Visualizing Time

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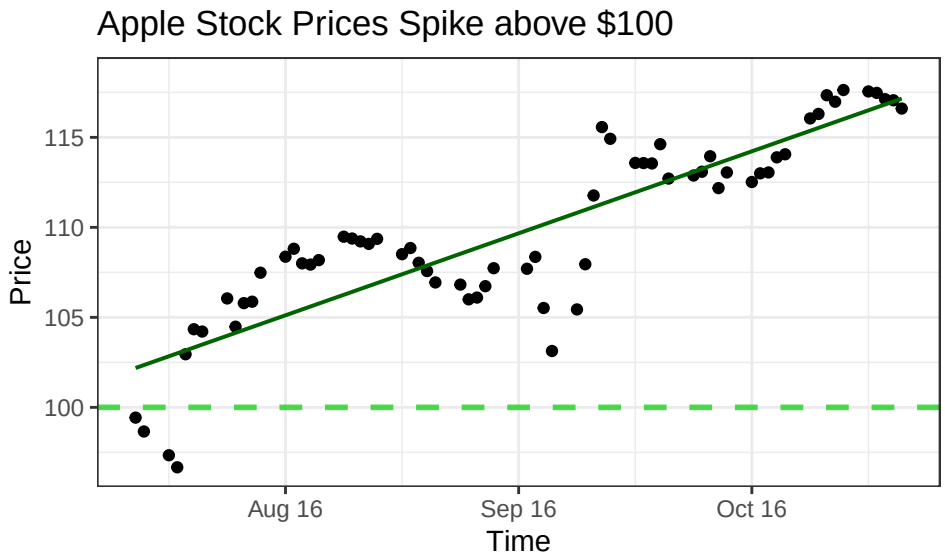
Apple Stock

```
data("AppleStock")
AppleStock <- AppleStock %>%
  mutate(Date = as.Date(Date, format = "%m/%d/%Y"))
head(AppleStock)
```

```
##         Date  Price Change Volume
## 1 2016-07-21  99.43     NA 32.690
## 2 2016-07-22  98.66  -0.77 28.218
## 3 2016-07-25  97.34  -1.32 40.291
## 4 2016-07-26  96.67  -0.67 53.455
## 5 2016-07-27 102.95   6.28 92.144
## 6 2016-07-28 104.34   1.39 38.772
```

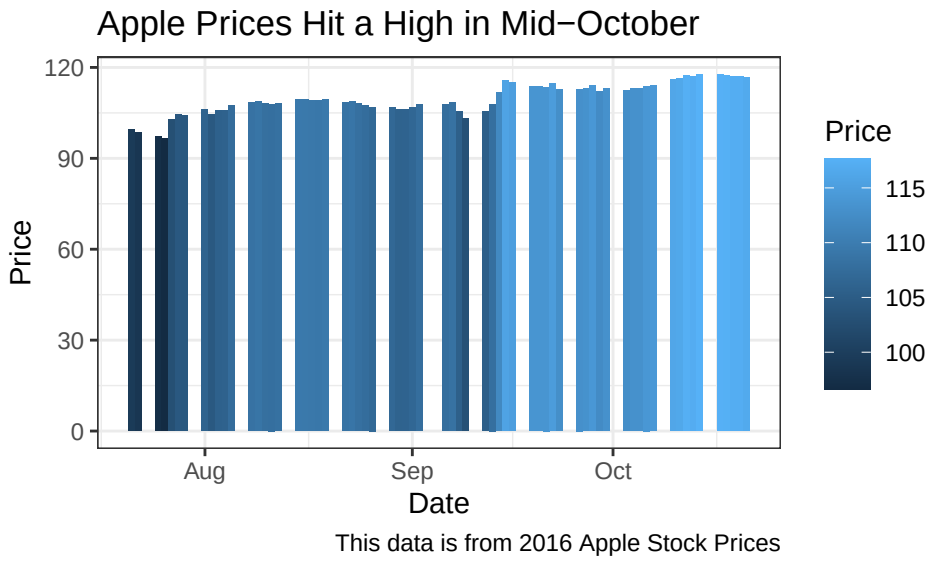
```
gf_point(Price~Date,data=AppleStock) %>%
  gf_refine(scale_x_date(date_breaks = "4 weeks", date_labels = "%b %y")) %>%
  gf_lm(color="darkgreen") %>%
  gf_labs(title="Apple Stock Prices Spike above $100",y="Price",x="Time") %>%
  gf_hline(yintercept = 100, linetype = "dashed", alpha=0.7, color="green3", size=1)
```

```
## Warning: geom_hline(): Ignoring `mapping` because `yintercept` was provided.
```




```
ggplot(AppleStock, aes(x = Date, y = Price, fill=Price)) +
  geom_bar(stat = "identity") +
```

```
  labs(title = "Apple Prices Hit a High in Mid-October",
       x = "Date", y = "Price",caption="This data is from 2016 Apple Stock Prices")
```

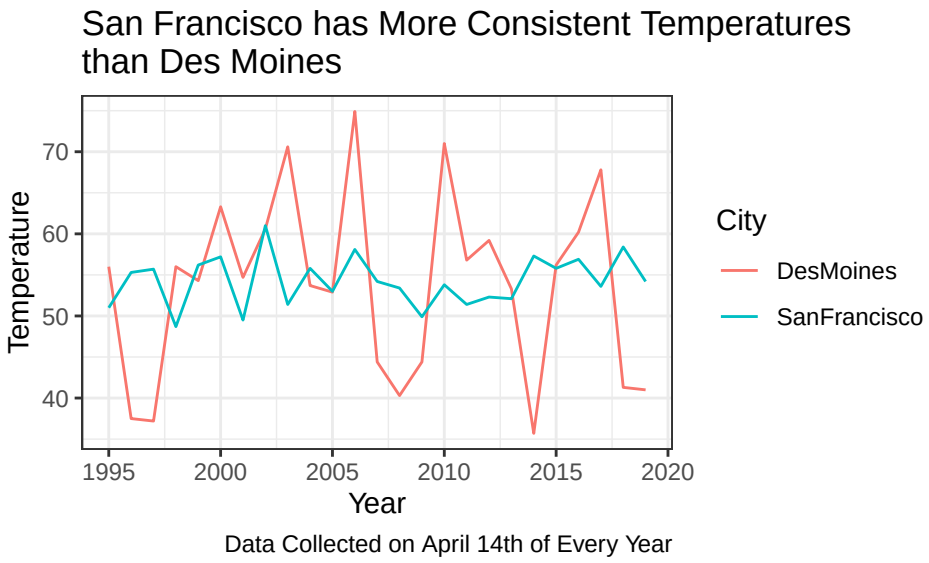


April 14th Temps

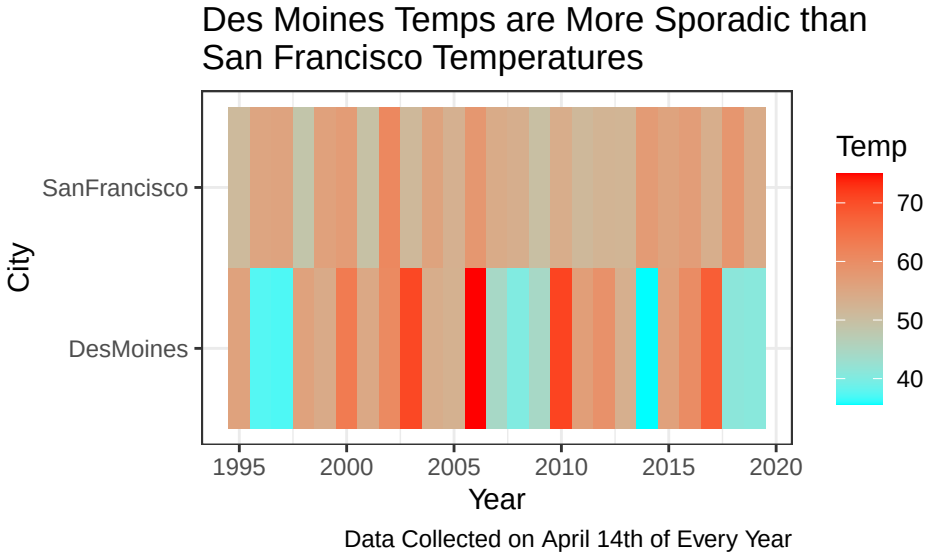
```
data("April14Temps")
April14TempsWrangled = gather(April14Temps,key="City",value="Temp",2:3)
head(April14TempsWrangled)
```

```
##   Year      City Temp
## 1 1995 DesMoines 56.0
## 2 1996 DesMoines 37.5
## 3 1997 DesMoines 37.2
## 4 1998 DesMoines 56.0
## 5 1999 DesMoines 54.3
## 6 2000 DesMoines 63.3
```

```
gf_line(Temp~Year,data=April14TempsWrangled,color=~City) %>%
  gf_labs(title="San Francisco has More Consistent Temperatures\nthan Des Moines",
  y="Temperature",caption="Data Collected on April 14th of Every Year")
```




```
gf_tile(City~Year,data=April14TempsWrangled,fill=~Temp) %>%
  gf_refine(scale_fill_gradientn(colors = rev(rainbow(2)))) %>%
  gf_labs(title="Des Moines Temps are More Sporadic than\nSan Francisco Temperatures",
  caption="Data Collected on April 14th of Every Year")
```

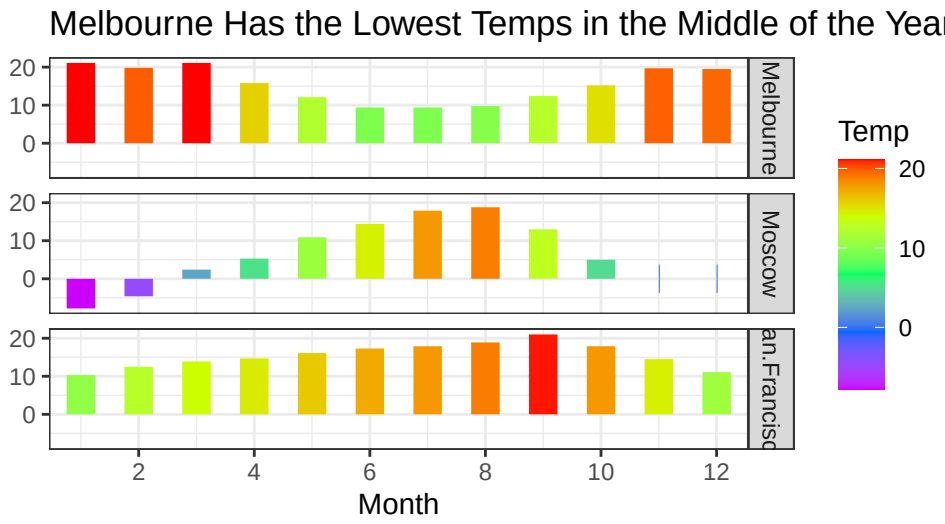


Bike Commute

```
data("CityTemps")
CityTempsWrangled = subset(gather(CityTemps,key="City",value="Temp",3:5), Year==2017)
head(CityTempsWrangled)
```

```
##   Year Month   City Temp
## 1 2017     1 Moscow -7.8
## 2 2017     2 Moscow -4.6
## 3 2017     3 Moscow  2.4
## 4 2017     4 Moscow  5.3
## 5 2017     5 Moscow 10.9
## 6 2017     6 Moscow 14.4
```

```
gf_linerange(Temp+0~Month|City~.,data=CityTempsWrangled,color=~Temp,size = 5) %>%
  gf_refine(scale_x_continuous(breaks = seq(0, 12, by = 2)),
            scale_color_gradientn(colors = rev(rainbow(5)))) %>%
  gf_labs(title="Melbourne Has the Lowest Temps in the Middle of the Year",
          caption="Data was collected based on average temperatures in 2017")
```



Data was collected based on average temperatures in 2017

```
gf_line(Temp~Month,color=~City,data=CityTempsWrangled) %>%
  gf_refine(scale_x_continuous(breaks = seq(0, 12, by = 2))) %>%
  gf_labs(title="Moscow has Inconsistent Temperatures throughout 2017")
```