

ggplot Part III

Workshop on Data Visualization in R

Lokesh Mano • 17-Apr-2023

NBIS, SciLifeLab

Contents

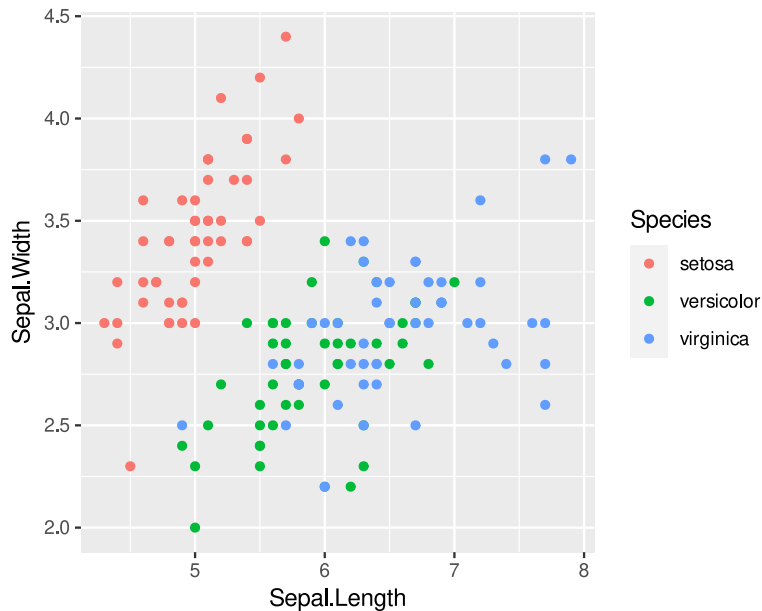
- Scales - axis
- Coordinate Systems
- Theme
- Theme - Legend
- Theme - Text
- Theme - Rect
- Theme - Reuse

Scales • Axes

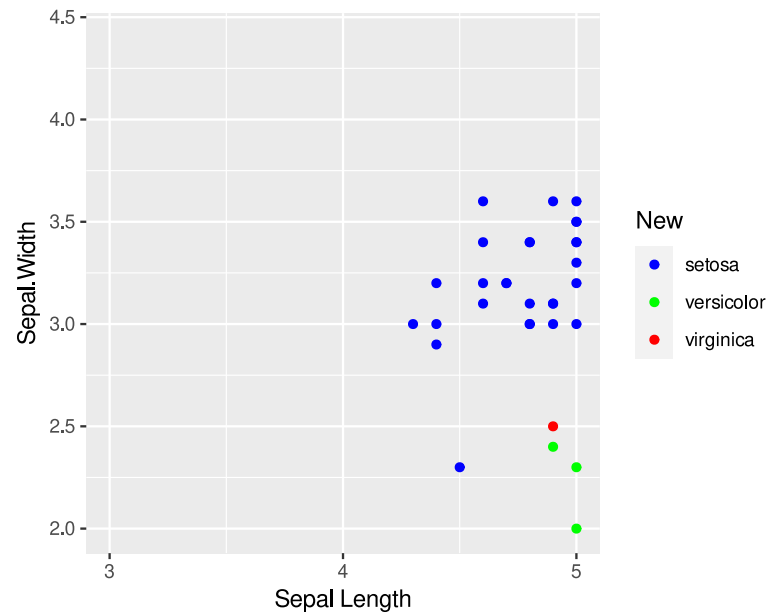
- scales: x, y
- syntax: `scale_<axis>_<type>`
- arguments: name, limits, breaks, labels

```
p <- ggplot(iris)+  
  geom_point(aes(x=Sepal.Length,  
                 y=Sepal.Width,  
                 color=Species))
```

p



```
p + scale_color_manual(name="New",  
                       values=c("blue", "green", "red"))+  
  scale_x_continuous(name="Sepal Length",  
                    breaks=seq(1,8),limits=c(3,5))
```

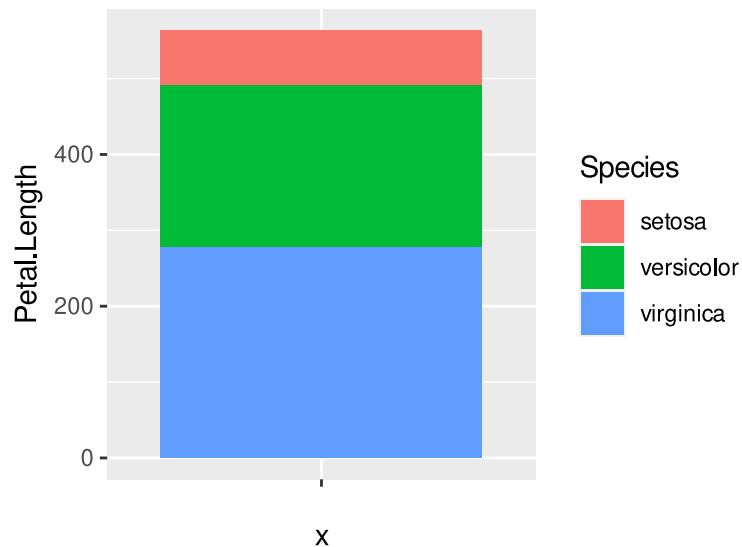


Coordinate Systems

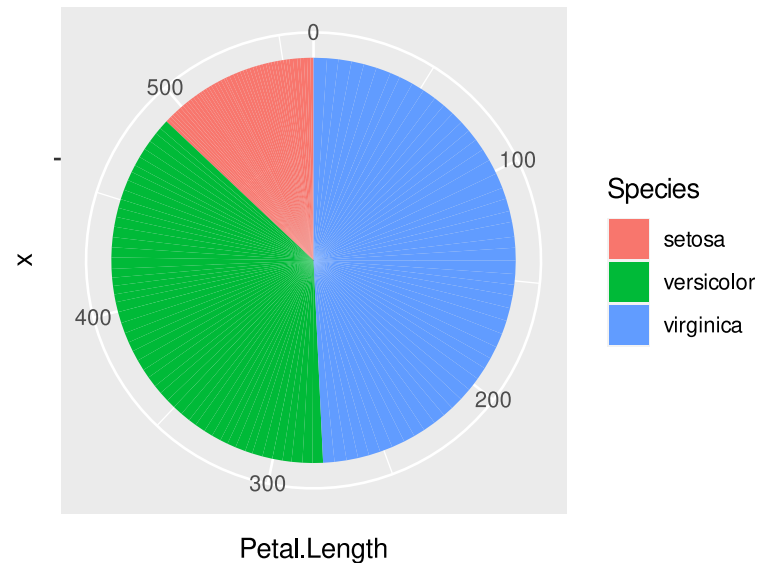


- `coord_cartesian(xlim=c(2,8))` for zooming in
- `coord_map` for controlling limits on maps
- `coord_polar`

```
p <- ggplot(iris,aes(x="",y=Petal.Length,fill=Species))  
p + geom_bar(stat="identity")  
p
```



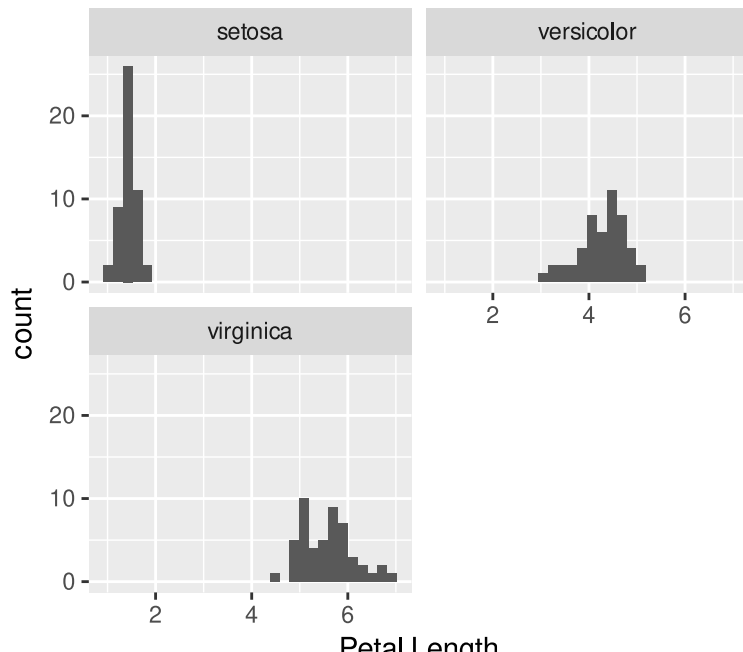
```
p + coord_polar("y",start=0)
```



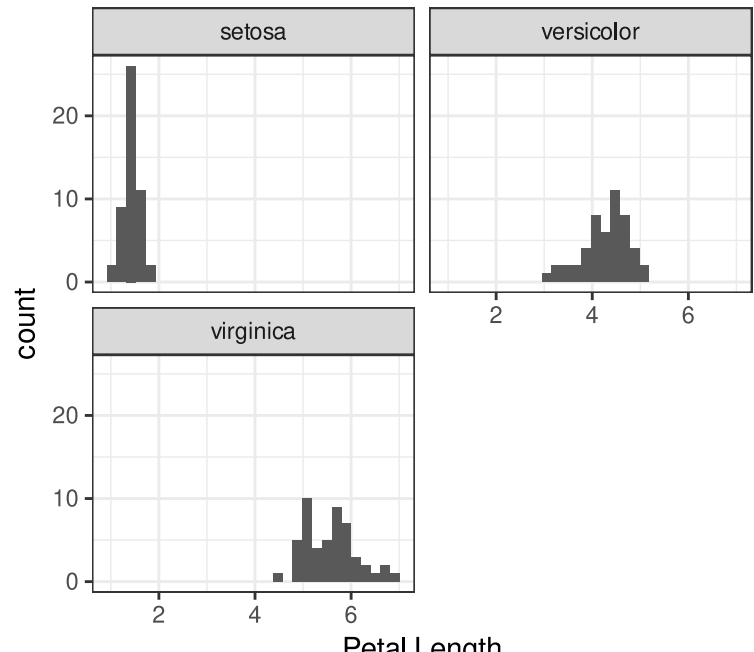
Theme

- Modify non-data plot elements/appearance
- Axis labels, panel colors, legend appearance etc
- Save a particular appearance for reuse
- `?theme`

```
ggplot(iris,aes(Petal.Length))+  
  geom_histogram()+  
  facet_wrap(~Species,nrow=2)+  
  theme_grey()
```



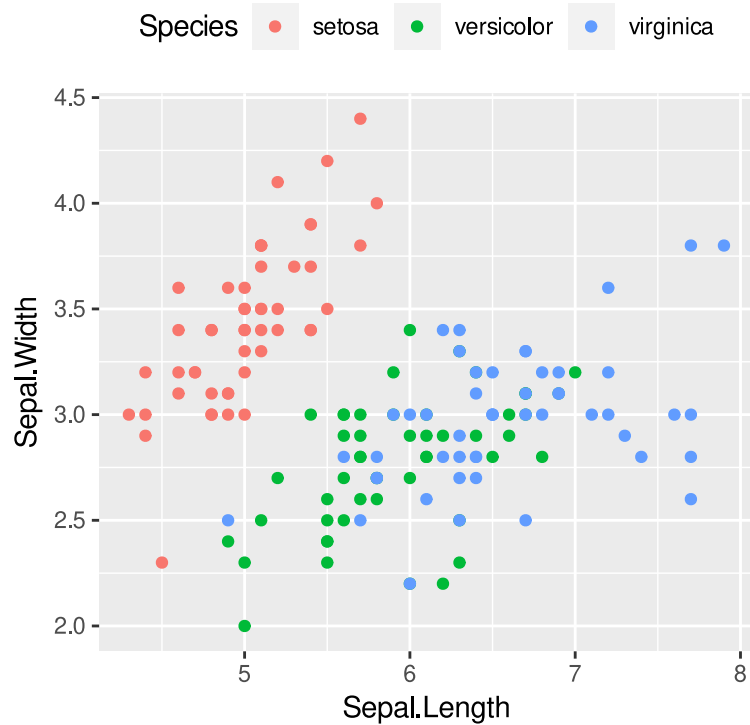
```
ggplot(iris,aes(Petal.Length))+  
  geom_histogram()+  
  facet_wrap(~Species,nrow=2)+  
  theme_bw()
```



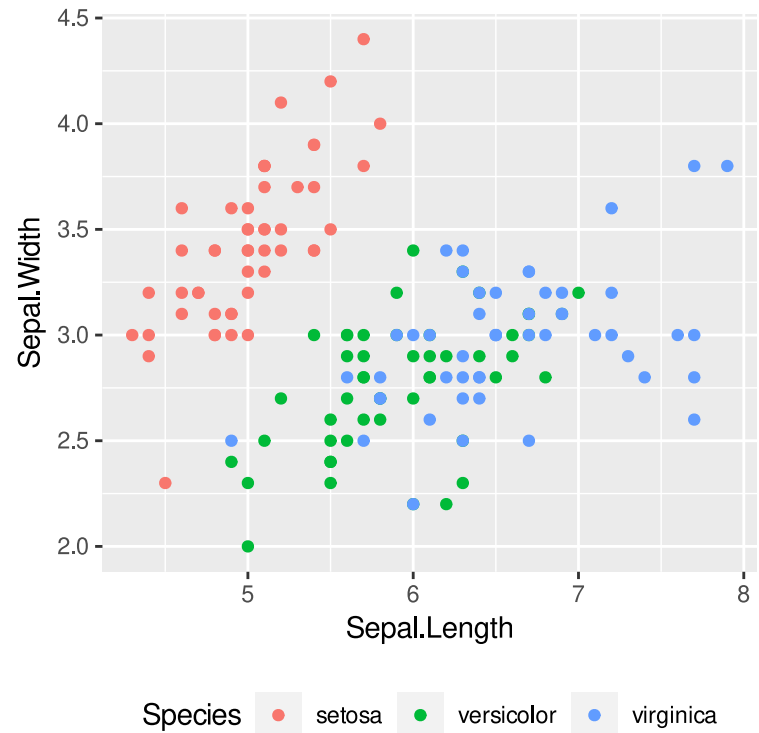
Theme • Legend

```
p <- ggplot(iris)+  
  geom_point(aes(x=Sepal.Length,  
                y=Sepal.Width,  
                color=Species))
```

```
p + theme(legend.position="top")
```



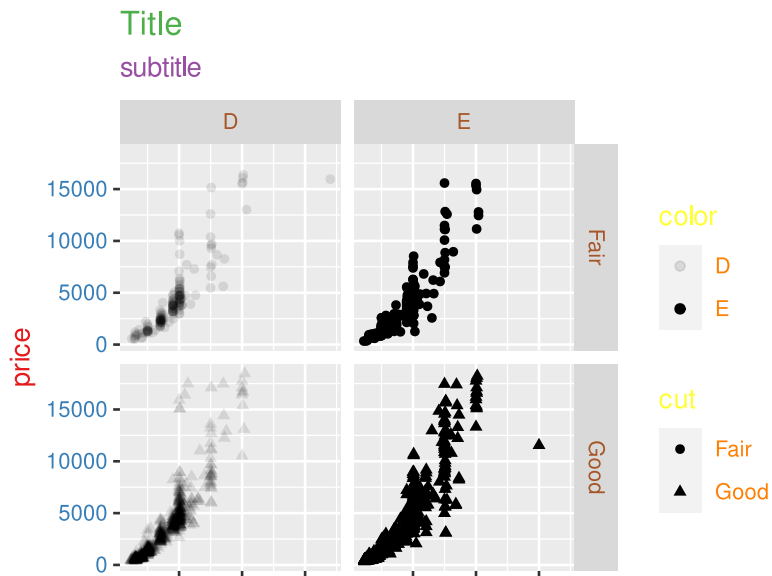
```
p + theme(legend.position="bottom")
```



Theme • Text

```
element_text(family=NULL,face=NULL,color=NULL,size=NULL,hjust=NULL,  
             vjust=NULL, angle=NULL,lineheight=NULL,margin = NULL)
```

```
p <- p + theme(  
  axis.title=element_text(color="#e41a1c"),  
  axis.text=element_text(color="#377eb8"),  
  plot.title=element_text(color="#4daf4a"),  
  plot.subtitle=element_text(color="#984ea3"),  
  legend.text=element_text(color="#ff7f00"),  
  legend.title=element_text(color="#ffff33"),  
  strip.text=element_text(color="#a65628")  
)
```



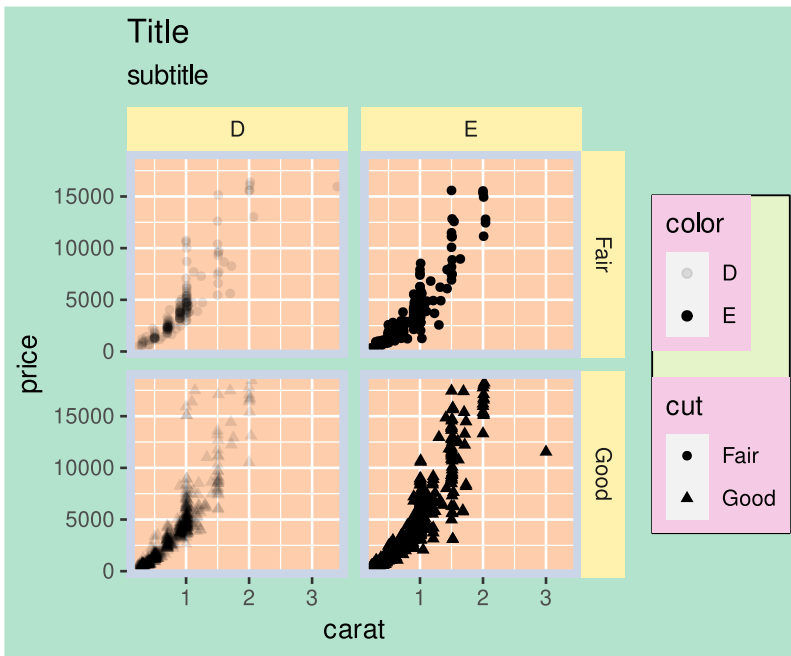
strip.text
legend.title
legend.text
plot.subtitle
plot.title
axis.text
axis.title



Theme • Rect

```
element_rect(fill=NULL,color=NULL,size=NULL,linetype=NULL)
```

```
p <- p + theme(  
  plot.background=element_rect(fill="#b3e2cd"),  
  panel.background=element_rect(fill="#fdcdac"),  
  panel.border=element_rect(fill=NA,color="#cbd5e8",size=3),  
  legend.background=element_rect(fill="#f4cae4"),  
  legend.box.background=element_rect(fill="#e6f5c9"),  
  strip.background=element_rect(fill="#fff2ae")  
)
```



strip.background

legend.box.background

legend.background

panel.border

panel.background

plot.background



Thank you. Questions?

R version 4.1.3 (2022-03-10)

Platform: x86_64-pc-linux-gnu (64-bit)

OS: Ubuntu 22.04.2 LTS

Built on: 📅 17-Apr-2023 at 🕒 14:32:06

2023 • SciLifeLab • NBIS