R Notebook

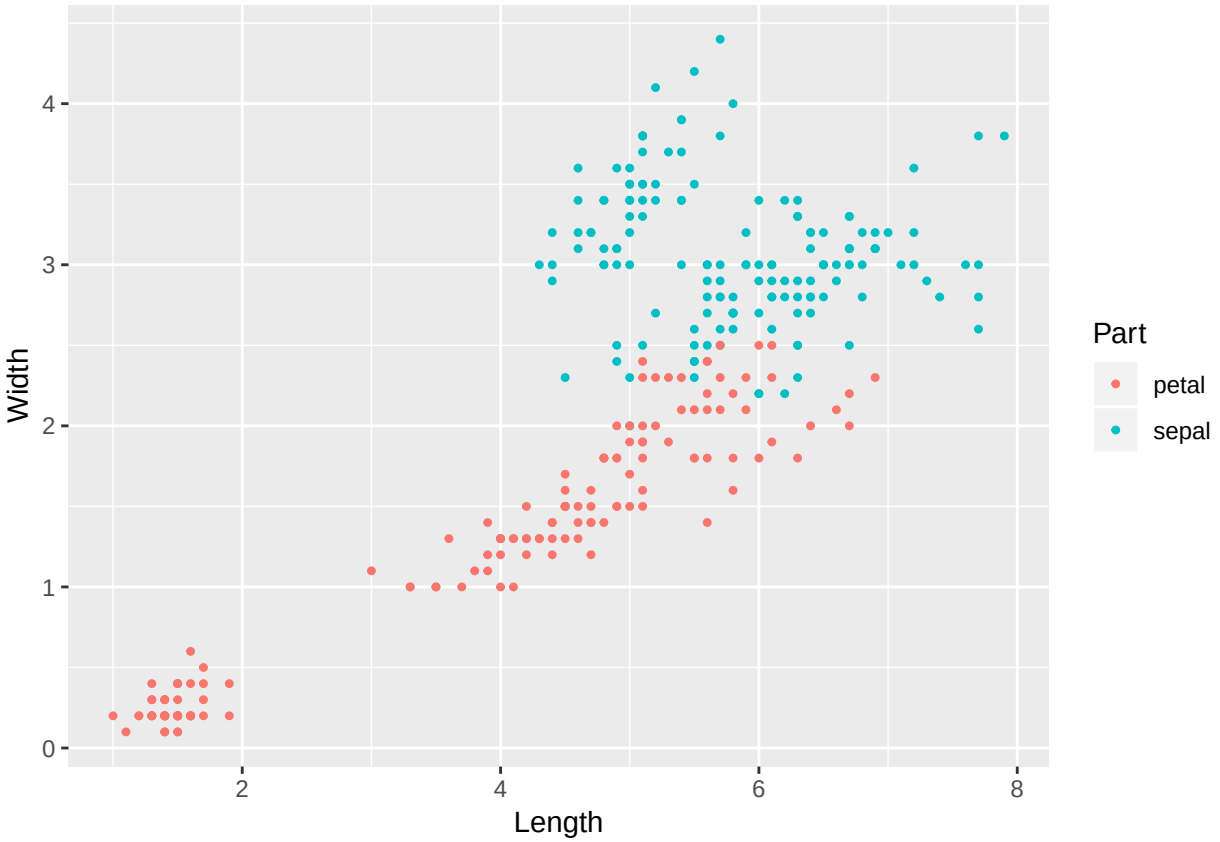
```
library(gapminder)
library(ggplot2)
library(datasets)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

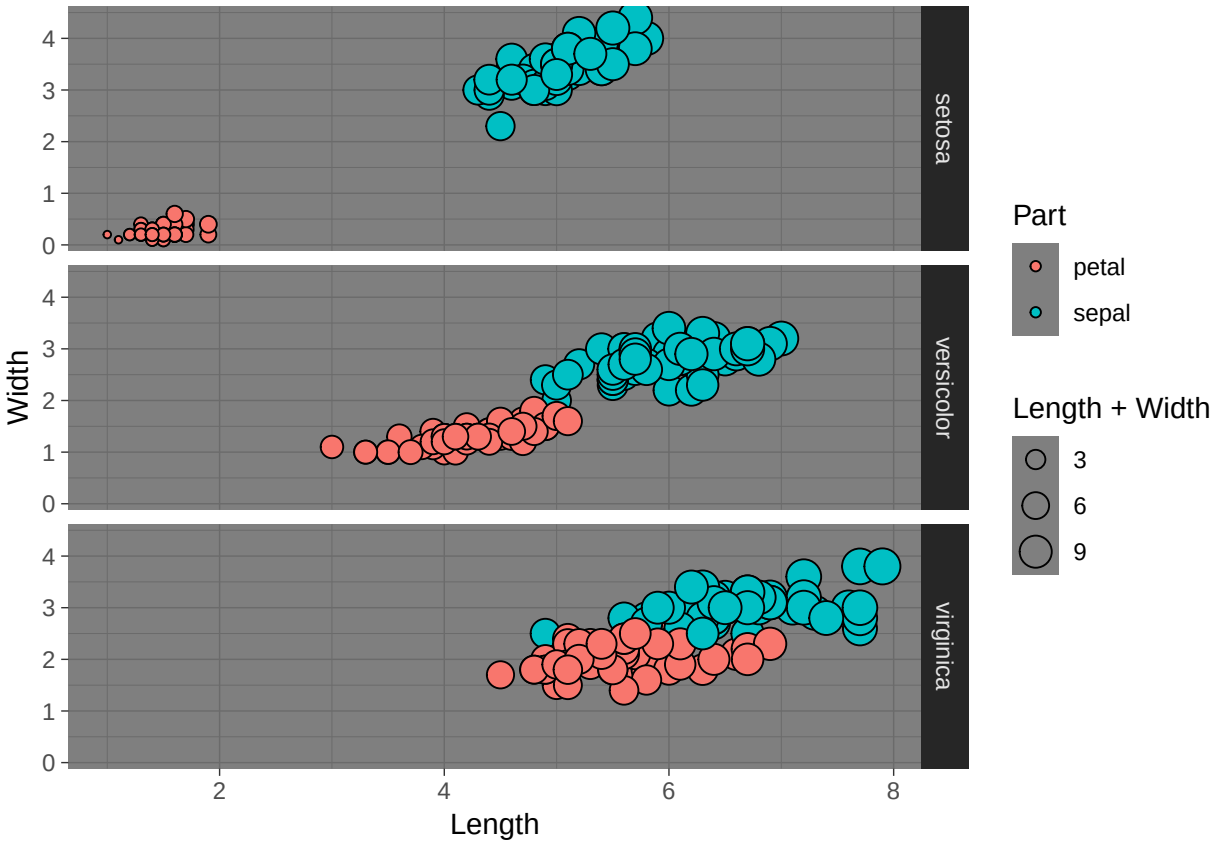
```
#library(Cairo)
```

```
df1 <- iris %>%
  transmute(Species, Part = 'sepal', Length = Sepal.Length, Width = Sepal.Width, id = as.numeric(row.nam
df2 <- iris %>%
  transmute(Species, Part = 'petal', Length = Petal.Length, Width = Petal.Width, id =  as.numeric(row.na
iris_long <- bind_rows(df1, df2) %>%
  arrange(id)
iris_long$id <- NULL
```

```
ggplot(iris_long, aes(x = Length, y = Width, color = Part)) +
  geom_point(shape = 20)
```

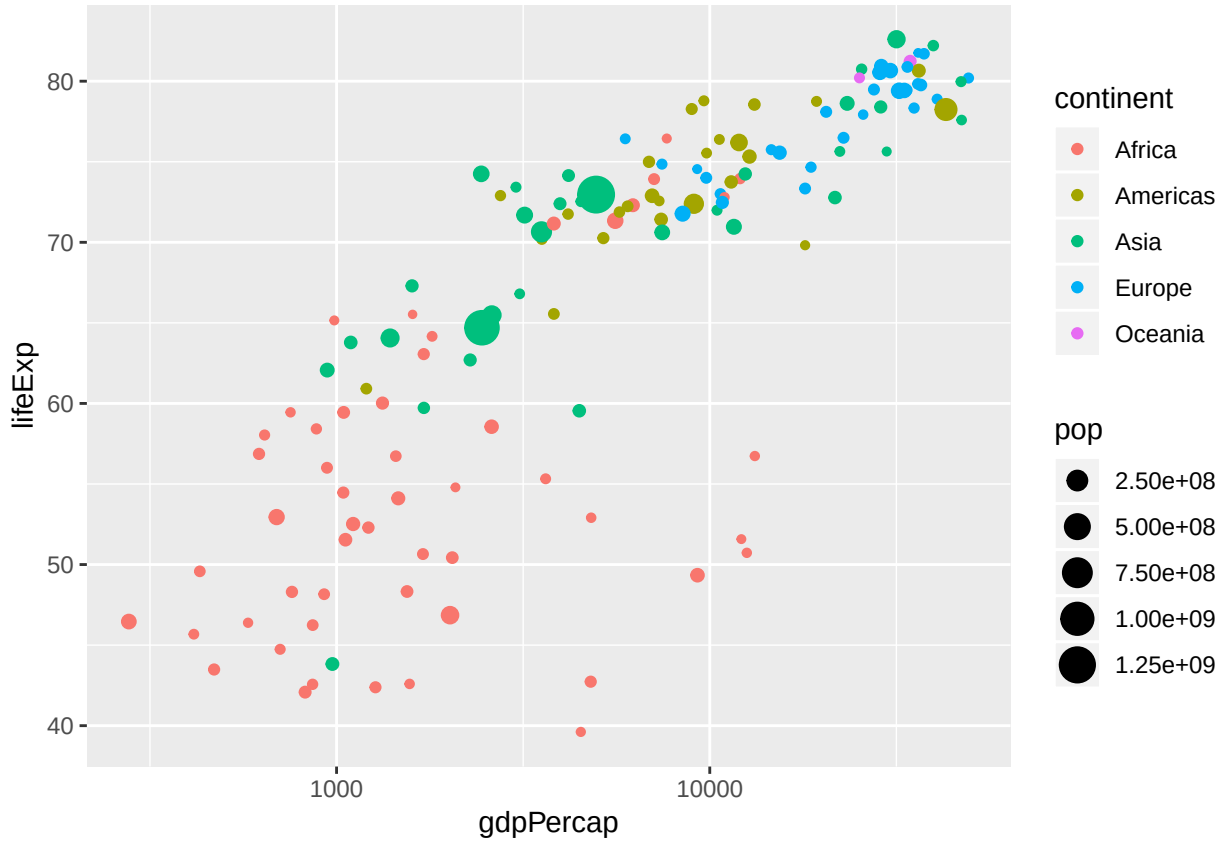



```
ggplot(iris_long, aes(x = Length, y = Width, fill = Part, size = Length + Width)) +
  geom_point(shape = 21) +
  facet_grid(Species ~ .) +
  theme_dark()
```




```
df <- gapminder %>%
  filter(year == 2007)
```

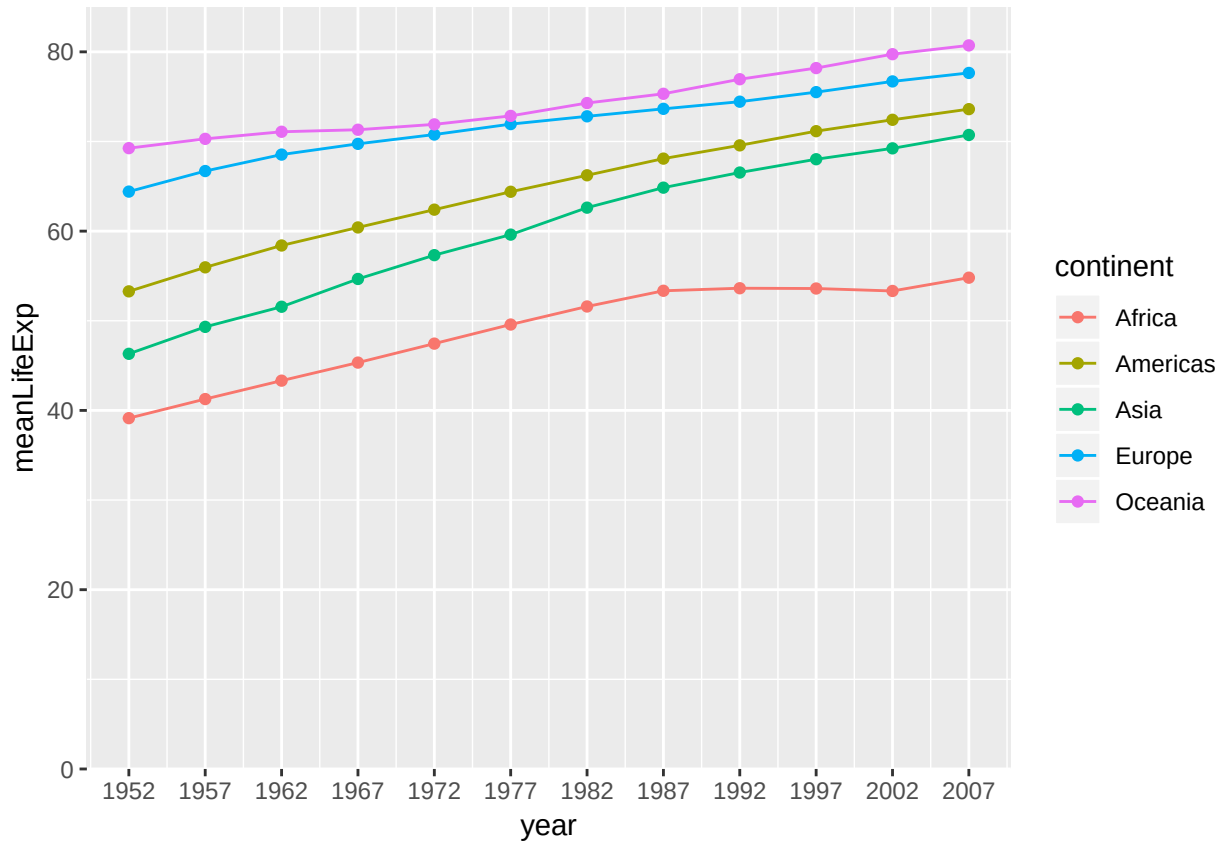
```
#CairoWin()
ggplot(df, aes(x = gdpPercap, y = lifeExp, color = continent, size = pop)) +
  geom_point() +
  scale_x_log10(breaks = c(1000, 10000))
```



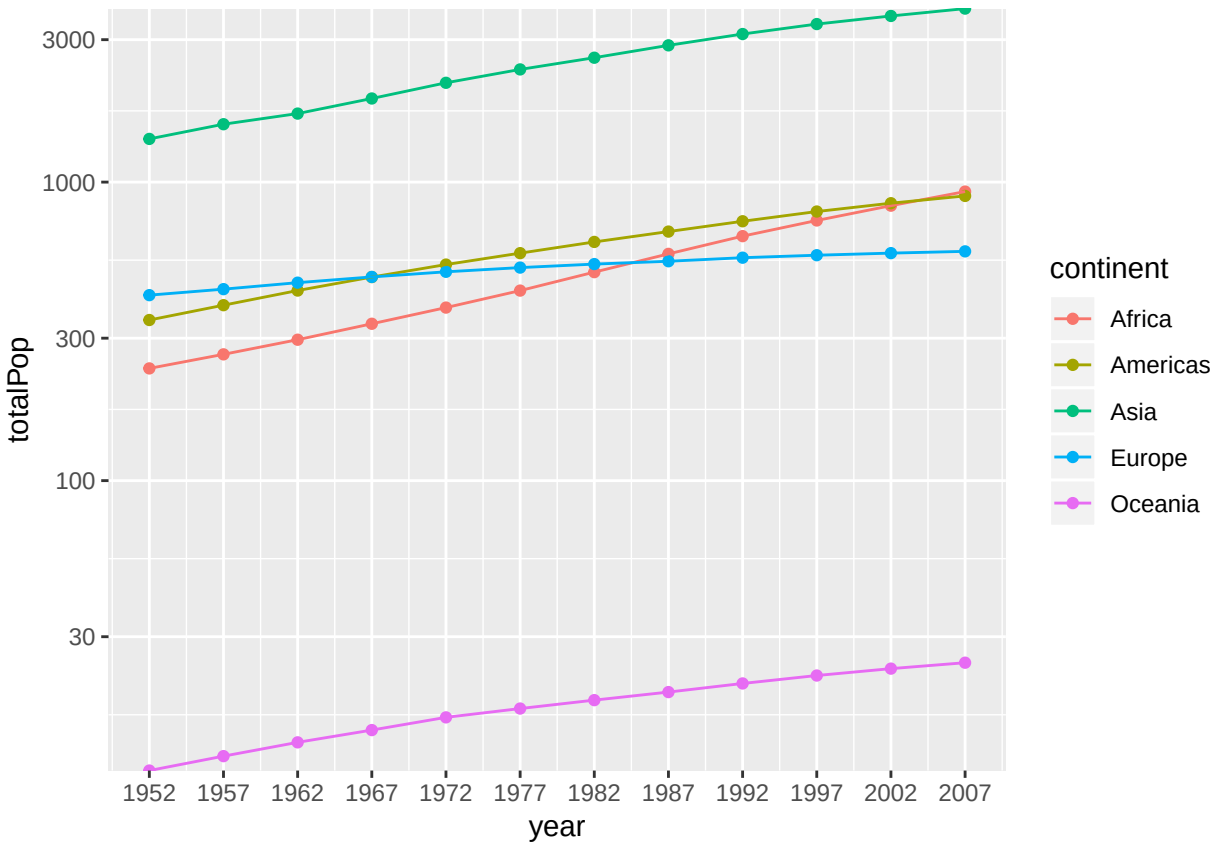

```
df <- gapminder %>%
  group_by(year, continent) %>%
  summarize(meanLifeExp = mean(lifeExp), totalPop = sum(pop) / 1000000)
df
```

```
## # A tibble: 60 x 4
## # Groups:   year [12]
##     year continent meanLifeExp totalPop
##    <int> <fct>           <dbl>    <dbl>
##  1  1952 Africa           39.1    238.
##  2  1952 Americas         53.3    345.
##  3  1952 Asia             46.3   1395.
##  4  1952 Europe           64.4    418.
##  5  1952 Oceania          69.3     10.7
##  6  1957 Africa           41.3    265.
##  7  1957 Americas         56.0    387.
##  8  1957 Asia             49.3   1563.
##  9  1957 Europe           66.7    438.
## 10  1957 Oceania          70.3     11.9
## # ... with 50 more rows
```

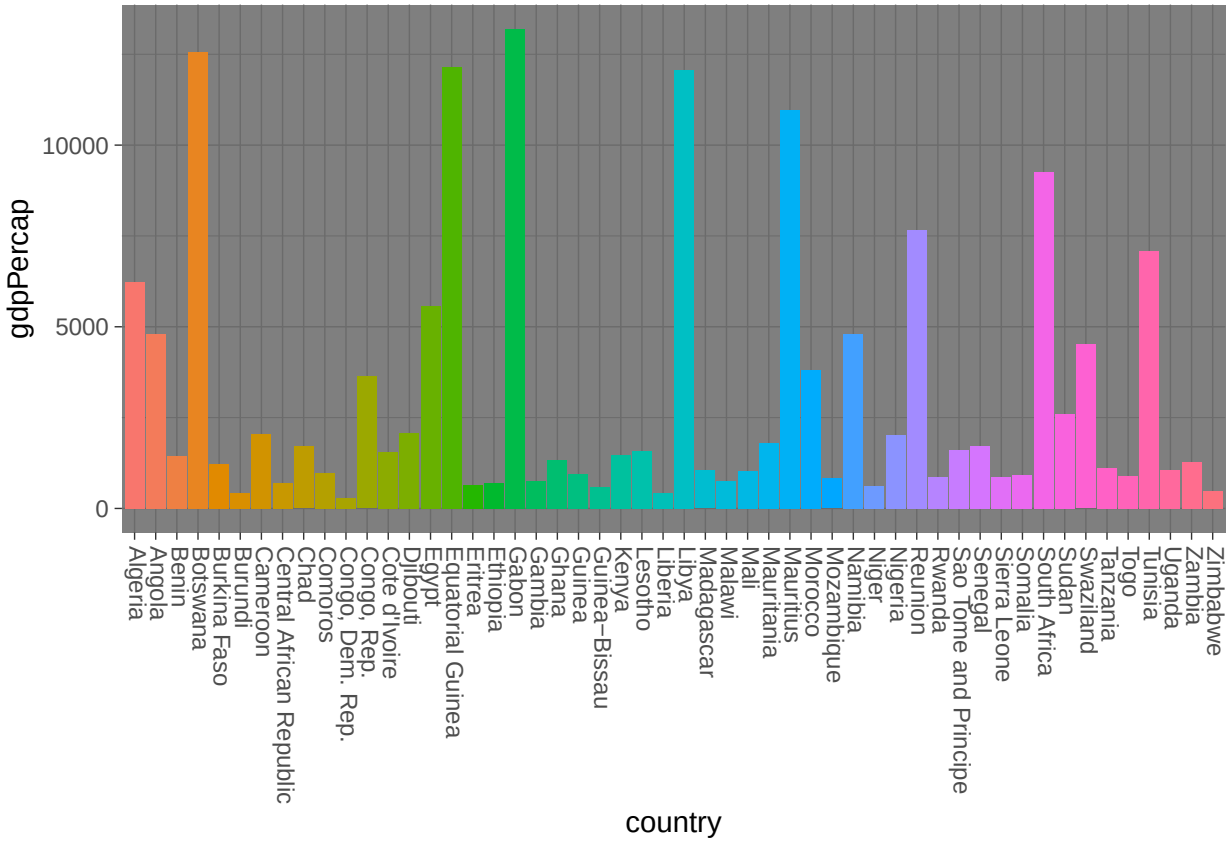
```
ggplot(df, aes(x = year, color = continent)) +
  geom_point(aes(y = meanLifeExp)) +
  geom_line(aes(y = meanLifeExp)) +
  scale_y_continuous(expand = c(0, 0), limits = c(0, 85)) +
  scale_x_continuous(breaks = seq(1952, 2007, by = 5))
```




```
ggplot(df, aes(x = year, color = continent)) +
  geom_point(aes(y = totalPop)) +
  geom_line(aes(y = totalPop)) +
  scale_y_log10(expand = c(0, 0)) +
  scale_x_continuous(breaks = seq(1952, 2007, by = 5))
```




```
gapminder %>%
  filter(continent == "Africa", year == 2007) %>%
  ggplot(aes(x = country, y = gdpPercap,  fill = country)) +
    geom_bar(stat = "Identity") +
    guides(fill=FALSE) +
    theme_dark() +
    theme(axis.text.x = element_text(angle = -90, hjust = 0, vjust = 0.3))
```


gdpPercap
10000
5000
0
Algeria
Angola
Benin
Botswana
Burkina Faso
Burundi
Cameroon
Central African Republic
Chad
Comoros
Congo, Dem. Rep.
Congo, Rep.
Cote d'Ivoire
Djibouti
Egypt
Equatorial Guinea
Eritrea
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Libya
Madagascar
Malawi
Mali
Mauritania
Mauritius
Morocco
Mozambique
Namibia
Niger
Nigeria
Reunion
Rwanda
Sao Tome and Principe
Senegal
Sierra Leone
Somalia
South Africa
Sudan
Swaziland
Tanzania
Togo
Tunisia
Uganda
Zambia
Zimbabwe
country