Retail Analysis of Walmart Data

```
Setwd()

getwd()

walmart <- read.csv('Walmart_Store_sales.csv', stringsAsFactors = FALSE)

str(walmart)

View(walmart)

dim(walmart)

search()

install.packages('lubridate')

library("lubridate")

install.packages('fansi', dependencies = TRUE)

library(fansi)

install.packages("dplyr")

library(dplyr)

walmart <- walmart %>% mutate(Date=dmy(new_dt))

walmart

summary(walmart)

# aggregate the weekly sales by the store

install.packages('utf8')

library(utf8)
```

```
walmart1 <- walmart %>% group_by(Store) %>% summarise(AVG_sales = mean(Weekly_Sales),sd_sales
= sd(Weekly_Sales))


walmart1


walmart1 %>% mutate(cov=(AVG_sales/sd_sales)*100)


# Quarterly growth rate


# creating Quater, Year & Semester Variable




walmart <- walmart %>%
mutate(yr=year(new_dt),mon=month(new_dt),qtr=quarter(new_dt),sem=semester(new_dt))


walmart <- walmart %>% mutate(yr=year(Date), mon=month(Date),
qtr=quarter(Date),sem=semester(Date))

View(walmart)




quarter(walmart$Date,with_year = TRUE)

semester(walmart$Date,with_year = TRUE)


walmart <- walmart %>% mutate(yr_qtr=paste('year','Q','qtr',sep=''))

View(walmart)


# Quarter sales of the stores
```

```
walmart2 <- walmart %>% group_by(Store, yr_qtr,sem,mon,yr,qtr) %>%
summarise(qtr_Sales=sum(Weekly_Sales)) %>% arrange(desc(qtr_Sales))

View(walmart2)


walmart3 <- walmart2 %>% mutate(qoq_rate=(qtr_Sales/lag(qtr_Sales,4)-1)*100)

View(walmart3)


# mean sales of non-holiday


walmart %>% filter(Holiday_Flag==0) %>% summarise(AVG_sales=mean(Weekly_Sales))


# Holidays which have higher sales than the mean sales of Non-Holiday

walmart %>% filter(Holiday_Flag==1, Weekly_Sales>1041256)


fact_date=as.factor(walmart$Date)

levels(fact_date)


unique_date <- data.frame(new_dt=levels(as.factor(walmart$Date)))

View(unique_date)


unique_date$r_01=row_number(unique_date)

unique_date$Date=ymd(unique_date$Date1)

View(unique_date)


walmart_New <- inner_join(walmart,unique_date,by="Date")

View(walmart_new)


walmart$Holiday_Flag=as.factor(walmart$Holiday_Flag)
```

```
library(ggplot2)

ggplot(data=walmart,aes(x=CPI,y=Weekly_Sales))+geom_point(aes(color=Holiday_Flag))

ggplot(data=walmart,aes(x=Fuel_Price,y=Weekly_Sales))+geom_point(aes(color=Holiday_Flag))

ggplot(data=walmart,aes(x=Unemployment,y=Weekly_Sales))+geom_point(aes(color=Holiday_Flag))

walmart <- walmart %>% mutate(days=day(Date))

walmart

model_lm <- lm(data = walmart, Weekly_Sales ~ Holiday_Flag + Date +Temperature + Fuel_Price +
Unemployment + CPI + days)

model_lm

summary(model_lm)

model_lm <- lm(data = walmart, Weekly_Sales ~ Holiday_Flag + Unemployment + CPI)

model_lm

summary(model_lm)

Weekly_Sales = 1664939.2+ 84509.58*Holiday_Flag + (-42542.2*Unemplyoment) + (-1652.8*CPI)
```