Analise de temperatura

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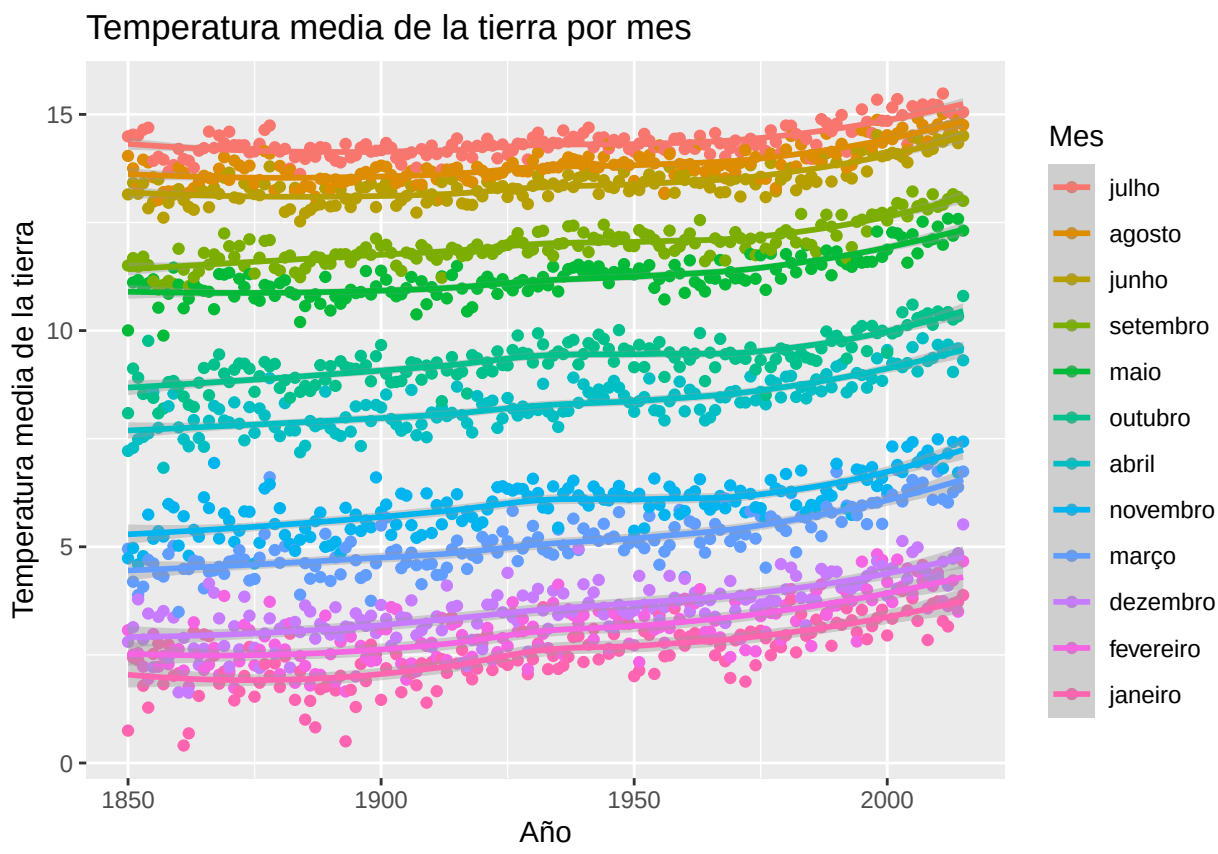
```
#Representamos temperaturas médias por mês desde 1850. Pode-se ver claramente que, embora a temperatura

dtemp$dt <- as.Date(dtemp$dt,"%Y-%m-%d")
dtemp$Year<-year(dtemp$dt)
dtemp$Month<- as.numeric(format(dtemp$dt,"%m"))
dtemp$Month<- format(dtemp$dt,"%B")
View(dtemp)
```

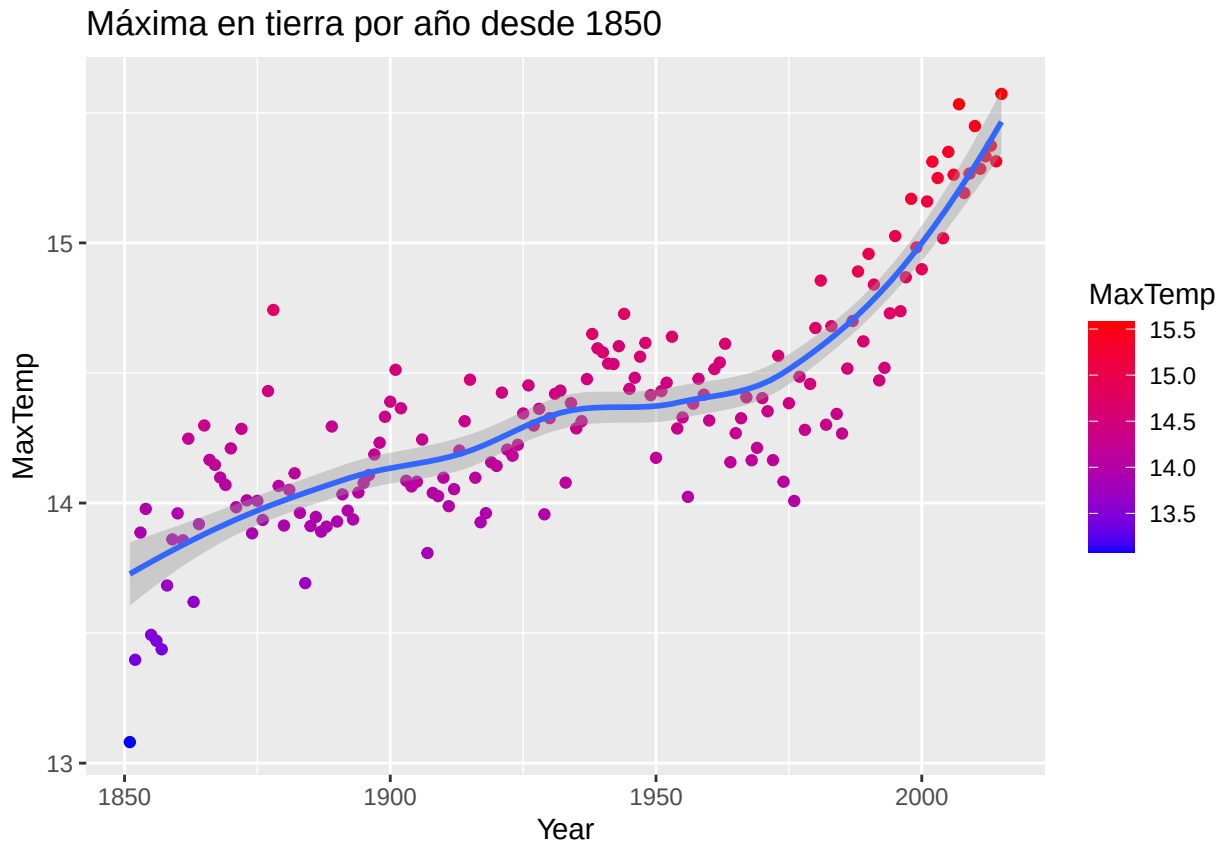
```
## `geom_smooth()` using formula 'y ~ x'
```




```
#gráfica de las máximas por año
  dtemp%>%
```

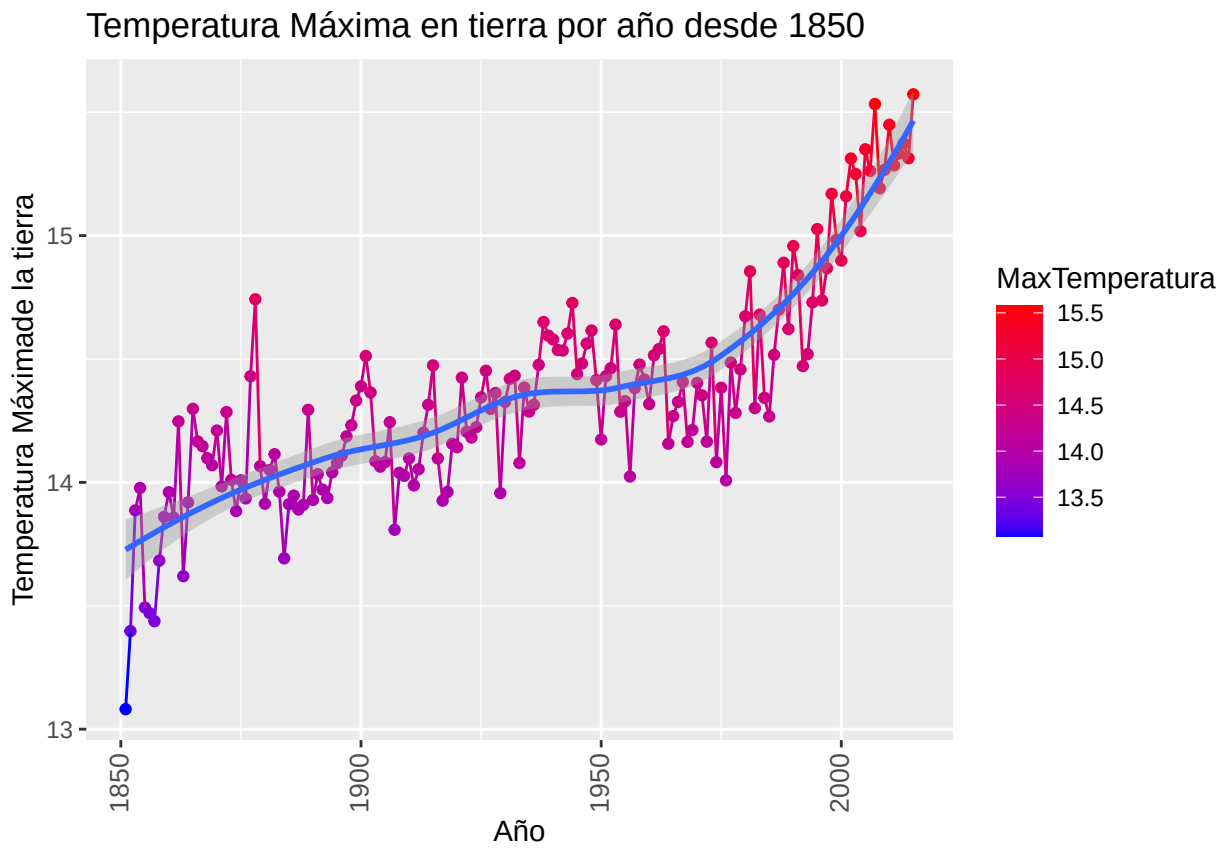
```
  filter(Year>1850)%>%
  group_by(Year) %>%
  summarise(MaxTemp = mean(LandMaxTemperature)) -> MaxByYear


qplot(Year, MaxTemp, data=MaxByYear, main="Máxima en tierra por año desde 1850",geom=c("point","smooth
```

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```



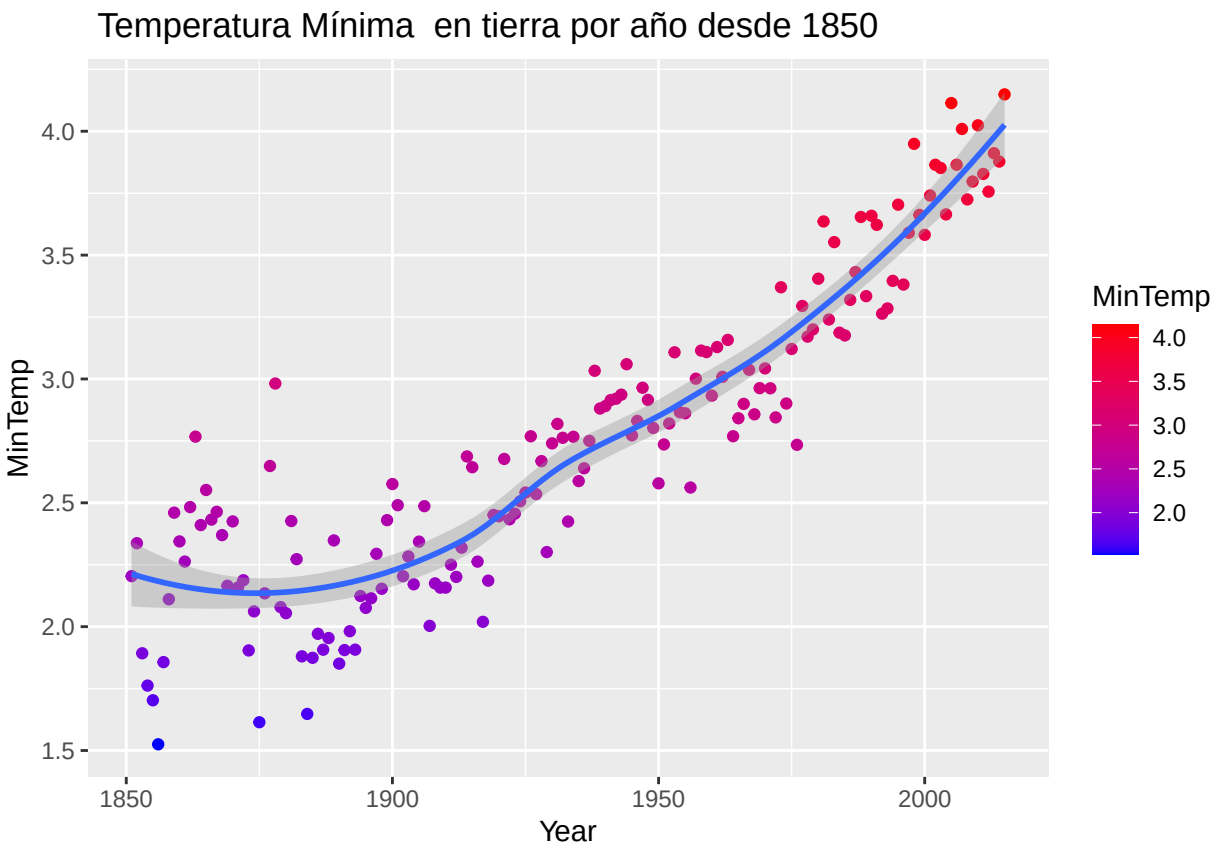

```
ggplot(data=MaxByYear,aes(Year,MaxTemp, colour=MaxTemp))+
  geom_point()+
  geom_line()+
  geom_smooth(method="loess")+
  labs(title="Temperatura Máxima en tierra por año desde 1850",
       x="Año",
       y="Temperatura Máximade la tierra",
       colour="MaxTemperatura")+
  scale_color_gradient(low="blue", high="red")+
  theme(axis.text.x = element_text(angle = 90, size = 10, vjust = 0.4))
```

```
## `geom_smooth()` using formula 'y ~ x'
```



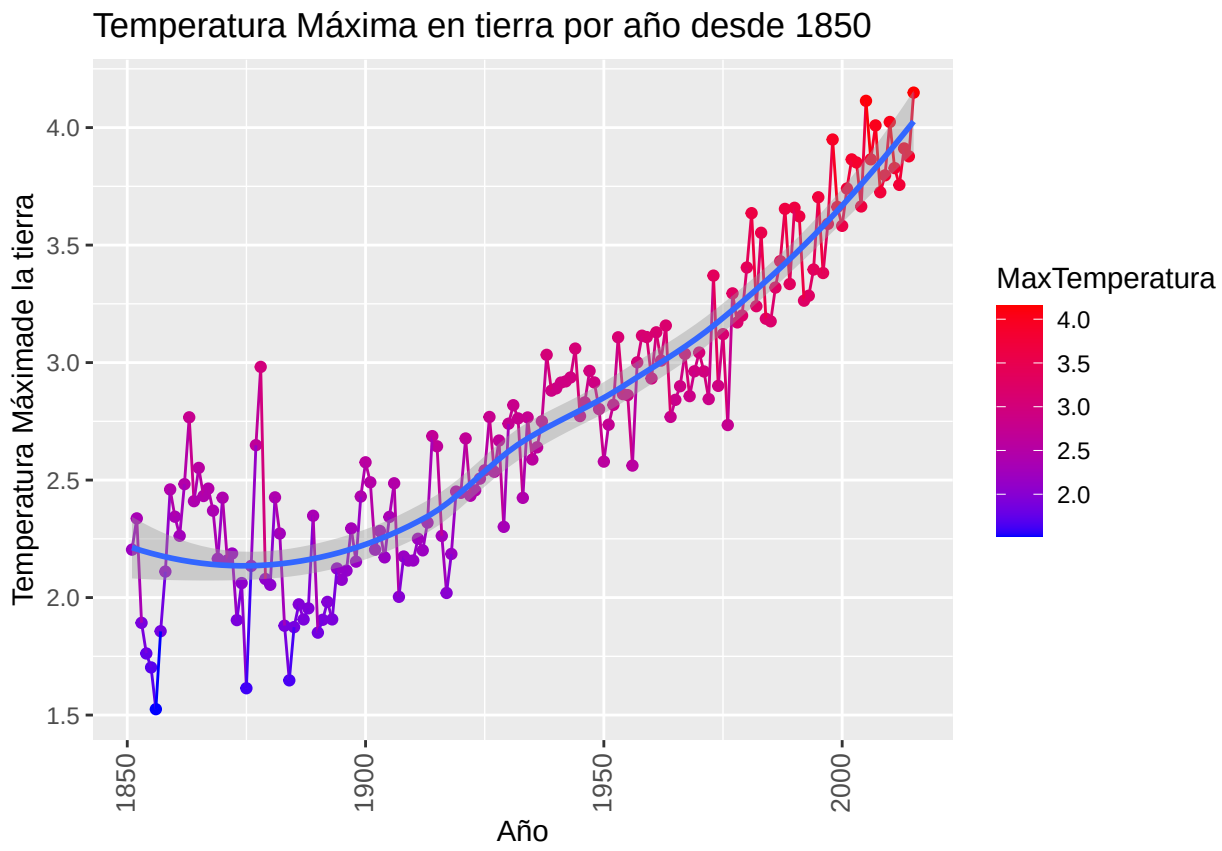

```
#gráfica de las minima por año

dtemp$MaxMinLandDifference  <- dtemp$LandMaxTemperature - dtemp$LandMinTemperature
dtemp$Quarter <- quarters(dtemp$dt)

dtemp%>%
  filter(Year>1850)%>%
  group_by(Year)%>%
  summarise(MinTemp = mean(LandMinTemperature)) -> MinByYear


qplot(Year, MinTemp, data=MinByYear, main=" Temperatura Mínima  en tierra por año desde 1850",geom=c("p
```

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```



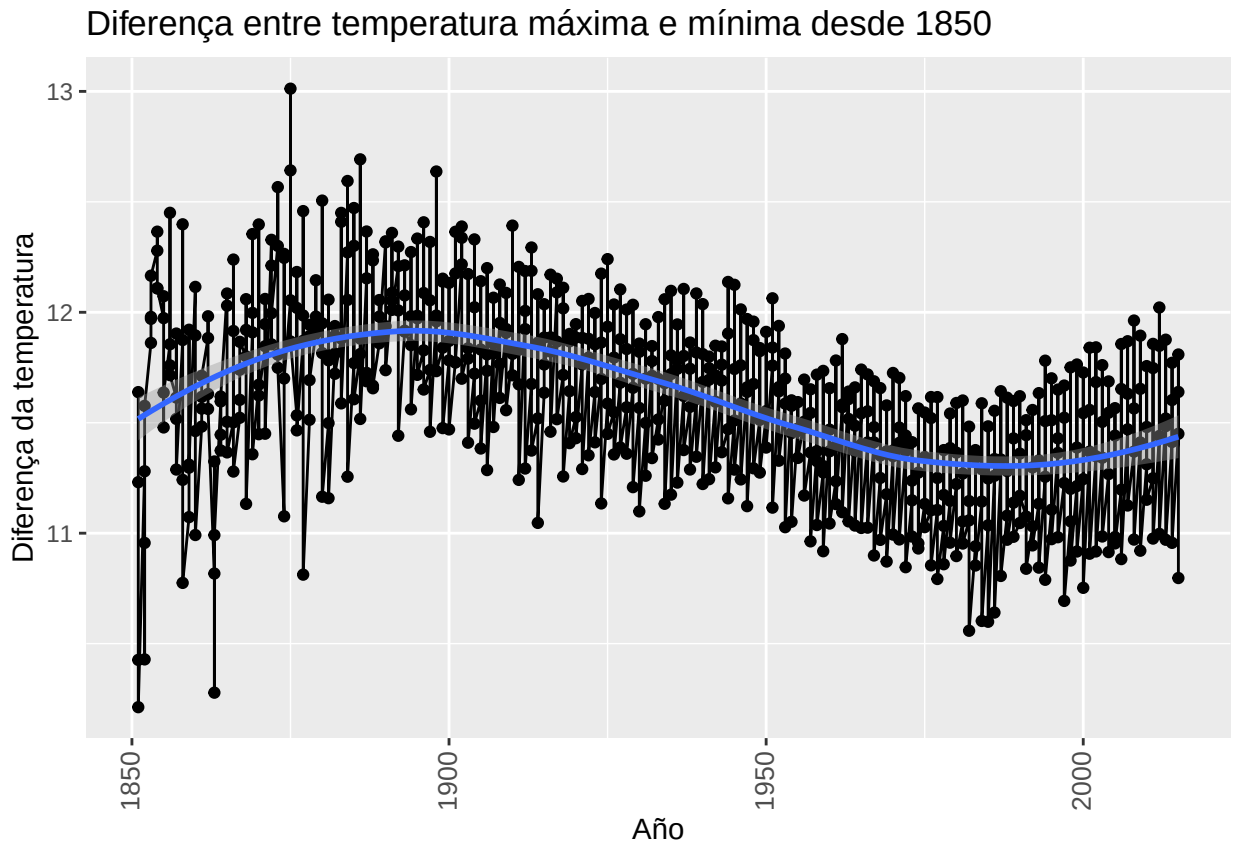

```
ggplot(data=MinByYear, aes(Year, MinTemp,colour=MinTemp))+
geom_point()+
geom_line()+
geom_smooth(method="loess")+
labs(title="Temperatura Máxima en tierra por año desde 1850",
x="Año",
y="Temperatura Máximade la tierra",
colour="MaxTemperatura")+
scale_color_gradient(low="blue", high="red")+
theme(axis.text.x = element_text(angle = 90, size = 10, vjust = 0.4))
```

```
## `geom_smooth()` using formula 'y ~ x'
```



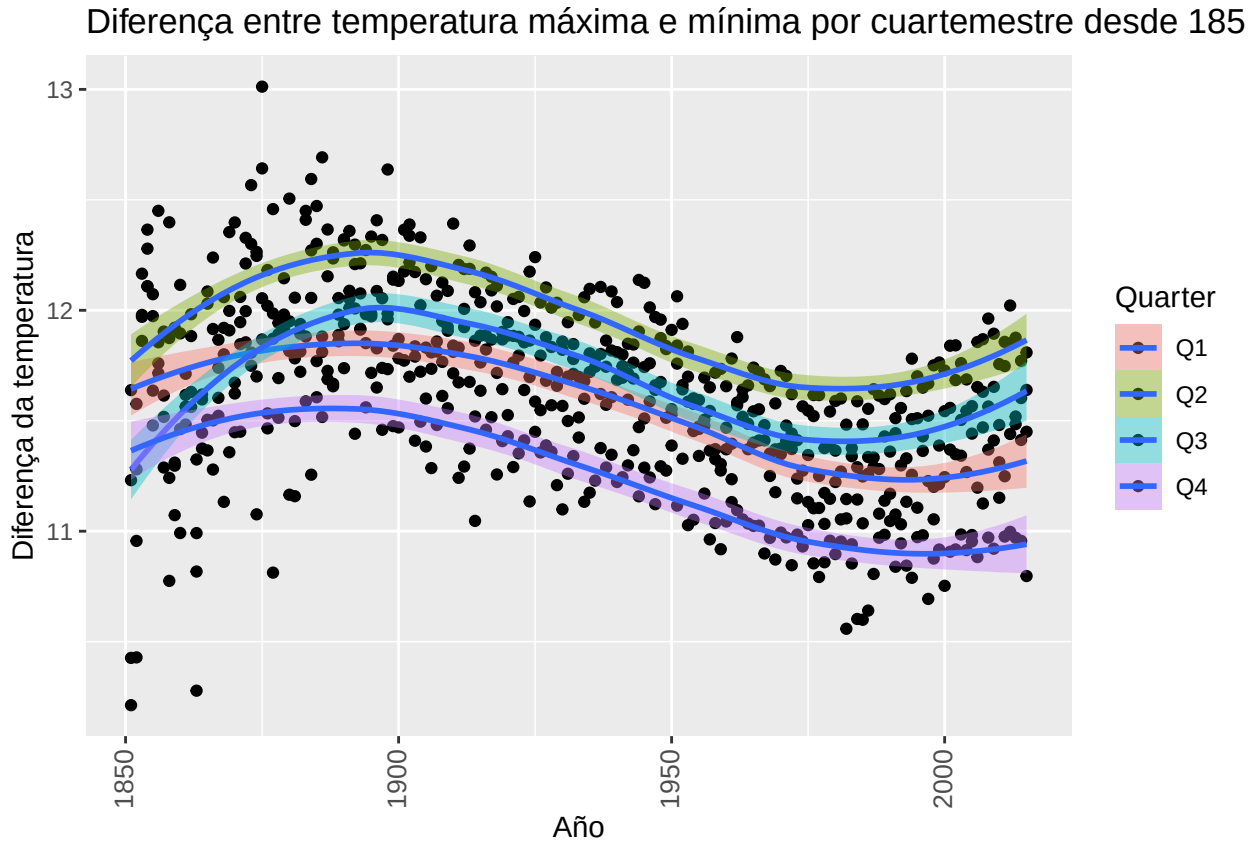

```
# Diferença entre temperatura máxima e mínima
dtemp%>% select(Quarter,Year,MaxMinLandDifference)%>%
  filter(Year>1850)%>%
  group_by(Year,Quarter)%>%
  summarise(MinMaxTemp = mean(MaxMinLandDifference)) -> MaxMinDiff


ggplot(data=MaxMinDiff,aes(Year,MinMaxTemp))+
geom_point()+
geom_line()+
geom_smooth(method="loess")+
labs(title="Diferença entre temperatura máxima e mínima desde 1850",
x="Año",
y="Diferença da temperatura")+
scale_color_gradient(low="blue", high="red")+
theme(axis.text.x = element_text(angle = 90, size = 10, vjust = 0.4))
```

```
## `geom_smooth()` using formula 'y ~ x'
```




```
#gráfica con la evolución cuatrimestral
ggplot(data=MaxMinDiff,aes(Year,MinMaxTemp,fill=Quarter))+
  geom_point()+
  geom_smooth(method="loess")+
  labs(title="Diferença entre temperatura máxima e mínima por cuartemestre desde 1850",
  x="Año",
  y="Diferença da temperatura",
  fill="Quarter")+
  scale_color_gradient(low="blue", high="red")+
  theme(axis.text.x = element_text(angle = 90, size = 10, vjust = 0.4))
```

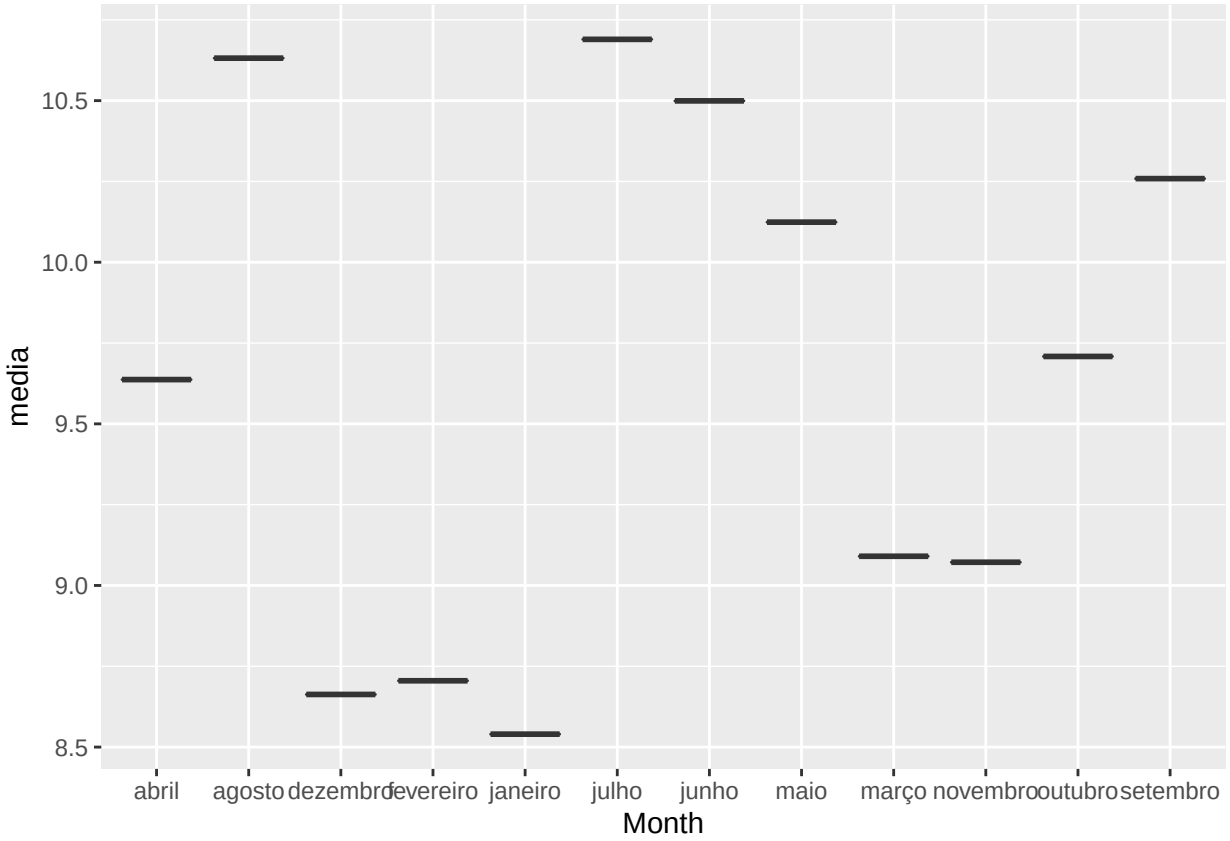
```
## `geom_smooth()` using formula 'y ~ x'
```




```
#Vemos a distribuição das temperaturas da terra e do oceano ao longo do ano. Quase todos os meses, eles

dtemp%>%
  #filter(Year>=1850)%>%
  group_by(Month)%>%
  summarise(media=mean(LandAndOceanAverageTemperature)) -> MediaMesTemp

 MediaMesTemp$Month<- as.factor(MediaMesTemp$Month)
 str(MediaMesTemp)
```

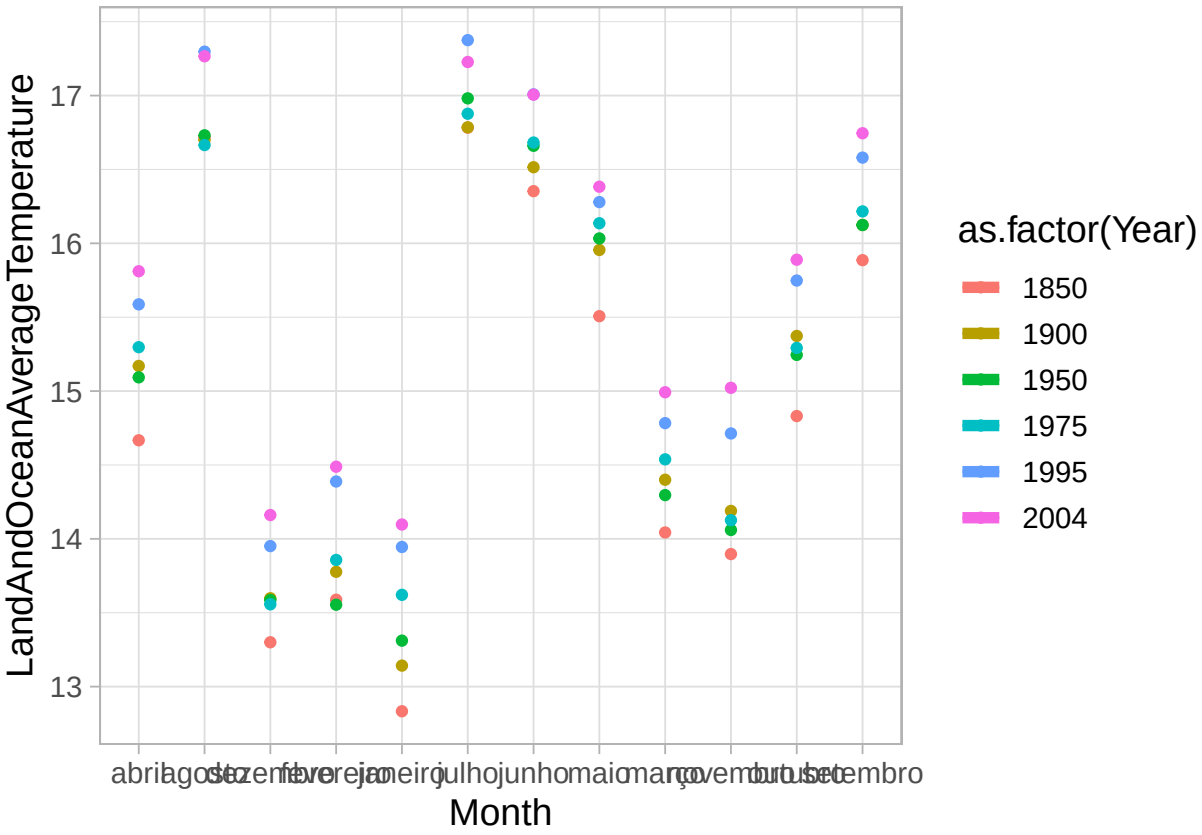
```
## tibble [12 x 2] (S3: tbl_df/tbl/data.frame)
##  $ Month: Factor w/ 12 levels "abril","agosto",..: 1 2 3 4 5 6 7 8 9 10 ...
##  $ media: num [1:12] 9.64 10.63 8.66 8.71 8.54 ...
```

```
 ggplot(MediaMesTemp, aes(Month , media))+
 geom_boxplot(fill="blue1")
```




```
#Temperaturas médias de acordo com o mês nos anos indicados

df_sel<- dtemp%>%
            filter(Year %in% c(1850,1900,1950,1975,1995,2004))

ggplot(data=df_sel,aes(Month,LandAndOceanAverageTemperature, colour=as.factor(Year)))+
  geom_line()+
  geom_point()+
  #geom_smooth(method="loess")
  geom_smooth(se=FALSE,fill=NA, size=2) +
  theme_light(base_size=14)
```

```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'

## geom_path: Each group consists of only one observation. Do you need to adjust
## the group aesthetic?
```


LandAndOceanAverageTemperature
17
16
15
14
13
abril
agosto
dezembro
fevereiro
janeiro
julho
junho
maio
março
novembro
outubro
setembro
Month
as.factor(Year)
1850
1900
1950
1975
1995
2004