HOMEWORK 3

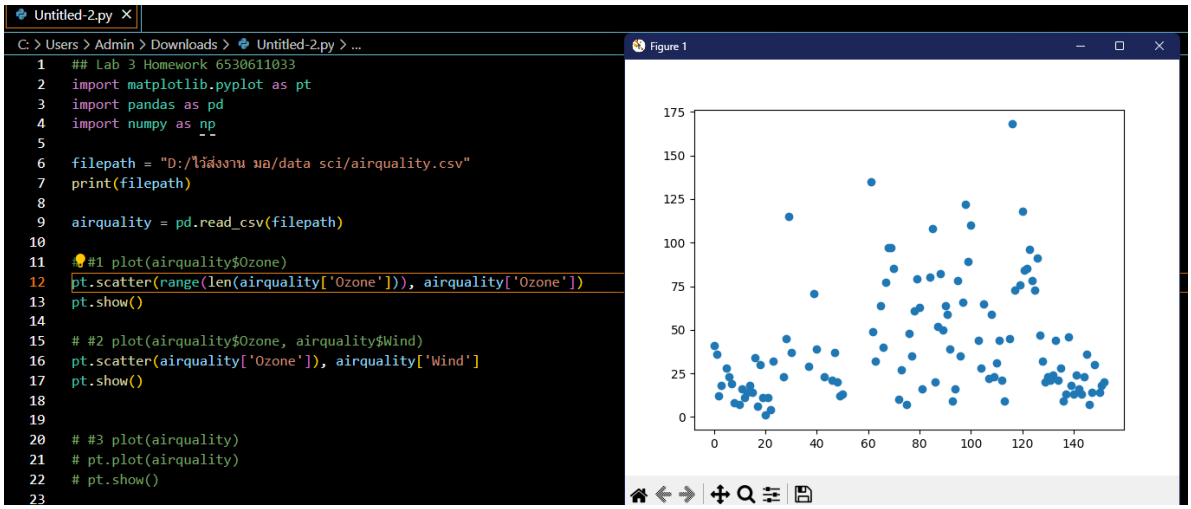
968-252 Data Science

Data Visualisation

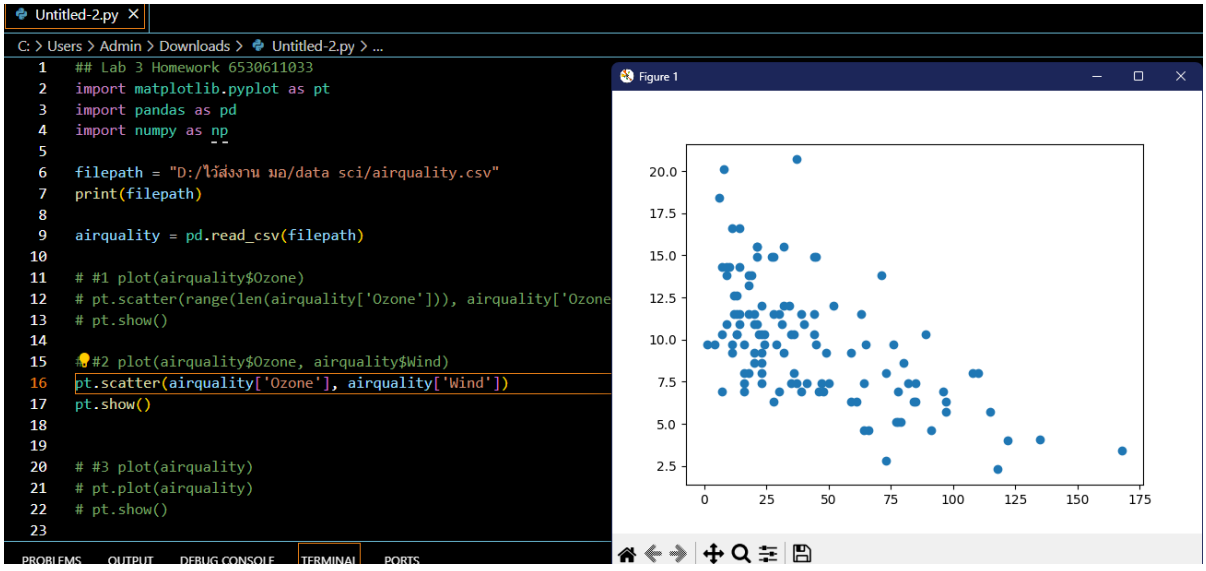
ชื่อ-นามสกุล นาย ธนวัฒน์ วิริยธรรมโสภณ รหัส 6530611033 สาขา COMP

จงเขียนคำสั่ง Python หรือภาษาอื่นที่ไม่ใช่เครื่องมือสำเร็จรูป (โปรดระบุภาษา) ที่ให้ผลลัพธ์ได้เช่นเดียวกับคำสั่ง R ต่อไปนี้

(1) plot(airquality$Ozone)

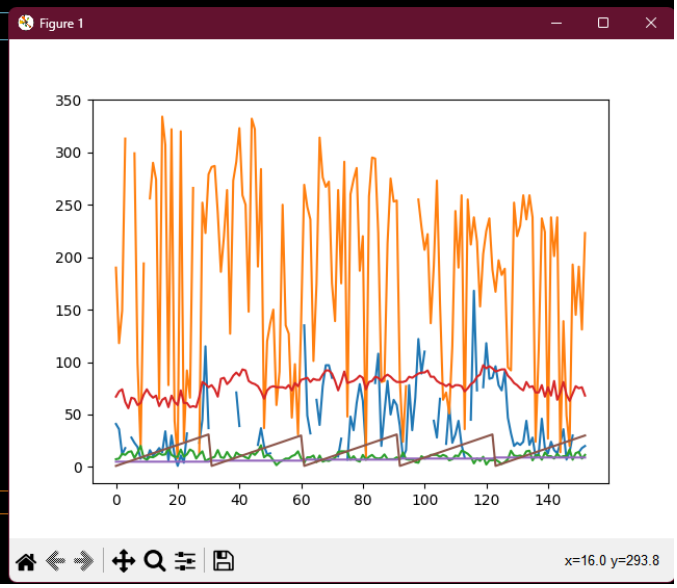


(2) plot(airquality$Ozone, airquality$Wind)



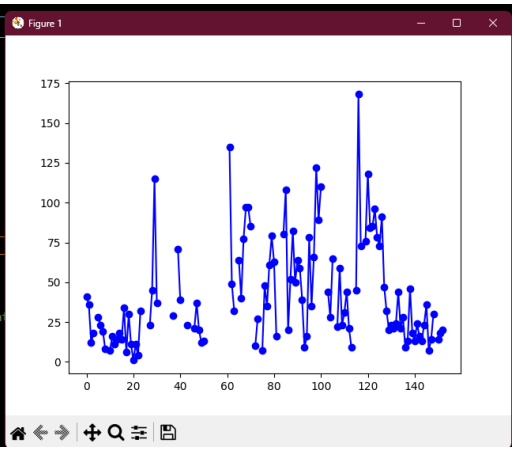
(3) plot(airquality)

```
## Lab 3 Homework 6530611033
import matplotlib.pyplot as pt
import pandas as pd

filepath = "D:/ไว้ส่งงาน มอ/data sci/airquality.csv"
print(filepath)

airquality = pd.read_csv(filepath)

# #1 plot(airquality$Ozone)
# pt.plot(airquality['Ozone'])
# pt.show()

#2 plot(airquality$Ozone)
# pt.plot(airquality['Ozone'], airquality['Wind'])
# pt.show()

#3 plot(airquality)
pt.plot(airquality)
pt.show()
```

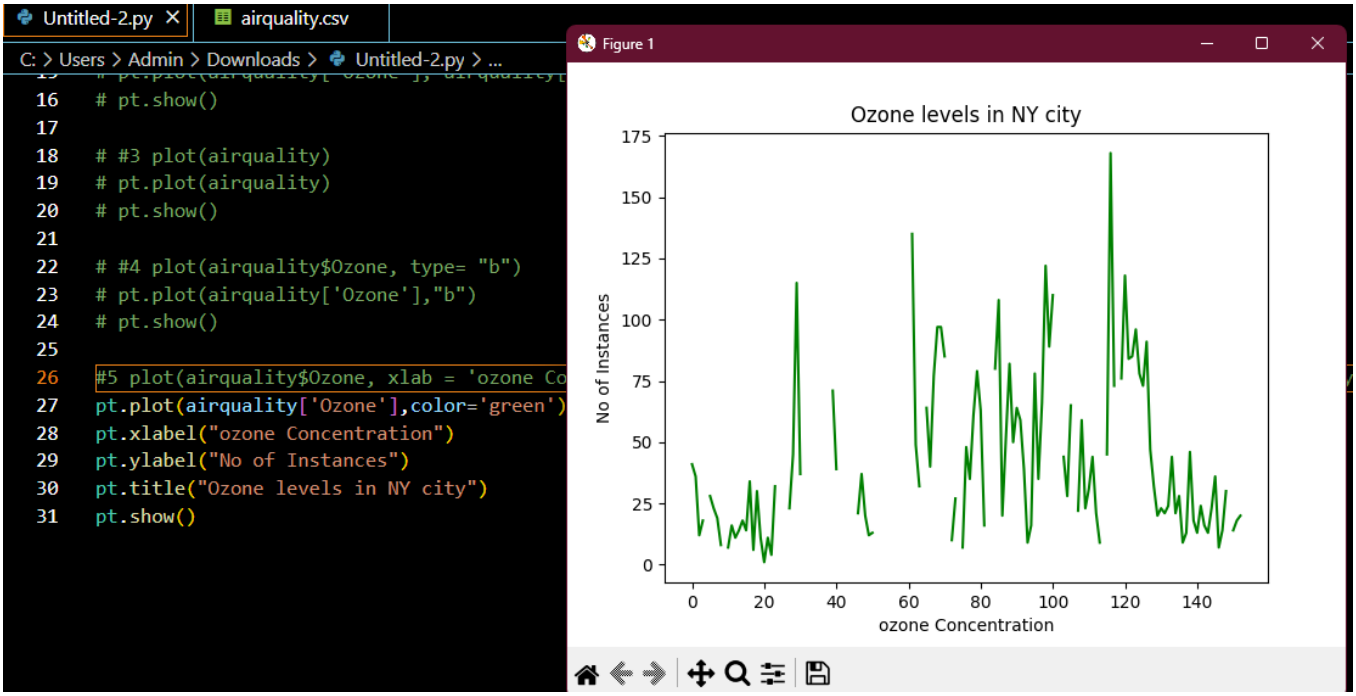


(4) plot(airquality$Ozone, type= "b")

```
# #2 plot(airquality$Ozone)
# pt.plot(airquality['Ozone'])
# pt.show()


# #3 plot(airquality)
# pt.plot(airquality)
# pt.show()

# #4 plot(airquality$Ozone, type= "b")
pt.plot(airquality['Ozone'], 'b-', marker='o')
pt.show()


# #5 plot(airquality$Ozone, xlab = 'ozone Concent
# pt.plot(airquality['Ozone'],color='green')
# pt.xlabel("ozone Concentration")
# pt.ylabel("No of Instances")
# pt.title("Ozone levels in NY city")
# pt.show()
```

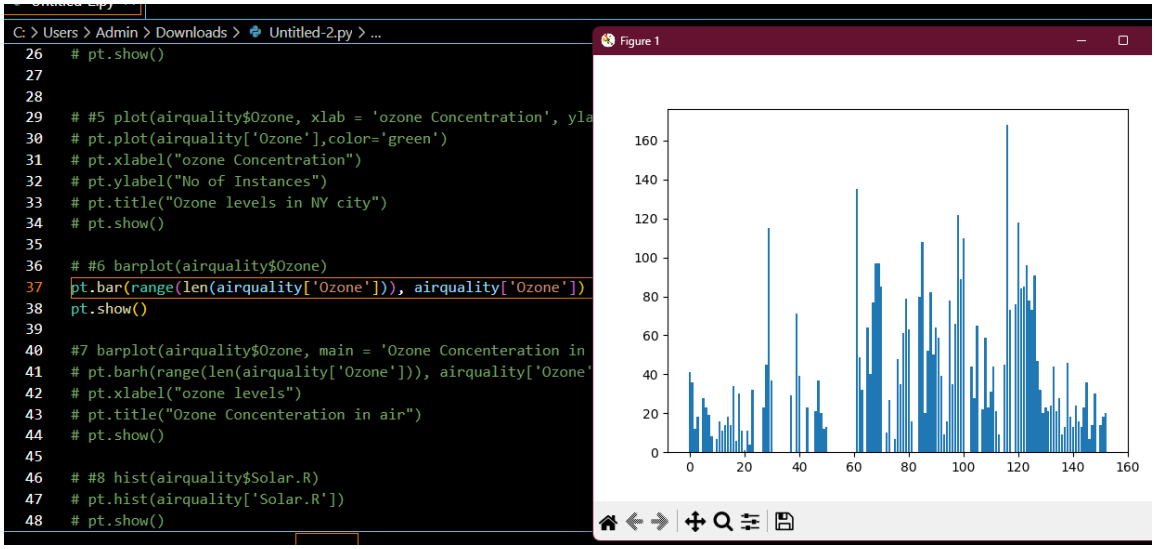


(5) plot(airquality$Ozone, xlab = 'ozone Concentration', ylab = 'No of Instances', main = 'Ozone levels in NY city', col

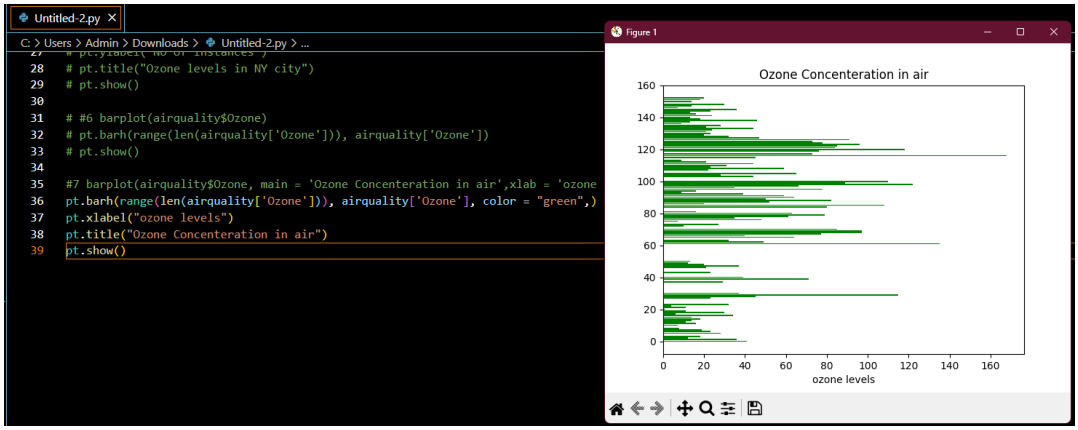


= 'green')

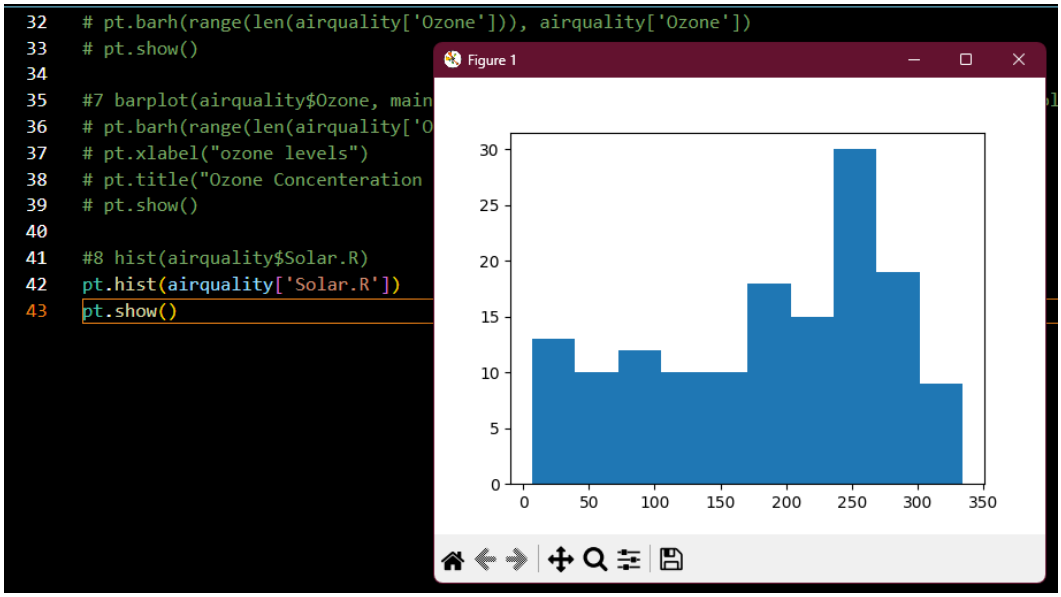
(6) barplot(airquality$Ozone)



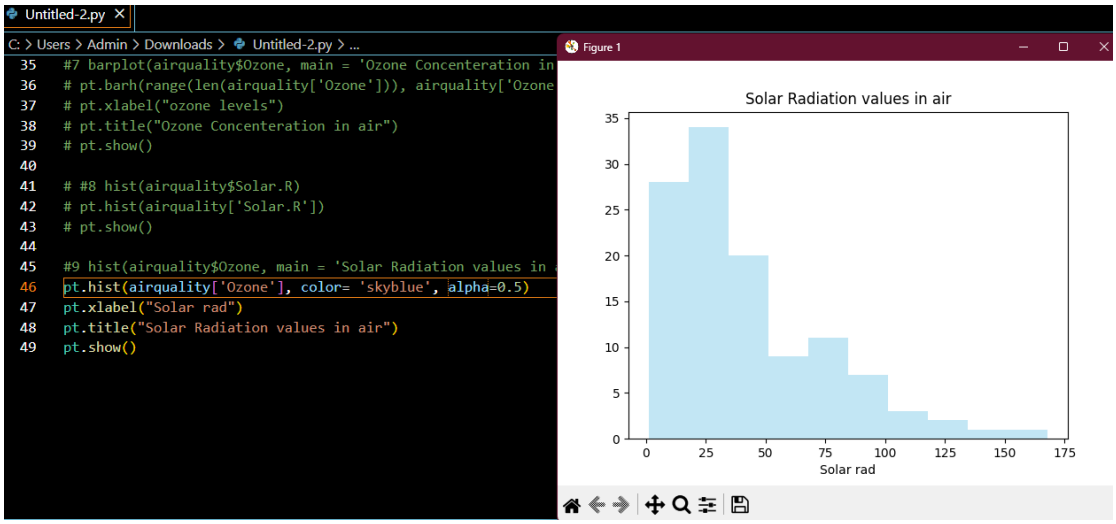
(7) barplot(airquality$Ozone, main = 'Ozone Concenteration in air',xlab = 'ozone levels', col= 'green',horiz = TRUE)



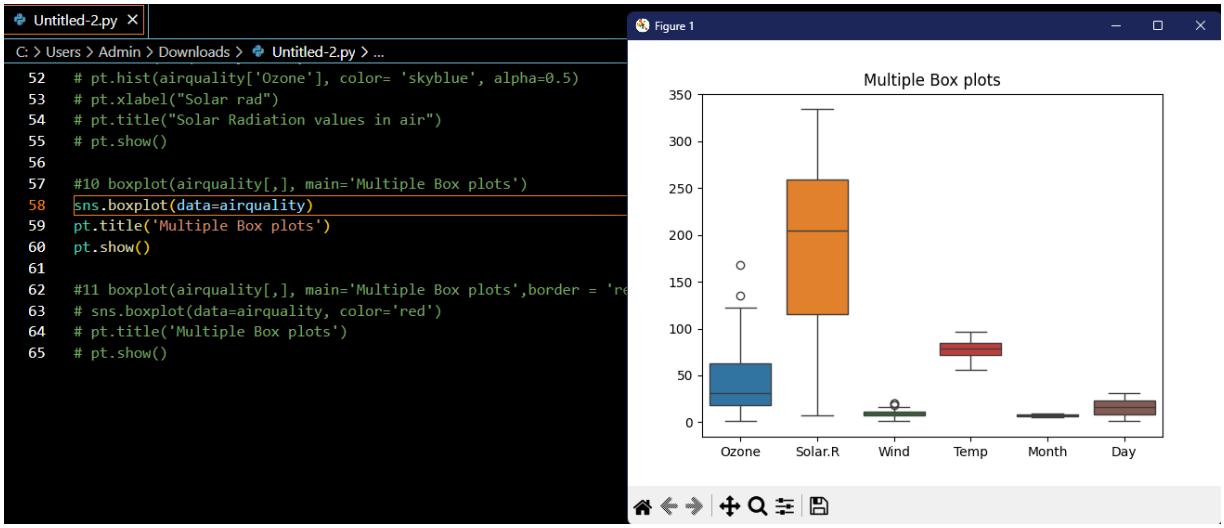
(8) hist(airquality$Solar.R)



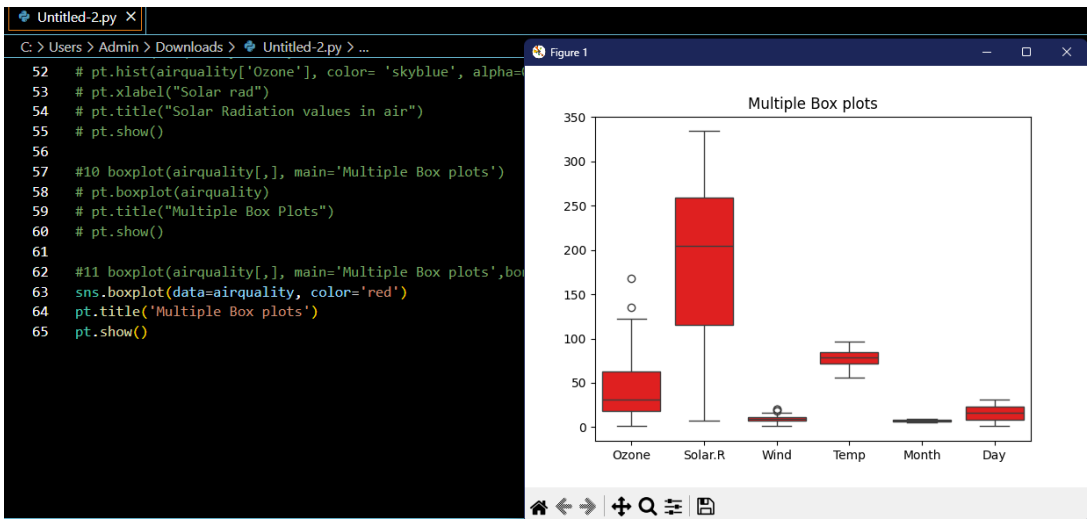
(9) hist(airquality$Ozone, main = 'Solar Radiation values in air',xlab = 'Solar rad.', col=cm.colors(5))



(10) boxplot(airquality[,], main='Multiple Box plots')



(11) boxplot(airquality[,], main='Multiple Box plots',border = 'red',col=terrain.colors(5))



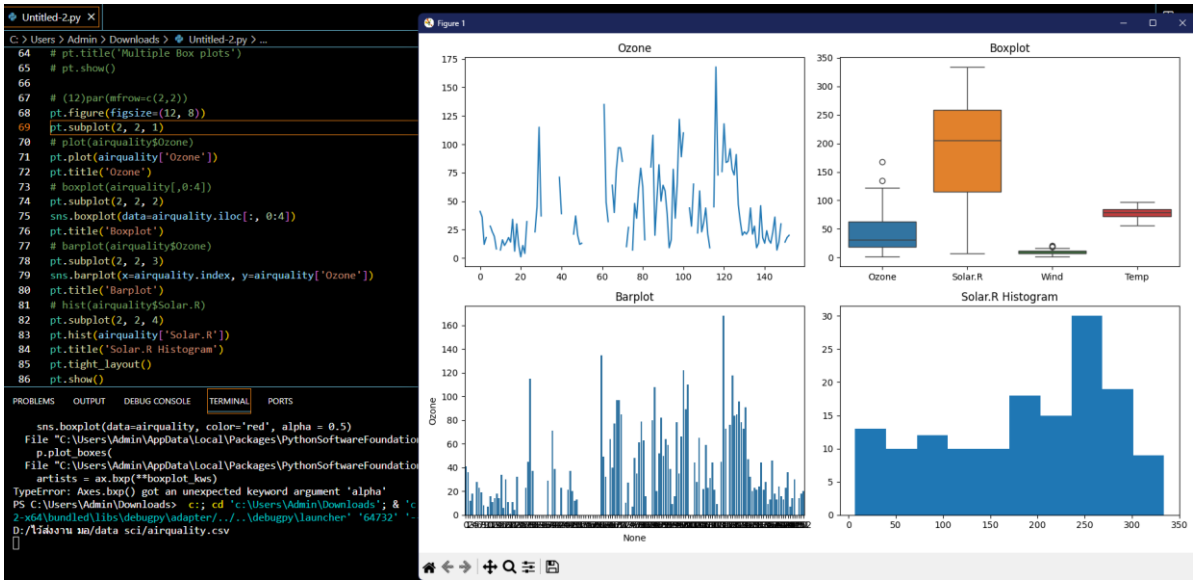
(12) par(mfrow=c(2,2))

plot(airquality$Ozone)

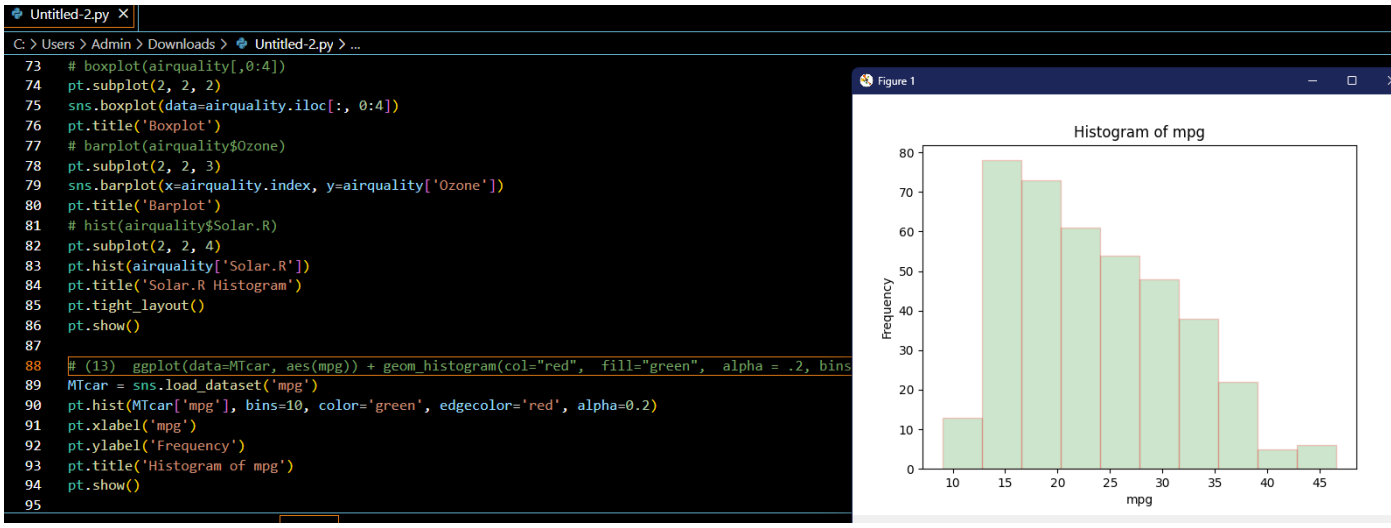
boxplot(airquality[,0:4])

barplot(airquality$Ozone)

hist(airquality$Solar.R)

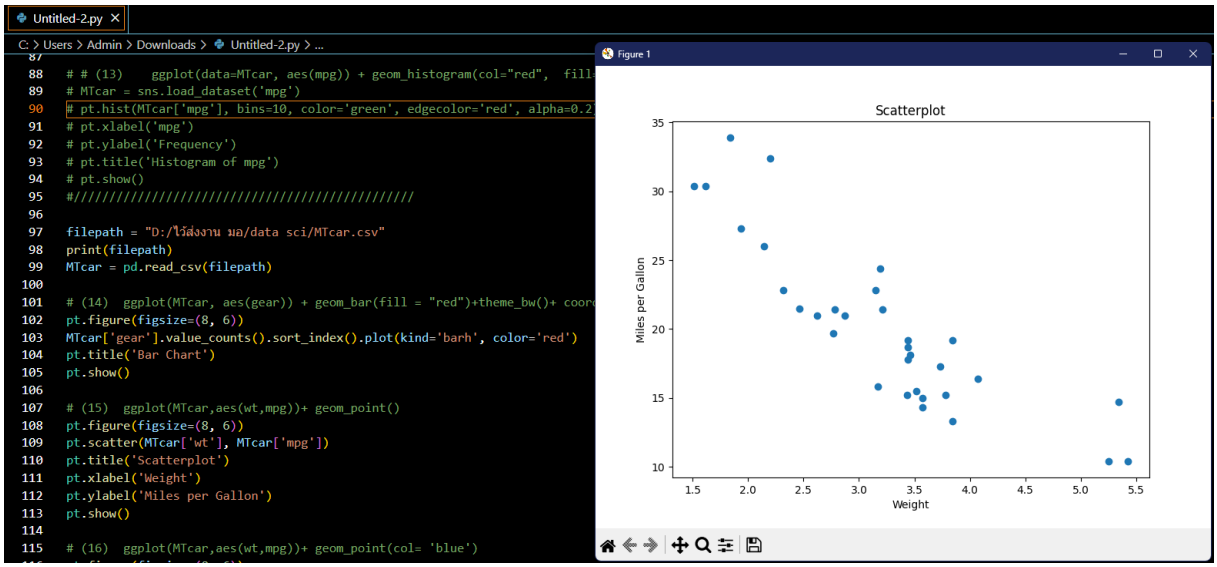


(13) ggplot(data=MTcar, aes(mpg)) + geom_histogram(col="red", fill="green", alpha = .2, bins = 10)

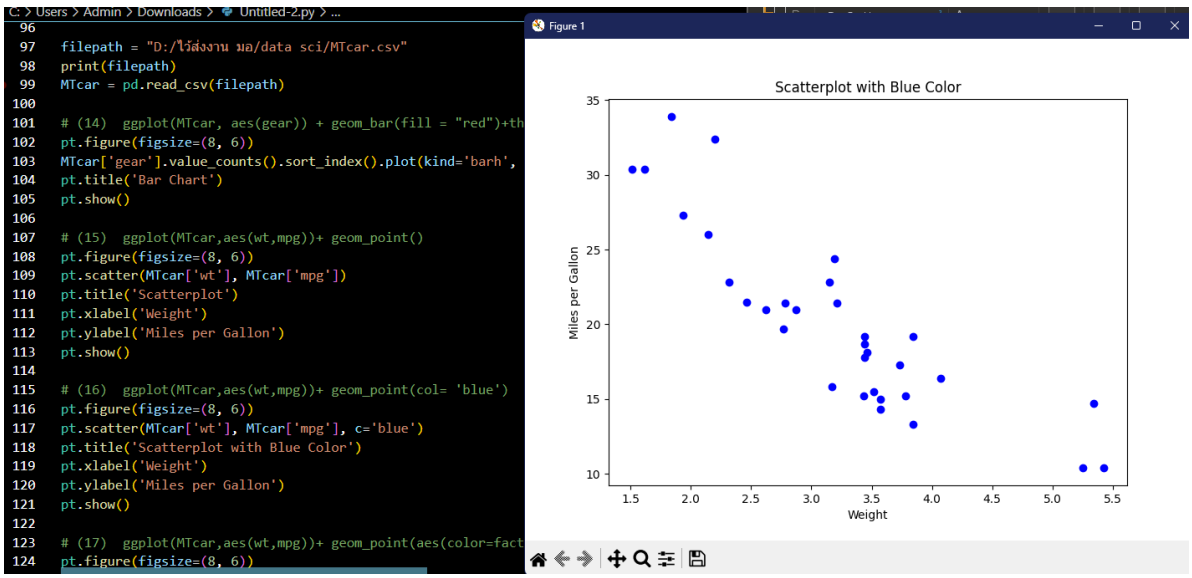


(14) ggplot(MTcar, aes(gear)) + geom_bar(fill = "red")+theme_bw()+ coord_flip()+ labs(title = "Bar Chart") + theme_gray()

(15) ggplot(MTcar,aes(wt,mpg))+ geom_point()

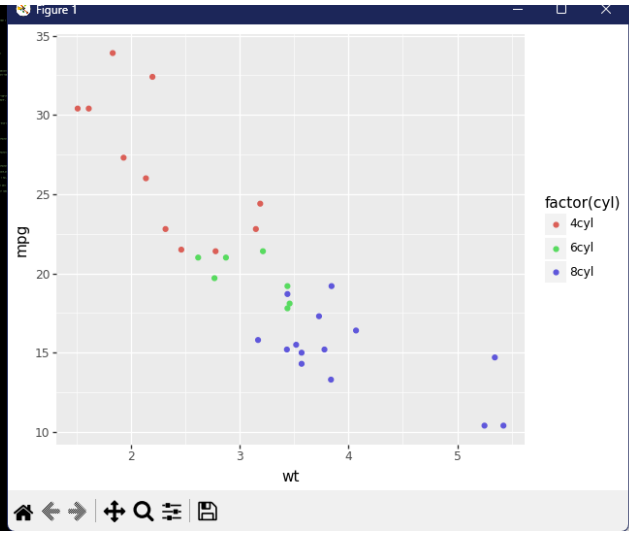


(16) ggplot(MTcar,aes(wt,mpg))+ geom_point(col= 'blue')



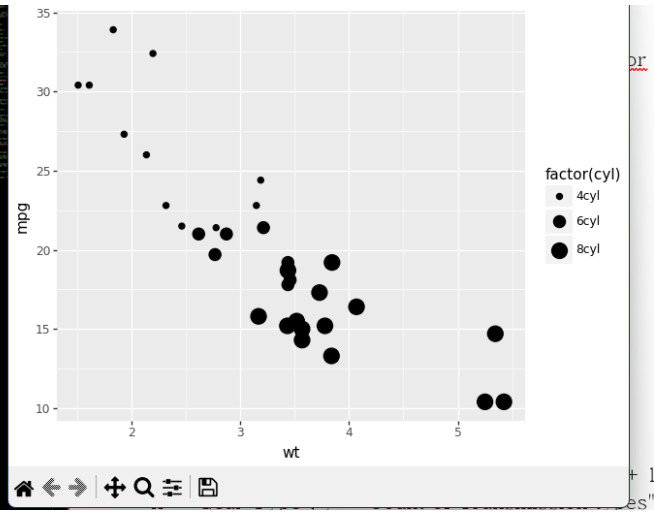
(17) ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(color=factor(cyl)))

```
# pt.xlabel('Weight')
# pt.ylabel('Miles per Gallon')
# pt.show()

# (17)  ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(color=factor(cyl)))
plot17 = (
    ggplot(MTcar, aes(x='wt', y='mpg')) +
    geom_point(aes(color='factor(cyl)'))
)
print(plot17)

# (18)  ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(size=factor(cyl)))
plot18 = (
    ggplot(MTcar, aes(x='wt', y='mpg')) +
    geom_point(aes(size='factor(cyl)'))
)
print(plot18)

# (19)  ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(shape=factor(cyl), color=fac

# (20)  ggplot(MTcar,aes(wt,mpg))+
#geom_point(aes(shape=factor(cyl),color=factor(cyl)),size=4,alpha =0.6)
```

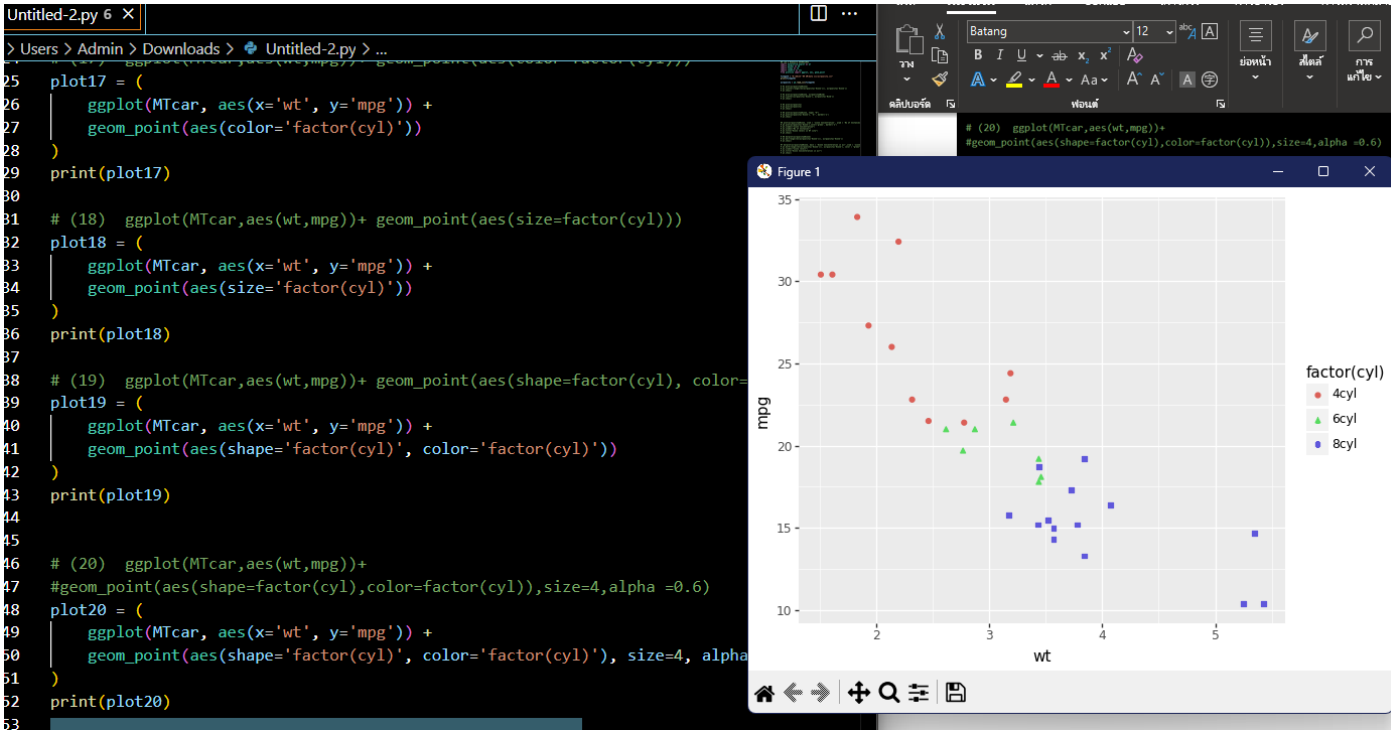


(18) ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(size=factor(cyl)))

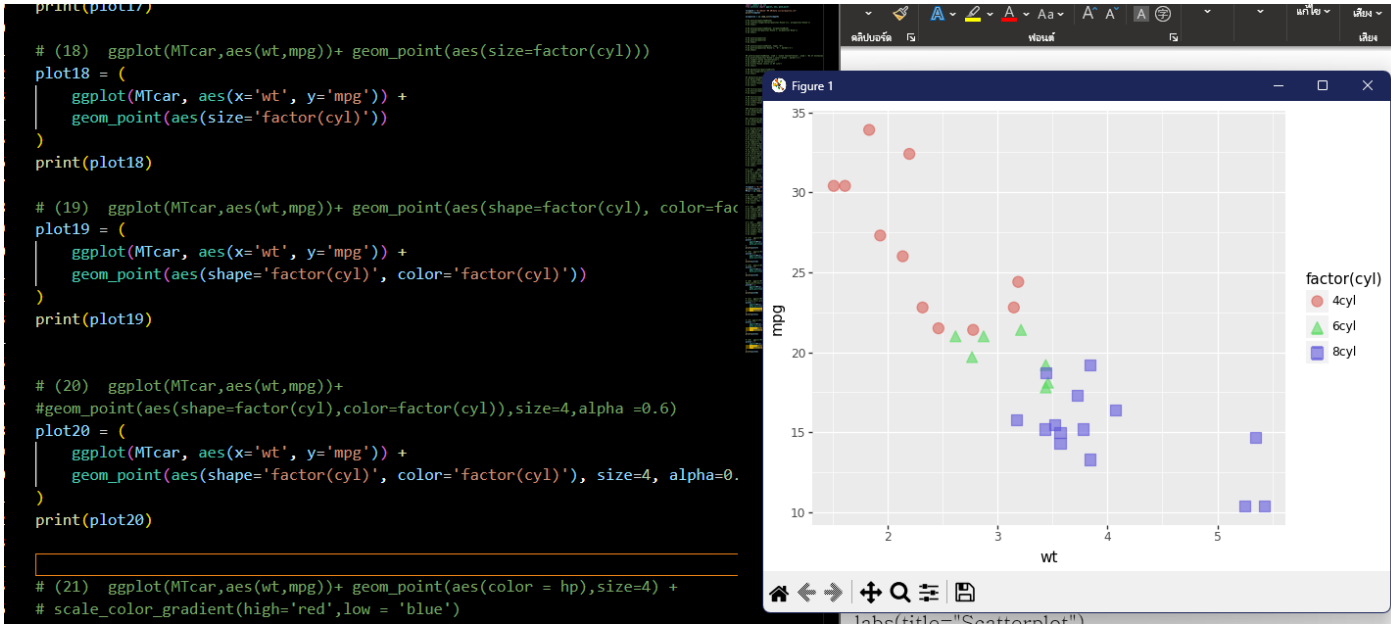
```
# pt.ylabel('Miles per Gallon')
# pt.show()

# (17)  ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(color=factor(cyl)))
# sns.scatterplot(x='wt', y='mpg', hue='cyl', data=MTcar)
# pt.show()

# (18)  ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(size=factor(cyl)))
plot18 = (
    ggplot(MTcar, aes(x='wt', y='mpg')) +
    geom_point(aes(size='factor(cyl)'))
)
print(plot18)

# (19)  ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(shape=factor(cyl), color=fac

# (20)  ggplot(MTcar,aes(wt,mpg))+
#geom_point(aes(shape=factor(cyl),color=factor(cyl)),size=4,alpha =0.6)


# (21)  ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(color = hp),size=4) +
# scale_color_gradient(high='red',low = 'blue')
```



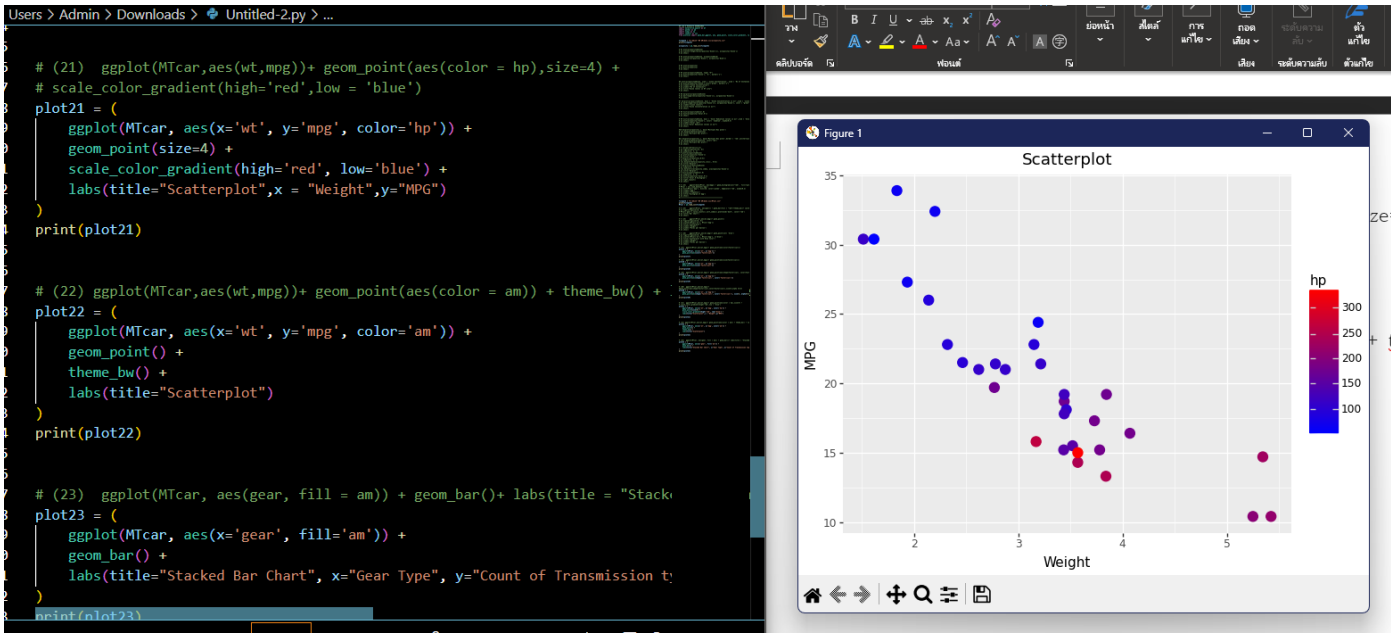
(19) ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(shape=factor(cyl), color=factor(cyl)))



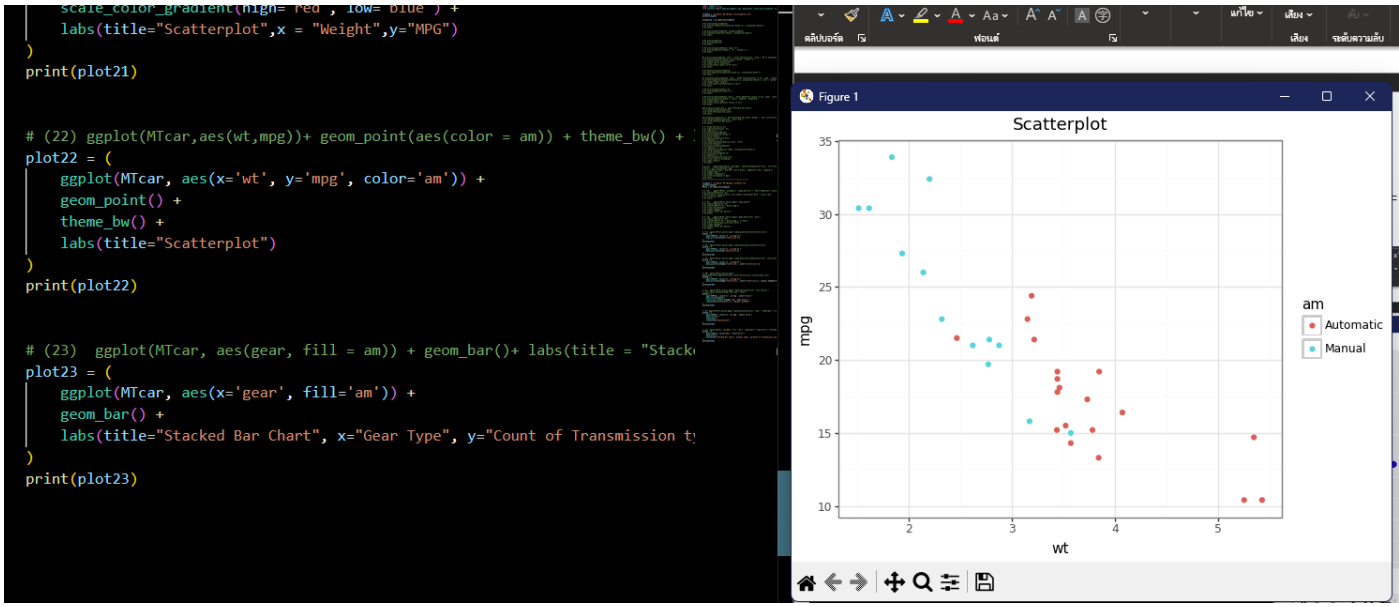
(20) ggplot(MTcar,aes(wt,mpg))+geom_point(aes(shape=factor(cyl),color=factor(cyl)),size=4,alpha =0.6)



(21) ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(color = hp),size=4) +scale_color_gradient(high='red',low = 'blue')



(22) ggplot(MTcar,aes(wt,mpg))+ geom_point(aes(color = am)) + theme_bw() + labs(title="Scatterplot")



(23) ggplot(MTcar, aes(gear, fill = am)) + geom_bar()+ labs(title = "Stacked Bar Chart", x = "Gear Type", y = "Count of Transmission types")