

Einführung in die Datenanalyse mit R - ggplot2

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Das Paket ggplot2

- ▶ Entwickelt von Hadley Wickham
- ▶ Viele Informationen unter:
- ▶ <http://ggplot2.org/>
- ▶ Den Graphiken liegt eine eigene Grammatik zu Grunde

Bibliothek ggplot2

```
library(ggplot2)
```

Der Datensatz

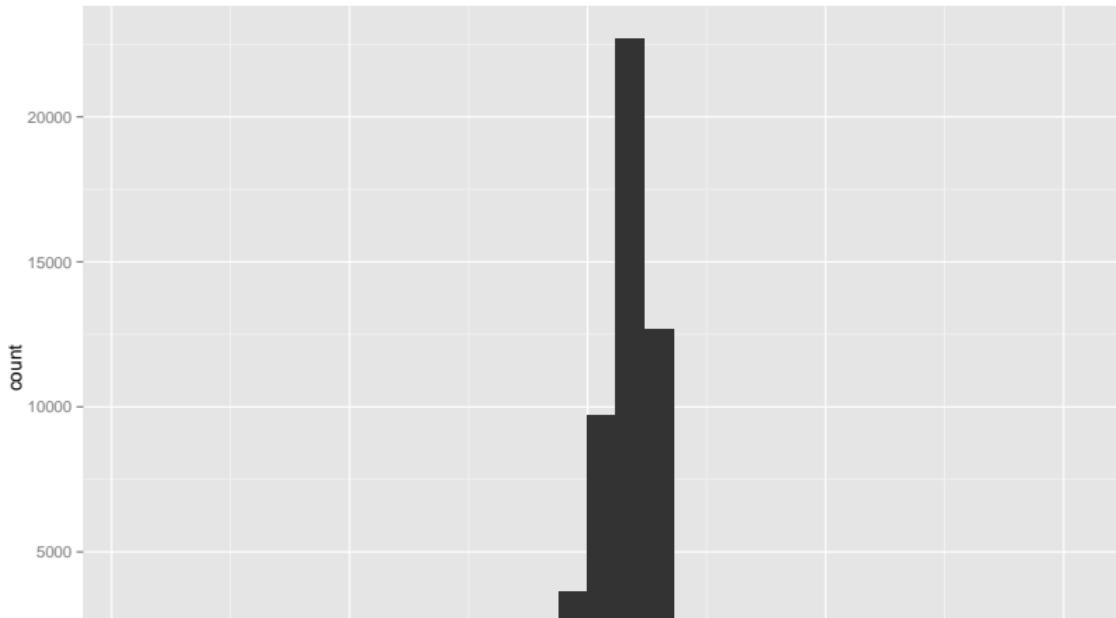
```
head(diamonds)
```

```
##   carat      cut color clarity depth table price x
## 1  0.23     Ideal    E    SI2   61.5     55   326 3.95 3
## 2  0.21 Premium    E    SI1   59.8     61   326 3.89 3
## 3  0.23     Good    E    VS1   56.9     65   327 4.05 4
## 4  0.29 Premium    I    VS2   62.4     58   334 4.20 4
## 5  0.31     Good    J    SI2   63.3     58   335 4.34 4
## 6  0.24 Very Good    J   VVS2   62.8     57   336 3.94 3
```

Wie nutzt man qplot

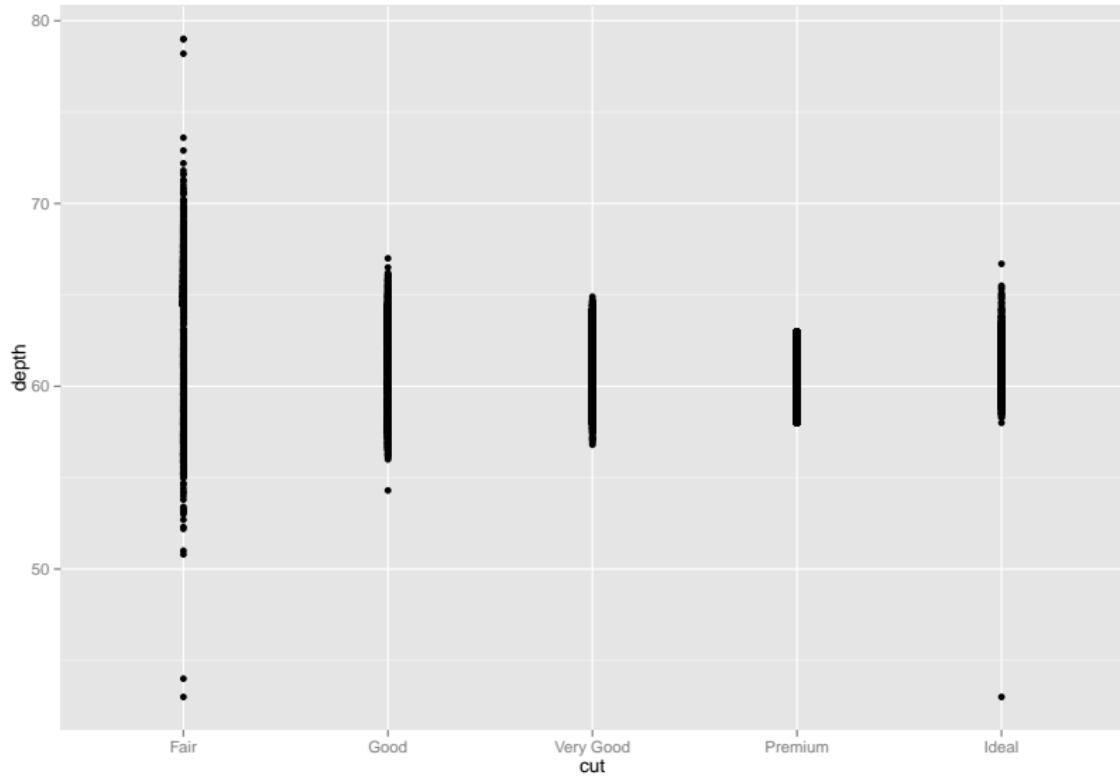
- ▶ qplot wird für schnelle Graphiken verwendet
- ▶ bei ggplot kann man alles bis ins Detail kontrollieren

```
# histogram  
qplot(depth, data=diamonds)
```



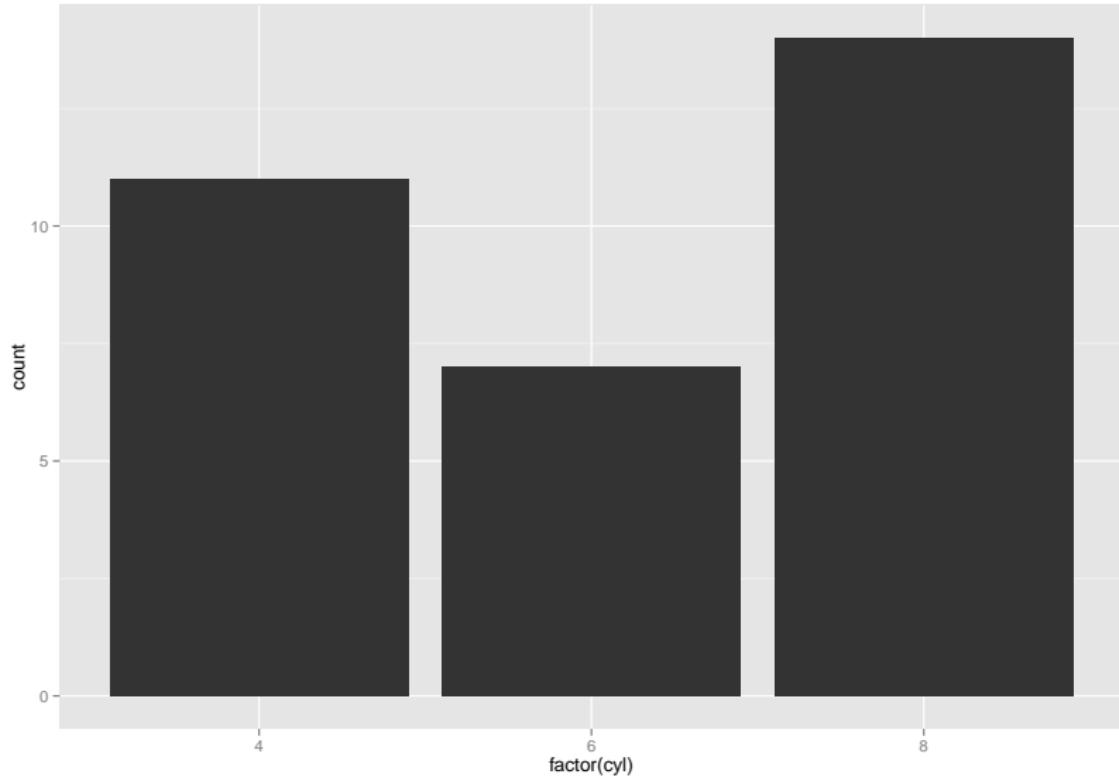
Barplot

```
qplot(cut, depth, data=diamonds)
```



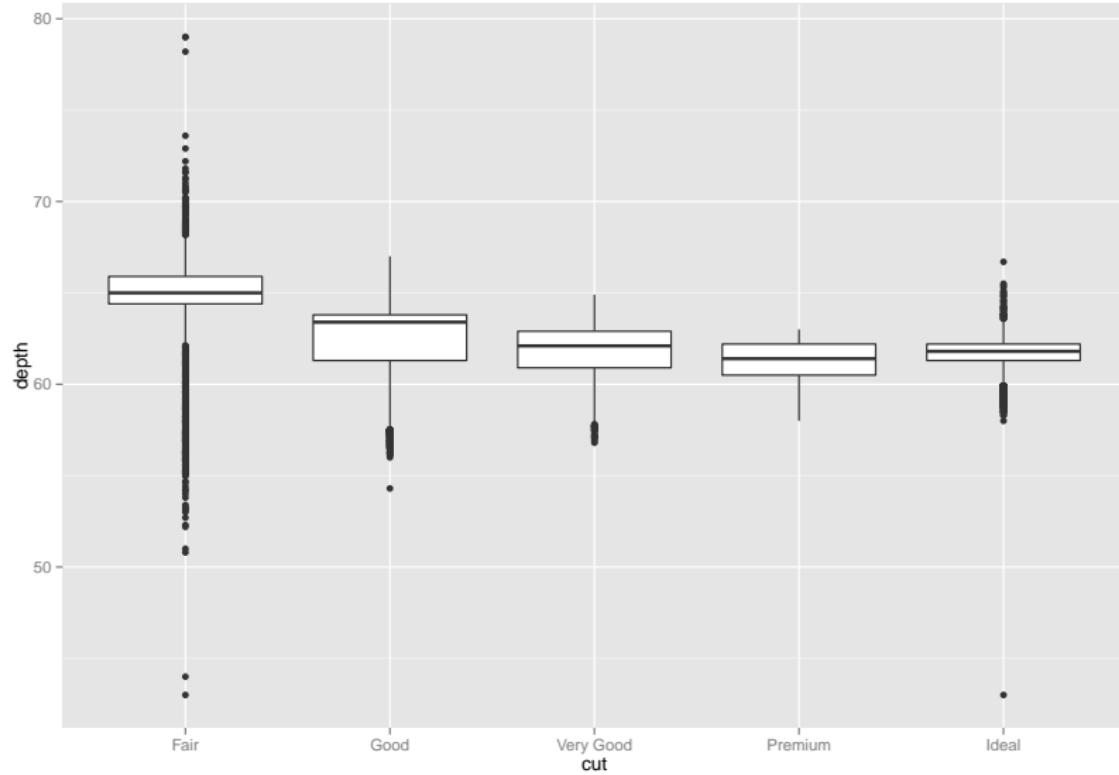
Barplot

```
qplot(factor(cyl), data=mtcars, geom="bar")
```



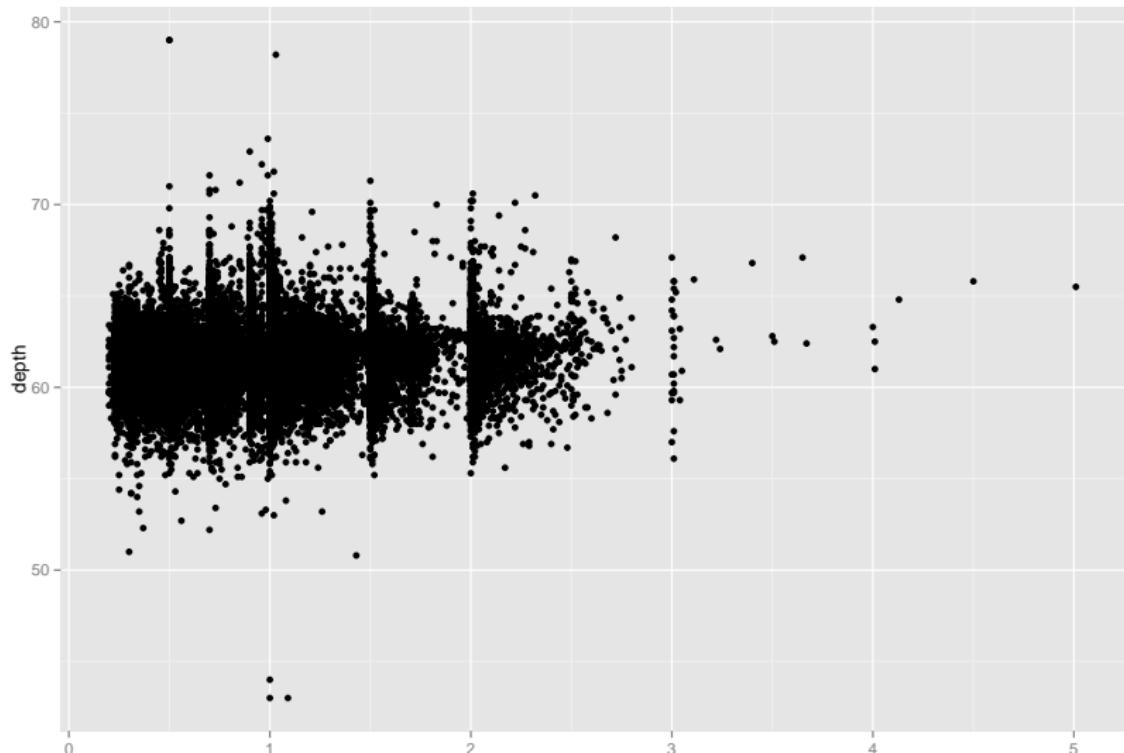
Boxplot

```
qplot(data=diamonds, x=cut, y=depth, geom="boxplot")
```



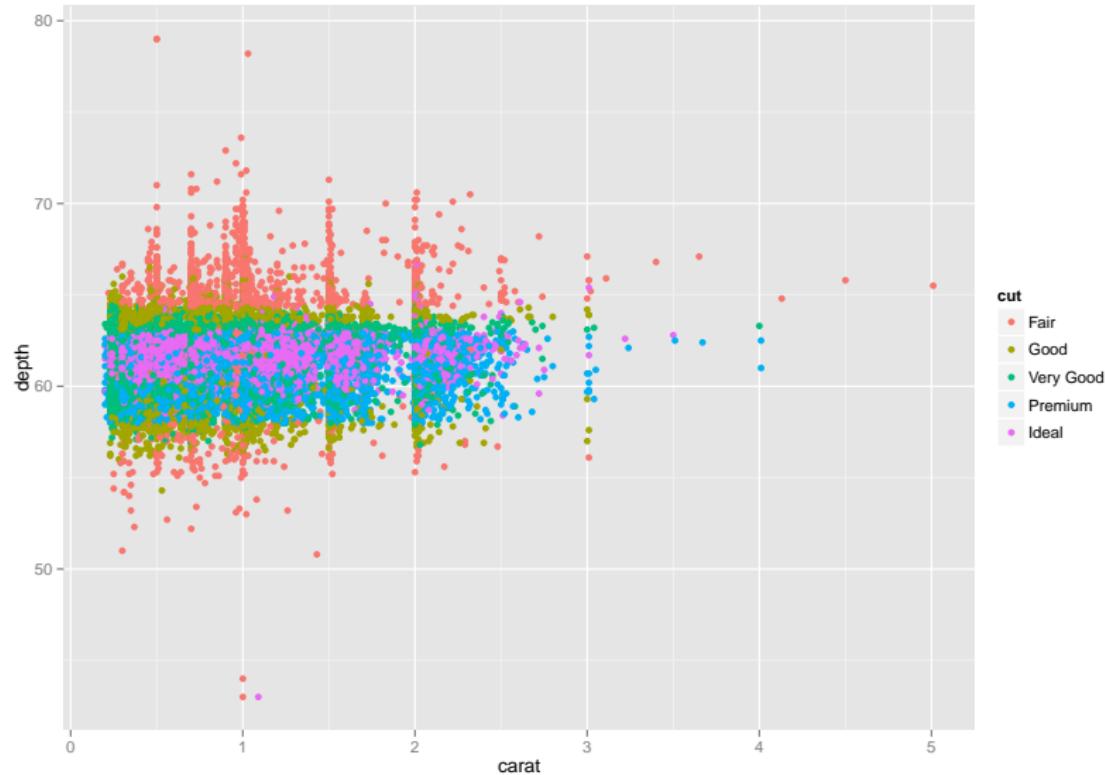
Scatterplot

```
# scatterplot  
qplot(carat, depth, data=diamonds)
```



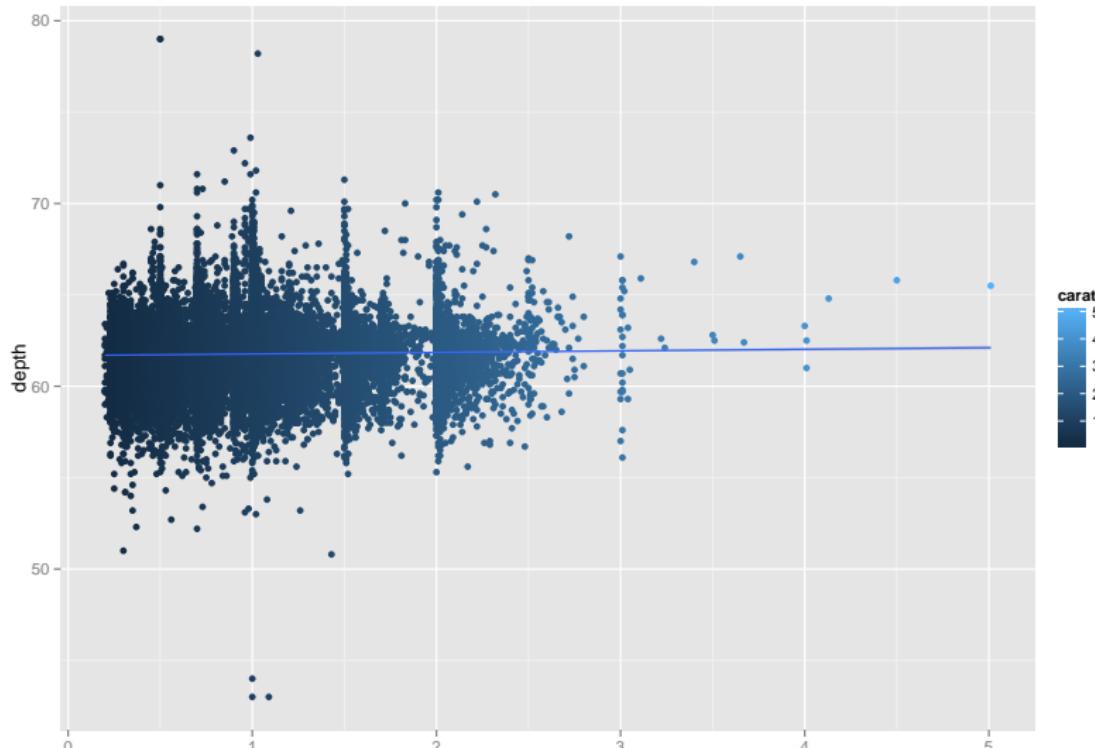
Farbe hinzufügen:

```
qplot(carat, depth, data=diamonds, color=cut)
```



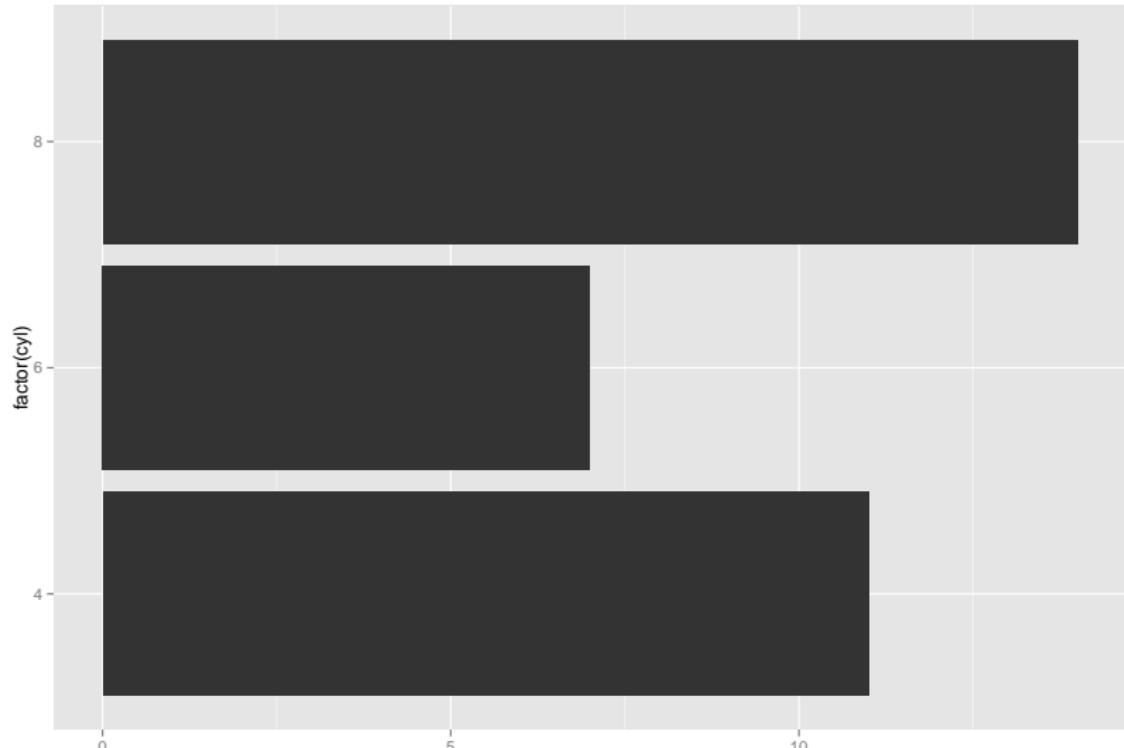
Trendlinie hinzufügen

```
myGG<-qplot(data=diamonds,x=carat,y=depth,color=carat)  
myGG + stat_smooth(method="lm")
```



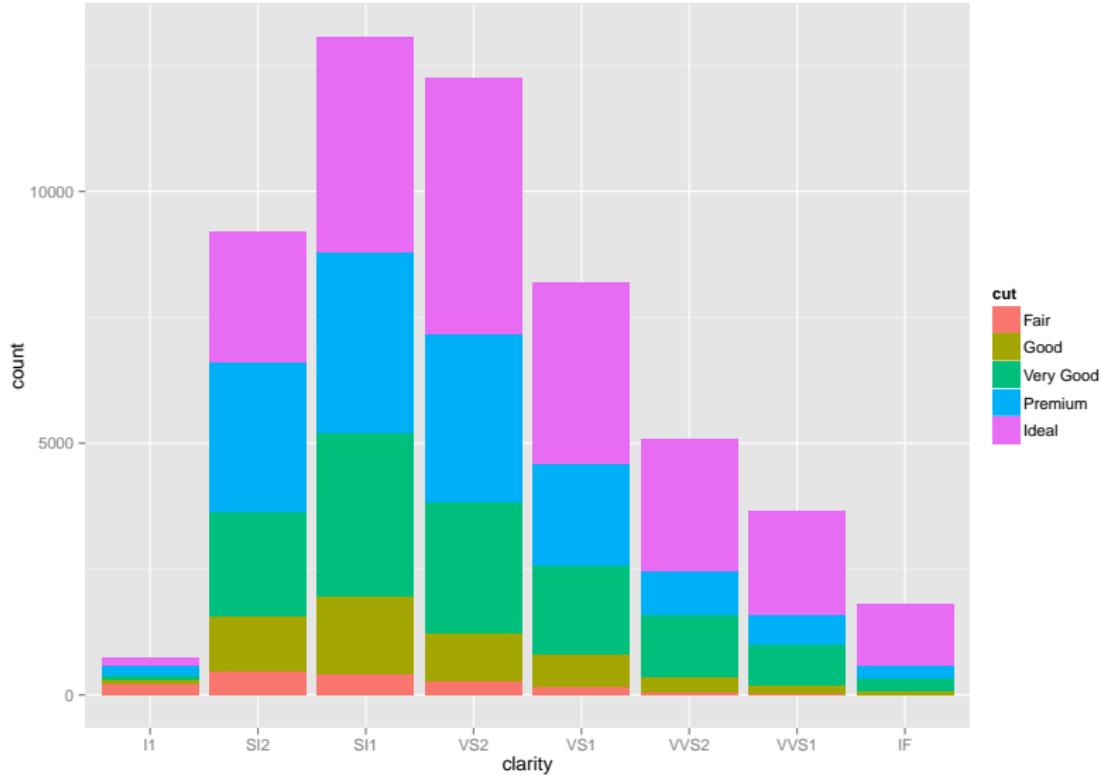
Graphik drehen

```
qplot(factor(cyl), data=mtcars, geom="bar") +  
coord_flip()
```



Wie nutzt man ggplot

```
ggplot(diamonds, aes(clarity, fill=cut)) + geom_bar()
```



Farben selber wählen

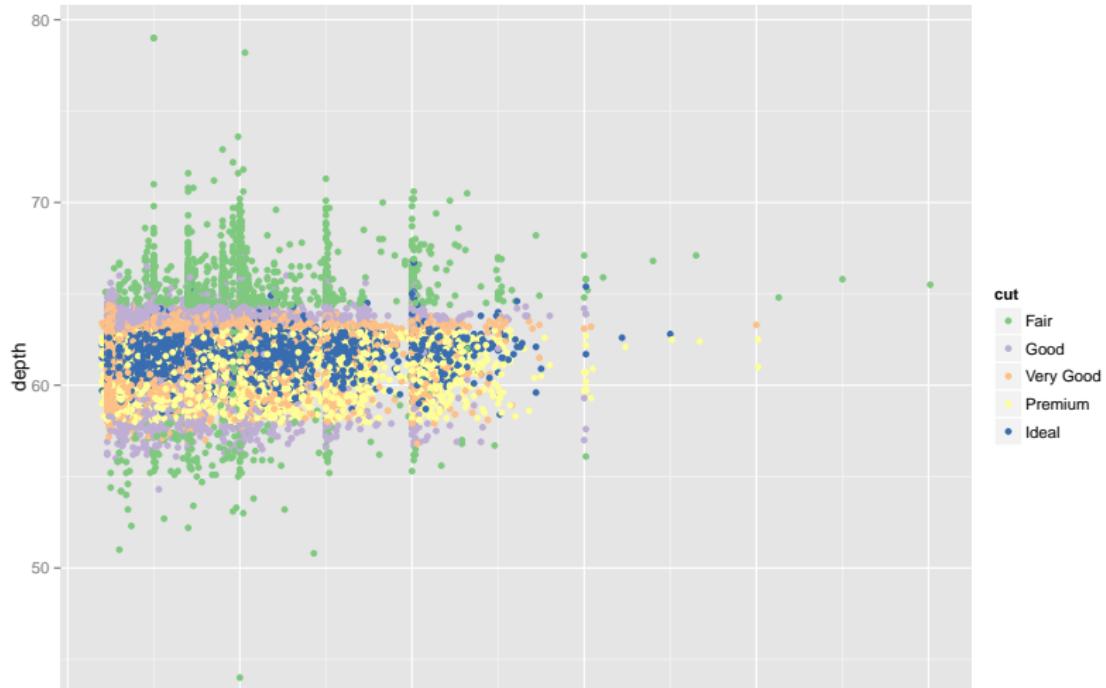
Es wird das Paket RColorBrewer verwendet um die Farbpalette zu ändern

```
library(RColorBrewer)
myColors <- brewer.pal(5, "Accent")
names(myColors) <- levels(diamonds$cut)
colScale <- scale_colour_manual(name = "cut",
                                  values = myColors)
```

<http://stackoverflow.com/questions/6919025/>

Plot mit den Farben

```
p <- ggplot(diamonds,aes(carat, depth, colour = cut)) +  
  geom_point()  
p + colScale
```



Speichern mit ggsave

```
ggsave("Graphik.jpg")
```

Links

- ▶ Warum man ggplot2 für einfache Grafiken nutzen sollte
- ▶ Einführung in ggplot2
- ▶ ggplot2 Basics
- ▶ Noam Ross - Quick Introduction to ggplot2