Visualization with Base Plot

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Visualization using base R

- Use mtcars dataset and other simple generated data

Outline

- Boxplot
- Barplot
- Regression plot
- color palettes in R
- par function
- Examples of other plots

Boxplot

```
head(mtcars)
```

```
##                    mpg cyl disp  hp drat    wt  qsec vs am gear carb
## Mazda RX4         21.0   6  160 110 3.90 2.620 16.46  0  1    4    4
## Mazda RX4 Wag     21.0   6  160 110 3.90 2.875 17.02  0  1    4    4
## Datsun 710        22.8   4  108  93 3.85 2.320 18.61  1  1    4    1
## Hornet 4 Drive    21.4   6  258 110 3.08 3.215 19.44  1  0    3    1
## Hornet Sportabout 18.7   8  360 175 3.15 3.440 17.02  0  0    3    2
## Valiant           18.1   6  225 105 2.76 3.460 20.22  1  0    3    1
```

```
mtcars$carb <- as.character(mtcars$carb)
```

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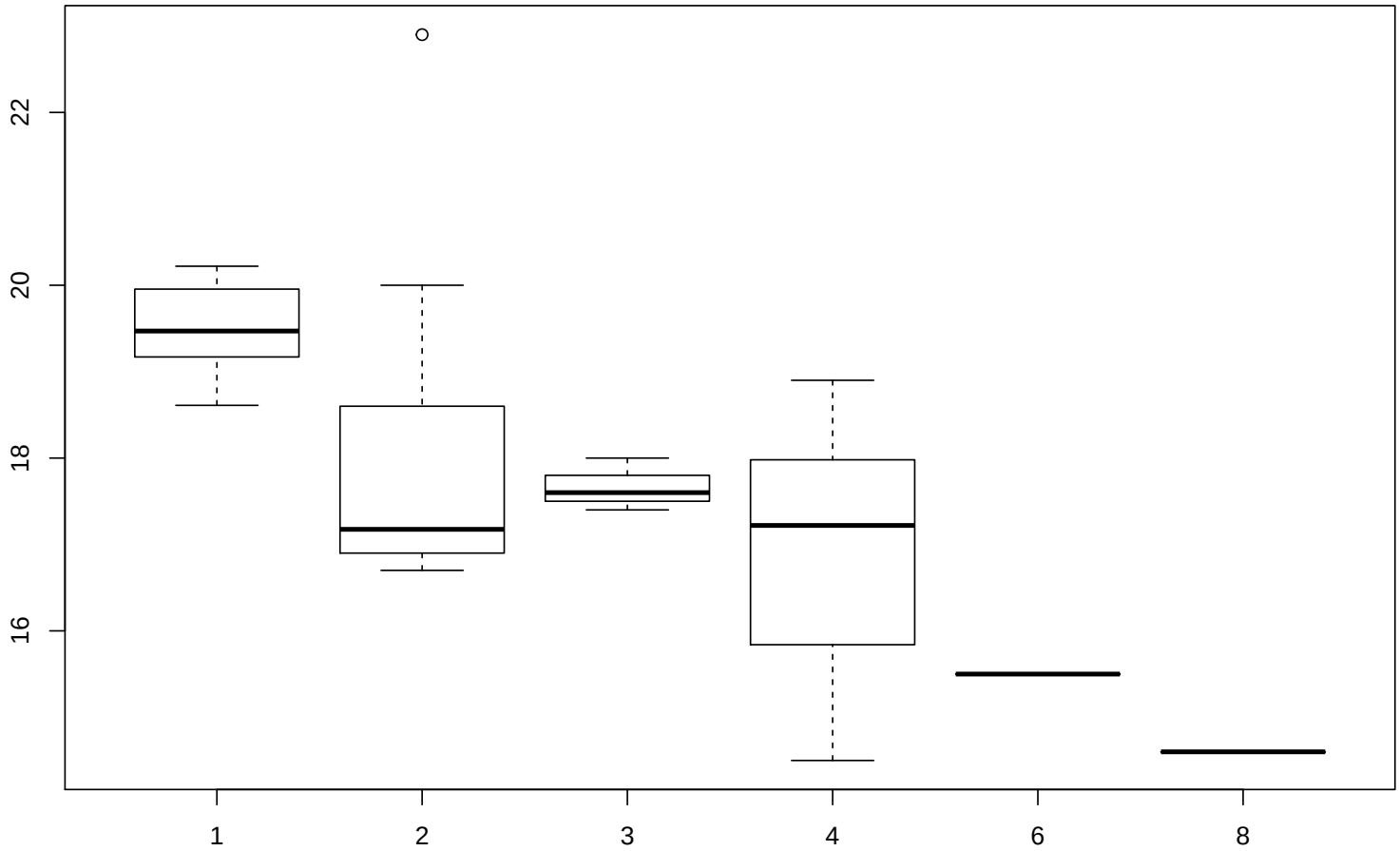
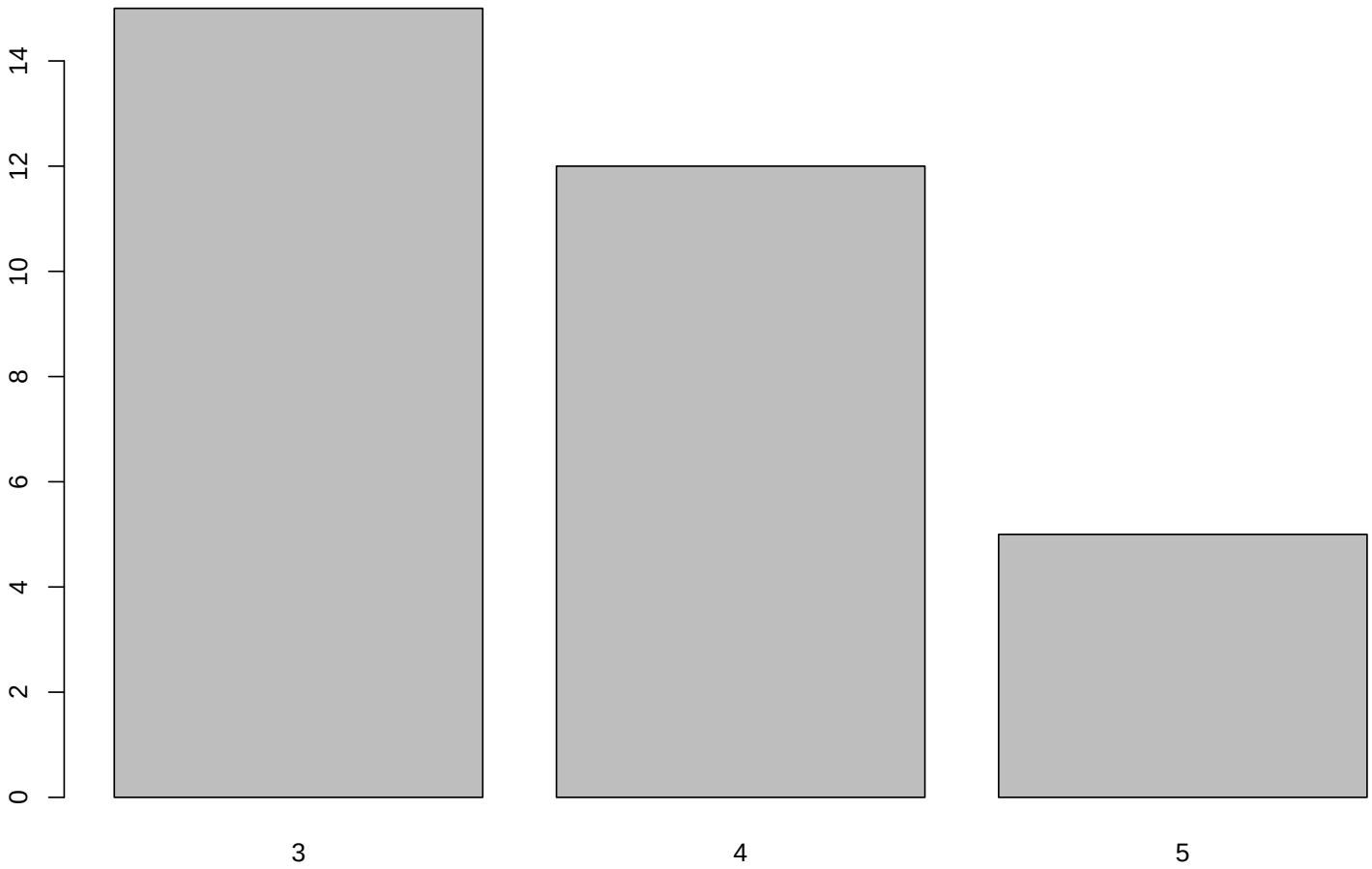
```
boxplot(qsec~carb,data=mtcars)
```



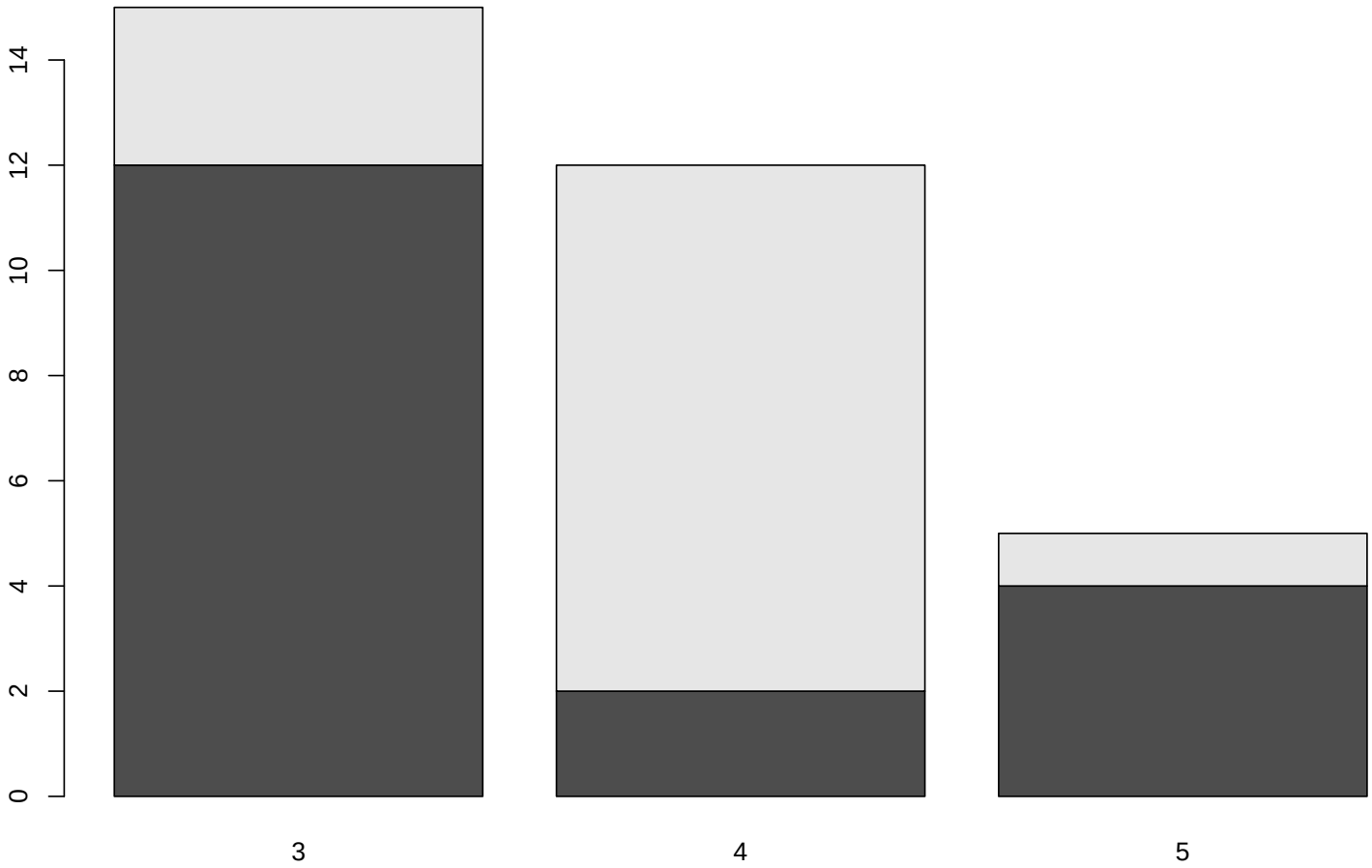
Barplot

```
counts <- table(mtcars$gear) #kalkulasi jumlah count masing2 gear
barplot(counts)
```



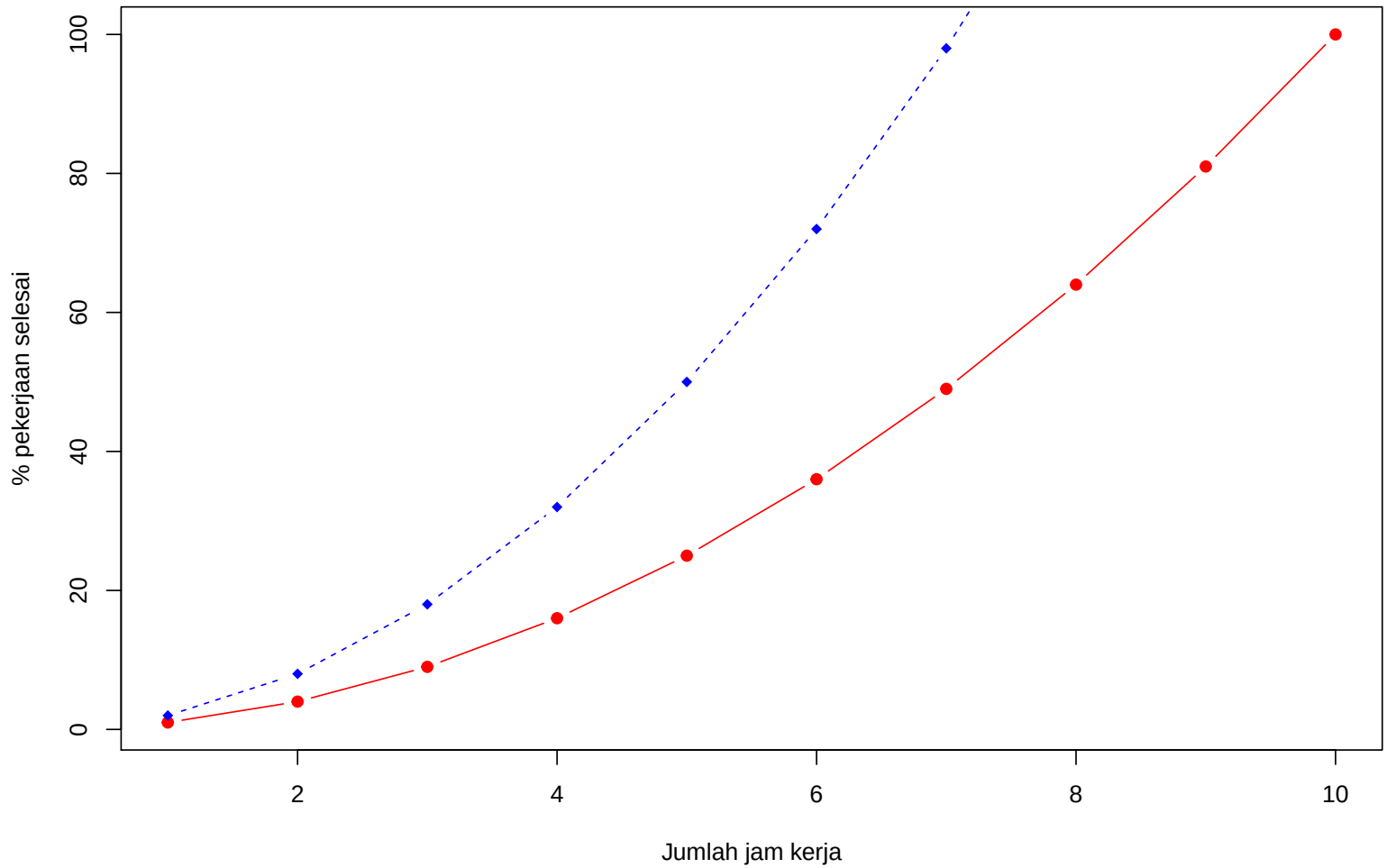
Stacked barplot

```
counts <- table(mtcars$vs, mtcars$gear)
barplot(counts)
```



Linear regression

```
x<-1:10; y1=x*x; y2=2*y1
plot(x, y1, type="b", pch=19, col="red", xlab="Jumlah jam kerja", ylab="% pekerjaan selesai")
# Add a line
lines(x, y2, pch=18, col="blue", type="b", lty=2)
```

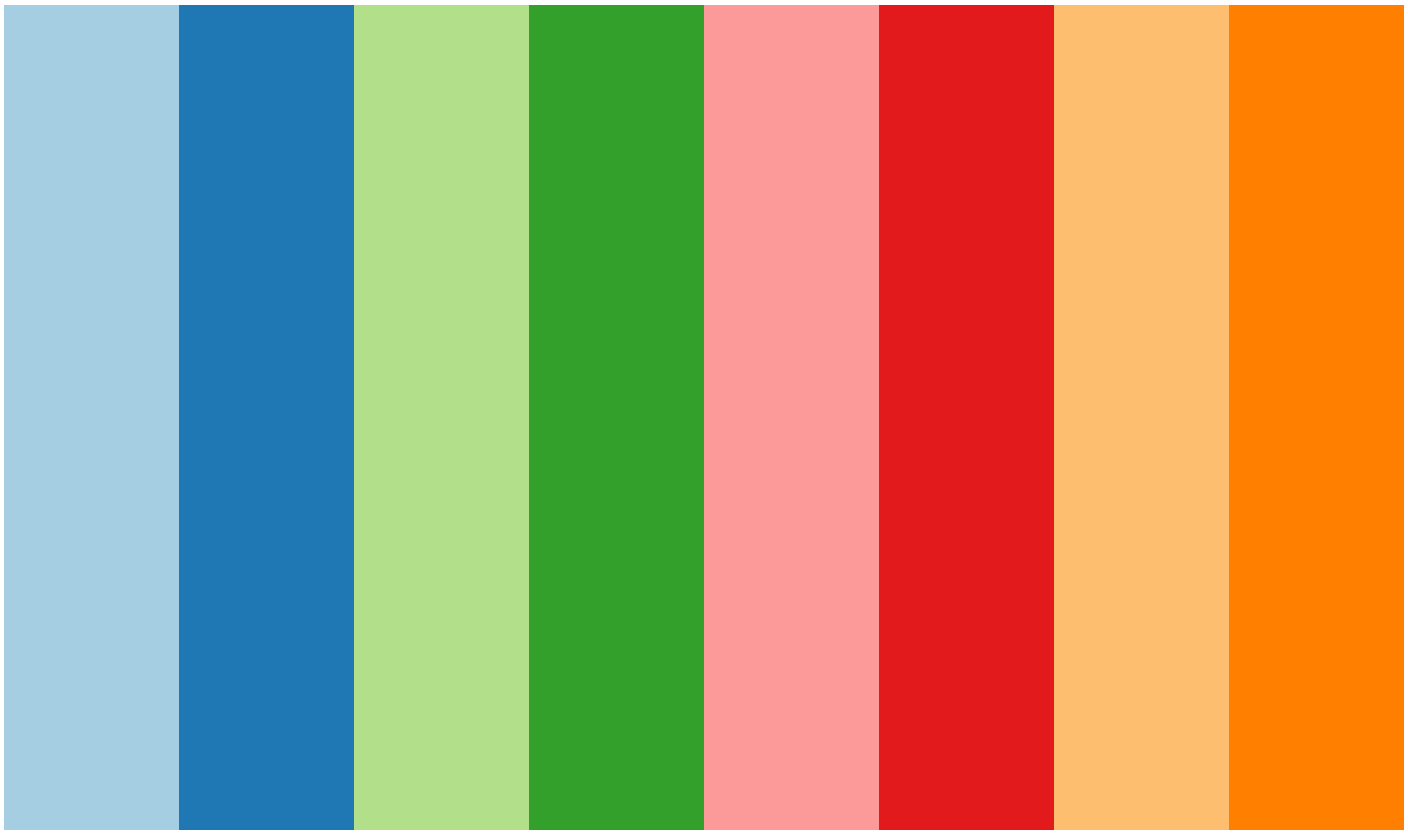


Color palettes

```
library(RColorBrewer)
```

```
## Warning: package 'RColorBrewer' was built under R version 3.5.2
```

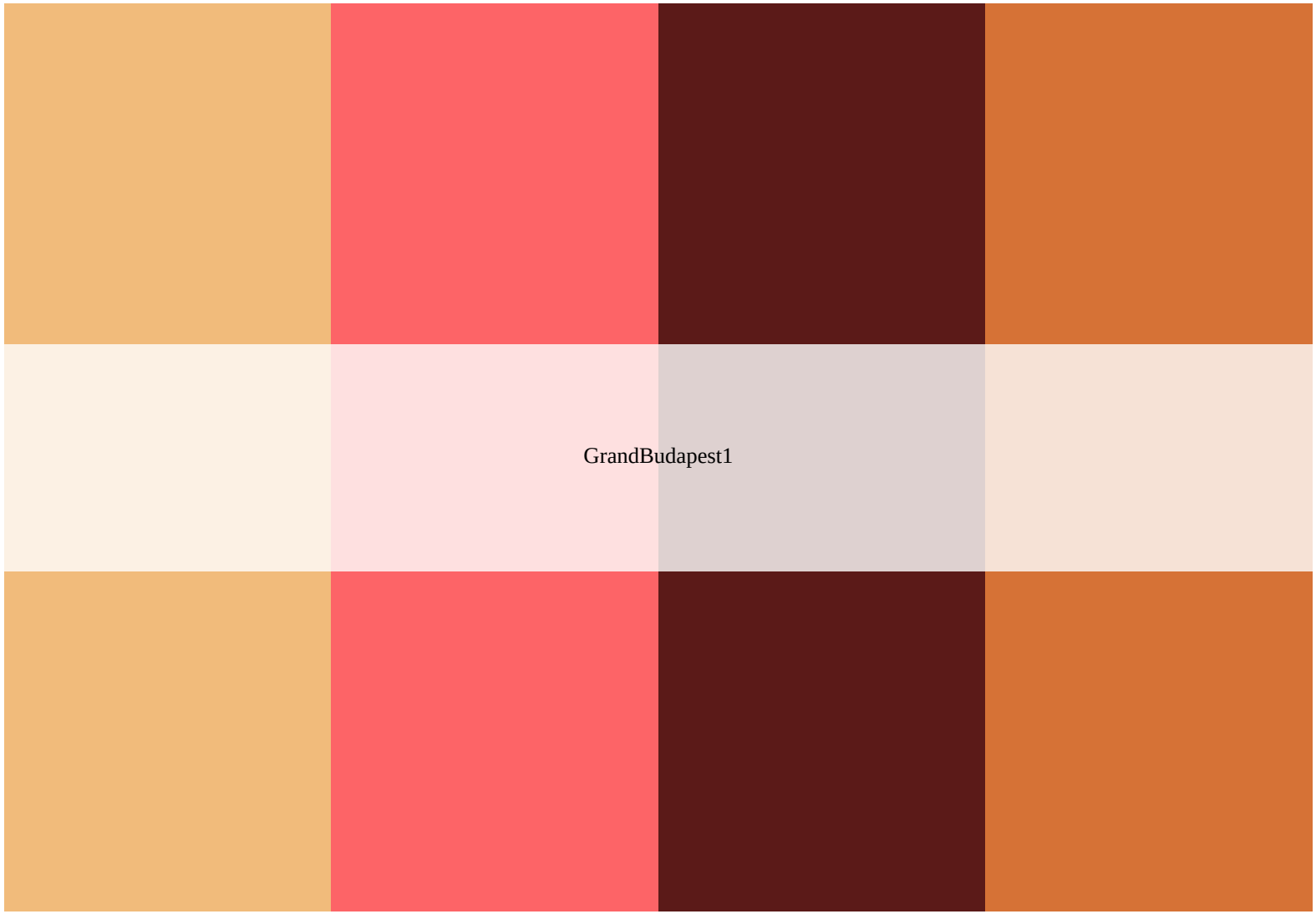
```
display.brewer.pal(n = 8, name = 'Paired')
```



```
library(wesanderson)
```

```
## Warning: package 'wesanderson' was built under R version 3.5.3
```

```
wes_palette("GrandBudapest1", n = 4)
```



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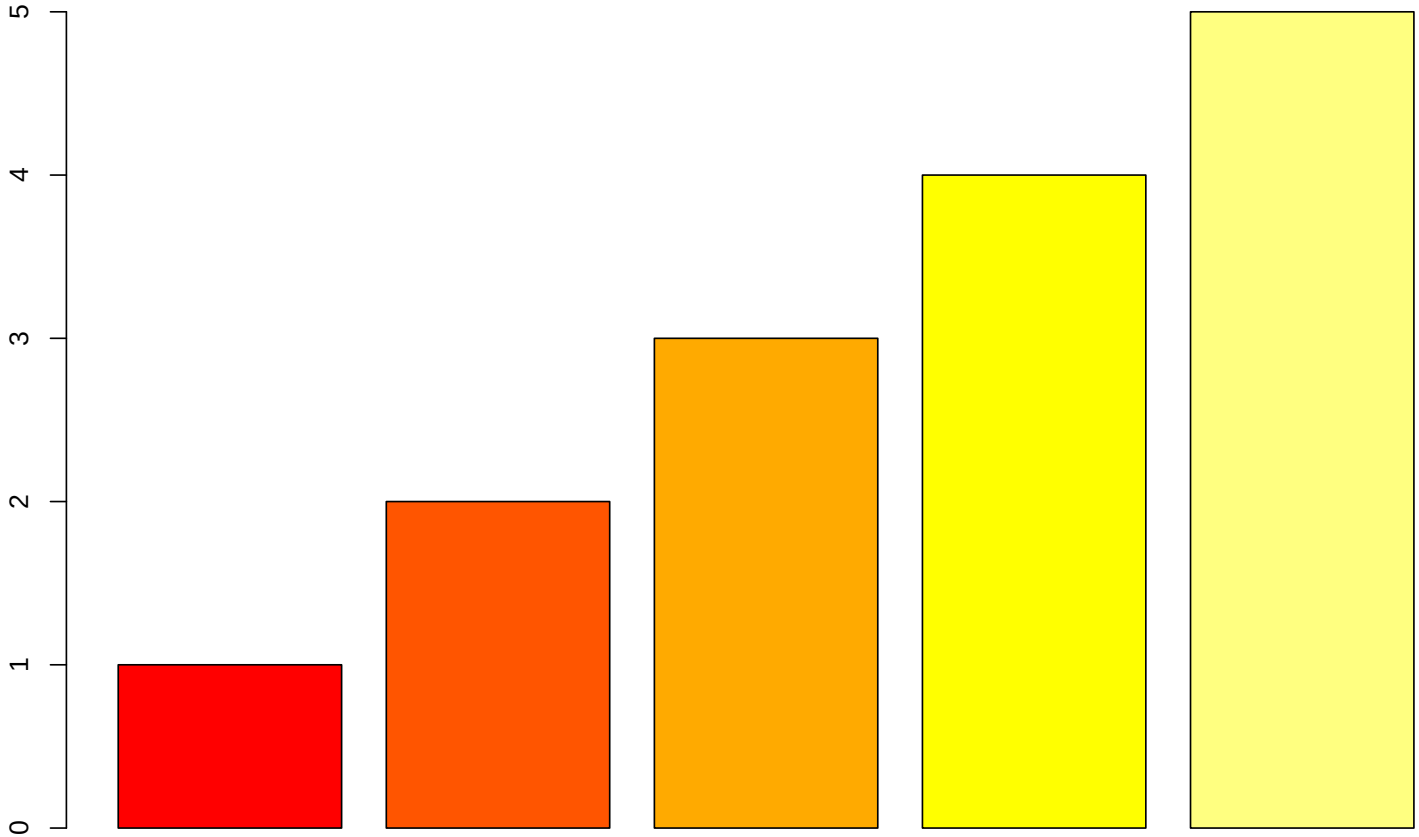
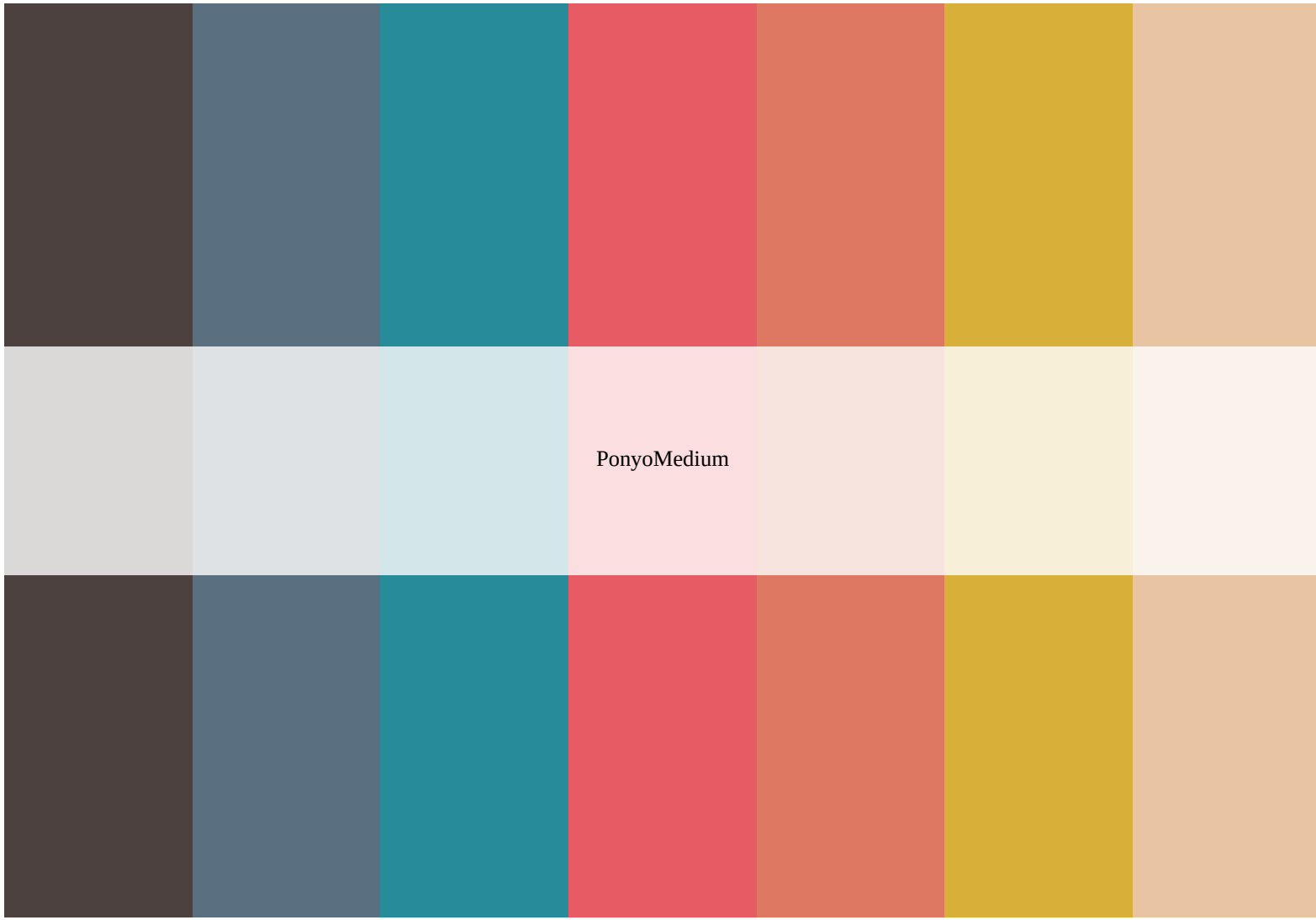
```
barplot(1:5, col=heat.colors(5))
```



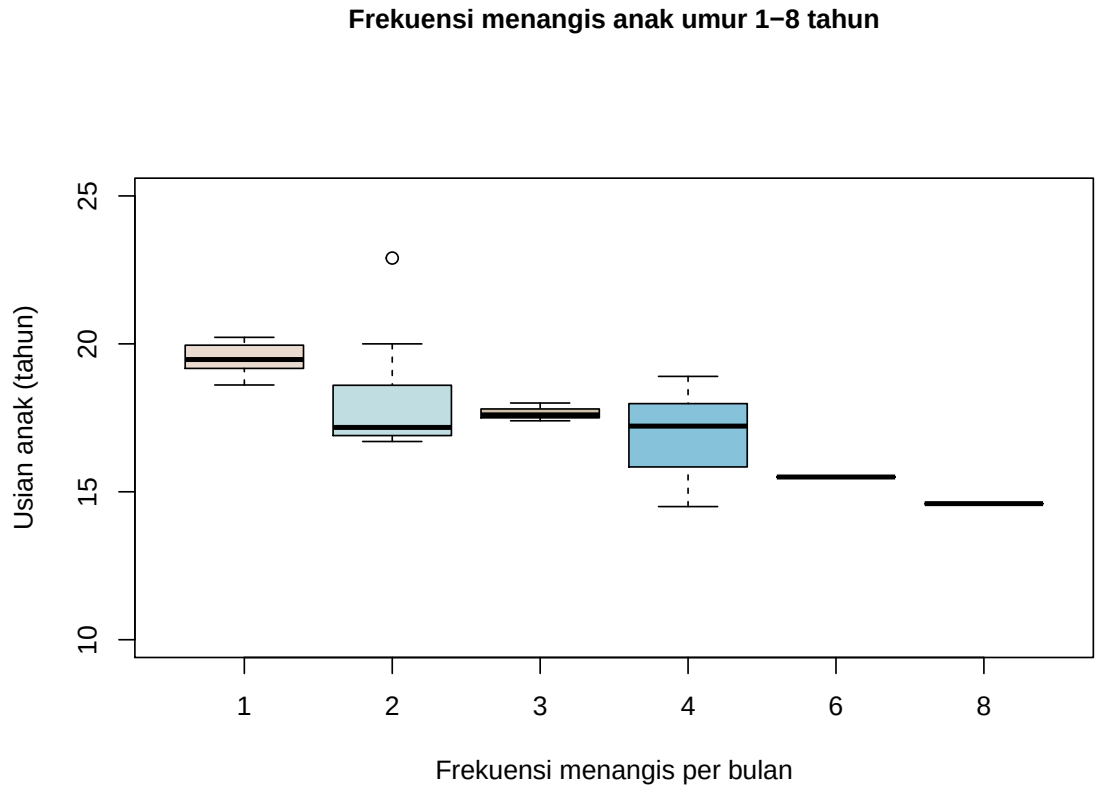
```
library(ghibli)
```

```
## Warning: package 'ghibli' was built under R version 3.5.3
```

```
ghibli_palette("PonyoMedium", direction = 1, type = "continuous")
```



```
par(mar=c(10,10,10,10))
boxplot(qsec~carb,data=mtcars, #ganti rentang y atau x limit
        main = "Frekuensi menangis anak umur 1-8 tahun",
        ylab="Usian anak (tahun)", xlab="Frekuensi menangis per bulan",
        cex.main = "1", cex.axis="1",
        ylim=c(10,25), col=ghibli_palette("KikiLight", direction = -1, type = "continuous"))
```



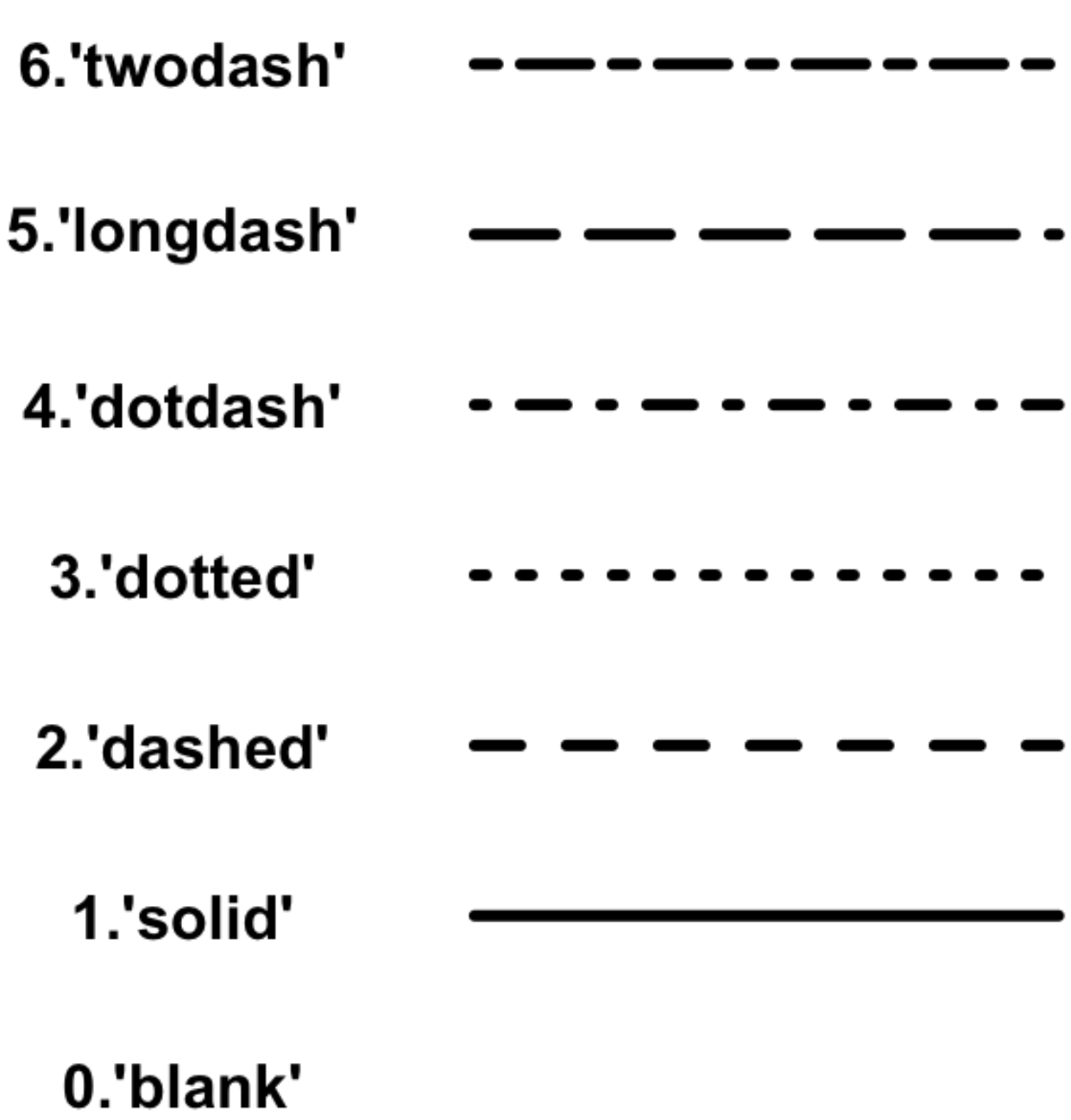


Figure 1: Line types

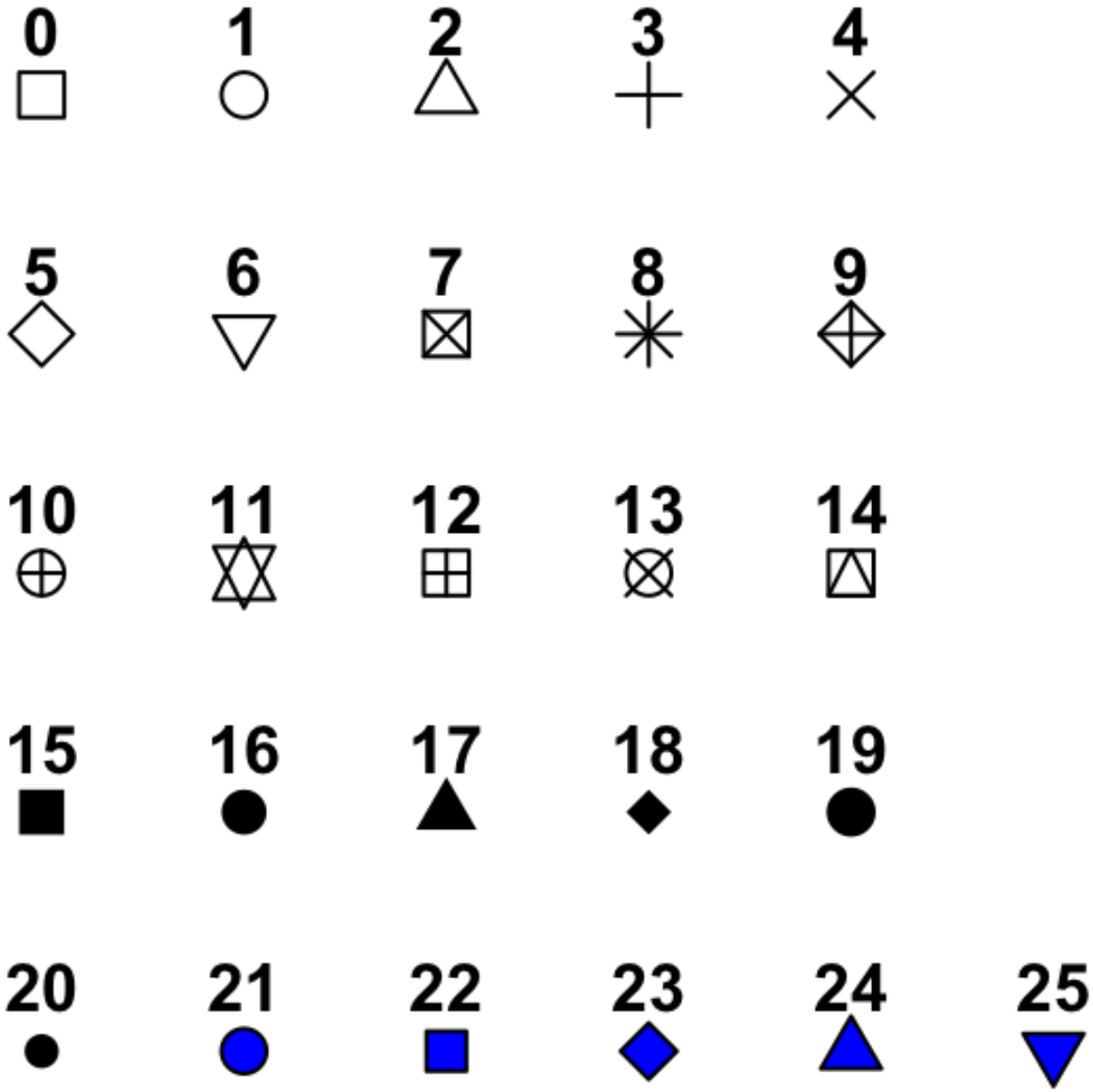
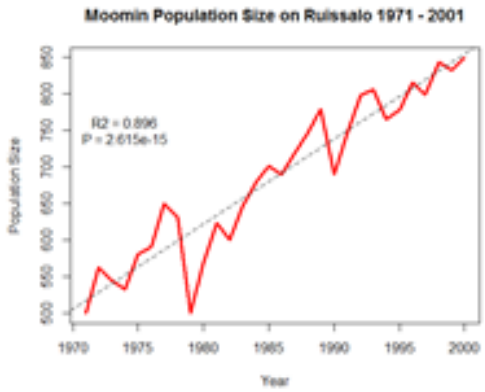


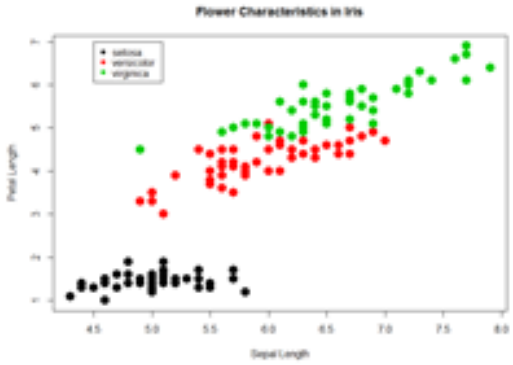
Figure 2: pch types

R Graph Gallery

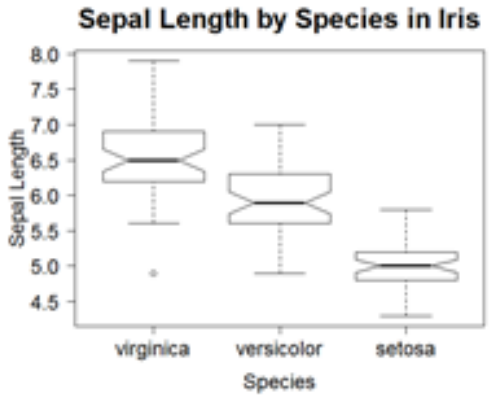
1. Basic Histogram



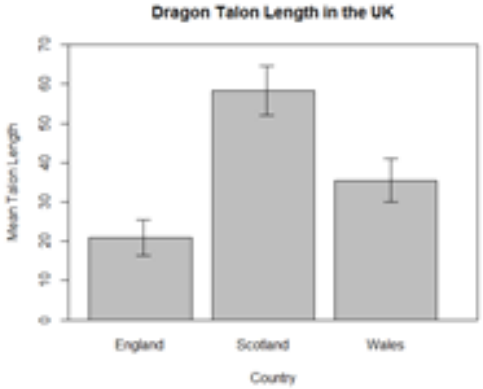
2. Line Graph with Regression



3. Scatterplot with Legend



4. Boxplot with reordered/ formatted axes



5. Boxplot with Error Bars

Figure 3: Other figures

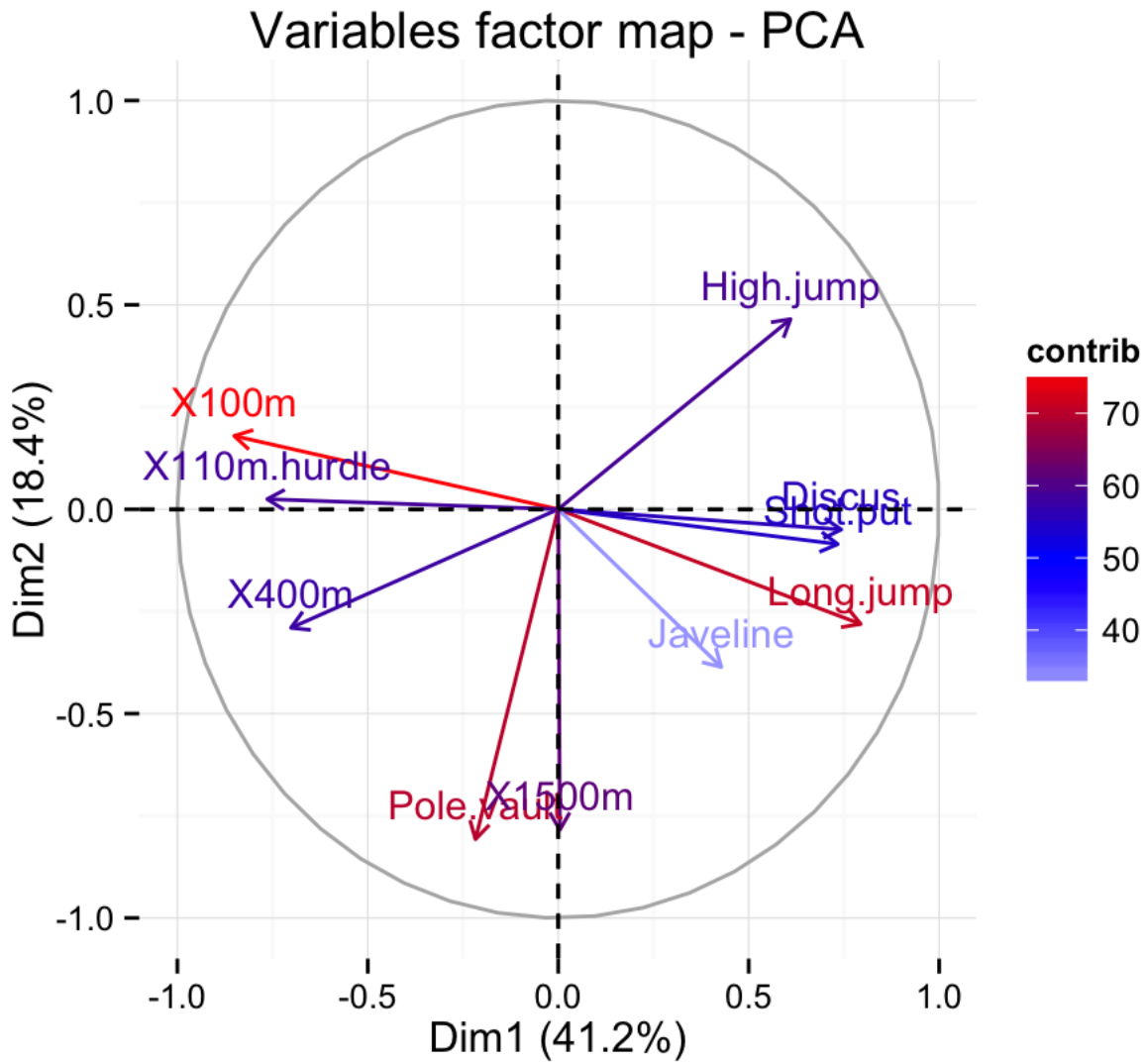


Figure 4: Other figures

Tugas!

- gunakan data mtcars

```
head(mtcars)
```

```
##                   mpg cyl disp  hp drat    wt  qsec vs am gear carb
## Mazda RX4         21.0   6  160 110 3.90 2.620 16.46  0  1    4    4
## Mazda RX4 Wag     21.0   6  160 110 3.90 2.875 17.02  0  1    4    4
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## Valiant           18.1   6  225 105 2.76 3.460 20.22  1  0    3    1
```

Tugas

- anggap cyl = jumlah jam commute, dan disp = tingkat stress
- jadikan cyl = as.character
- buatlah plot berukuran 1 baris, 3 kolom
- gambar 1 = boxplot tingkat stress untuk tiap jumlah jam commute, warna dasar R
- gambar 2 = boxplot tingkat stress untuk tiap jumlah jam commute, warna RColorBrewer
- gambar 3 = terserah (bisa gunakan dataset lain)