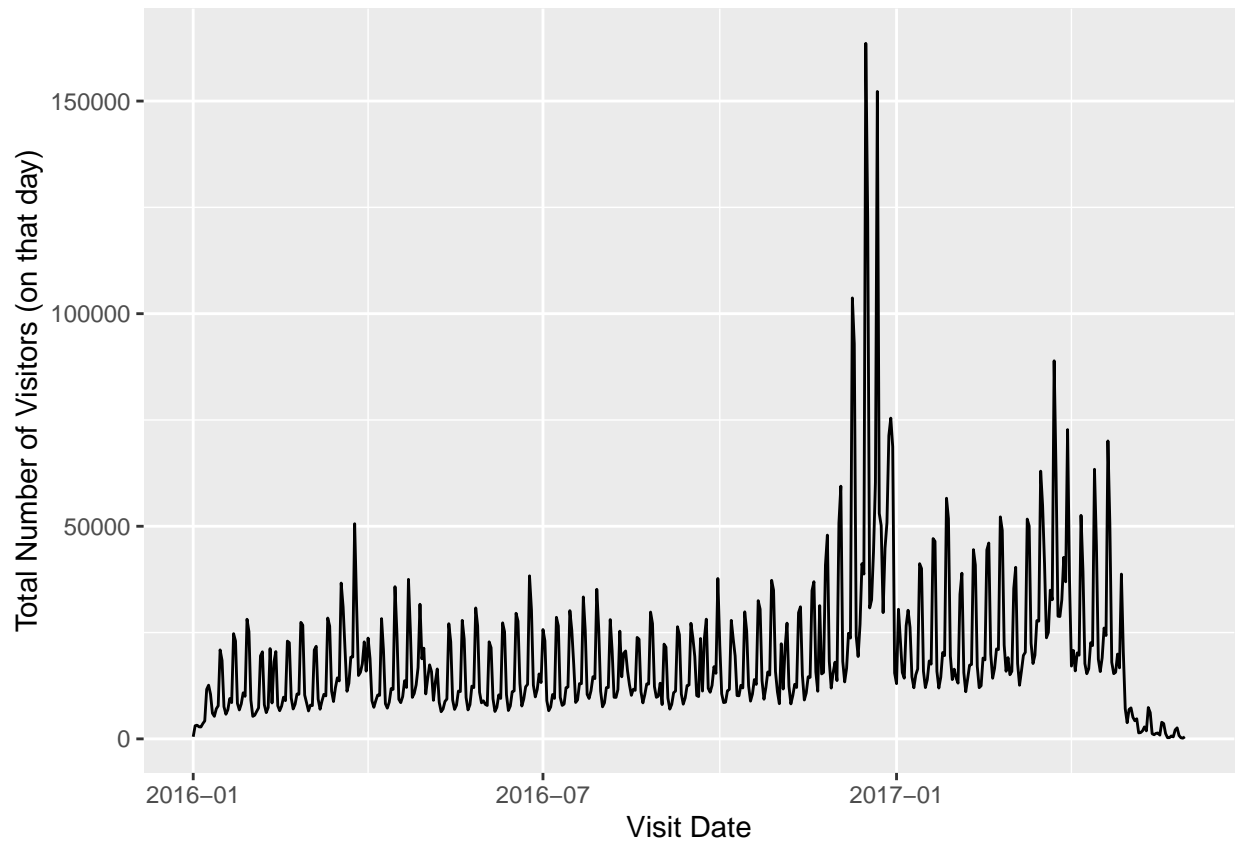
```
print(paste("Total number of Genres in which reservations were made through hpg reserve",length(unique
```

```
## [1] "Total number of Genres in which reservations were made through hpg reserve 34"
```

```
# Total Number of visitors vs Reservation Date
group_by(hpg_reserve, reserve_datetime) %>%
  mutate(reserve_datetime = as.Date(reserve_datetime)) %>%
  summarise(count= sum(reserve_visitors)) %>%
  ggplot()+
  geom_line(mapping = aes(x=reserve_datetime,y=count))+
  labs(x="Reservation Date",y="Total Number of Customers\n for whom reservations were made")
```

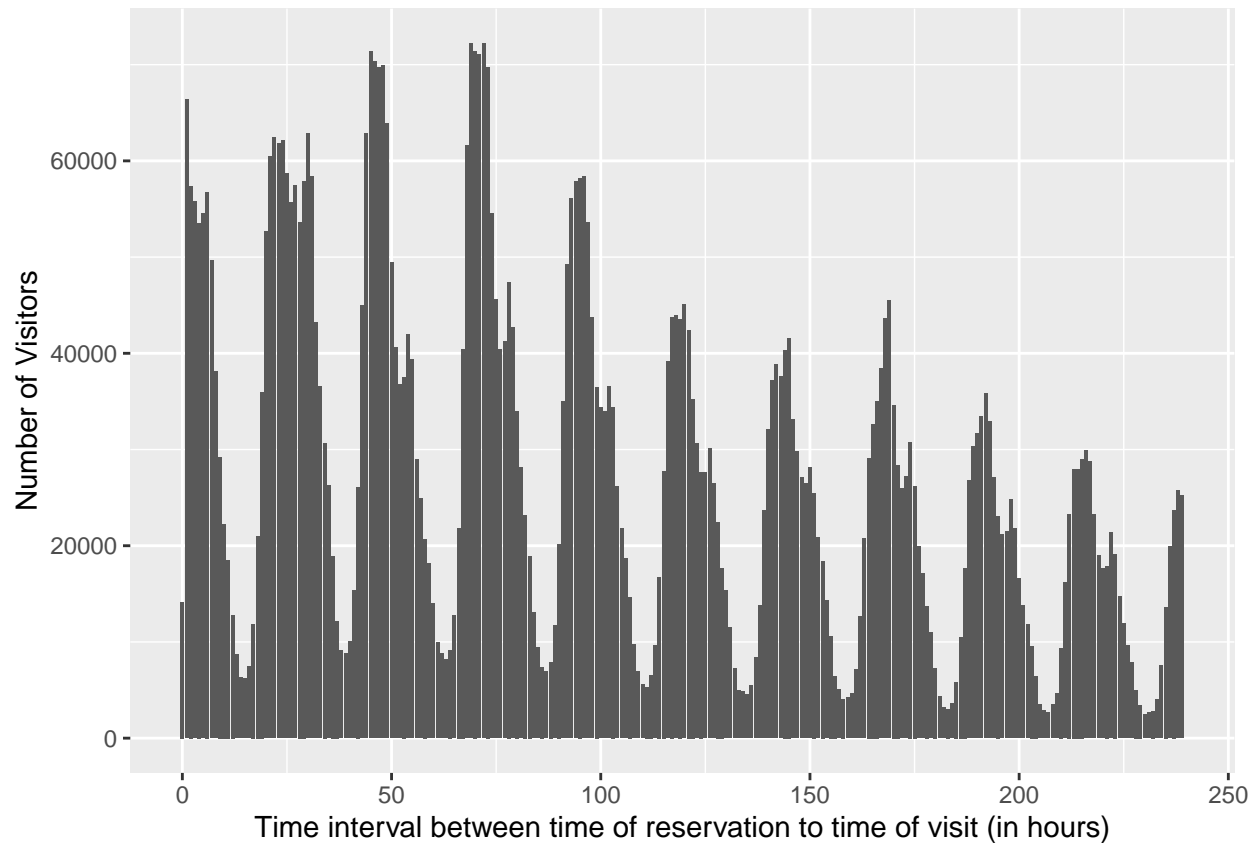


```
# Total Number of visitors vs Visit Date
group_by(hpg_reserve, visit_datetime) %>%
  mutate(visit_datetime = as.Date(visit_datetime)) %>%
  summarise(count= sum(reserve_visitors)) %>%
  ggplot()+
  geom_line(mapping = aes(x=visit_datetime,y=count))+
  labs(x="Visit Date",y="Total Number of Visitors (on that day)")
```

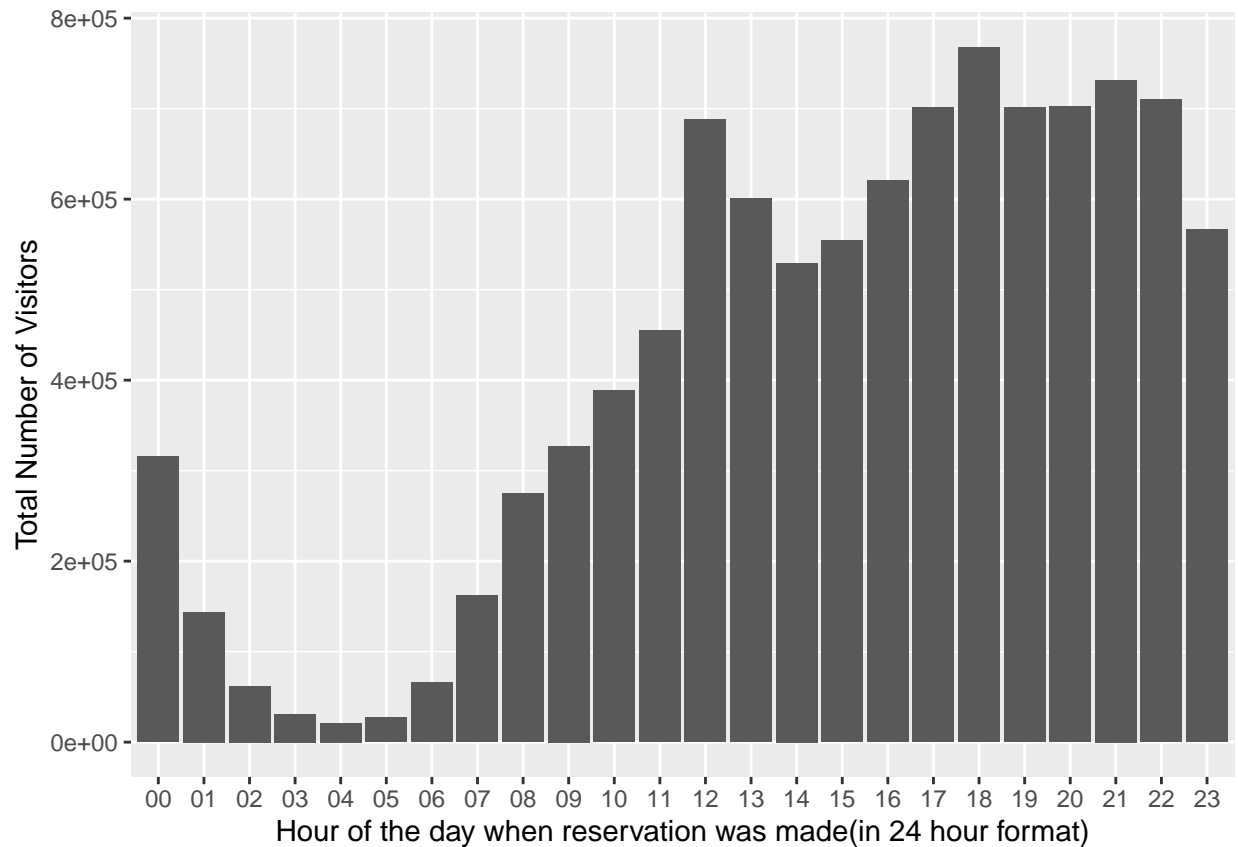


```
# Number of Visitors vs time difference from reservation to visitation
hpg_reserve %>%
  mutate(hourdiff = difftime(visit_datetime, reserve_datetime, unit="hours")) %>%
  filter( hourdiff < 24*10) %>%
  group_by(hourdiff) %>%
  summarise(all_visitors = sum(reserve_visitors)) %>%
  ggplot(aes(hourdiff, all_visitors)) +
  geom_col() +
  labs(x = "Time interval between time of reservation to time of visit (in hours)", y="Number of Visitors")
```

Don't know how to automatically pick scale for object of type difftime. Defaulting to continuous.

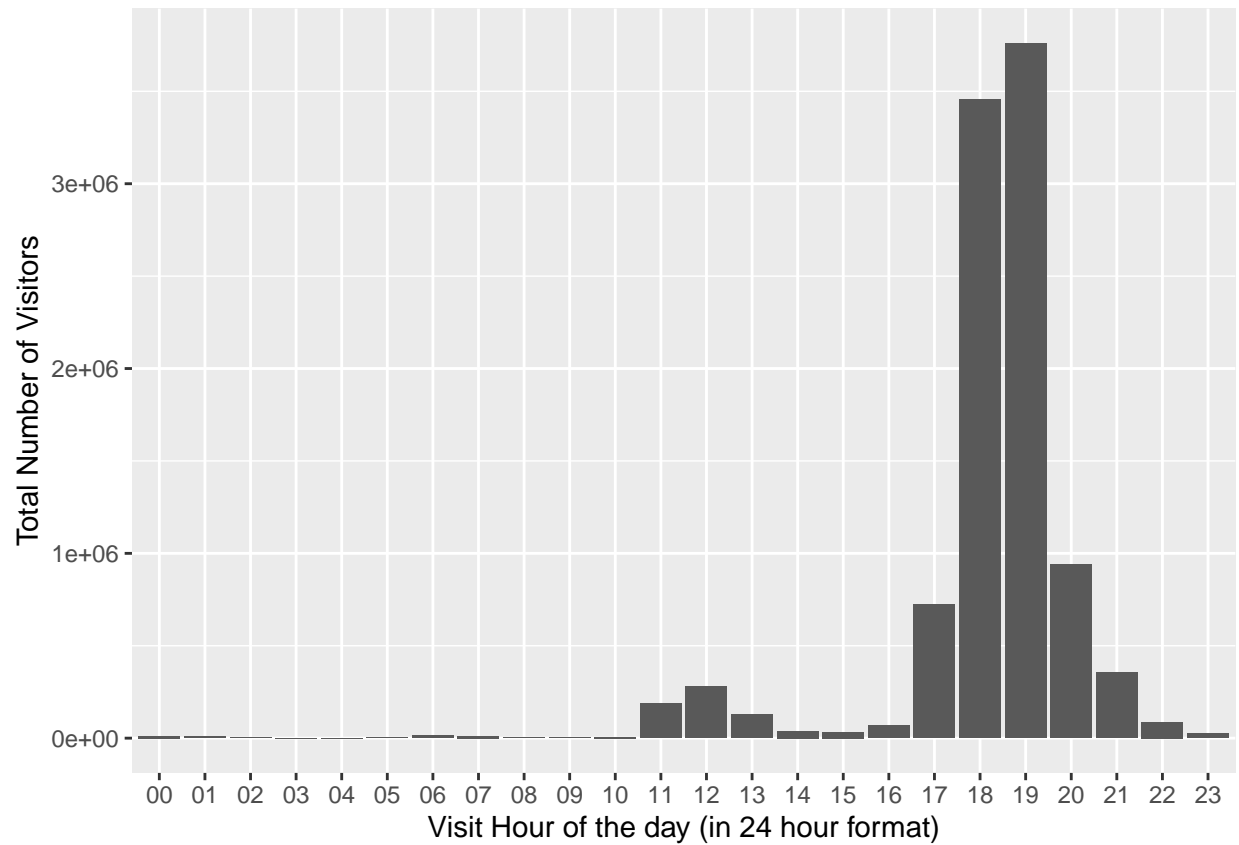


```
# Time of Day During which reservations are made distribution
hpg_reserve %>%
  mutate(visit_hour = format(as.POSIXct(hpg_reserve$reserve_datetime), format = "%H")) %>%
  group_by(visit_hour) %>%
  summarise(all_visitors = sum(reserve_visitors)) %>%
  ggplot()+
  geom_col(aes(visit_hour,all_visitors))+
  labs(x="Hour of the day when reservation was made(in 24 hour format)",y="Total Number of Visitors")
```

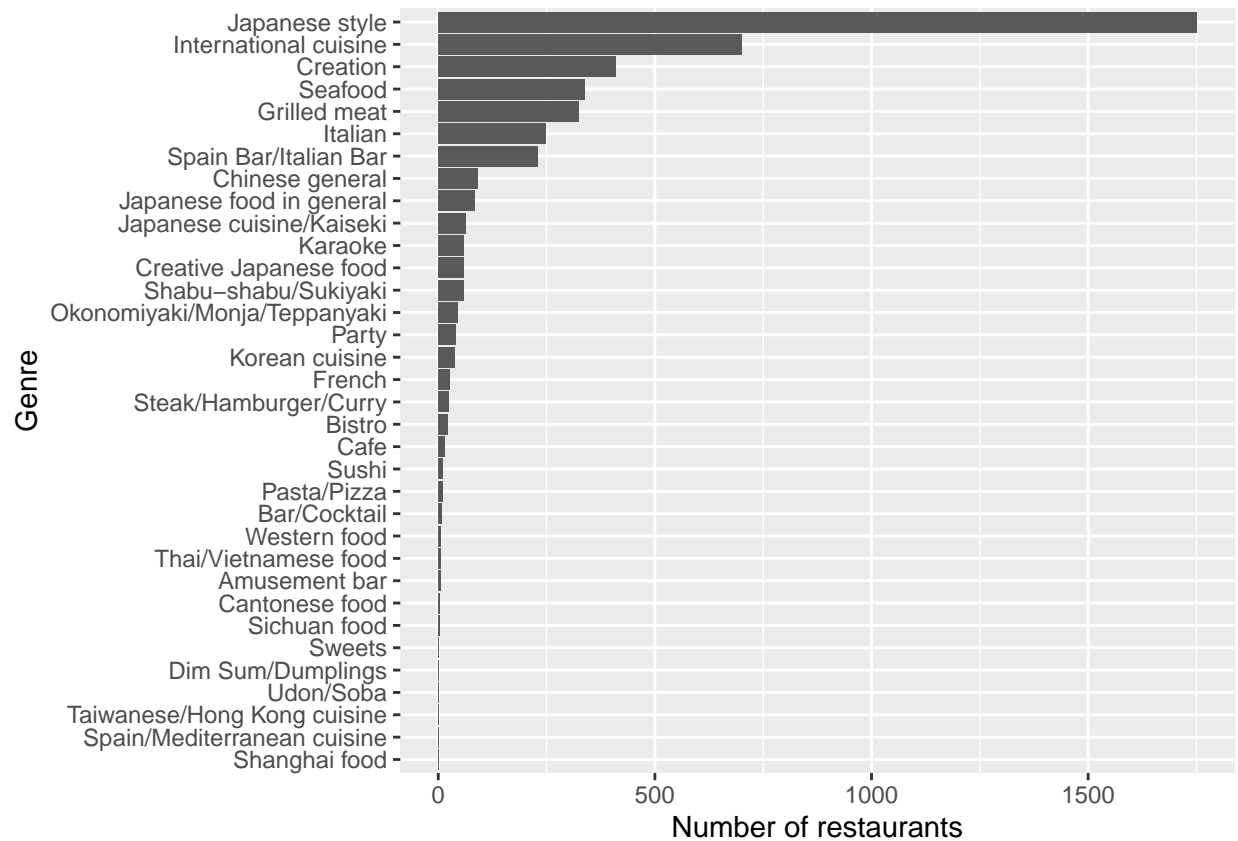



Time of the Day for visit for which reservations are made distribution

```
hpg_reserve %>%
  mutate(visit_hour = format(as.POSIXct(hpg_reserve$visit_datetime), format = "%H")) %>%
  group_by(visit_hour) %>%
  summarise(all_visitors = sum(reserve_visitors)) %>%
  ggplot()+
  geom_col(aes(visit_hour,all_visitors))+
  labs(x="Visit Hour of the day (in 24 hour format)",y="Total Number of Visitors")
```

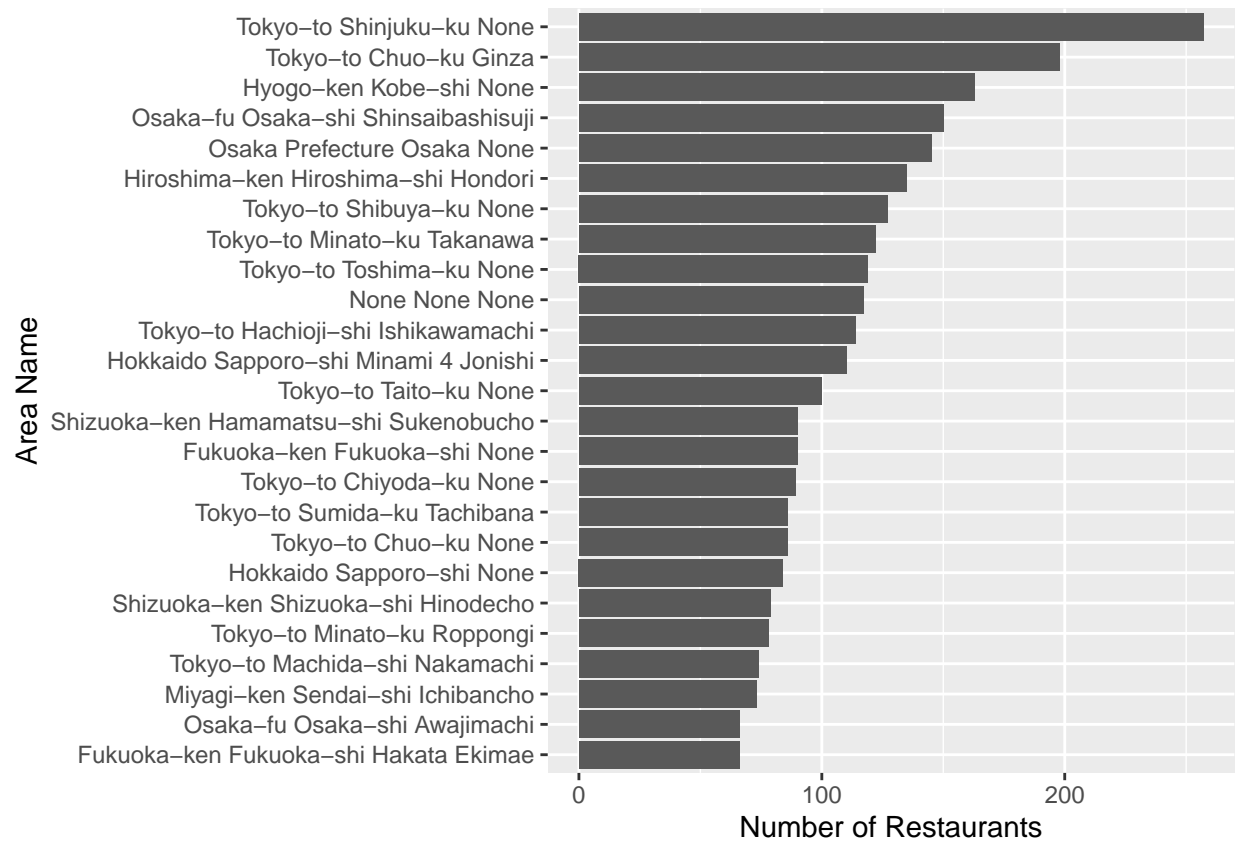


```
hpg_store_info %>%  
  group_by(hpg_genre_name) %>%  
  count() %>%  
  ggplot()+  
  geom_col(aes(reorder(hpg_genre_name,n,FUN = min),n))+  
  coord_flip()+  
  labs(x="Genre",y="Number of restaurants")
```



Top 25 area vs Number of restaurants

```
hpg_store_info %>%
  group_by(hpg_area_name) %>%
  count() %>%
  ungroup() %>%
  top_n(25,n) %>%
  ggplot()+
  geom_col(aes(reorder(hpg_area_name,n,FUN = min),n))+
  coord_flip()+
  labs(x="Area Name",y="Number of Restaurants")
```



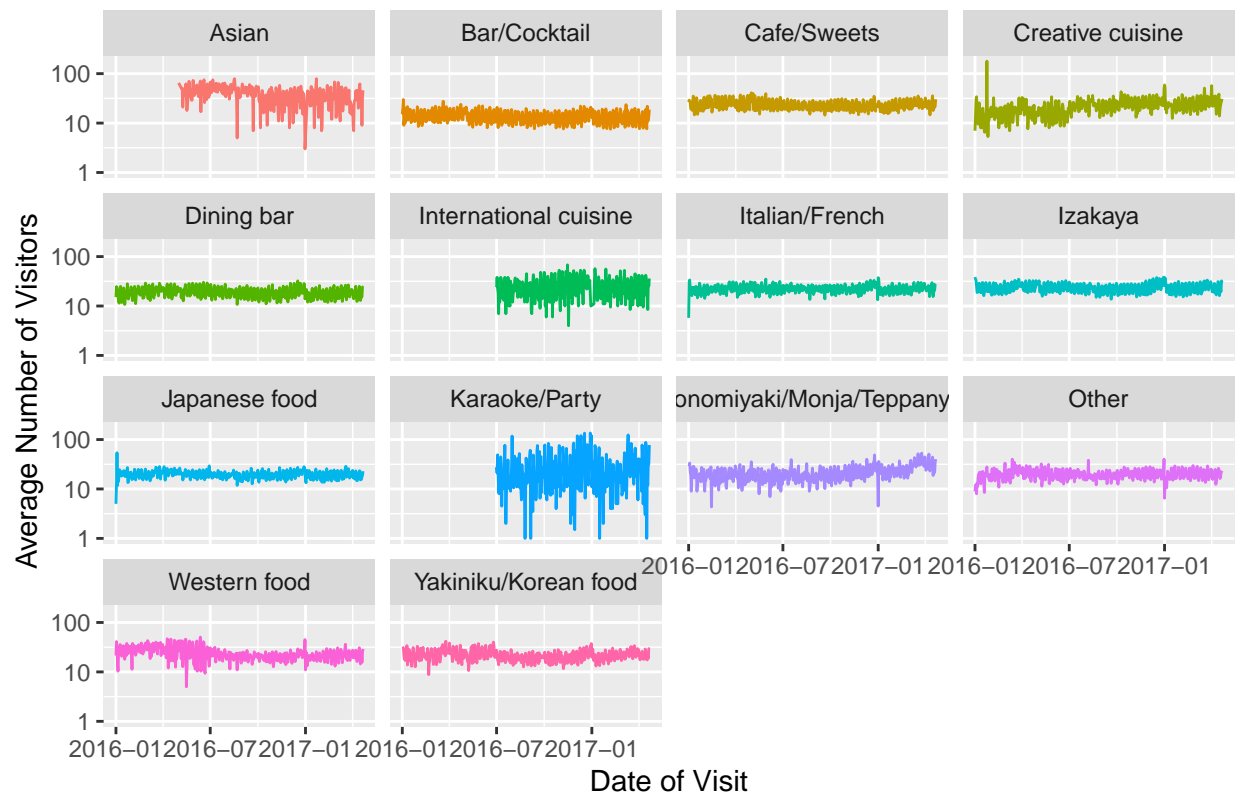
Exploring Relations between Features

Visitors per Genre

```
# Distribution of Visitors accross Genre
air_visited %>%
  group_by(visit_date,air_genre_name) %>%
  summarise(avg_visitors = mean(visitors)) %>%
  ungroup() %>%
  ggplot()+
  geom_line(mapping = aes(visit_date,avg_visitors,color=air_genre_name))+
  facet_wrap(vars(air_genre_name))+
  scale_y_log10()+
  theme(legend.position = "none")+
  labs(x="Date of Visit",y="Average Number of Visitors",title = "Distribution of Visitors accross Genre")
```

'summarise()' has grouped output by 'visit_date'. You can override using the '.groups' argument.

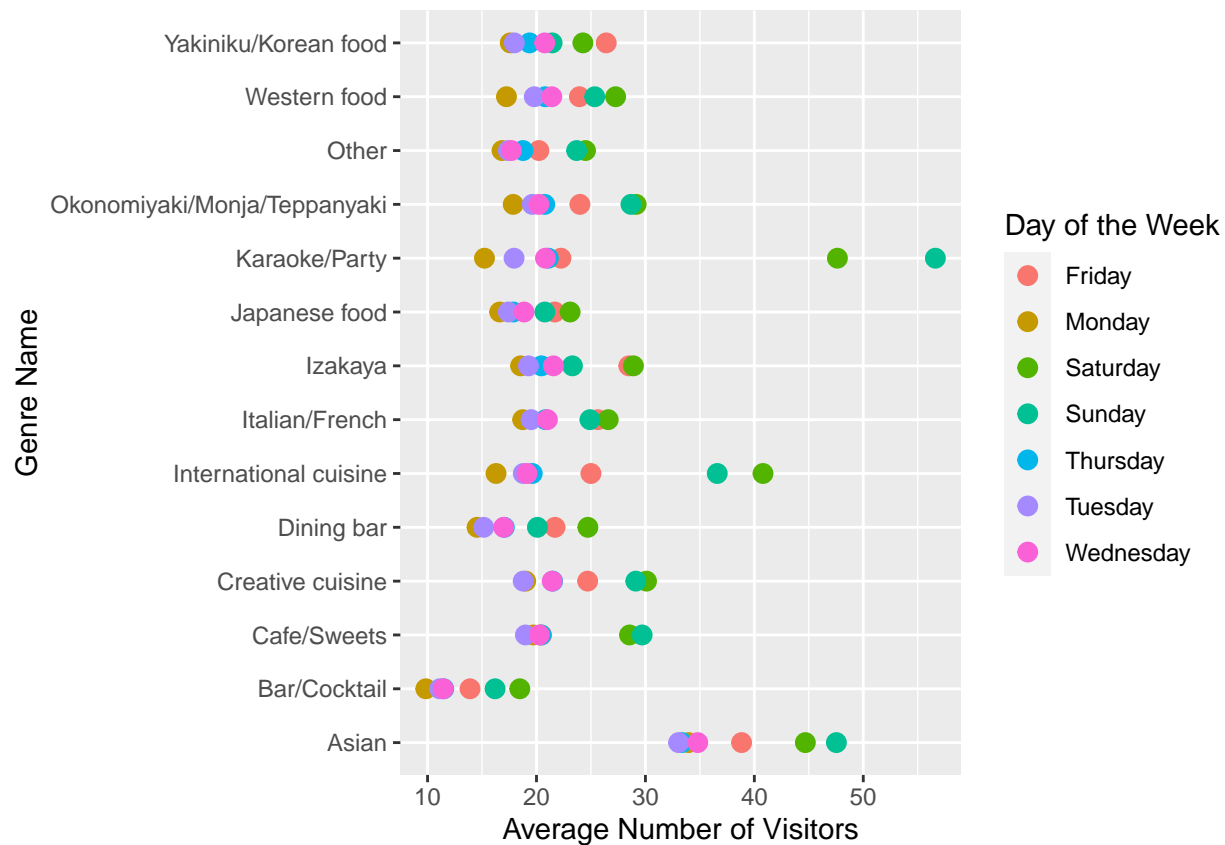
Distribution of Visitors accross Genre



Number of Visitors vs Genre

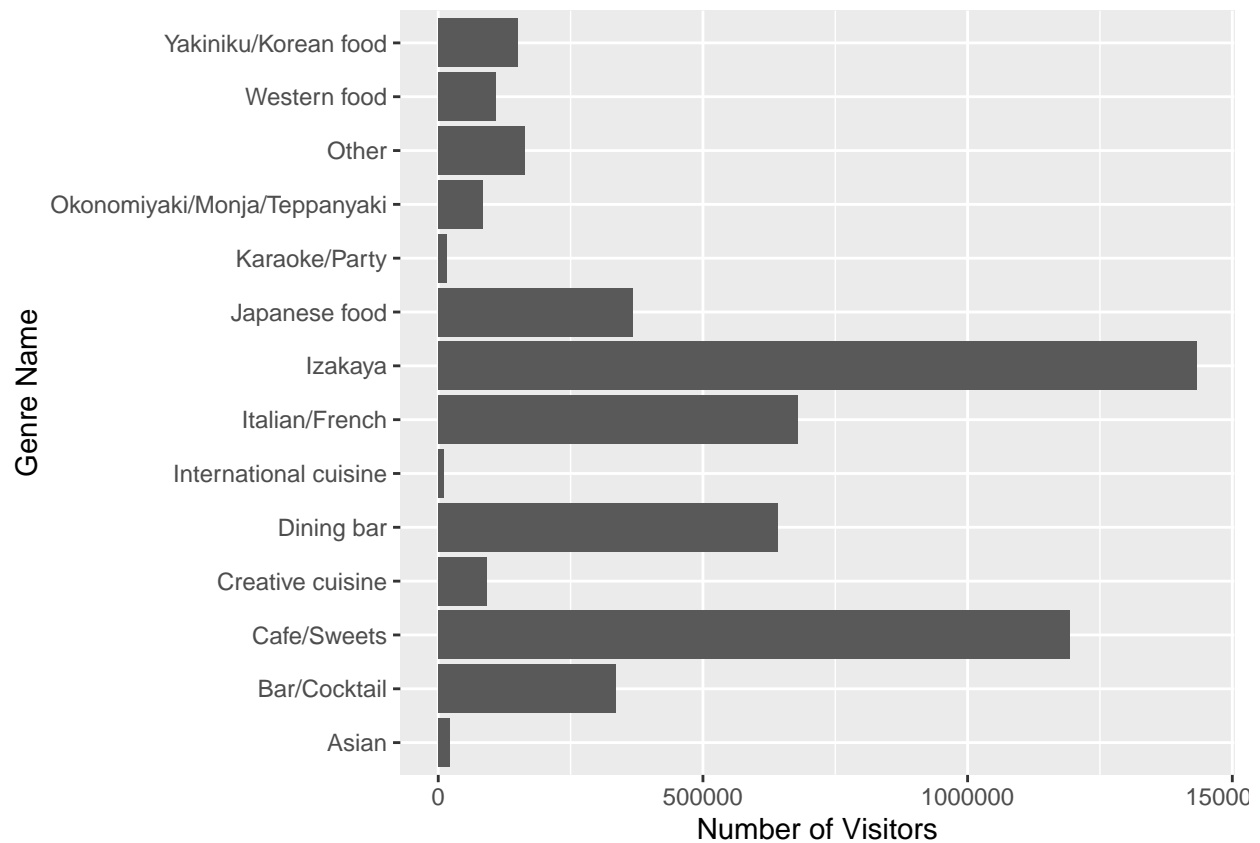
```
air_visited %>%
  group_by(day_of_week, air_genre_name) %>%
  summarise(avg_visitors = mean(visitors)) %>%
  ggplot()+
  geom_point(mapping=aes(air_genre_name, avg_visitors, color = day_of_week), size=3)+
  coord_flip()+
  labs(x="Genre Name", y="Average Number of Visitors")+
  guides(color=guide_legend(title="Day of the Week"))
```

'summarise()' has grouped output by 'day_of_week'. You can override using the '.groups' argument.



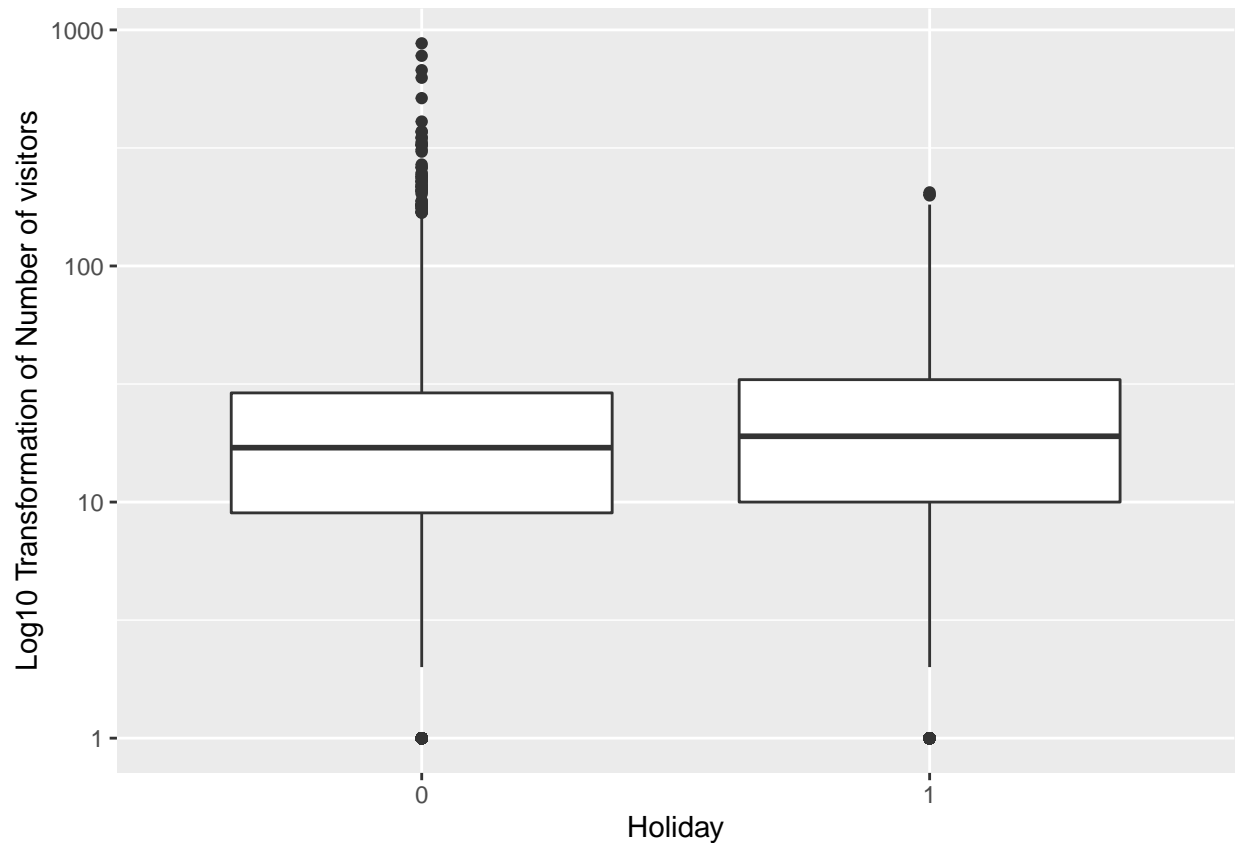
```
# Genre vs Number of Visitors for Air store data
air_visited %>%
  ggplot()+
  geom_histogram(aes(visitors,air_genre_name),stat="identity")+
  labs(y="Genre Name",x="Number of Visitors")
```

```
## Warning: Ignoring unknown parameters: binwidth, bins, pad
```



Impact of Holidays

```
air_visited %>%
  ggplot()+
  geom_boxplot(aes(as.character(holiday_flg), visitors))+
  scale_y_log10()+
  labs(x="Holiday", y="Log10 Transformation of Number of visitors")
```

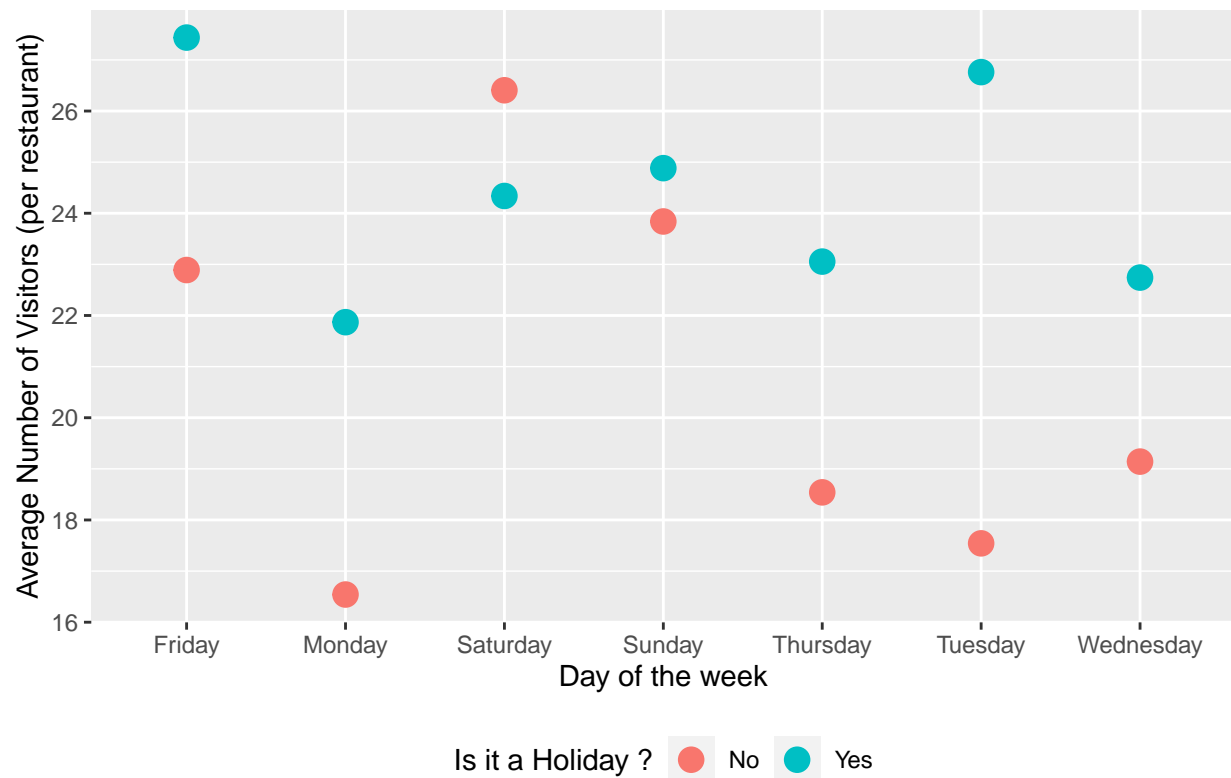


```
p <- air_visited %>%
  group_by(day_of_week, holiday_flg) %>%
  summarise(avg_visitors = mean(visitors)) %>%
  ggplot()+
  geom_point(aes(day_of_week, avg_visitors, color = as.character(holiday_flg)), size= 4)+
  labs(y="Average Number of Visitors (per restaurant)", x="Day of the week", title=" Average Number of visitors by day of the week")

## 'summarise()' has grouped output by 'day_of_week'. You can override using the '.groups' argument.

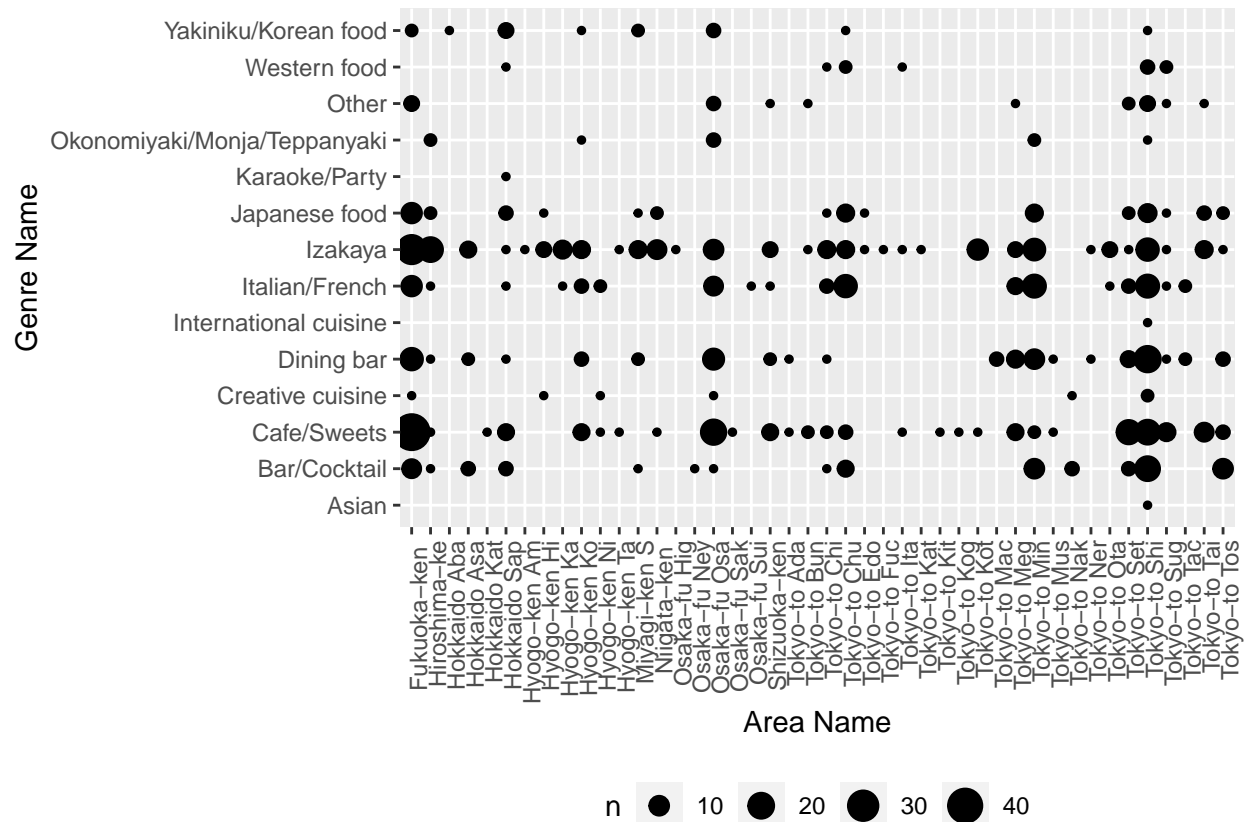
p <- p + guides(color=guide_legend(title="Is it a Holiday ?")) + theme(legend.position="bottom")
p + scale_color_discrete(labels = c("No", "Yes"))
```


Average Number of visitors increases during holidays

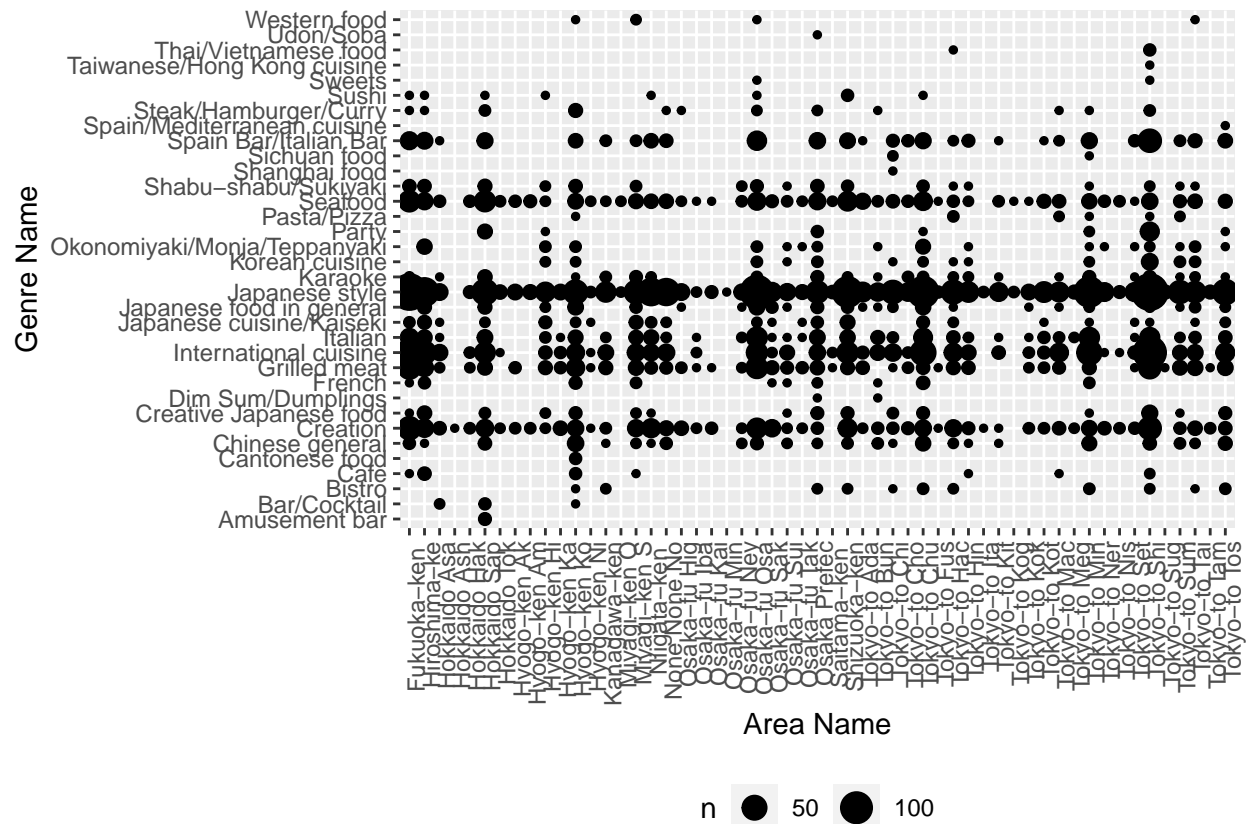


Restaurants per Area and the effect on number of visitor

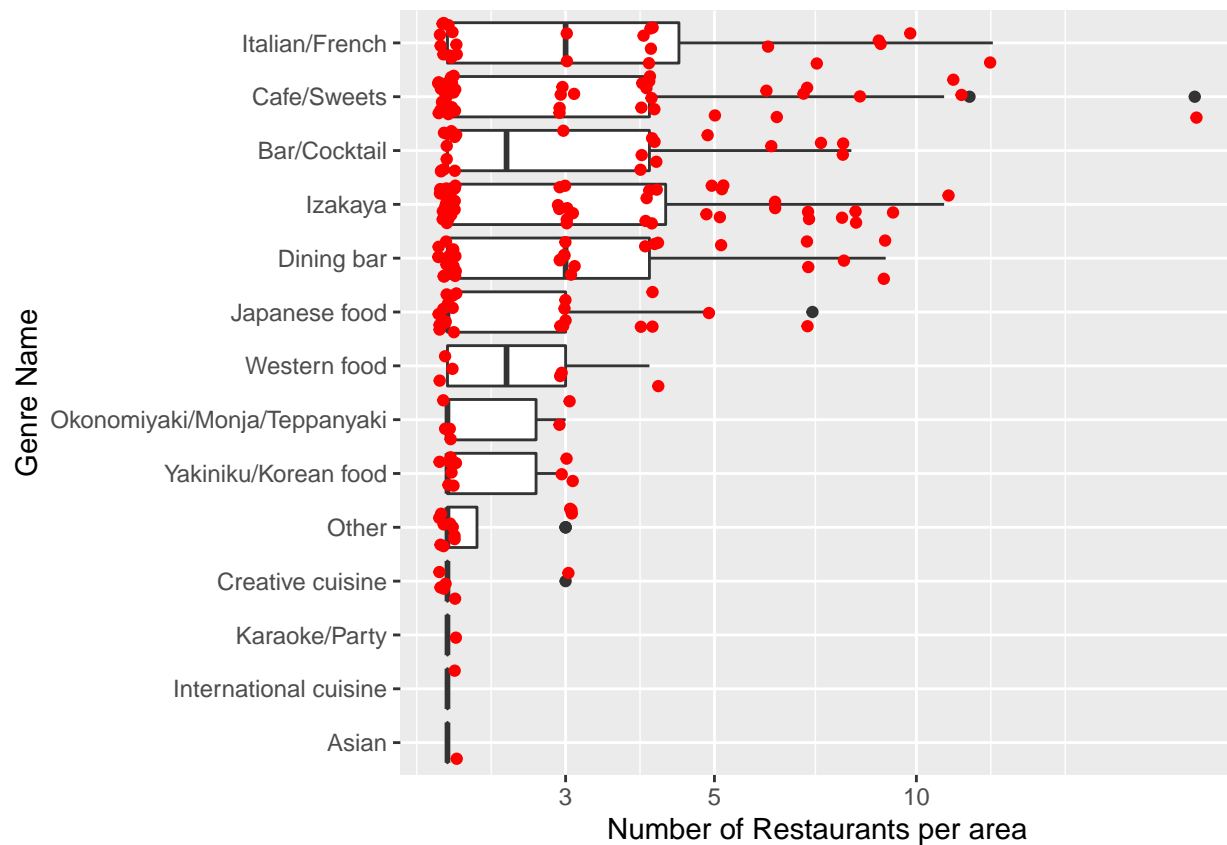
```
# For Air Store Data
air_store_info %>%
  mutate(air_area_name = str_sub(air_area_name, 1, 12)) %>%
  group_by(air_genre_name, air_area_name) %>%
  ggplot()+
  geom_count(aes(air_area_name, air_genre_name))+
  theme(legend.position = "bottom", axis.text.x = element_text(angle=90, hjust=1, vjust=0.9))+
  labs(x="Area Name", y="Genre Name")
```



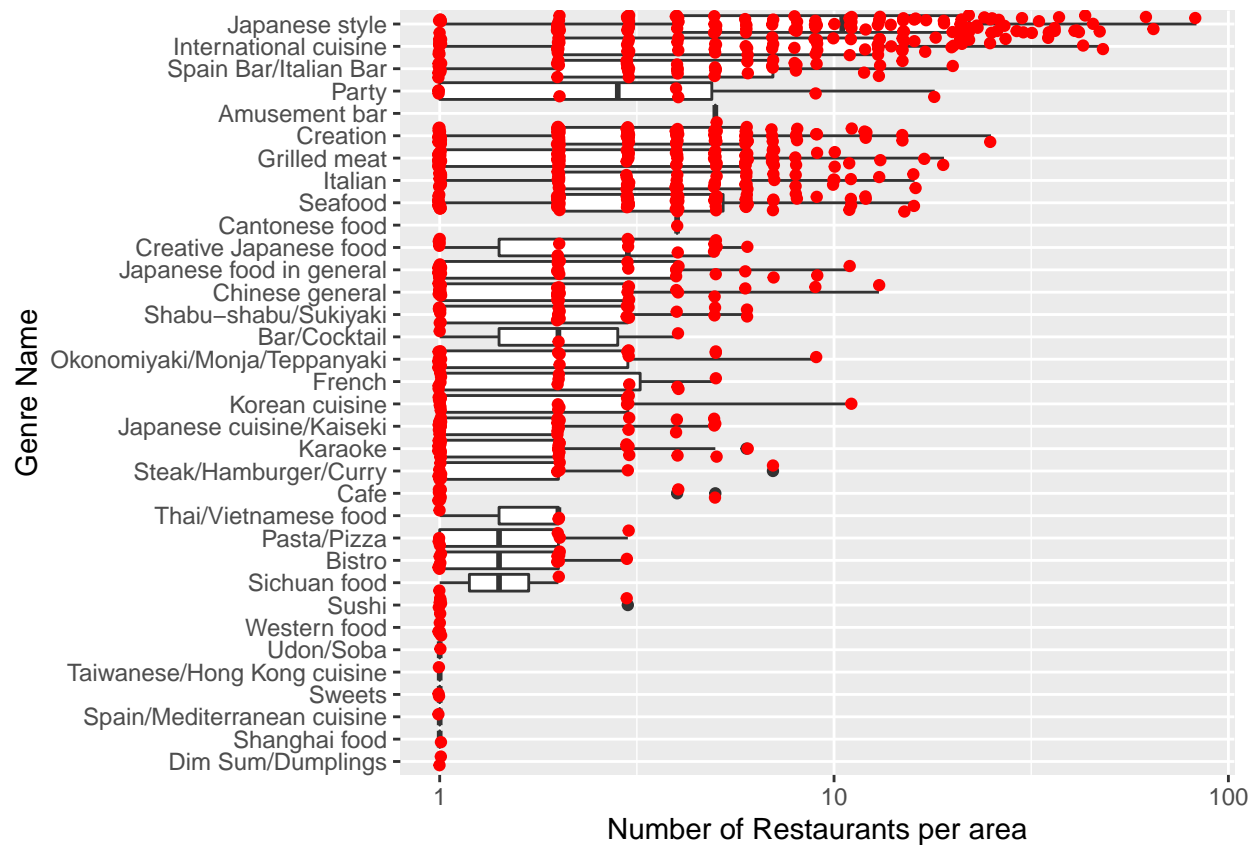
```
# For HPG Data
hpg_store_info %>%
  mutate(hpg_area_name = str_sub(hpg_area_name, 1, 12)) %>%
  group_by(hpg_genre_name, hpg_area_name) %>%
  ggplot()+
  geom_count(aes(hpg_area_name, hpg_genre_name))+
  theme(legend.position = "bottom", axis.text.x = element_text(angle=90, hjust=1, vjust=0.9))+
  labs(x="Area Name", y="Genre Name")
```



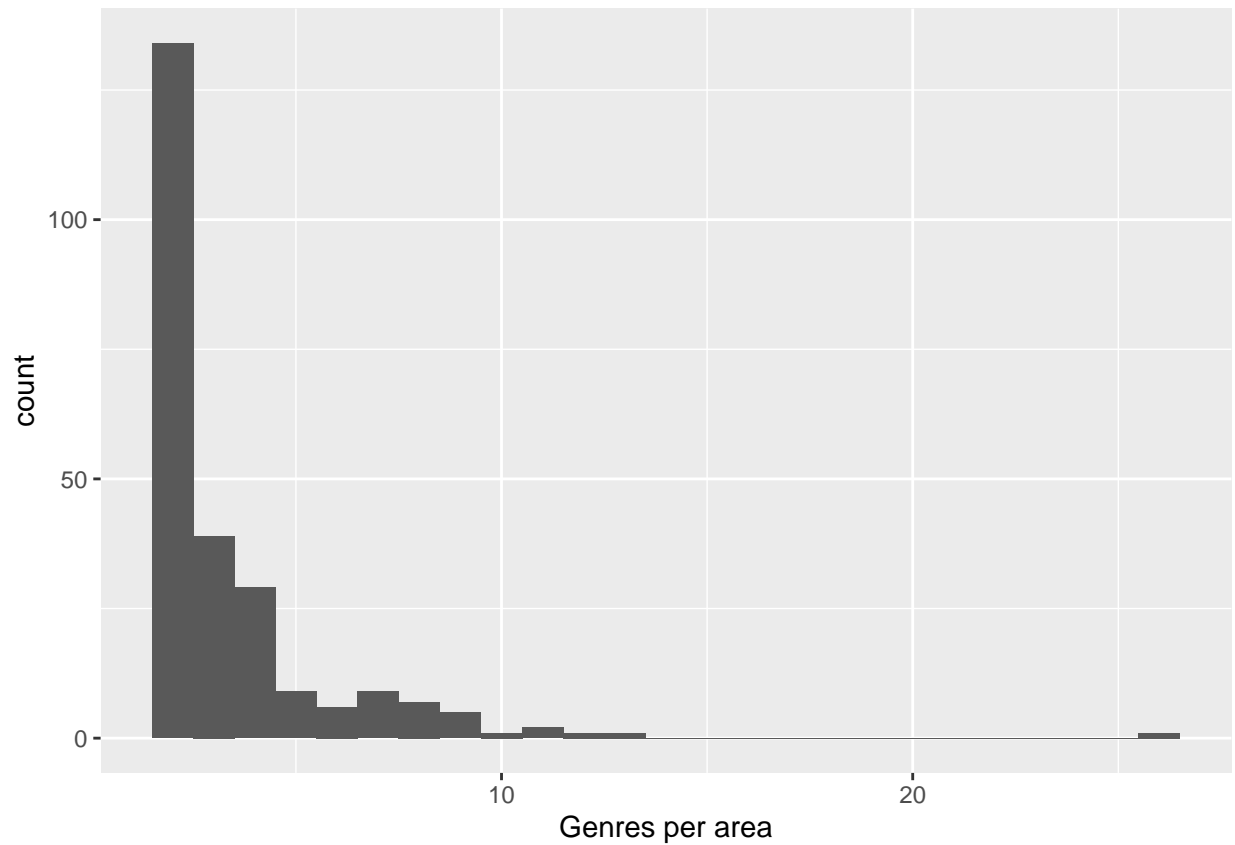
```
# For Air Store
air_store_info %>%
  group_by(air_genre_name,air_area_name) %>%
  count() %>%
  ggplot() +
  geom_boxplot(aes(reorder(air_genre_name,n,FUN=mean),n))+
  geom_jitter(aes(reorder(air_genre_name,n,FUN=mean),n),color= "red")+
  scale_y_log10()+
  coord_flip()+
  labs(x="Genre Name",y="Number of Restaurants per area")
```



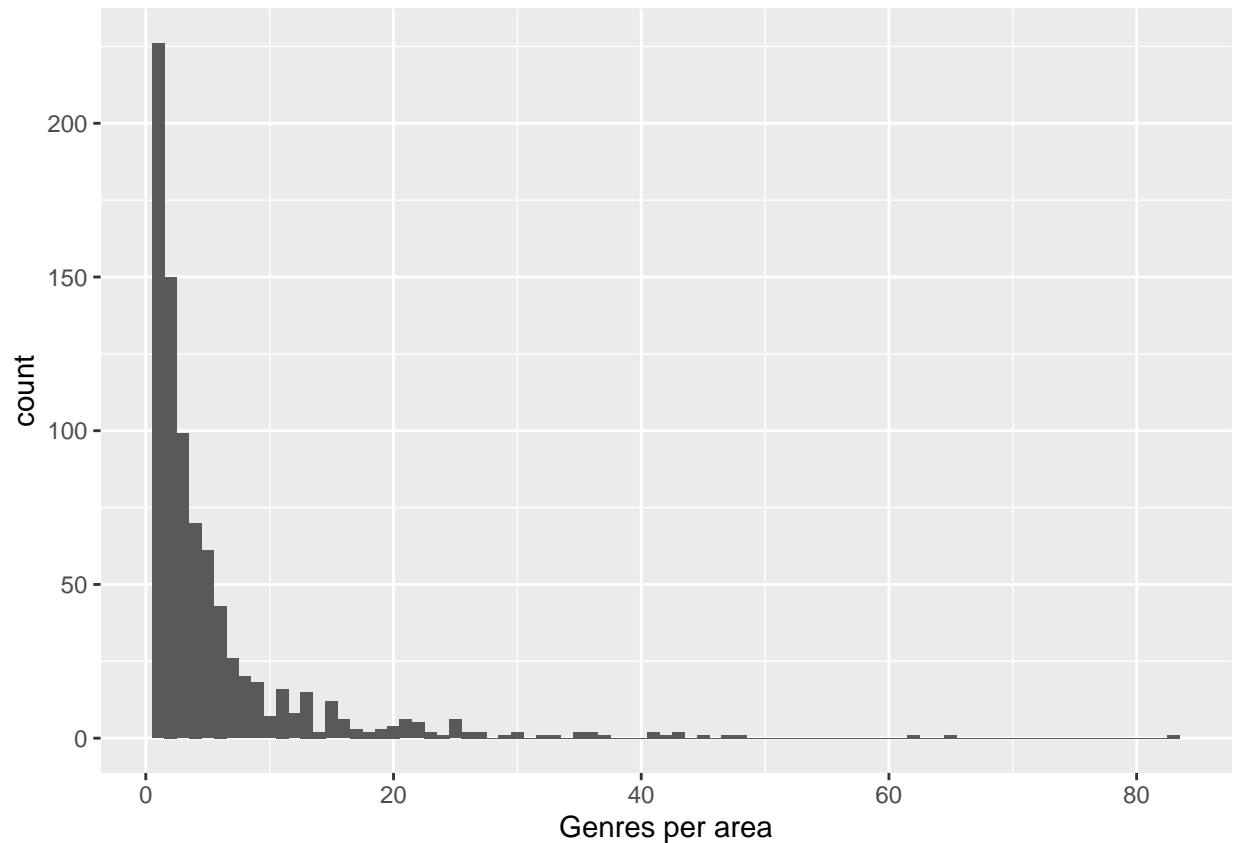
```
# For HPG
hpg_store_info %>%
  group_by(hpg_genre_name, hpg_area_name) %>%
  count() %>%
  ggplot() +
    geom_boxplot(aes(reorder(hpg_genre_name, n, FUN=mean), n)) +
    geom_jitter(aes(reorder(hpg_genre_name, n, FUN=mean), n), color="red") +
    scale_y_log10() +
    coord_flip() +
    labs(x="Genre Name", y="Number of Restaurants per area")
```



```
# For Air Store
air_store_info %>%
  group_by(air_genre_name, air_area_name) %>%
  count() %>%
  ggplot(aes(n)) +
  geom_histogram(binwidth = 1) +
  labs(x = "Genres per area")
```



```
# For HPG
hpg_store_info %>%
  group_by(hpg_genre_name, hpg_area_name) %>%
  count() %>%
  ggplot(aes(n)) +
  geom_histogram(binwidth = 1) +
  labs(x = "Genres per area")
```



```
library(modelr)

m <- lm(visitors~.,data=air_visited)

step(m)

## Start:  AIC=1271380
## visitors ~ air_store_id + visit_date + air_genre_name + air_area_name +
##   latitude + longitude + calendar_date + day_of_week + holiday_flg +
##   reserve_datetime
##
##
## Step:  AIC=1271380
## visitors ~ air_store_id + visit_date + air_genre_name + air_area_name +
##   latitude + longitude + calendar_date + day_of_week + holiday_flg
##
##
## Step:  AIC=1271380
## visitors ~ air_store_id + visit_date + air_genre_name + air_area_name +
##   latitude + longitude + day_of_week + holiday_flg
##
##
## Step:  AIC=1271380
## visitors ~ air_store_id + visit_date + air_genre_name + latitude +
##   longitude + day_of_week + holiday_flg
```

```

##
##
## Step: AIC=1271380
## visitors ~ air_store_id + visit_date + latitude + longitude +
##   day_of_week + holiday_flg
##
##           Df Sum of Sq      RSS      AIC
## - latitude      1         77 38801038 1271379
## <none>                        38800961 1271380
## - longitude      1        356 38801316 1271381
## - visit_date      1       5570 38806530 1271414
## - holiday_flg     1      161334 38962295 1272424
## - day_of_week     6     2854655 41655616 1289266
## - air_store_id 828  29156754 67957715 1411016
##
## Step: AIC=1271379
## visitors ~ air_store_id + visit_date + longitude + day_of_week +
##   holiday_flg
##
##           Df Sum of Sq      RSS      AIC
## <none>                        38801038 1271379
## - longitude      1        324 38801361 1271379
## - visit_date      1       5573 38806611 1271413
## - holiday_flg     1      161328 38962366 1272423
## - day_of_week     6     2854625 41655663 1289264
## - air_store_id 828  29157801 67958838 1411018
##
##
## Call:
## lm(formula = visitors ~ air_store_id + visit_date + longitude +
##   day_of_week + holiday_flg, data = air_visited)
##
## Coefficients:
##              (Intercept)  air_store_idair_0164b9927d20bcc3
##                2.941e+11                -4.201e+06
## air_store_idair_0241aa3964b7f861  air_store_idair_0328696196e46f18
##                5.557e+07                -8.894e+09
## air_store_idair_034a3d5b40d5b1b1  air_store_idair_036d4f1ee7285390
##               -9.011e+09                -9.247e+09
## air_store_idair_0382c794b73b51ad  air_store_idair_03963426c9312048
##               -1.718e+08                -1.536e+10
## air_store_idair_04341b588bde96cd  air_store_idair_049f6d5b402a31b2
##               -2.146e+08                -1.970e+10
## air_store_idair_04cae7c1bc9b2a0b  air_store_idair_0585011fa179bcce
##                3.257e+09                -1.970e+10
## air_store_idair_05c325d315cc17f5  air_store_idair_0647f17b4dc041c8
##               -1.970e+10                -3.750e+08
## air_store_idair_064e203265ee5753  air_store_idair_066f0221b8a4d533
##               -9.286e+09                -1.966e+10
## air_store_idair_06f95ac5c33aca10  air_store_idair_0728814bd98f7367
##                1.343e+08                -2.466e+08
## air_store_idair_0768ab3910f7967f  air_store_idair_07b314d83059c4d2
##               -1.167e+08                -8.932e+09
## air_store_idair_07bb665f9cdfbdfb  air_store_idair_082908692355165e

```


##	-8.932e+09	-1.053e+08
##	air_store_idair_083ddc520ea47e1e	air_store_idair_0845d8395f30c6bb
##	-2.012e+10	-7.277e+08
##	air_store_idair_084d98859256acf0	air_store_idair_0867f7bebad6a649
##	9.133e+07	-1.536e+10
##	air_store_idair_08ba8cd01b3ba010	air_store_idair_08cb3c4ee6cd6a22
##	2.351e+09	-1.034e+10
##	air_store_idair_08ef81d5b7a0d13f	air_store_idair_08f994758a1e76d4
##	3.845e+07	-1.043e+08
##	air_store_idair_09040f6df960ddb8	air_store_idair_0919d54f0c9a24b8
##	-1.773e+08	-4.201e+06
##	air_store_idair_09661c0f3259cc04	air_store_idair_09a845d5b5944b01
##	-7.786e+07	-1.946e+10
##	air_store_idair_09fd1f5c58583141	air_store_idair_0a74a5408a0b8642
##	-8.932e+09	3.341e+09
##	air_store_idair_0b184ec04c741a6a	air_store_idair_0b1e72d2d4422b20
##	3.845e+07	-1.510e+09
##	air_store_idair_0b9038300f8b2b50	air_store_idair_0e1eae99b8723bc1
##	-2.112e+08	1.343e+08
##	air_store_idair_0e7c11b9abc50163	air_store_idair_0ead98dd07e7a82a
##	-9.795e+07	-1.970e+10
##	air_store_idair_0f0cdeee6c9bf3d7	air_store_idair_0f2f96335f274801
##	-9.589e+09	1.219e+07
##	air_store_idair_0f60e1576a7d397d	air_store_idair_1033310359ceeac1
##	-2.012e+10	9.133e+07
##	air_store_idair_10393f12e9069760	air_store_idair_105a7954e32dba9b
##	-7.786e+07	-1.970e+10
##	air_store_idair_10713fbf3071c361	air_store_idair_10bbe8acd943d8f6
##	-1.043e+08	-1.043e+08
##	air_store_idair_12c4fb7a423df20d	air_store_idair_138ee734ac79ff90
##	-1.043e+08	-1.963e+10
##	air_store_idair_138ff410757b845f	air_store_idair_1408dd53f31a8a65
##	-4.927e+07	5.496e+09
##	air_store_idair_142e78ba7001da9c	air_store_idair_1509881b22965b34
##	-9.286e+09	3.845e+07
##	air_store_idair_152c1f08d7d20e07	air_store_idair_15ae33469e9ea2dd
##	-1.534e+10	-1.053e+08
##	air_store_idair_15e6e15c7ea2c162	air_store_idair_16179d43b6ee5fd8
##	-3.540e+07	-1.167e+08
##	air_store_idair_1653a6c513865af3	air_store_idair_168441ada3e878e1
##	9.513e+09	-9.446e+09
##	air_store_idair_16c4cfddeb2cf69b	air_store_idair_16cf0a73233896de
##	-8.932e+09	-1.970e+10
##	air_store_idair_1707a3f18bb0da07	air_store_idair_17a6ab40f97fd4d8
##	-1.536e+10	9.072e+07
##	air_store_idair_17bed6dbf7c8b0fc	air_store_idair_1979eaff8189d086
##	-2.514e+09	-7.277e+08
##	air_store_idair_1ab60ce33bfed8a8	air_store_idair_1ae94f514a0bce13
##	-7.786e+07	-1.970e+10
##	air_store_idair_1ba4e87ef7422183	air_store_idair_1c0b150f9e696a5f
##	2.417e+08	-1.043e+08
##	air_store_idair_1c95a84924d72500	air_store_idair_1d1e8860ae04f8e9
##	-8.740e+09	-1.053e+08
##	air_store_idair_1d25ca6c76df48b4	air_store_idair_1d3f797dd1f7cf1c

##	-8.932e+09	-2.112e+08
##	air_store_idair_1dd8f6f47480d1a2	air_store_idair_1dea9815ccd36620
##	-2.112e+08	-1.970e+10
##	air_store_idair_1e23210b584540e7	air_store_idair_1e665503b8474c55
##	-1.053e+08	-1.970e+10
##	air_store_idair_1eeff462acb24fb7	air_store_idair_1f1390a8be2272b3
##	-1.053e+08	-1.053e+08
##	air_store_idair_1f34e9beded2231a	air_store_idair_1f7f8fa557bc0d55
##	3.368e+09	-8.683e+09
##	air_store_idair_2009041dbf9264de	air_store_idair_20619d21192aa571
##	-1.053e+08	-8.932e+09
##	air_store_idair_20add8092c9bb51d	air_store_idair_2195cd5025a98033
##	-4.268e+09	1.071e+08
##	air_store_idair_21f5052d5330528d	air_store_idair_220cba70c890b119
##	-1.034e+10	-1.053e+08
##	air_store_idair_22682e965418936f	air_store_idair_228f10bec0bda9c8
##	-1.043e+08	-8.917e+09
##	air_store_idair_229d7e508d9f1b5e	air_store_idair_232dcee6f7c51d37
##	-2.466e+08	-1.434e+08
##	air_store_idair_234d3dbf7f3d5a50	air_store_idair_23e1b11aee2a1407
##	-6.630e+08	5.557e+07
##	air_store_idair_23ee674e91469086	air_store_idair_24b9b2a020826ede
##	-5.275e+08	-1.869e+10
##	air_store_idair_24e8414b9b07dec	air_store_idair_2545dd3a00f265e2
##	-8.958e+07	-6.389e+07
##	air_store_idair_256be208a979e023	air_store_idair_2570ccb93badde68
##	-1.053e+08	-1.053e+08
##	air_store_idair_258ad2619d7bff9a	air_store_idair_258dc112912fc458
##	1.343e+08	2.417e+08
##	air_store_idair_25c583983246b7b0	air_store_idair_25d8e5cc57dd87d9
##	-1.970e+10	-1.043e+08
##	air_store_idair_25e9888d30b386df	air_store_idair_2634e41551e9807d
##	-5.838e+07	-1.053e+08
##	air_store_idair_26c5bb7bb82bf1	air_store_idair_26f10355d9b4d82a
##	-4.234e+07	-8.962e+09
##	air_store_idair_2703dcb33192b181	air_store_idair_275732a5db46f4d3
##	1.343e+08	-1.718e+08
##	air_store_idair_27e991812b0d9c92	air_store_idair_28064154614b2e6c
##	-1.970e+10	-1.053e+08
##	air_store_idair_287d2de7d3c93406	air_store_idair_28a9fa1ec0839375
##	-7.921e+07	-1.536e+10
##	air_store_idair_28dbe91c4c9656be	air_store_idair_290e7a57b390f78e
##	-1.067e+10	-4.201e+06
##	air_store_idair_298513175efdf261	air_store_idair_2a184c1745274b2b
##	-1.975e+10	2.351e+09
##	air_store_idair_2a24aec099333f39	air_store_idair_2a3743e37aab04b4
##	-9.011e+09	-8.932e+09
##	air_store_idair_2a485b92210c98b5	air_store_idair_2a7f14da7fe0f699
##	-1.536e+10	-1.167e+08
##	air_store_idair_2aab19554f91ff82	air_store_idair_2ac361b97630e2df
##	3.627e+07	-1.043e+08
##	air_store_idair_2b8b29ddfd35018e	air_store_idair_2b9bc9f5f5168ea1
##	-1.536e+10	2.351e+09
##	air_store_idair_2bfffb19a24d11729	air_store_idair_2c505f9ad67d4635

##	-8.932e+09	-1.043e+08
##	air_store_idair_2c6c79d597e48096	air_store_idair_2c6fef1ce0e13a5a
##	-4.201e+06	3.341e+09
##	air_store_idair_2c989829acbd1c6b	air_store_idair_2cee51fa6fdf6c0d
##	1.690e+00	-1.043e+08
##	air_store_idair_2d3afcb91762fe01	air_store_idair_2d78d9a1f4dd02ca
##	-1.966e+10	5.557e+07
##	air_store_idair_2e7cb1f1a2a9cd6a	air_store_idair_2f8ced25216df926
##	-4.201e+06	-4.201e+06
##	air_store_idair_2fc149abe33adcb4	air_store_idair_2fc478dc9f0a6b31
##	-9.286e+09	3.341e+09
##	air_store_idair_2fed81034f8834e5	air_store_idair_303bac187b53083a
##	-1.167e+08	-1.975e+10
##	air_store_idair_310e467e6e625004	air_store_idair_3155ee23d92202da
##	3.845e+07	-1.510e+09
##	air_store_idair_31c753b48a657b6c	air_store_idair_32460819c7600037
##	-1.167e+08	-8.982e+09
##	air_store_idair_324f7c39a8410e7c	air_store_idair_326ca454ef3558bc
##	-1.034e+10	-2.884e+09
##	air_store_idair_32b02ba5dc2027f4	air_store_idair_32c61b620a766138
##	1.219e+07	3.341e+09
##	air_store_idair_32f5d7cd696e3c4a	air_store_idair_33b01025210d6007
##	-8.932e+09	-8.740e+09
##	air_store_idair_3440e0ea1b70a99b	air_store_idair_346ade7d29230634
##	-8.932e+09	-1.534e+10
##	air_store_idair_347be2c4feeb408b	air_store_idair_349278fa964bb12f
##	2.417e+08	-1.970e+10
##	air_store_idair_3525f11ef0bf0c35	air_store_idair_35512c42db0868da
##	-8.982e+09	-3.943e+08
##	air_store_idair_3561fd1c0bce6a95	air_store_idair_35c4732dcbe31be
##	-1.177e+08	-9.589e+09
##	air_store_idair_36429b5ca4407b3e	air_store_idair_36bcf77d3382d36e
##	3.341e+09	4.866e+00
##	air_store_idair_37189c92b6c761ec	air_store_idair_375a5241615b5e22
##	5.496e+09	2.351e+09
##	air_store_idair_382f5ace4e2247b8	air_store_idair_383f5b2f8d345a49
##	-1.345e+10	-2.112e+08
##	air_store_idair_38746ffe9aa20c7e	air_store_idair_396166d47733d5c9
##	-1.970e+10	3.623e+09
##	air_store_idair_396942e6423a2145	air_store_idair_397d3f32a7196aa2
##	-4.735e+07	-4.927e+07
##	air_store_idair_3980af67be35afdb	air_store_idair_3982a2c4ea2ed431
##	-3.540e+07	-1.979e+10
##	air_store_idair_399904bdb7685ca0	air_store_idair_39dccb7df20b1c6a
##	-8.932e+09	-9.247e+09
##	air_store_idair_3a8a3f8fb5cd7f88	air_store_idair_3aa839e8e0cb6c87
##	-2.112e+08	-1.970e+10
##	air_store_idair_3ac24136722e2291	air_store_idair_3b20733899b5287f
##	-9.589e+09	3.845e+07
##	air_store_idair_3b6438b125086430	air_store_idair_3bb99a1fe0583897
##	-1.536e+10	2.351e+09
##	air_store_idair_3bd49f98ab7f36ab	air_store_idair_3c05c8f26c611eb9
##	-6.389e+07	-1.345e+10
##	air_store_idair_3c938075889fc059	air_store_idair_3cad29d1a23209d2

##	-1.970e+10	-1.043e+08
##	air_store_idair_3caef3f76b8f26c5	air_store_idair_3d3a2b509180e798
##	-8.932e+09	3.627e+07
##	air_store_idair_3e6cea17a9d2c0f1	air_store_idair_3e93f3c81008696d
##	-1.034e+10	-1.536e+10
##	air_store_idair_3f91d592acd6cc0b	air_store_idair_401b39f97e56b939
##	-8.932e+09	-8.932e+09
##	air_store_idair_4043b7ccfbffa732	air_store_idair_4092cfbd95a3ac1b
##	-8.914e+09	-8.932e+09
##	air_store_idair_40953e2d8b4f2857	air_store_idair_40f6193ea3ed1b91
##	-1.053e+08	-8.932e+09
##	air_store_idair_414ff459ed18fa48	air_store_idair_41bbf6e1d9814c4b
##	-1.773e+08	-4.268e+09
##	air_store_idair_421670f21da5ba31	air_store_idair_4254c3fc3ad078bd
##	-1.536e+10	-3.006e+06
##	air_store_idair_42c9aa6d617c5057	air_store_idair_42d41eb58cad170e
##	-1.034e+10	-1.970e+10
##	air_store_idair_43b65e4b05bff2d3	air_store_idair_43d577e0c9460e64
##	-1.053e+08	-9.286e+09
##	air_store_idair_4433ab8e9999915f	air_store_idair_4481a87c1d7c9896
##	2.351e+09	-1.167e+08
##	air_store_idair_452100f5305dde64	air_store_idair_45326ebb8dc72cfb
##	-1.867e+10	-9.286e+09
##	air_store_idair_4570f52104fe0982	air_store_idair_4579cb0669fd411b
##	1.536e+08	-1.970e+10
##	air_store_idair_457efe8c3a30ea17	air_store_idair_464a62de0d57be1e
##	-1.053e+08	3.845e+07
##	air_store_idair_465bddfed3353b23	air_store_idair_47070be6093f123e
##	-1.043e+08	5.557e+07
##	air_store_idair_472b19e3b5bffa41	air_store_idair_473cf23b9e7c0a37
##	-1.053e+08	-1.980e+10
##	air_store_idair_473f98b212d37b4a	air_store_idair_47beaffd3806c979
##	-7.277e+08	-3.774e+00
##	air_store_idair_483eba479dc9910d	air_store_idair_48e9fc98b62495a7
##	-1.167e+08	-8.932e+09
##	air_store_idair_48f4da6223571da4	air_store_idair_48ffd31594bc3263
##	-7.277e+08	-1.053e+08
##	air_store_idair_49211568cab5fdee	air_store_idair_4974785f48853db9
##	-1.203e+08	-1.536e+10
##	air_store_idair_4b251b9f8373f1ae	air_store_idair_4b380b4db9d37883
##	-1.970e+10	-1.969e+10
##	air_store_idair_4b55d8aea1d2b395	air_store_idair_4b9085d0d46a6211
##	-1.970e+10	-4.201e+06
##	air_store_idair_4beac252540f865e	air_store_idair_4c2ed28f3f19ca52
##	-9.589e+09	-1.043e+08
##	air_store_idair_4c665a2bfff0da3b	air_store_idair_4c727b55acdee495
##	-5.087e+07	-1.067e+10
##	air_store_idair_4cab15ad29c0ffbc	air_store_idair_4cab91146e3d1897
##	-8.894e+09	-5.838e+07
##	air_store_idair_4cca5666eaf5c709	air_store_idair_4ce7b17062a1bf73
##	1.536e+08	-4.201e+06
##	air_store_idair_4d21676ed11f0bac	air_store_idair_4d71826793c09b22
##	-1.536e+10	-4.201e+06
##	air_store_idair_4d90a22572fa1ec9	air_store_idair_4de6d887a7b1c1fc

##	1.343e+08	-8.946e+09
##	air_store_idair_4dea8d17f6f59c56	air_store_idair_4e1c38f68f435596
##	-1.434e+08	-1.177e+08
##	air_store_idair_4f762e840b3996e1	air_store_idair_4feeb8600f131e43
##	-2.112e+08	3.845e+07
##	air_store_idair_500641aca4cf673c	air_store_idair_506fe758114df773
##	-5.275e+08	-2.112e+08
##	air_store_idair_51281cd059d7b89b	air_store_idair_51319e7acf0438cf
##	-4.268e+09	-1.963e+10
##	air_store_idair_52a08ef3efdb4bb0	air_store_idair_52e2a1fd42bc917a
##	5.496e+09	-1.043e+08
##	air_store_idair_536043fcf1a4f8a4	air_store_idair_539d693f7317c62d
##	-8.932e+09	2.351e+09
##	air_store_idair_546b353cbea4a45b	air_store_idair_5485912b44f976de
##	3.845e+07	-1.067e+10
##	air_store_idair_54d6c25d33f5260e	air_store_idair_54ed43163b7596c4
##	-1.963e+10	3.845e+07
##	air_store_idair_55390f784018349a	air_store_idair_55c3627912b9c849
##	-4.201e+06	-1.966e+10
##	air_store_idair_55e11c33d4758131	air_store_idair_56cd12f31a0afc04
##	-7.786e+07	3.845e+07
##	air_store_idair_56cebcdb6906e04c	air_store_idair_56ea46c14b2dd967
##	-9.589e+09	3.845e+07
##	air_store_idair_57013002b912772b	air_store_idair_573ecdf81b157d22
##	-6.630e+08	-7.786e+07
##	air_store_idair_57c9eea1a2b66e65	air_store_idair_57ed725a1930a5b9
##	-2.466e+08	-1.053e+08
##	air_store_idair_5878b6f2a9da12c1	air_store_idair_59cc9b2b209c6331
##	-1.970e+10	-2.112e+08
##	air_store_idair_5a9a6cbeeb434c08	air_store_idair_5acc13d655a6e8b2
##	-1.970e+10	1.970e+08
##	air_store_idair_5afb1cca48ceaa19	air_store_idair_5b6d18c470bbfaf9
##	-7.921e+07	-3.006e+06
##	air_store_idair_5b704df317ed1962	air_store_idair_5bd22f9cc1426a90
##	-1.167e+08	3.352e-02
##	air_store_idair_5c65468938c07fa5	air_store_idair_5c7489c9ec755e2d
##	-1.043e+08	5.496e+09
##	air_store_idair_5c817ef28f236bdf	air_store_idair_5cb030b9f0b91537
##	-1.043e+08	-1.053e+08
##	air_store_idair_5cfc537125d97f16	air_store_idair_5d7c744c3a2ef624
##	-6.389e+07	-1.067e+10
##	air_store_idair_5d945ade487cdf4d	air_store_idair_5dea8a7a5bf5eb71
##	-2.466e+08	1.343e+08
##	air_store_idair_5e339a1f364cdb00	air_store_idair_5e34c6fe6fabd10e
##	-8.958e+07	-2.362e+08
##	air_store_idair_5e70fe82f9e4fab6	air_store_idair_5e939e005bd34633
##	-8.932e+09	-1.043e+08
##	air_store_idair_5ed3198e4a5eed0f	air_store_idair_5f3a3ef4cba110a4
##	-1.043e+08	3.627e+07
##	air_store_idair_5f6fa1b897fe80d5	air_store_idair_5fbda8e9302f7c13
##	-2.884e+09	-1.963e+10
##	air_store_idair_602ca92c0db34f8f	air_store_idair_609050e4e4f79ae1
##	-1.970e+10	3.845e+07
##	air_store_idair_60a7057184ec7ec7	air_store_idair_60aa54ecbc602348

##	-1.975e+10	-4.201e+06
##	air_store_idair_6108821ffa9b72	air_store_idair_614e2f7e76dff854
##	-2.112e+08	-9.335e+07
##	air_store_idair_61668cc2b0778898	air_store_idair_61b8d37c33617f21
##	3.627e+07	-1.892e+10
##	air_store_idair_61de73b097513f58	air_store_idair_622375b4815cf5cb
##	-9.124e+07	-1.892e+10
##	air_store_idair_627cabe2fe53f33f	air_store_idair_629d9935273c82ae
##	-9.589e+09	-2.884e+09
##	air_store_idair_629edf21ea38ac2d	air_store_idair_632ba66e1f75aa28
##	-1.167e+08	-2.466e+08
##	air_store_idair_638c35eb25e53eea	air_store_idair_63a750d8b4b6a976
##	-1.970e+10	-1.970e+10
##	air_store_idair_63a88d81295195ed	air_store_idair_63b13c56b7201bd9
##	-9.589e+09	-1.970e+10
##	air_store_idair_63e28ee0b0c955a7	air_store_idair_640cf4835f0d9ba3
##	5.557e+07	-7.902e+07
##	air_store_idair_6411203a47b5ec77	air_store_idair_645cb18b33f938cf
##	-8.932e+09	-1.034e+10
##	air_store_idair_646b93e336f0dded	air_store_idair_64a5d5c1381837af
##	-1.536e+10	-1.889e+08
##	air_store_idair_64d4491ad8cdb1c6	air_store_idair_650f9b9de0c5542c
##	-4.201e+06	-2.466e+08
##	air_store_idair_657a0748462f85de	air_store_idair_65e294f1ae6df9c3
##	-2.466e+08	-1.966e+10
##	air_store_idair_6607fe3671242ce3	air_store_idair_670a0c1c4108bcea
##	3.845e+07	-8.932e+09
##	air_store_idair_671b4bea84dafb67	air_store_idair_673acd9fa5e0dd78
##	-4.201e+06	3.341e+09
##	air_store_idair_67483104fa38ef6c	air_store_idair_675aa35cba456fd1
##	-1.345e+10	1.294e+01
##	air_store_idair_67f87c159d9e2ee2	air_store_idair_68147db09287bf74
##	-1.980e+10	-2.112e+08
##	air_store_idair_681b0c56328dd2af	air_store_idair_681f96e6a6595f82
##	-1.043e+08	-4.201e+06
##	air_store_idair_68301bcb11e2f389	air_store_idair_683371d9baabf410
##	-2.466e+08	-1.067e+10
##	air_store_idair_6836438b543ba698	air_store_idair_6873982b9e19c7ad
##	-1.979e+10	7.250e+09
##	air_store_idair_68c1de82037d87e6	air_store_idair_68cc910e7b307b09
##	-1.935e+10	-1.750e+01
##	air_store_idair_68d075113f368946	air_store_idair_6902e4ec305b3d08
##	-2.012e+10	-4.201e+06
##	air_store_idair_694571ea13fb9e0e	air_store_idair_6a15e4eae523189d
##	-9.589e+09	-6.725e+00
##	air_store_idair_6b15edd1b4fbb96a	air_store_idair_6b2268863b14a2af
##	-4.268e+09	-7.277e+08
##	air_store_idair_6b65745d432fd77f	air_store_idair_6b7678aae65d2d59
##	-1.043e+08	-4.201e+06
##	air_store_idair_6b942d5ebbc759c2	air_store_idair_6b9fa44a9cf504a1
##	-1.034e+10	-4.201e+06
##	air_store_idair_6c1128955c58b690	air_store_idair_6c91a28278a16f64
##	-1.970e+10	-1.970e+10
##	air_store_idair_6c952e3c6e590945	air_store_idair_6ca1d941c8199a67

##	2.351e+09	-1.067e+10
##	air_store_idair_6cbe54f0aa30b615	air_store_idair_6ced51c24fb54262
##	-1.053e+08	-8.932e+09
##	air_store_idair_6d64dba2edd4fc0c	air_store_idair_6d65542aa43b598b
##	1.071e+08	-4.268e+09
##	air_store_idair_6d65dd11d96e00fb	air_store_idair_6e06824d0934dd81
##	7.250e+09	5.557e+07
##	air_store_idair_6e3fd96320d24324	air_store_idair_6e64fb5821402cd2
##	-1.345e+10	-1.970e+10
##	air_store_idair_6ff5fca957798daa	air_store_idair_707d4b6328f2c2df
##	-4.201e+06	-1.043e+08
##	air_store_idair_709262d948dd0b6e	air_store_idair_70e9e8cd55879414
##	-8.932e+09	-1.203e+08
##	air_store_idair_70f834596eb99fee	air_store_idair_710d6537cb7623df
##	3.845e+07	-1.043e+08
##	air_store_idair_712dd258f7f91b4b	air_store_idair_71903025d39a4571
##	-1.053e+08	3.341e+09
##	air_store_idair_722297e7f26db91d	air_store_idair_728ff578acc6ac6e
##	-8.932e+09	-1.434e+08
##	air_store_idair_72f5146cf0c49beb	air_store_idair_735bcbe1763d6e98
##	-8.982e+09	-5.087e+07
##	air_store_idair_73f316e6a18d8aa9	air_store_idair_7420042ff75f9aca
##	3.845e+07	-8.932e+09
##	air_store_idair_746211c0b532e8aa	air_store_idair_747f375eb3900e1e
##	-2.012e+10	-9.335e+07
##	air_store_idair_74cf22153214064c	air_store_idair_7514d90009613cd6
##	-9.247e+09	3.341e+09
##	air_store_idair_754ae581ad80cc9f	air_store_idair_75864c80d2fb334a
##	-1.645e+09	-4.201e+06
##	air_store_idair_75bd5d1b6dc6670d	air_store_idair_764f71040a413d4d
##	-7.786e+07	-1.043e+08
##	air_store_idair_77488fa378cf98c3	air_store_idair_77dfc83450cbc89c
##	-2.466e+08	-3.540e+07
##	air_store_idair_7831b00996701c0f	air_store_idair_789103bf53b8096b
##	3.257e+09	-1.177e+08
##	air_store_idair_789466e488705c93	air_store_idair_78df4dc6a7e83e41
##	-1.946e+10	-4.234e+07
##	air_store_idair_79afb3f52b4d062c	air_store_idair_79f528087f49df06
##	-8.683e+09	-2.466e+08
##	air_store_idair_7a81bd7fadcbf3d8	air_store_idair_7a946aada80376a4
##	-4.201e+06	-8.932e+09
##	air_store_idair_7bacc4d36fb094c9	air_store_idair_7bc6ca04d7b0f3b8
##	-2.112e+08	-1.043e+08
##	air_store_idair_7bda6048a4a78837	air_store_idair_7c7774c66fb237f7
##	-1.970e+10	-7.786e+07
##	air_store_idair_7cc17a324ae5c7dc	air_store_idair_7cf5a02c0e01b647
##	-9.589e+09	-9.611e+09
##	air_store_idair_7d65049f9d275c0d	air_store_idair_7dacea2f22afccfb
##	-1.208e+08	1.102e+00
##	air_store_idair_7db266904cb0d72a	air_store_idair_7e12c5d27f44a8de
##	-1.053e+08	-2.112e+08
##	air_store_idair_7ef9a5ea5c8fe39f	air_store_idair_7f3dc18494bce98b
##	5.496e+09	-8.932e+09
##	air_store_idair_7f9e15afafcf4c75	air_store_idair_7fbf7649eb13ad9b

##	-1.034e+10	-1.043e+08
##	air_store_idair_800c02226e2e0288	air_store_idair_8093d0b565e9dbdf
##	-1.969e+10	3.627e+07
##	air_store_idair_8110d68cc869b85e	air_store_idair_81546875de9c8e78
##	9.072e+07	3.627e+07
##	air_store_idair_81a12d67c22e012f	air_store_idair_81bd68142db76f58
##	-7.902e+07	9.072e+07
##	air_store_idair_81c2600146d07d16	air_store_idair_81c5dff692063446
##	-8.982e+09	-8.932e+09
##	air_store_idair_820d1919cbecaa0a	air_store_idair_82a6ae14151953ba
##	-1.167e+08	-3.006e+06
##	air_store_idair_831658500aa7c846	air_store_idair_832f9dbe9ee4ebd3
##	4.217e+00	-8.932e+09
##	air_store_idair_83db5aff8f50478e	air_store_idair_84060403939d8216
##	-4.201e+06	-2.146e+08
##	air_store_idair_848616680ef061bd	air_store_idair_84f6876ff7e83ae7
##	-2.466e+08	-1.966e+10
##	air_store_idair_8523d6a70de49e6c	air_store_idair_859feab8e3c9f98d
##	-1.966e+10	-2.112e+08
##	air_store_idair_85bd13a49370c392	air_store_idair_86cfbf2624576fad
##	-1.966e+10	-4.201e+06
##	air_store_idair_86f7b2109e4abd65	air_store_idair_87059630ab6fe47f
##	-8.982e+09	-1.053e+08
##	air_store_idair_87078cf7903a648c	air_store_idair_87467487d21891dd
##	-1.043e+08	-4.201e+06
##	air_store_idair_8764b3473ddcceaf	air_store_idair_876d7a23c47811cb
##	-1.043e+08	-4.201e+06
##	air_store_idair_877f79706adbfb06	air_store_idair_87ca98aa7664de94
##	-4.201e+06	-1.043e+08
##	air_store_idair_87f9e1024b951f01	air_store_idair_883ca28ef0ed3d55
##	-1.946e+10	-1.838e+08
##	air_store_idair_88c8e34baa79217b	air_store_idair_88ca84051ba95339
##	-4.201e+06	-4.927e+07
##	air_store_idair_88f31db64991768a	air_store_idair_890d7e28e8eaaa11
##	-3.943e+08	3.845e+07
##	air_store_idair_89e7328af22efe74	air_store_idair_8a1d21fad48374e8
##	-4.268e+09	-1.966e+10
##	air_store_idair_8a59bb0c497b771e	air_store_idair_8a906e5801eac81c
##	-8.932e+09	5.557e+07
##	air_store_idair_8b4a46dc521bfcfe	air_store_idair_8c119d1f16049f20
##	5.496e+09	-1.053e+08
##	air_store_idair_8c3175aa5e4fc569	air_store_idair_8cc350fd70ee0757
##	-9.124e+07	-9.150e+09
##	air_store_idair_8ce035ee1d8a56a6	air_store_idair_8d50c64692322dff
##	-9.335e+07	-1.053e+08
##	air_store_idair_8d61f49aa0373492	air_store_idair_8e429650fcf7a0ae
##	-1.043e+08	-4.201e+06
##	air_store_idair_8e4360a64dbd4c50	air_store_idair_8e492076a1179383
##	-8.932e+09	-1.536e+10
##	air_store_idair_8e8f42f047537154	air_store_idair_8ec47c0f1e2c879e
##	-2.466e+08	-1.759e+08
##	air_store_idair_8f13ef0f5e8c64dd	air_store_idair_8f273fb9ad2fed6f
##	-7.277e+08	-8.932e+09
##	air_store_idair_8f3b563416efc6ad	air_store_idair_900d755ebd2f7bbd

##	-1.053e+08	3.627e+07
##	air_store_idair_901925b628677c2e	air_store_idair_90213bcae4afa274
##	-1.970e+10	-1.053e+08
##	air_store_idair_90bd5de52c166767	air_store_idair_90ed0a2f24755533
##	1.343e+08	9.562e+06
##	air_store_idair_90f0efbb702d77b7	air_store_idair_9105a29b0eb250d2
##	2.417e+08	-1.966e+10
##	air_store_idair_91236b89d29567af	air_store_idair_9152d9926e5c4a3a
##	-2.112e+08	3.845e+07
##	air_store_idair_915558a55c2bc56c	air_store_idair_91beafbba9382b0a
##	-5.808e+08	2.351e+09
##	air_store_idair_91d72e16c4bcba55	air_store_idair_9241121af22ff1d6
##	-9.446e+09	1.970e+08
##	air_store_idair_929d8513e3cdb423	air_store_idair_931a8a4321b6e7d1
##	-1.970e+10	3.845e+07
##	air_store_idair_9352c401d5adb01b	air_store_idair_9387ff95e886ebc7
##	-1.536e+10	-1.510e+09
##	air_store_idair_938ef91ecdde6878	air_store_idair_939964477035ef0b
##	-1.043e+08	-2.112e+08
##	air_store_idair_93b9bb641f8fc982	air_store_idair_93dd7070c9bf5453
##	-9.247e+09	-1.167e+08
##	air_store_idair_93ebe490d4abb8e9	air_store_idair_9438d67241c81314
##	-1.434e+08	-1.970e+10
##	air_store_idair_947eb2cae4f3e8f2	air_store_idair_9483d65e9cc9a6b7
##	-1.966e+10	-4.201e+06
##	air_store_idair_950381108f839348	air_store_idair_95d28905941fd4cb
##	-3.540e+07	7.963e+07
##	air_store_idair_95e917913cd988f3	air_store_idair_96005f79124e12bf
##	-8.932e+09	-8.946e+09
##	air_store_idair_965b2e0cf4119003	air_store_idair_96743eee94114261
##	-1.167e+08	-1.510e+09
##	air_store_idair_96773a6236d279b1	air_store_idair_968d72c12eed09f0
##	-9.011e+09	-3.540e+07
##	air_store_idair_96929a799b12a43e	air_store_idair_96ec3cfe78cb0652
##	-4.201e+06	-1.873e+09
##	air_store_idair_97159fc4e90053fe	air_store_idair_97958e7fce98b6a3
##	-1.536e+10	-1.043e+08
##	air_store_idair_97b2a9f975fc702c	air_store_idair_97cf68dc1a9beac0
##	-1.053e+08	-1.345e+10
##	air_store_idair_97e0f2feec4d577a	air_store_idair_9828505fefc77d75
##	-2.466e+08	-1.970e+10
##	air_store_idair_98b54e32ccddd896	air_store_idair_990a642a3deb2903
##	2.351e+09	-3.540e+07
##	air_store_idair_99157b6163835eec	air_store_idair_99a5183695b849f9
##	-1.873e+09	-1.067e+10
##	air_store_idair_99b01136f451fc0e	air_store_idair_99c3eae84130c1cb
##	-1.167e+08	-4.201e+06
##	air_store_idair_9a30407764f4ff84	air_store_idair_9a6f6e7f623003d2
##	-8.932e+09	-1.946e+10
##	air_store_idair_9aa32b3db0fab3a5	air_store_idair_9aa92007e3628dbc
##	3.845e+07	-8.982e+09
##	air_store_idair_9ae7081cb77dc51e	air_store_idair_9b13c7feb0a0c431
##	-4.201e+06	-9.446e+09
##	air_store_idair_9b6af3db40da4ae2	air_store_idair_9bbc673495e23532

##	-1.899e+09	-8.914e+09
##	air_store_idair_9bf0ccac497c4af3	air_store_idair_9bf595ef095572fb
##	-1.970e+10	-1.043e+08
##	air_store_idair_9c6787aa03a45586	air_store_idair_9ca2767761efff4d
##	5.067e+01	-8.932e+09
##	air_store_idair_9cd5e310f488bced	air_store_idair_9cf2f1ba86229773
##	-1.167e+08	-2.112e+08
##	air_store_idair_9d3482b4680aee88	air_store_idair_9d452a881f7f2bb7
##	-2.466e+08	-1.966e+10
##	air_store_idair_9d474ec2448c700d	air_store_idair_9d5a980b211e1795
##	3.627e+07	-1.167e+08
##	air_store_idair_9d93d95720f2e831	air_store_idair_9dc9483f717d73ee
##	3.627e+07	-8.982e+09
##	air_store_idair_9dd7d38b0f1760c4	air_store_idair_9e920b758503ef54
##	-1.963e+10	-1.970e+10
##	air_store_idair_9efaa7ded03c5a71	air_store_idair_9f277fb7a2c1d842
##	2.351e+09	-1.043e+08
##	air_store_idair_9fc607777ad76b26	air_store_idair_a083834e7ffe187e
##	-1.167e+08	2.351e+09
##	air_store_idair_a11473cc1eb9a27f	air_store_idair_a17f0778617c76e2
##	-4.201e+06	-9.589e+09
##	air_store_idair_a1fe8c588c8d2f30	air_store_idair_a218912784bf767d
##	-1.970e+10	-2.112e+08
##	air_store_idair_a21ffca0bea1661a	air_store_idair_a239a44805932bab
##	-1.053e+08	-2.514e+09
##	air_store_idair_a24bf50c3e90d583	air_store_idair_a2567267116a3b75
##	-4.268e+09	3.341e+09
##	air_store_idair_a257c9749d8d0ff6	air_store_idair_a271c9ba19e81d17
##	5.496e+09	-1.167e+08
##	air_store_idair_a2b29aa7feb4e36f	air_store_idair_a304330715435390
##	3.341e+09	-2.112e+08
##	air_store_idair_a33461f4392ec62c	air_store_idair_a373500730e2a9e0
##	-9.589e+09	-4.268e+09
##	air_store_idair_a38f25e3399d1b25	air_store_idair_a41b032371a63427
##	1.088e+01	-2.012e+10
##	air_store_idair_a49f1cf0634f13e5	air_store_idair_a510dcfe979f09eb
##	-8.474e+00	-1.053e+08
##	air_store_idair_a546cbf478a8b6e4	air_store_idair_a55d17bd3f3033cb
##	3.341e+09	2.351e+09
##	air_store_idair_a563896da3777078	air_store_idair_a678e5b144ca24ce
##	-1.208e+08	-4.268e+09
##	air_store_idair_a7404a854919e990	air_store_idair_a8533b7a992bb0ca
##	-1.970e+10	-1.043e+08
##	air_store_idair_a85f0c0c889f6b7e	air_store_idair_a85f8c0bfd61889f
##	1.100e+01	-1.963e+10
##	air_store_idair_a88ac559064dec08	air_store_idair_a9133955abccf071
##	-1.970e+10	3.623e+09
##	air_store_idair_a9178f19da58fe99	air_store_idair_a9a380530c1e121f
##	-1.043e+08	-2.112e+08
##	air_store_idair_aa0049fe3cc6f4d6	air_store_idair_ab3ae0e410b20069
##	-1.043e+08	-1.043e+08
##	air_store_idair_ab9746a0f83084b7	air_store_idair_abcdc8115988a010
##	-1.718e+08	5.496e+09
##	air_store_idair_abf06fcca748dca5	air_store_idair_ac7a7427c9ae12a5

##	-1.970e+10	-1.970e+10
##	air_store_idair_ad13e71e21235131	air_store_idair_ad60f6b76c9df7ed
##	-1.970e+10	5.557e+07
##	air_store_idair_ad7777590c884721	air_store_idair_add9a575623726c8
##	9.562e+06	-8.982e+09
##	air_store_idair_ade6e836ffd1da64	air_store_idair_aed3a8b49abe4a48
##	-1.869e+10	-8.932e+09
##	air_store_idair_af03c277a167b2bd	air_store_idair_af24e3e817deale5
##	-1.053e+08	-1.043e+08
##	air_store_idair_af63df35857b16e6	air_store_idair_b0a6a4c5e95c74cf
##	-1.970e+10	-1.867e+10
##	air_store_idair_b162fb07fbbdea33	air_store_idair_b192fb5310436005
##	3.845e+07	-1.167e+08
##	air_store_idair_b1a72bf1ebf4b8ef	air_store_idair_b1bb1fae86617d7a
##	-3.006e+06	-1.966e+10
##	air_store_idair_b1d822f75c9fc615	air_store_idair_b2395df0e874078d
##	-6.389e+07	-4.201e+06
##	air_store_idair_b23d0f519291247d	air_store_idair_b259b4e4a51a690d
##	-1.869e+10	3.341e+09
##	air_store_idair_b28bed4b2e7167b7	air_store_idair_b2a639cc7e02edf1
##	-1.043e+08	-1.970e+10
##	air_store_idair_b2d8bc9c88b85f96	air_store_idair_b2d97bd2337c5ba7
##	-1.969e+10	5.557e+07
##	air_store_idair_b2dcec37b83e2494	air_store_idair_b30fffd7ab1e75a5
##	-1.935e+10	-1.043e+08
##	air_store_idair_b3180b74332ba886	air_store_idair_b3a824511477a4ed
##	-1.975e+10	-4.201e+06
##	air_store_idair_b439391e72899756	air_store_idair_b45b8e456f53942a
##	-1.043e+08	3.341e+09
##	air_store_idair_b4f32bcc399da2b9	air_store_idair_b5598d12d1b84890
##	-1.536e+10	-1.796e+08
##	air_store_idair_b5bdd318005d9aa4	air_store_idair_b60cc7d6aee68194
##	-2.362e+08	-1.536e+10
##	air_store_idair_b711b43ae472cb6b	air_store_idair_b7fa3d2fca744dd2
##	-1.889e+08	-2.112e+08
##	air_store_idair_b80fed1a07c817d2	air_store_idair_b88192b35ac03c24
##	-8.932e+09	3.341e+09
##	air_store_idair_b8925441167c3152	air_store_idair_b8a5ee69e5fdcc5b
##	-1.043e+08	5.557e+07
##	air_store_idair_b8d9e1624baaad2	air_store_idair_b9e27558fb8bd5c4
##	-1.177e+08	-1.043e+08
##	air_store_idair_ba495cccc8f0f237	air_store_idair_ba937bf13d40fb24
##	3.627e+07	-4.201e+06
##	air_store_idair_bac5f4441db21db9	air_store_idair_baf28ac9f13a307d
##	-1.718e+08	-8.932e+09
##	air_store_idair_bb09595bab7d5cfb	air_store_idair_bb26d6d079594414
##	-1.645e+09	-3.540e+07
##	air_store_idair_bb4ff06cd661ee9b	air_store_idair_bbe1c1a47e09f161
##	-4.927e+07	-1.796e+08
##	air_store_idair_bc991c51d6613745	air_store_idair_bc9a129e11a2efe0
##	-1.946e+10	-8.982e+09
##	air_store_idair_bcce1ea4350b7b72	air_store_idair_bd74a9222edfdfe1
##	-1.966e+10	3.627e+07
##	air_store_idair_bdd32aa407c16335	air_store_idair_bebd55ed63ab2422

##	-1.970e+10	-4.268e+09
##	air_store_idair_bed603c423b7d9d4	air_store_idair_bedd35489e666605
##	-1.167e+08	3.845e+07
##	air_store_idair_bf13014b6e3e60ca	air_store_idair_bf21b8350771879b
##	-2.112e+08	-2.466e+08
##	air_store_idair_bf617aa68d5f1cfa	air_store_idair_bf7591560077332d
##	-2.112e+08	-2.146e+08
##	air_store_idair_bfafaed35e213fd7	air_store_idair_bfda7731a6c6fc61
##	-1.444e+08	-2.466e+08
##	air_store_idair_c027e2b560442808	air_store_idair_c0385db498b391e5
##	-1.969e+10	-1.053e+08
##	air_store_idair_c1d5d165c055b866	air_store_idair_c1ff20617c54fee7
##	2.351e+09	-1.167e+08
##	air_store_idair_c225148c0fcc5c72	air_store_idair_c2626f5f86d57342
##	-9.589e+09	-1.970e+10
##	air_store_idair_c26f027b5bc1f081	air_store_idair_c28983412a7eefcf
##	-4.201e+06	-9.446e+09
##	air_store_idair_c2c8435bdb3516d4	air_store_idair_c31472d14e29cee8
##	5.496e+09	-1.970e+10
##	air_store_idair_c3585b0fba3998d0	air_store_idair_c3bc011cca3bec65
##	-1.345e+10	-4.735e+07
##	air_store_idair_c3dcaf3aeb18e20e	air_store_idair_c47aa7493b15f297
##	-6.389e+07	-1.536e+10
##	air_store_idair_c4fa5c562d5409ca	air_store_idair_c52c63c781fe48f6
##	-1.869e+10	-2.012e+10
##	air_store_idair_c5459218282bedd5	air_store_idair_c66dbd2c37832d00
##	-4.201e+06	-4.201e+06
##	air_store_idair_c6a164dd4060e960	air_store_idair_c6aa2efba0ffc8eb
##	-8.932e+09	1.071e+08
##	air_store_idair_c6ffd6a93e6b68d6	air_store_idair_c73d319ffabf287a
##	-1.043e+08	-9.589e+09
##	air_store_idair_c759b6abeb552160	air_store_idair_c77ee2b7d36da265
##	5.496e+09	-1.970e+10
##	air_store_idair_c7d30ab0e07f31d5	air_store_idair_c7f78b4f3cba33ff
##	5.557e+07	-4.201e+06
##	air_store_idair_c8265ecc116f2284	air_store_idair_c88467d88b2c8ecd
##	-4.201e+06	-8.252e+00
##	air_store_idair_c8a657c8c5c93d69	air_store_idair_c8c0ef02ed72053f
##	-1.970e+10	-2.112e+08
##	air_store_idair_c8fe396d6c46275d	air_store_idair_c92745dfdd2ec68a
##	3.341e+09	-2.112e+08
##	air_store_idair_c9ed65554b6edffb	air_store_idair_c9f6de13be8b8f25
##	-1.970e+10	-1.970e+10
##	air_store_idair_ca1315af9e073bd1	air_store_idair_ca6ae8d49a2f1eaf
##	-7.921e+07	-1.966e+10
##	air_store_idair_ca957d3a1529fbd3	air_store_idair_cadf9cfb510a1d78
##	3.341e+09	1.071e+08
##	air_store_idair_caf996ac27206301	air_store_idair_cb083b4789a8d3a2
##	-2.146e+08	3.257e+09
##	air_store_idair_cb25551c4cd8d9f3	air_store_idair_cb7467aed805e7fe
##	3.845e+07	-1.970e+10
##	air_store_idair_cb935ff8610ba3d3	air_store_idair_cbe139af83feb388
##	-2.112e+08	-9.589e+09
##	air_store_idair_cbe867adcf44e14f	air_store_idair_cc1a0e985ce63711

##	-1.892e+10	-9.150e+09
##	air_store_idair_cc35590cd1da8554	air_store_idair_ccd19a5bc5573ae5
##	3.627e+07	-1.053e+08
##	air_store_idair_cd4b301d5d3918d8	air_store_idair_cd5f54969be9ed08
##	-1.871e+01	-1.043e+08
##	air_store_idair_ced6297e5bdf5130	air_store_idair_cf2229e64408d9fe
##	-1.759e+08	-8.932e+09
##	air_store_idair_cf22e368c1a71d53	air_store_idair_cf5ab75a0afb8af9
##	3.257e+09	2.351e+09
##	air_store_idair_cfcc94797d2b5d3d	air_store_idair_cfdeb326418194ff
##	-1.645e+09	-7.786e+07
##	air_store_idair_d00161e19f08290b	air_store_idair_d00a15343325e5f7
##	-1.053e+08	-8.917e+09
##	air_store_idair_d07e57b21109304a	air_store_idair_d0a1e69685259c92
##	-1.043e+08	-1.053e+08
##	air_store_idair_d0a7bd3339c3d12a	air_store_idair_d0e8a085d8dc83aa
##	5.557e+07	-9.446e+09
##	air_store_idair_d138b593ebda55cc	air_store_idair_d1418d6fd6d634f2
##	-1.970e+10	-9.611e+09
##	air_store_idair_d186b2cb0b9ce022	air_store_idair_d1f20424f76cc78e
##	-1.043e+08	-8.932e+09
##	air_store_idair_d34c0861a2be94cb	air_store_idair_d3e7b5952cd09ccb
##	-1.980e+10	-4.201e+06
##	air_store_idair_d44d210d2994f01b	air_store_idair_d473620754bf9fc2
##	-2.112e+08	-1.889e+08
##	air_store_idair_d477b6339b8ce69f	air_store_idair_d4981cdde163b172
##	3.341e+09	-8.932e+09
##	air_store_idair_d4b5a4b04c5f2d04	air_store_idair_d4d218b451f82c3d
##	-8.988e+09	-1.043e+08
##	air_store_idair_d500b48a8735fbd3	air_store_idair_d54d6fcb116fbed3
##	-1.167e+08	-9.286e+09
##	air_store_idair_d5e0a20370c325c7	air_store_idair_d63cfa6d6ab78446
##	5.557e+07	3.845e+07
##	air_store_idair_d69b08a175bc0387	air_store_idair_d6b3e67261f07646
##	-4.201e+06	-3.540e+07
##	air_store_idair_d8abb9e490abf94f	air_store_idair_d97dabf7aae60da5
##	-3.750e+08	-9.795e+07
##	air_store_idair_d98380a4aeb0290b	air_store_idair_daa7947e1c47f5ed
##	-8.988e+09	3.845e+07
##	air_store_idair_dabfbd0ec951925a	air_store_idair_dad0b6a36138f309
##	-1.053e+08	3.845e+07
##	air_store_idair_db1233ad855b34d5	air_store_idair_db4b38ebe7a7ceff
##	5.496e+09	-8.982e+09
##	air_store_idair_db80363d35f10926	air_store_idair_dbf64f1ce38c7442
##	5.496e+09	-1.970e+10
##	air_store_idair_dc0e080ba0a5e5af	air_store_idair_dc71c6cc06cd1aa2
##	-8.932e+09	3.341e+09
##	air_store_idair_de692863bb2dd758	air_store_idair_de803f7e324936b8
##	-1.966e+10	3.341e+09
##	air_store_idair_de88770300008624	air_store_idair_dea0655f96947922
##	-1.510e+09	-8.932e+09
##	air_store_idair_df507aec929ce5f6	air_store_idair_df554c4527a1cfe6
##	-2.466e+08	-4.268e+09
##	air_store_idair_df5cf5cd03eb68d0	air_store_idair_df843e6b22e8d540

##	-4.201e+06	-4.201e+06
##	air_store_idair_df9355c47c5df9d3	air_store_idair_dfad598ff642dab7
##	-1.970e+10	9.513e+09
##	air_store_idair_dfe068a1bf85f395	air_store_idair_e00fe7853c0100d6
##	3.627e+07	-1.034e+10
##	air_store_idair_e0118664da63a2d0	air_store_idair_e01d99390355408d
##	-4.201e+06	-2.112e+08
##	air_store_idair_e053c561f32acc28	air_store_idair_e08b9cf82057a170
##	5.496e+09	-7.921e+07
##	air_store_idair_e0aee25b56a069f2	air_store_idair_e0e69668214ff972
##	-2.466e+08	-1.966e+10
##	air_store_idair_e0f241bd406810c0	air_store_idair_e1b76fcb5208fb6b
##	-1.536e+10	-1.043e+08
##	air_store_idair_e2208a79e2678432	air_store_idair_e270aff84ac7e4c8
##	-1.970e+10	-1.536e+10
##	air_store_idair_e3020992d5fe5dfd	air_store_idair_e34c631c766f2766
##	3.845e+07	-1.043e+08
##	air_store_idair_e42bdc3377d1eee7	air_store_idair_e483f5b3c4f310e0
##	1.343e+08	-1.980e+10
##	air_store_idair_e524c6a9e06cc3a1	air_store_idair_e55abd740f93ecc4
##	-4.201e+06	-1.034e+10
##	air_store_idair_e57dd6884595f60d	air_store_idair_e58f669b6f1a08ce
##	-1.970e+10	-3.006e+06
##	air_store_idair_e5cf003abcc5febb	air_store_idair_e64de0a6bf0739af
##	-1.899e+09	-4.201e+06
##	air_store_idair_e657ca554b0c008c	air_store_idair_e700e390226d9985
##	-1.536e+10	2.351e+09
##	air_store_idair_e76a668009c5dabc	air_store_idair_e7d2ac6d53d1b744
##	-1.043e+08	-2.466e+08
##	air_store_idair_e7fbee4e3cfe65c5	air_store_idair_e88bbe2ede3467aa
##	-1.510e+09	-9.446e+09
##	air_store_idair_e89735e80d614a7e	air_store_idair_e8ed9335d0c38333
##	1.569e+00	3.845e+07
##	air_store_idair_e9ebf7fc520ac76a	air_store_idair_ea6d0c3acf00b22a
##	-9.335e+07	9.072e+07
##	air_store_idair_ea7c16131980c837	air_store_idair_eb120e6d384a17a8
##	3.627e+07	-1.970e+10
##	air_store_idair_eb20a89bba7dd3d0	air_store_idair_eb2d2653586315dd
##	-1.986e+01	-9.286e+09
##	air_store_idair_eb5788dba285e725	air_store_idair_ebd31e812960f517
##	-1.970e+10	-1.043e+08
##	air_store_idair_ebe02c3090271fa9	air_store_idair_ec0fad2def4dcff0
##	-1.718e+08	-5.808e+08
##	air_store_idair_eca4a5a191e8d993	air_store_idair_eca5e0064dc9314a
##	2.351e+09	-1.970e+10
##	air_store_idair_ecab54b57a71b10d	air_store_idair_eceb97ad6a7d4c07
##	-1.536e+10	7.963e+07
##	air_store_idair_ecf7f141339f1d57	air_store_idair_eda179770dfa9f91
##	3.845e+07	-9.011e+09
##	air_store_idair_edd5e3d696a5811b	air_store_idair_ee3a01f0c71a769f
##	1.221e+01	-4.268e+09
##	air_store_idair_ee3ba9af184c6c82	air_store_idair_eec5e572b9eb9c23
##	-1.510e+09	-1.963e+10
##	air_store_idair_eeeadee005c006a2	air_store_idair_ef47430bcd6f6a89

##	-4.927e+07	-1.970e+10
##	air_store_idair_ef789667e2e6fe96	air_store_idair_ef920fa6f4b085f6
##	-6.630e+08	-4.201e+06
##	air_store_idair_efc80d3f96b3aff7	air_store_idair_efd70b04de878f25
##	-2.466e+08	-1.043e+08
##	air_store_idair_efef1e3daecce07e	air_store_idair_f068442ebb6c246c
##	-8.962e+09	5.557e+07
##	air_store_idair_f0c7272956e62f12	air_store_idair_f0fb0975bdc2cdf9
##	-9.335e+07	-1.345e+10
##	air_store_idair_f1094dbf2aef85d9	air_store_idair_f180301886c21375
##	-1.980e+10	-1.970e+10
##	air_store_idair_f183a514cb8ff4fa	air_store_idair_f1f9027d4fa8f653
##	-4.201e+06	-3.027e+00
##	air_store_idair_f267dd70a6a6b5d3	air_store_idair_f26f36ec4dc5adb0
##	-1.067e+10	-1.053e+08
##	air_store_idair_f2985de32bb792e0	air_store_idair_f2c5a1f24279c531
##	-7.902e+07	5.557e+07
##	air_store_idair_f3602e4fa2f12993	air_store_idair_f3f9824b7d70c3cf
##	-1.946e+10	3.341e+09
##	air_store_idair_f4936b91c9addbf0	air_store_idair_f593fa60ac3541e2
##	-9.335e+07	-6.630e+08
##	air_store_idair_f690c42545146e0a	air_store_idair_f6b2489ccf873c3b
##	3.368e+09	3.845e+07
##	air_store_idair_f6bfd27e2e174d16	air_store_idair_f6cdaf7b7fdc6d78
##	-1.043e+08	-1.970e+10
##	air_store_idair_f8233ad00755c35c	air_store_idair_f85e21e543cf44f2
##	-1.043e+08	-2.012e+10
##	air_store_idair_f88898cd09f40496	air_store_idair_f911308e19d64236
##	-1.889e+08	-1.043e+08
##	air_store_idair_f9168b23fdcf1e52	air_store_idair_f927b2da69a82341
##	-2.466e+08	-9.589e+09
##	air_store_idair_f957c6d6467d4d90	air_store_idair_f96765e800907c77
##	-2.112e+08	-1.536e+10
##	air_store_idair_fa12b40b02fecfd8	air_store_idair_fa4ffc9057812fa2
##	-1.444e+08	-1.053e+08
##	air_store_idair_fab092c35776a9b1	air_store_idair_fb44f566d4f64a4e
##	-1.980e+10	1.343e+08
##	air_store_idair_fbadf737162a5ce3	air_store_idair_fc477473134e9ae5
##	-1.167e+08	3.341e+09
##	air_store_idair_fcd4492c83f1c6b9	air_store_idair_fcfbdcf7b1f82c6e
##	-1.043e+08	-1.043e+08
##	air_store_idair_fd154088b1de6fa7	air_store_idair_fd6aac1043520e83
##	-1.053e+08	-4.201e+06
##	air_store_idair_fdc02ec4a3d21ea4	air_store_idair_fdcfef8bd859f650
##	-9.589e+09	-1.970e+10
##	air_store_idair_fe22ef5a9cbef123	air_store_idair_fe58c074ec1445ea
##	-1.970e+10	5.557e+07
##	air_store_idair_fea5dc9594450608	air_store_idair_fee8dcf4d619598e
##	-4.268e+09	-9.589e+09
##	air_store_idair_fef9ccb3ba0da2f7	air_store_idair_ffcc2d5087e1b476
##	-1.067e+10	-4.201e+06
##	air_store_idair_fff68b929994bfbd	visit_date
##	-1.838e+08	-1.308e-03
##	longitude	day_of_weekMonday

##	-2.105e+09	-6.674e+00
##	day_of_weekSaturday	day_of_weekSunday
##	3.230e+00	7.336e-01
##	day_of_weekThursday	day_of_weekTuesday
##	-4.415e+00	-5.414e+00
##	day_of_weekWednesday	holiday_flg
##	-3.861e+00	3.702e+00