class_assignment.R

91939

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```
# ?ToothGrowth
# View(ToothGrowth)
data=ToothGrowth
str(data)
```

```
## 'data.frame':    60 obs. of  3 variables:
##  $ len : num  4.2 11.5 7.3 5.8 6.4 10 11.2 11.2 5.2 7 ...
##  $ supp: Factor w/ 2 levels "OJ","VC": 2 2 2 2 2 2 2 2 2 2 ...
##  $ dose: num  0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 ...
```

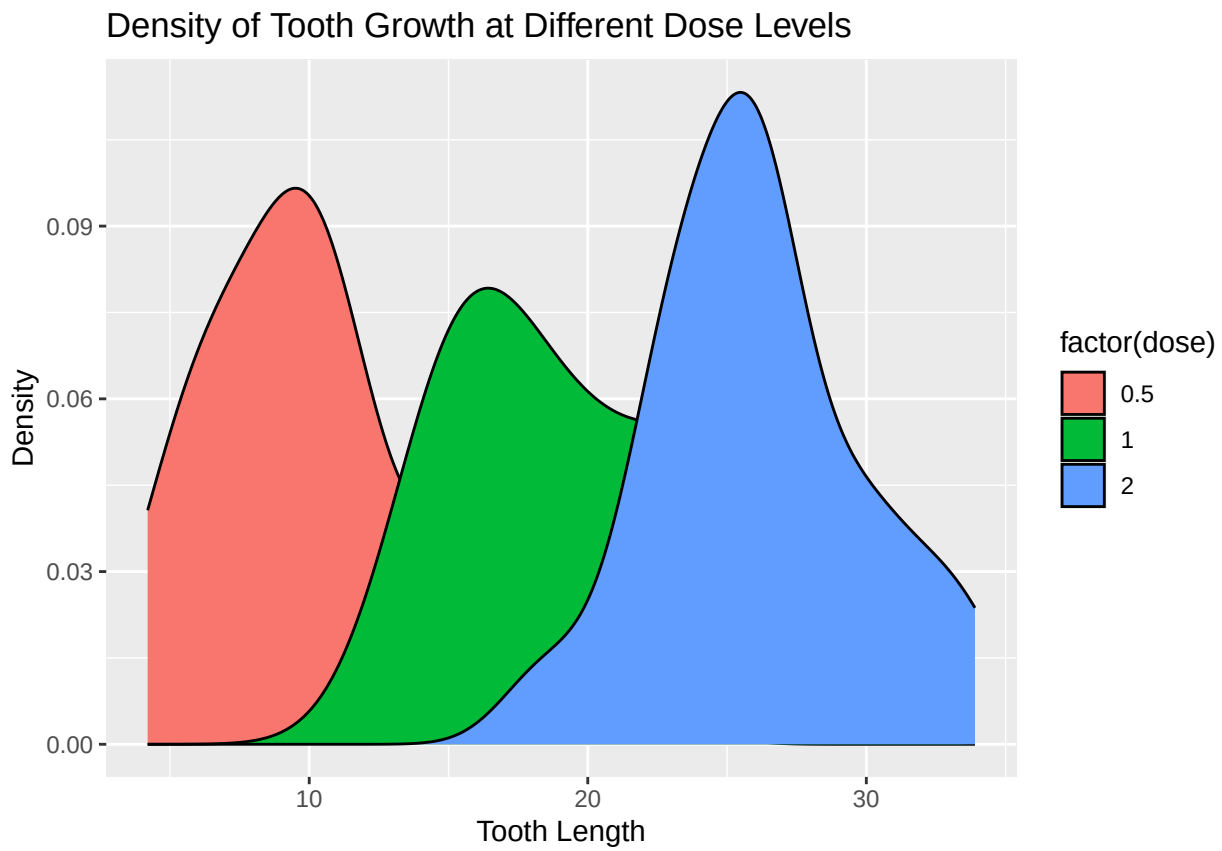
```
summary(data)
```

```
##       len        supp         dose
##  Min.   : 4.20   OJ:30   Min.   :0.500
##  1st Qu.:13.07   VC:30   1st Qu.:0.500
##  Median :19.25           Median :1.000
##  Mean   :18.81           Mean   :1.167
##  3rd Qu.:25.27           3rd Qu.:2.000
##  Max.   :33.90           Max.   :2.000
```

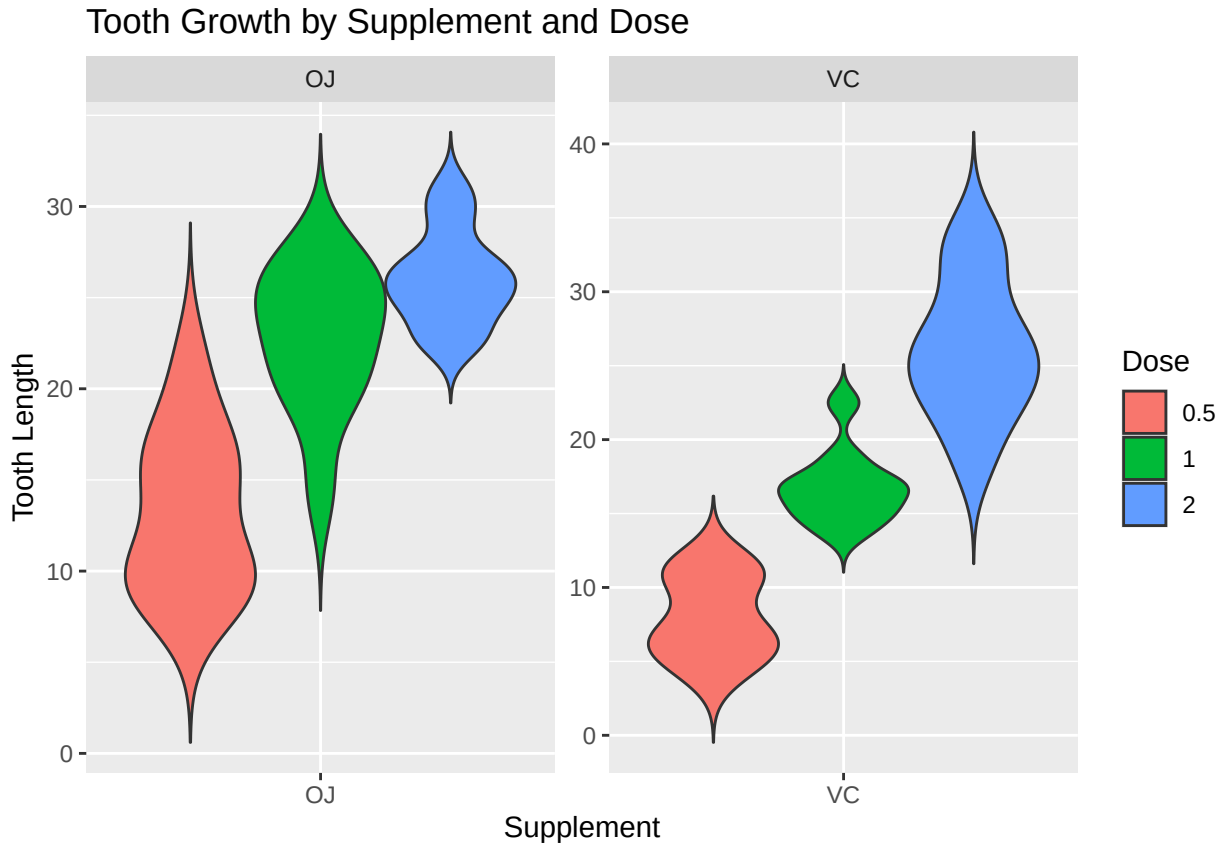
```
#1
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 4.3.2
```

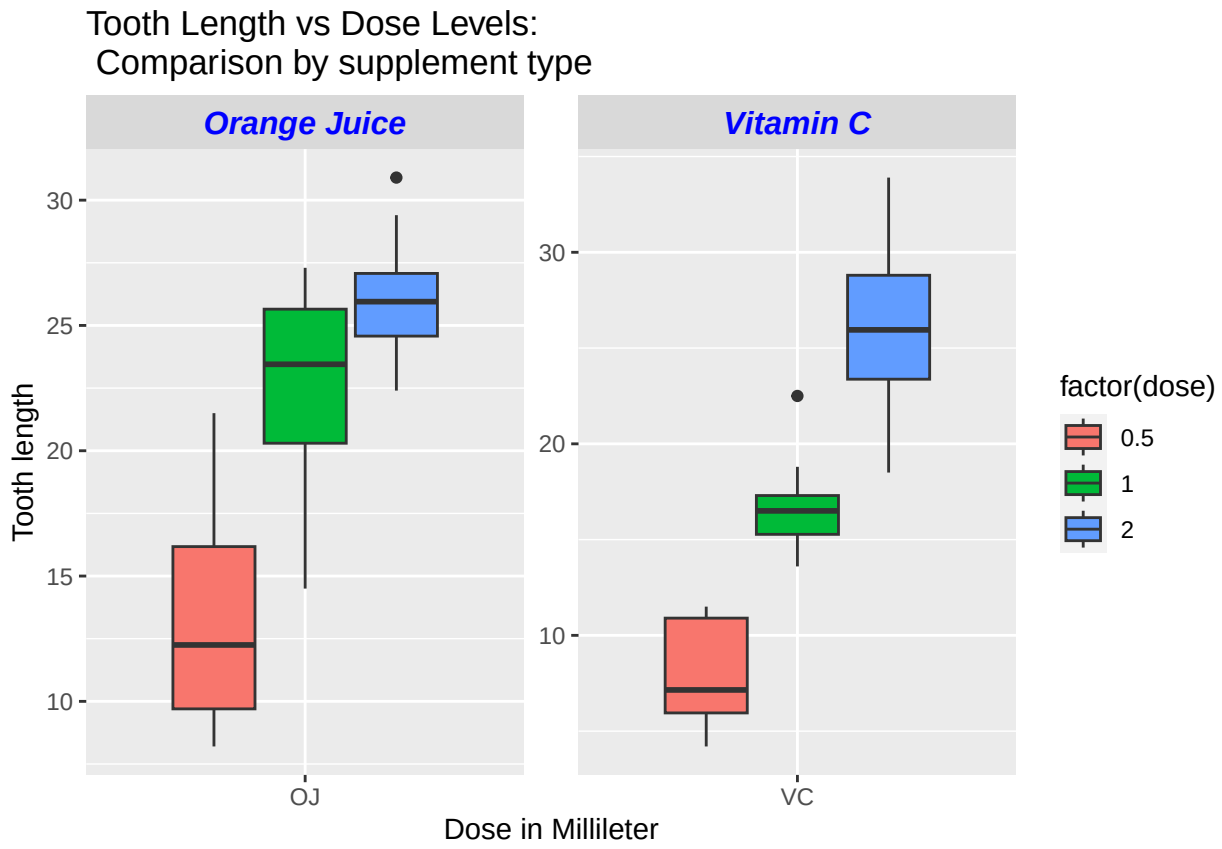
```
ggplot(data, aes(x = len, fill = factor(dose))) +
  geom_density(alpha = 1) +
  labs(title = "Density of Tooth Growth at Different Dose Levels",
       x = "Tooth Length", y = "Density")
```




```
#2
ggplot(data, aes(x = supp, y = len, fill = factor(dose))) +
  geom_violin(trim = FALSE, scale = "width", width = 1) +
  facet_wrap(~ supp, scales = "free")+
  labs(title = "Tooth Growth by Supplement and Dose",
       x = "Supplement", y = "Tooth Length", fill = "Dose")
```

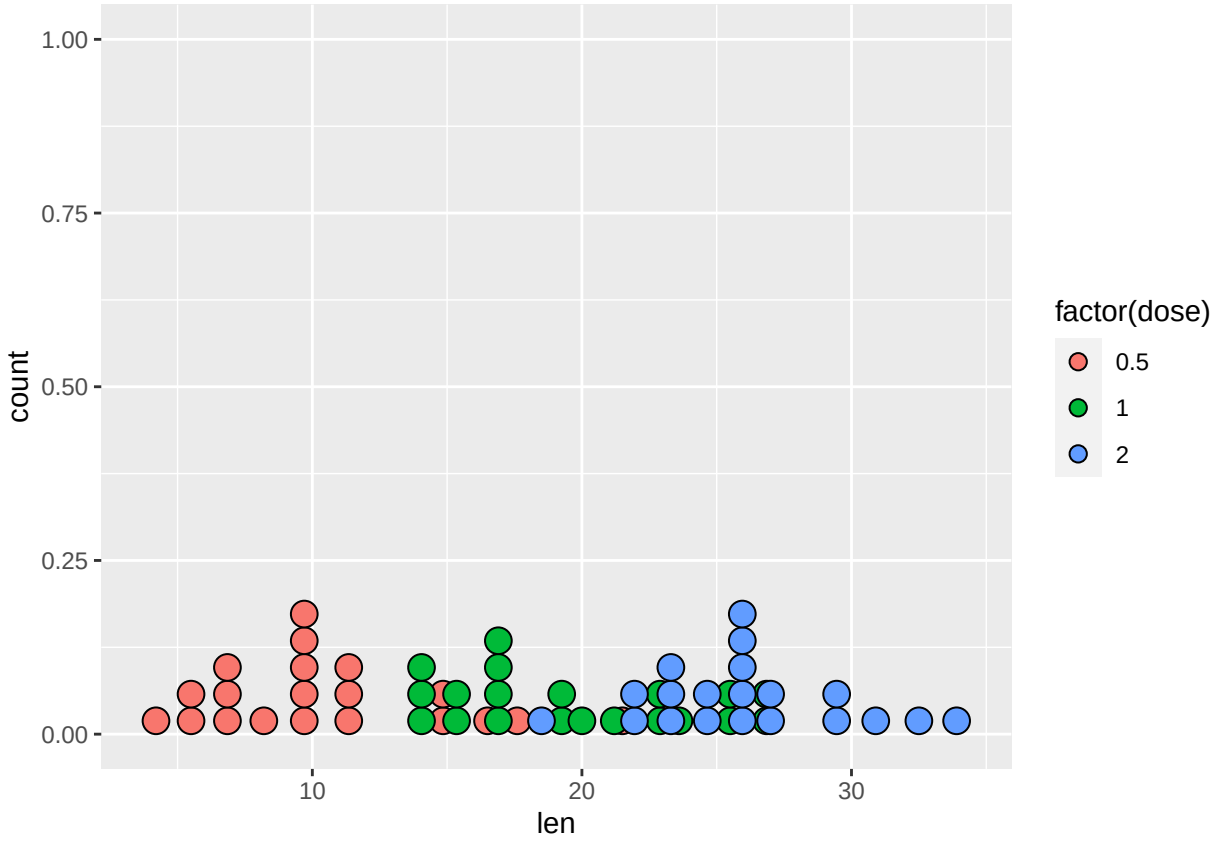



```
#3
supp.labs <- c("Orange Juice", "Vitamin C")
names(supp.labs) <- c("OJ", "VC")
ggplot(data, aes(x = supp, y = len, fill = factor(dose)))+
  geom_boxplot()+
  facet_wrap(~ supp, scales = "free",labeller = labeller(supp = supp.labs))+
  theme(
    strip.text.x = element_text(
    size = 12, color = "blue", face = "bold.italic"))+
  labs(title = "Tooth Length vs Dose Levels: \n Comparison by supplement type",
       x = "Dose in Millileter", y = "Tooth length")
```




```
#4
ggplot(data, aes(x = len,  fill = factor(dose)))+
  geom_dotplot()
```

```
## Bin width defaults to 1/30 of the range of the data. Pick better value with
## `binwidth`.
```




```
#5
# install.packages("corrplot")
library(corrplot)
```

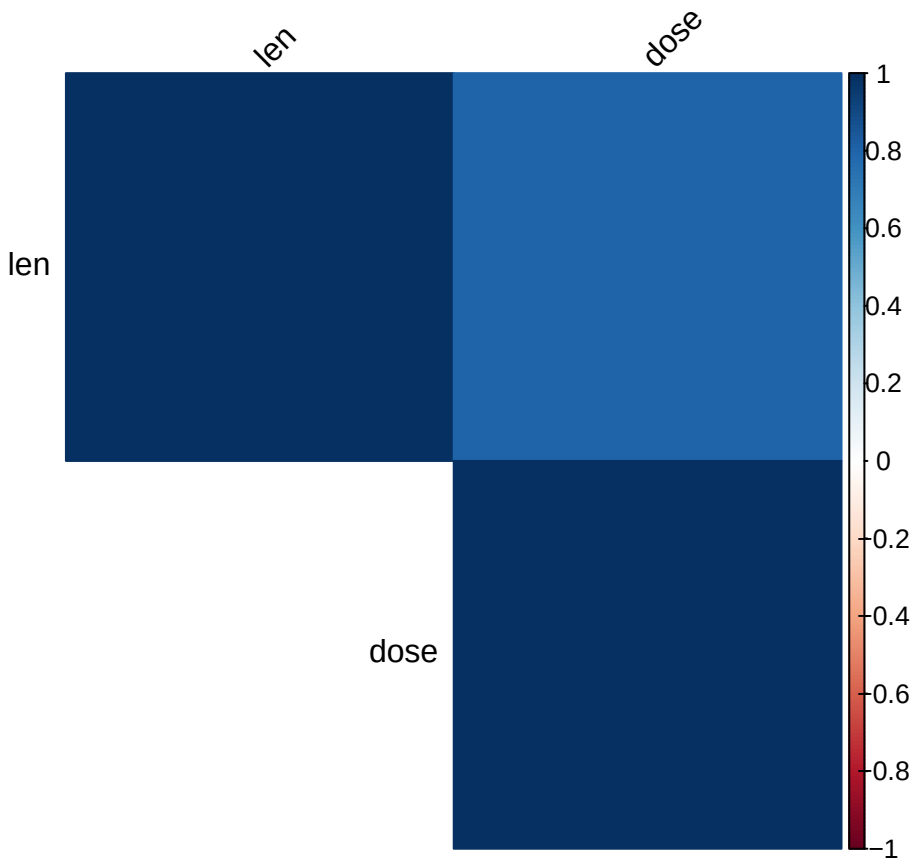
```
## Warning: package 'corrplot' was built under R version 4.3.2
```

```
## corrplot 0.92 loaded
```

```
help(corrplot)
```

```
## starting httpd help server ... done
```

```
cor_matrix <- cor(data[, c("len", "dose")])
corrplot(cor_matrix, method = "color", type = "upper", tl.col = "black", tl.srt = 45)
```


len
dose
len
dose
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1