```
beav=read.table('beavers.tab',header=T)
head(beav)
```

```
##   beaver day1 day2 day3 day4  loc
## 1     b1    2    4    0    6 loc1
## 2     b1    1    6    1    2 loc2
## 3     b1    3    5    1    2 loc3
## 4     b2    5    6    8    9 loc1
## 5     b2    7    5    6    4 loc2
## 6     b2    3    4    9    2 loc3
```

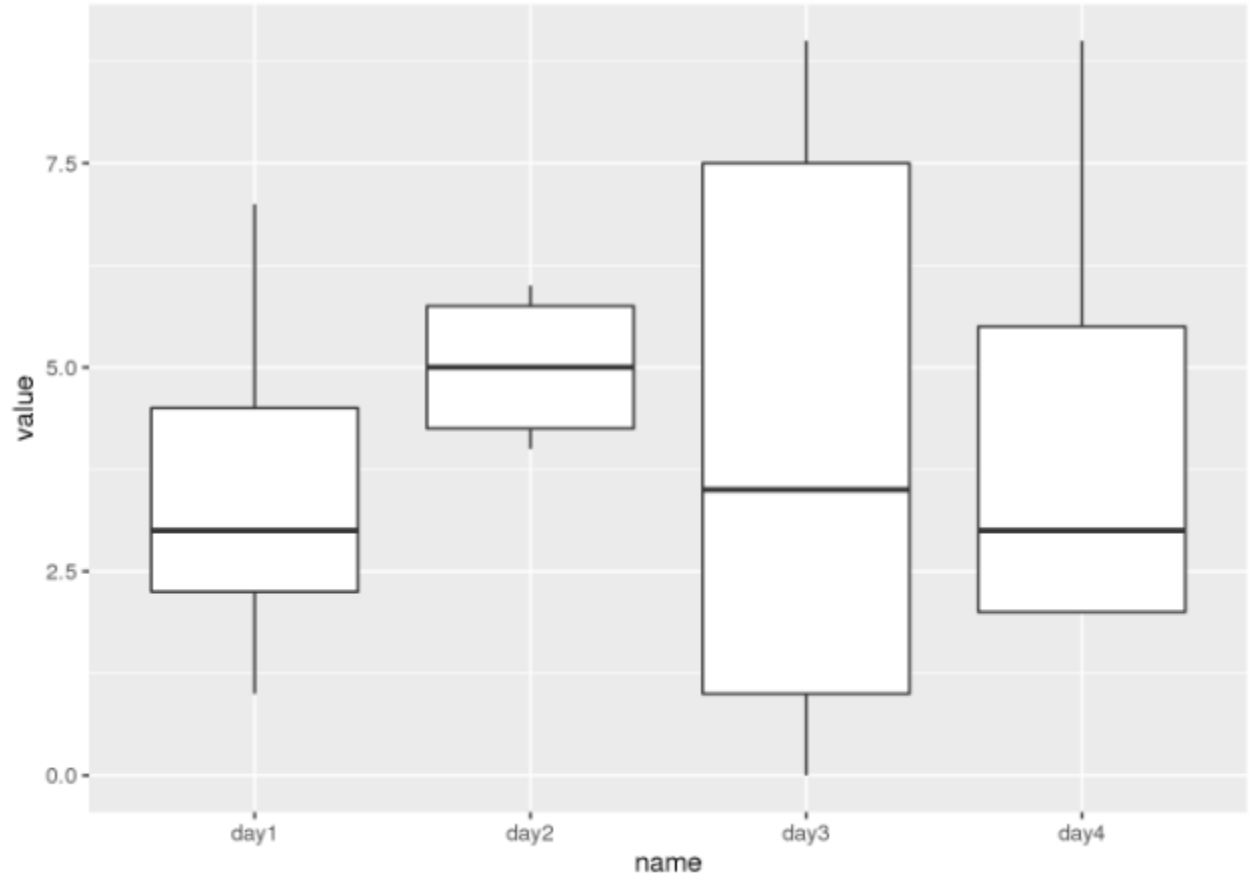
```r
beav_longer <- beav %>%
  pivot_longer(cols = starts_with("day"))
head(beav_longer)
```

```
## # A tibble: 6 x 4
##   beaver loc   name  value
##   <fct>  <fct> <chr> <int>
## 1 b1     loc1  day1      2
## 2 b1     loc1  day2      4
## 3 b1     loc1  day3      0
## 4 b1     loc1  day4      6
## 5 b1     loc2  day1      1
## 6 b1     loc2  day2      6
```

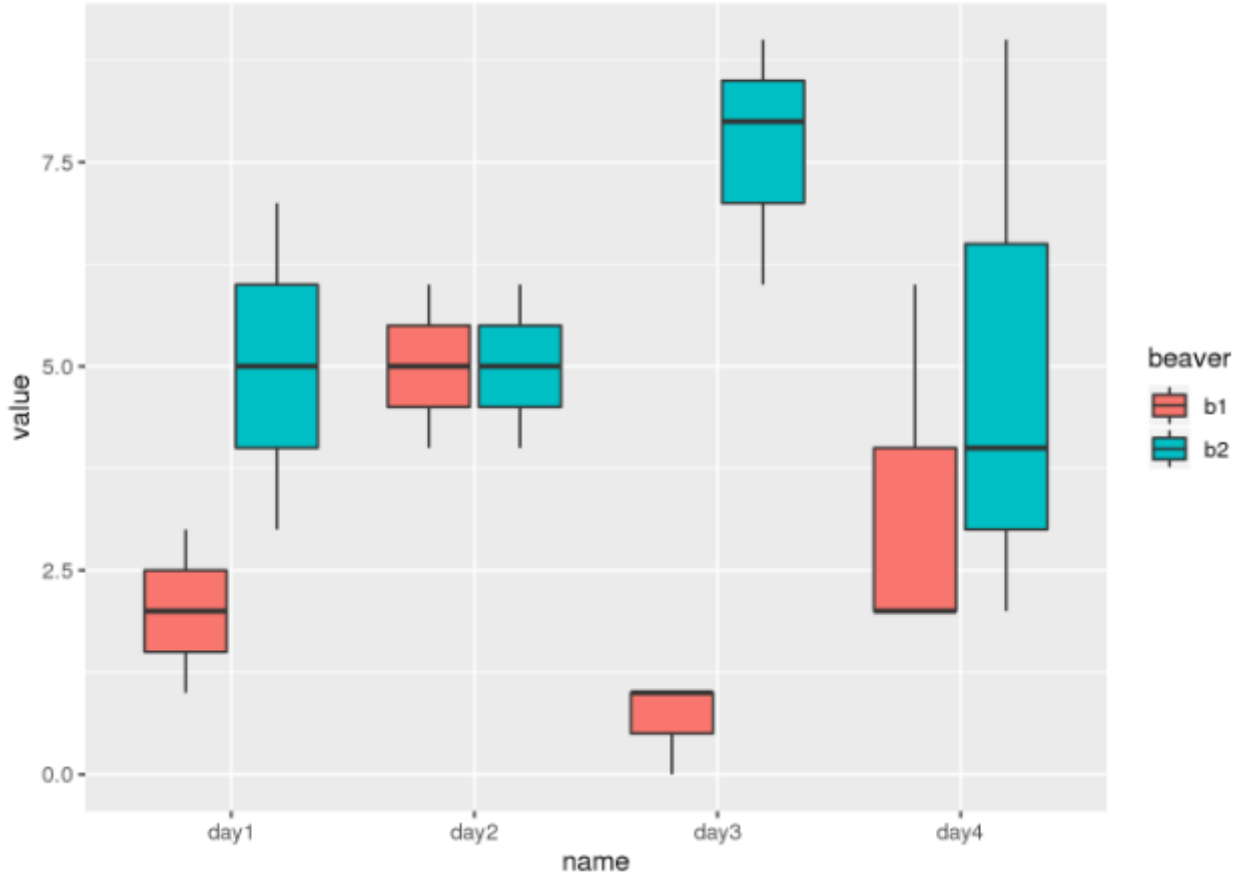
```
beav_wide <- beav_longer %>%
  pivot_wider(names_from = name, values_from = value)
head(beav_wide)
```

```
## # A tibble: 6 x 6
##   beaver loc    day1  day2  day3  day4
##   <fct>  <fct> <int> <int> <int> <int>
## 1 b1     loc1      2     4     0     6
## 2 b1     loc2      1     6     1     2
## 3 b1     loc3      3     5     1     2
## 4 b2     loc1      5     6     8     9
## 5 b2     loc2      7     5     6     4
## 6 b2     loc3      3     4     9     2
```

```
p<- ggplot(beav_longer, aes(x = name, y = value))
p + geom_boxplot()
```



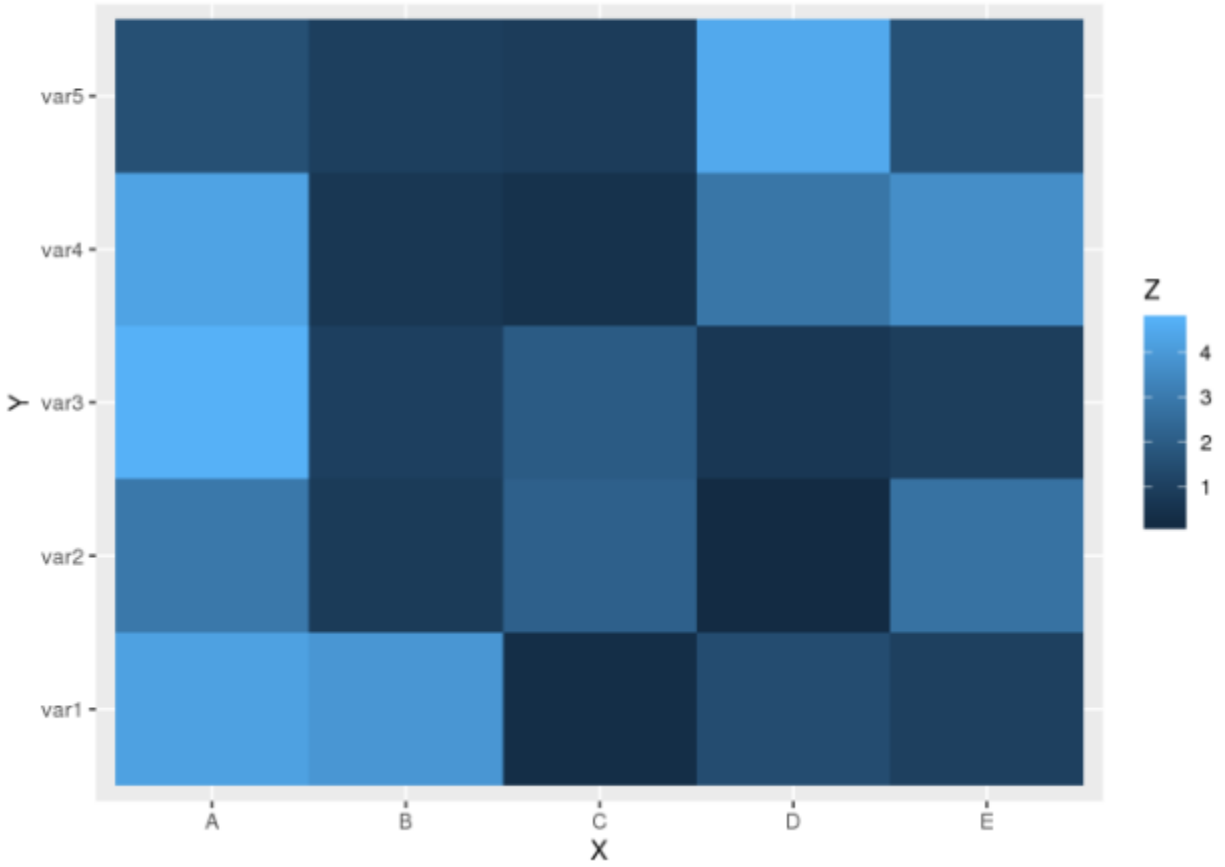
```
p<- ggplot(beav_longer, aes(x = name, y = value))
p + geom_boxplot(aes(fill=beaver))
```



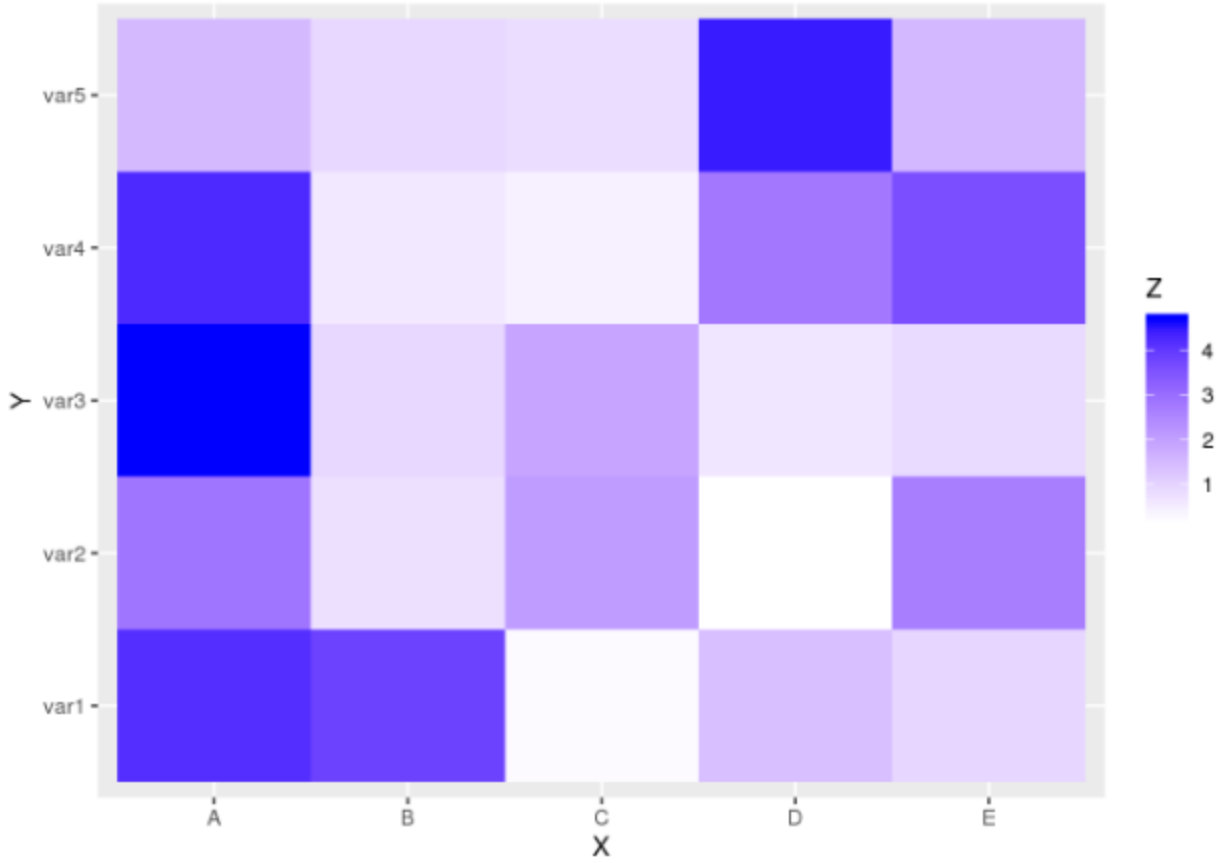
https://www.r-graph-gallery.com/index.html

```r
x <- LETTERS[1:5]
y <- paste0("var", seq(1,5))
data <- expand.grid(X=x, Y=y)
data$Z <- runif(25, 0, 5)
```

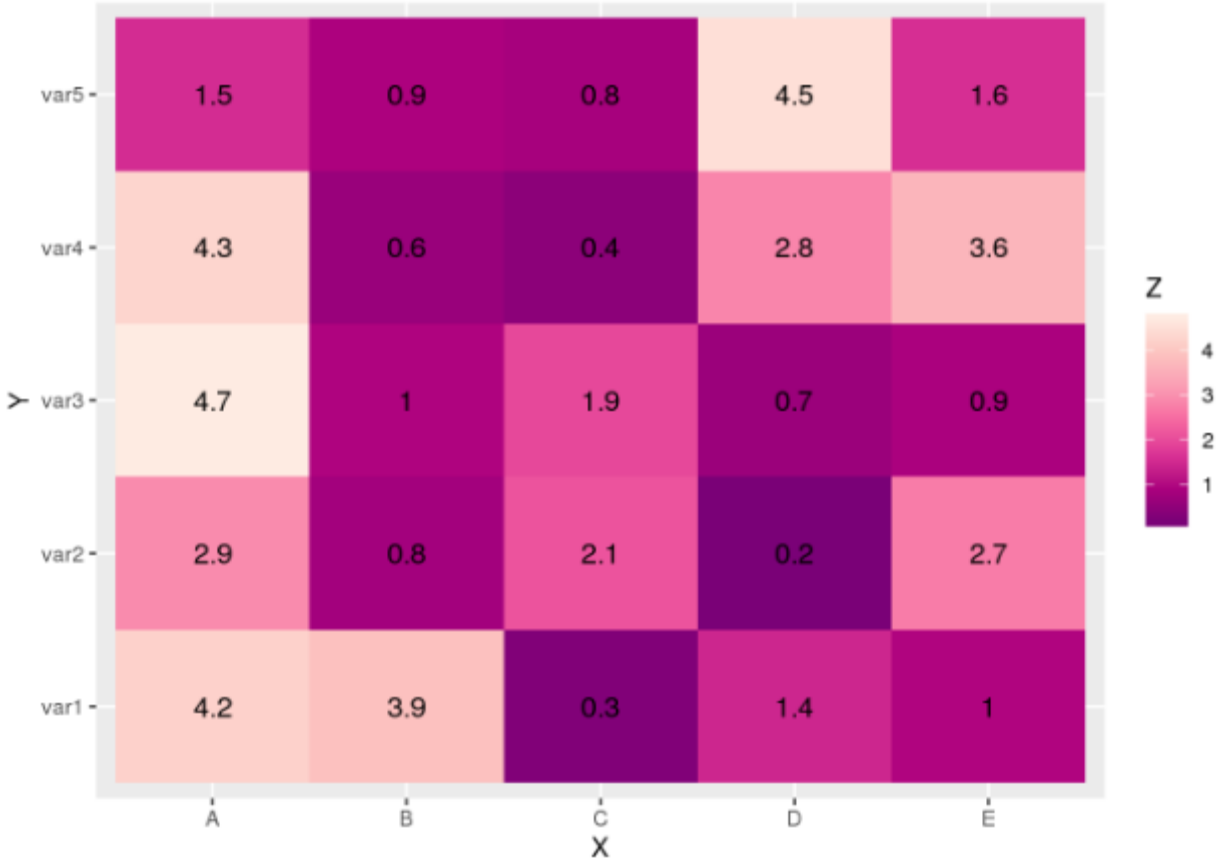
```
ggplot(data, aes(X, Y, fill= Z)) +
  geom_tile()
```



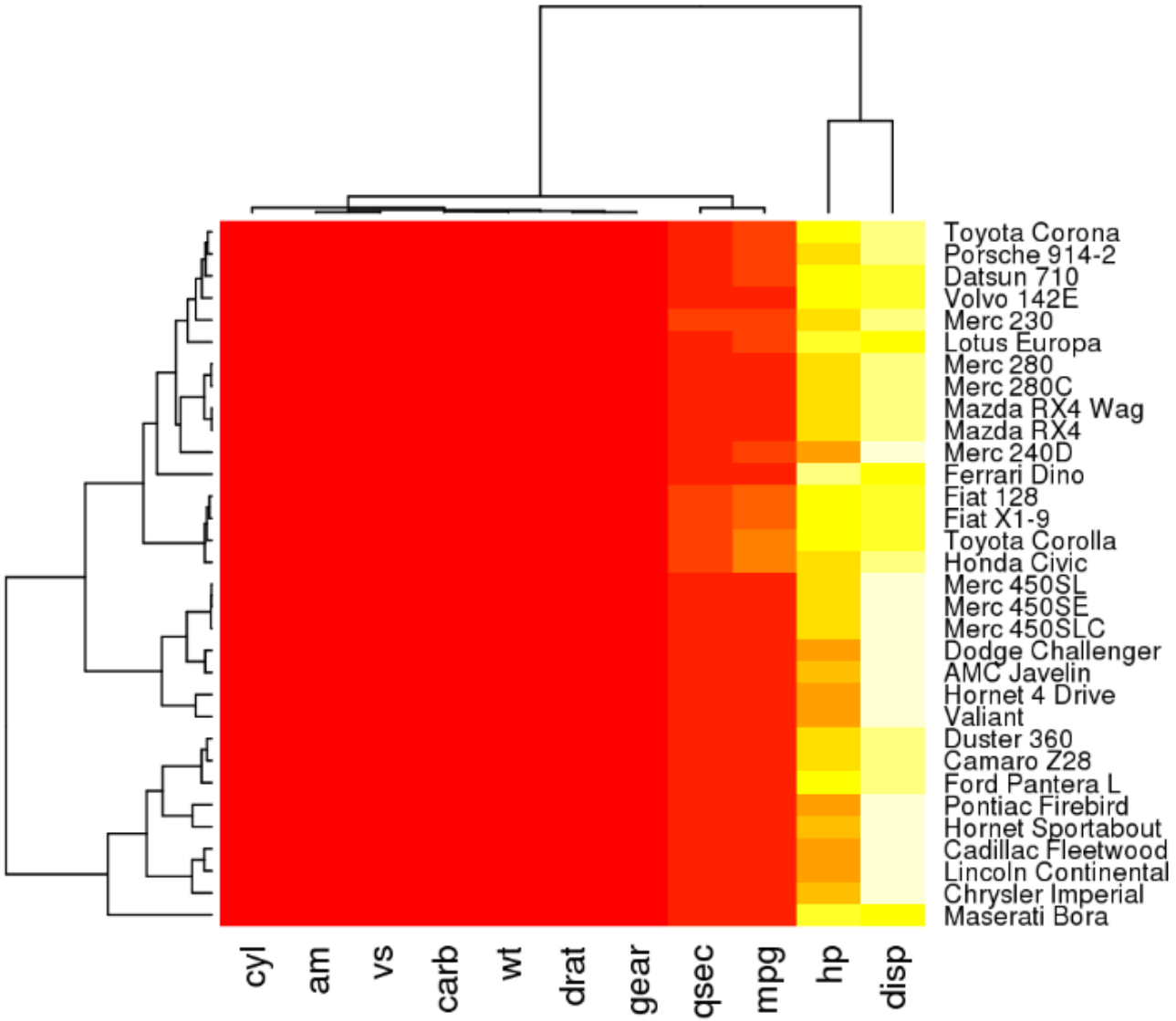
```
ggplot(data, aes(X, Y, fill= Z)) +
  geom_tile() +
  scale_fill_gradient(low="white", high="blue")
```



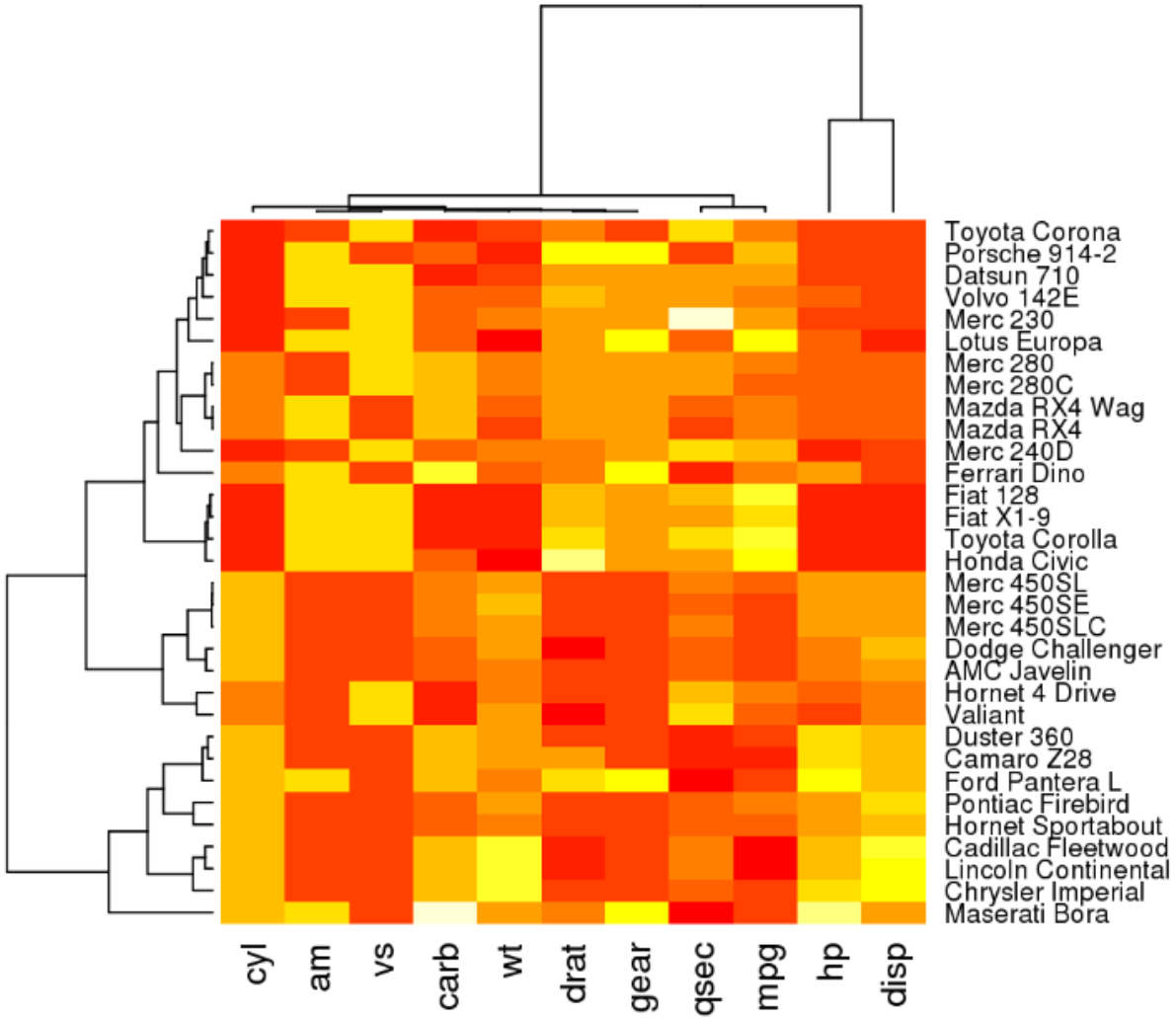
```
ggplot(data, aes(X, Y, fill= Z)) +
  geom_tile() +
  geom_text(aes(label = round(Z,1)), color = "blac
k", size = 4) +
  scale_fill_distiller(palette = "RdPu")
```



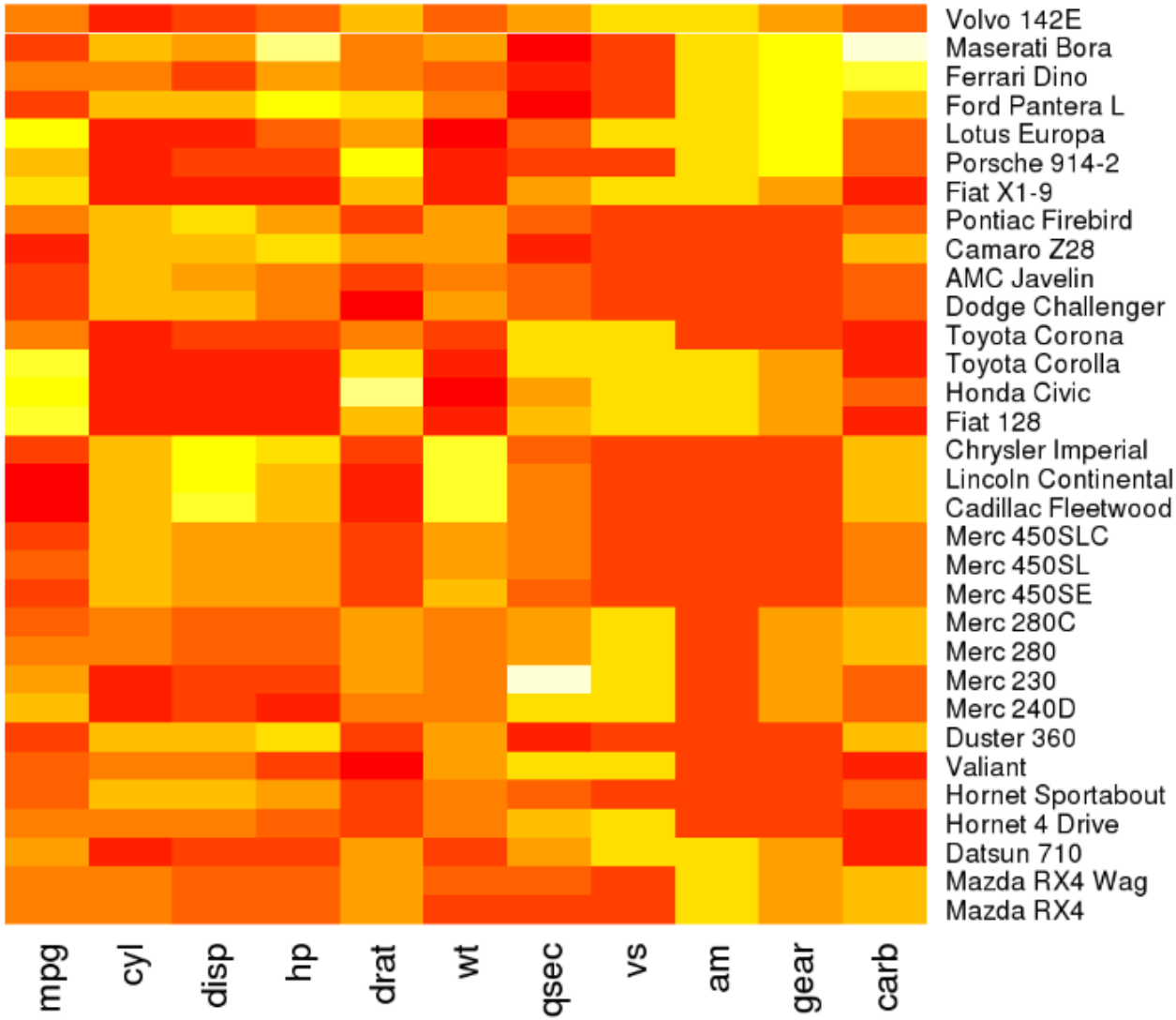
```
data <- as.matrix(mtcars)
heatmap(data)
```



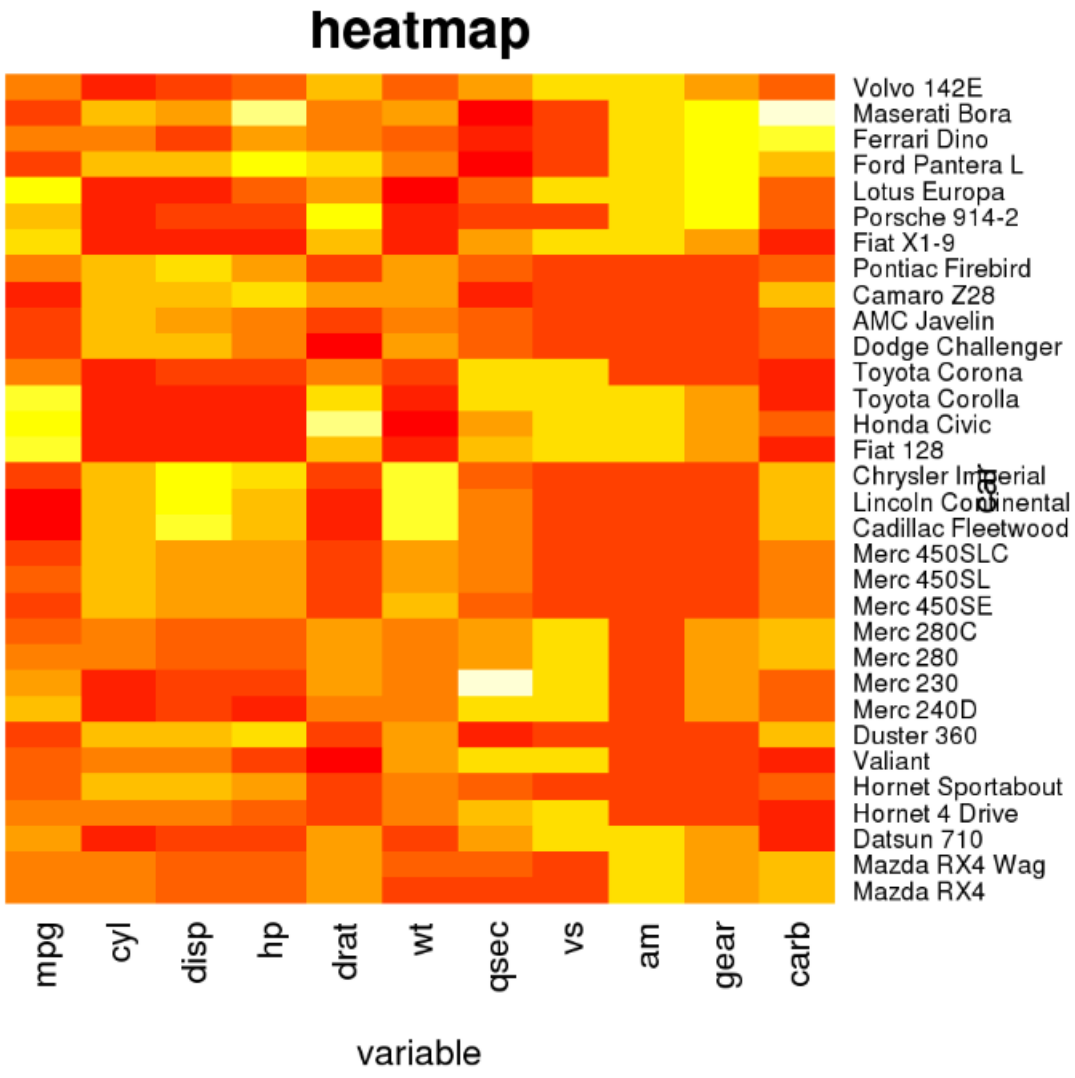
```
heatmap(data, scale="column")
```



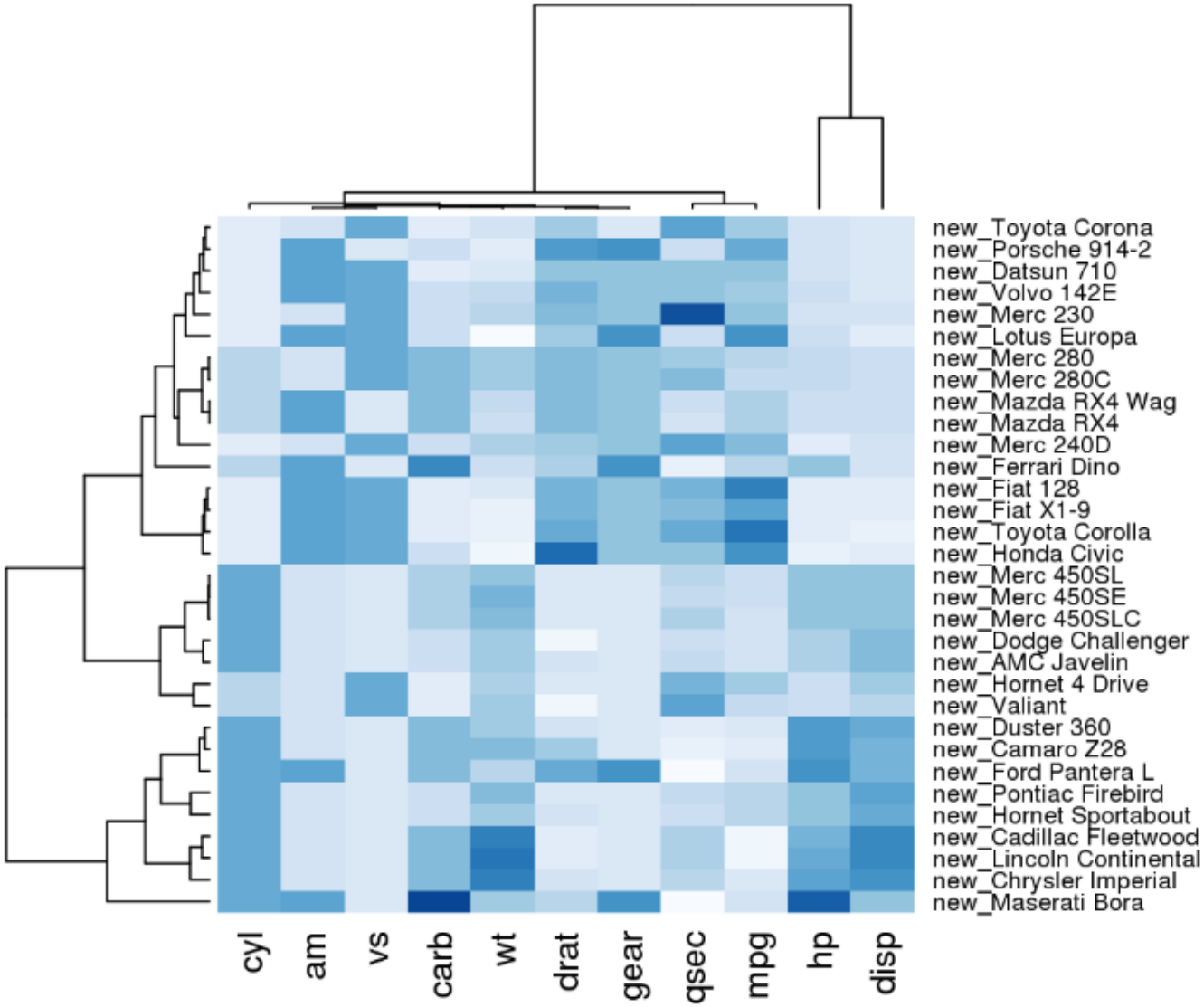
```
heatmap(data, Colv = NA, Rowv = NA, scale="column")
```



```
heatmap(data, Colv = NA, Rowv = NA, scale="column", xlab="variable", ylab="car",
main="heatmap")
```

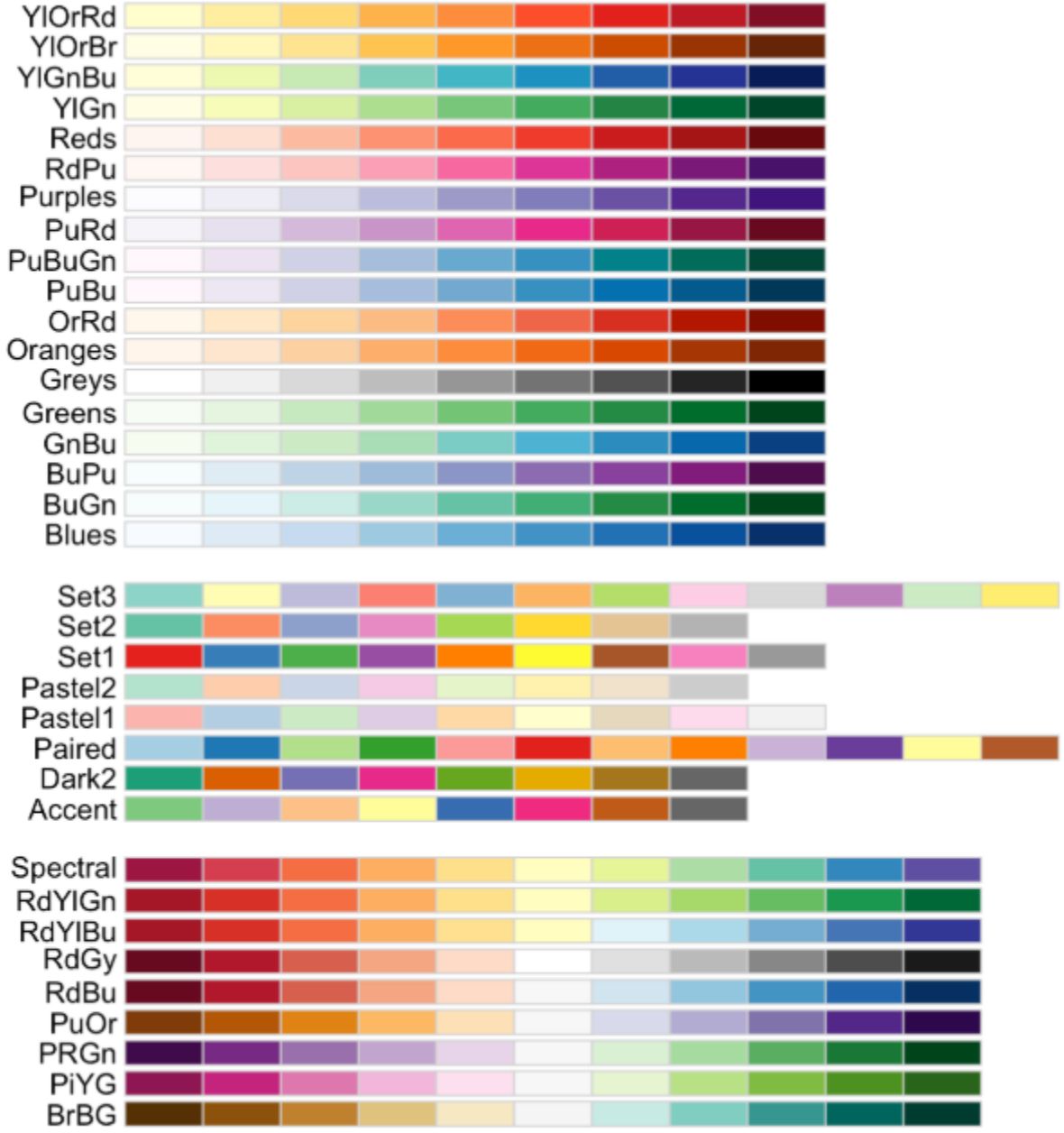


```
library(RColorBrewer)
heatmap(data, scale="column", cexRow=0.8, labRow=paste("new_", rownames(data),
sep=""), col= colorRampPalette(brewer.pal(8, "Blues"))(25))
```



```
col= colorRampPalette(brewer.pal(8, "Blues"))(25)
col
```

```
##  [1] "#F7FBFF" "#EFF6FC" "#E8F1FA" "#E1ECF8" "#DAE8F5" "#D3E3F3" "#CCDEF1"
##  [8] "#C4DAEE" "#B8D5EA" "#ADD0E6" "#A1CBE2" "#93C4DE" "#84BBDB" "#75B3D8"
## [15] "#67ABD4" "#5BA3D0" "#4F9BCB" "#4393C6" "#3989C1" "#3080BC" "#2676B7"
## [22] "#1D6BB0" "#165EA7" "#0F519D" "#084594"
```


YlOrRd
YlOrBr
YlGnBu
YlGn
Reds
RdPu
Purples
PuRd
PuBuGn
PuBu
OrRd
Oranges
Greys
Greens
GnBu
BuPu
BuGn
Blues
Set3
Set2
Set1
Pastel2
Pastel1
Paired
Dark2
Accent
Spectral
RdYlGn
RdYlBu
RdGy
RdBu
PuOr
PRGn
PiYG
BrBG

```
my_group <- as.numeric(as.factor(substr(rownames(data), 1 , 1)))
colSide <- brewer.pal(9, "Set1")[my_group]
colMain <- colorRampPalette(brewer.pal(8, "Blues"))(25)
heatmap(data, Colv = NA, Rowv = NA, scale="column" , RowSideColors=colSide,
col=colMain)
```