Task#6

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```
set.seed(42)

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

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

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

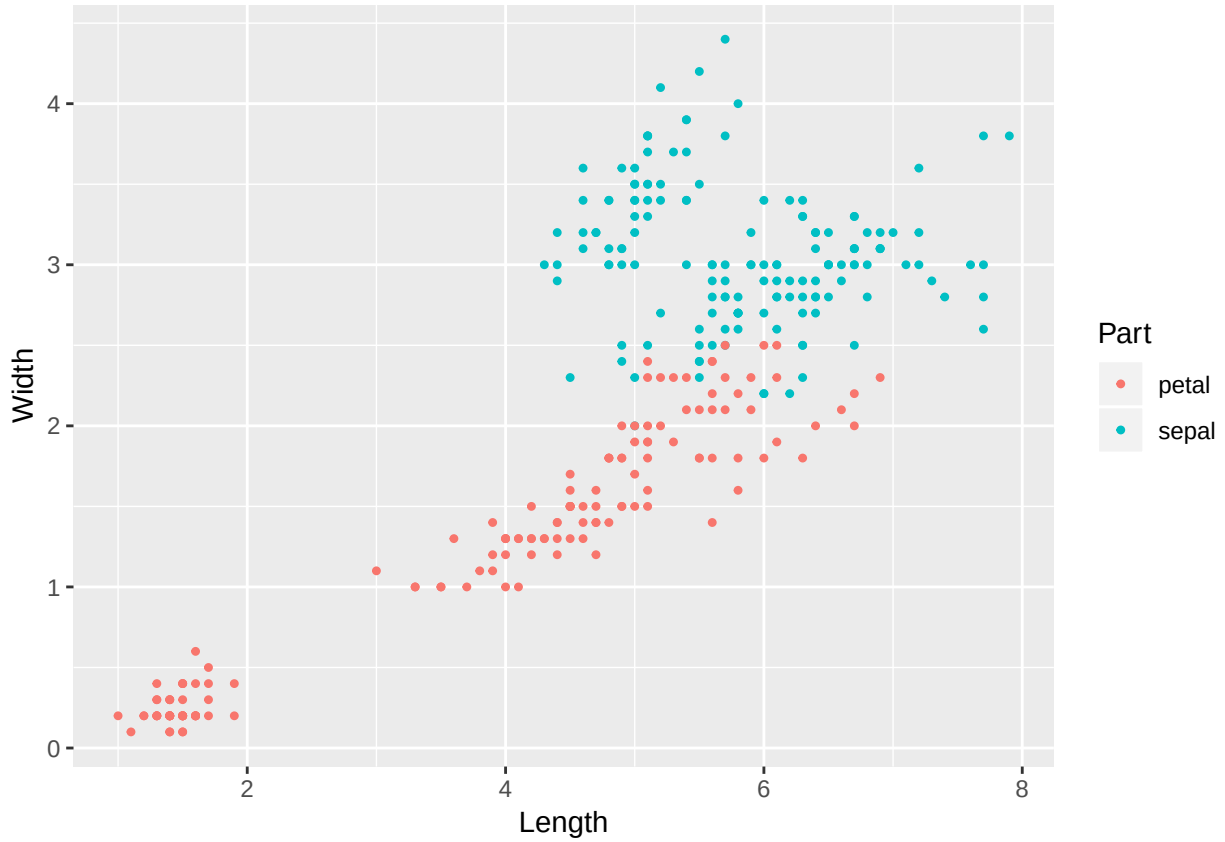
```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(Cairo)
```

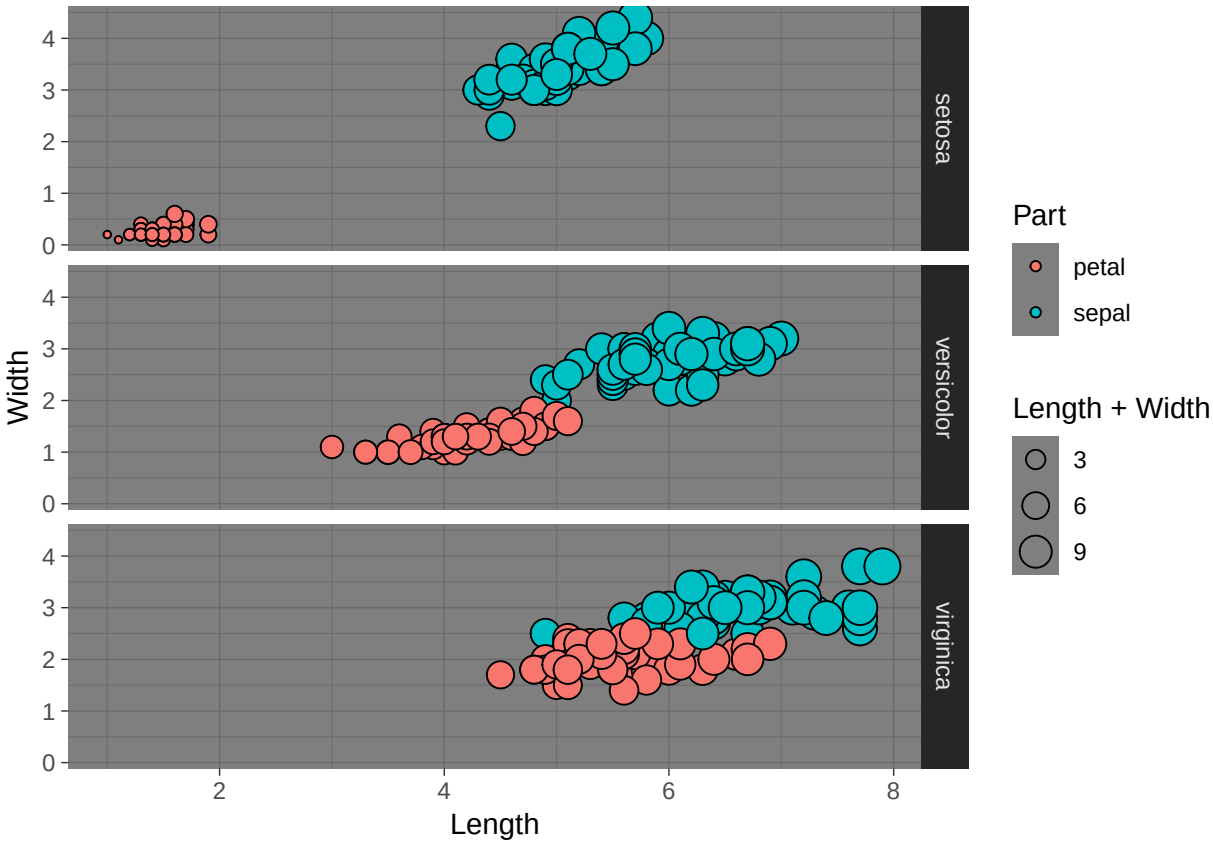
Task#1

```
df1 <- iris %>%
  transmute(Species, Part = 'sepal', Length = Sepal.Length, Width = Sepal.Width,
              id = as.numeric(row.names(iris)))
df2 <- iris %>%
  transmute(Species, Part = 'petal', Length = Petal.Length, Width = Petal.Width,
              id =  as.numeric(row.names(iris)))
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()
```



Task#2

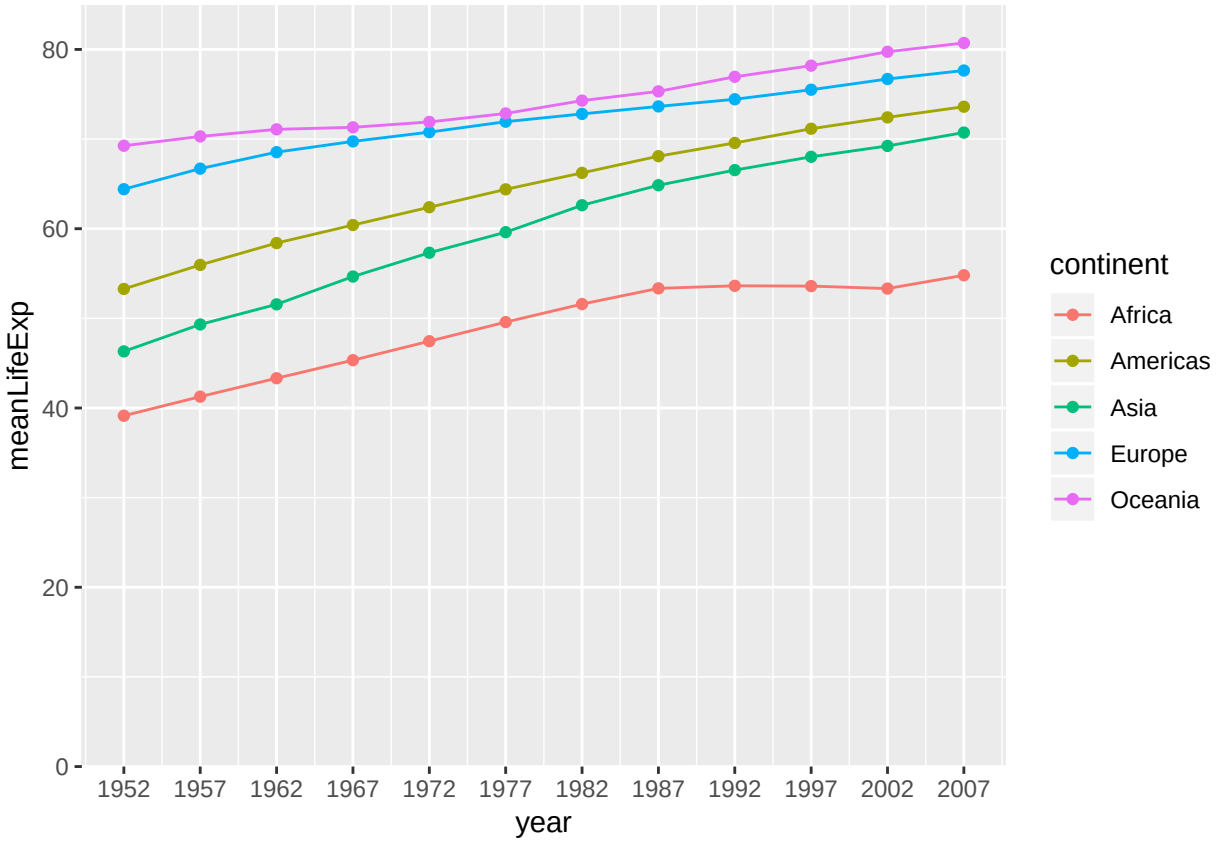
```
df <- gapminder %>%
  filter(year == 2007)

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

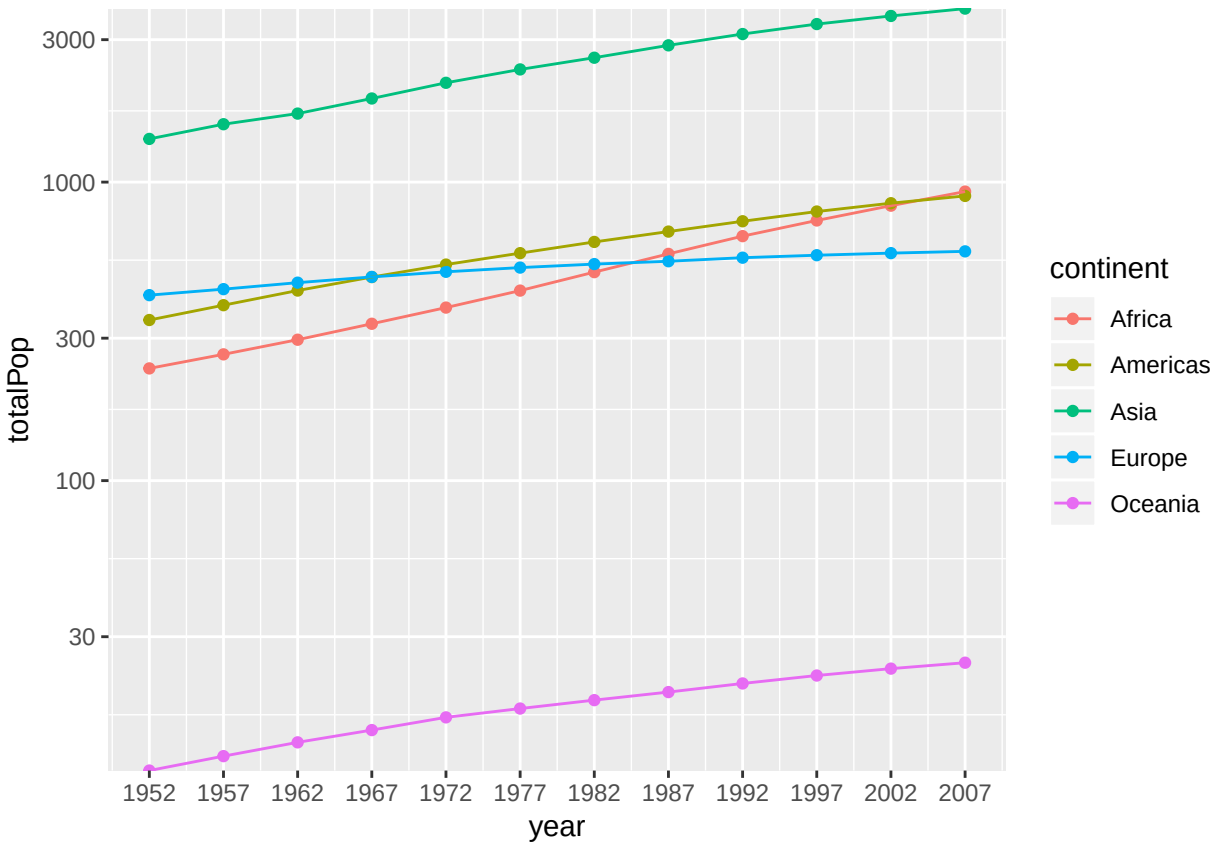

```
df <- gapminder %>%
  group_by(year, continent) %>%
  summarize(meanLifeExp = mean(lifeExp), totalPop = sum(pop) / 1000000)
df
```

```
## # 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))
```

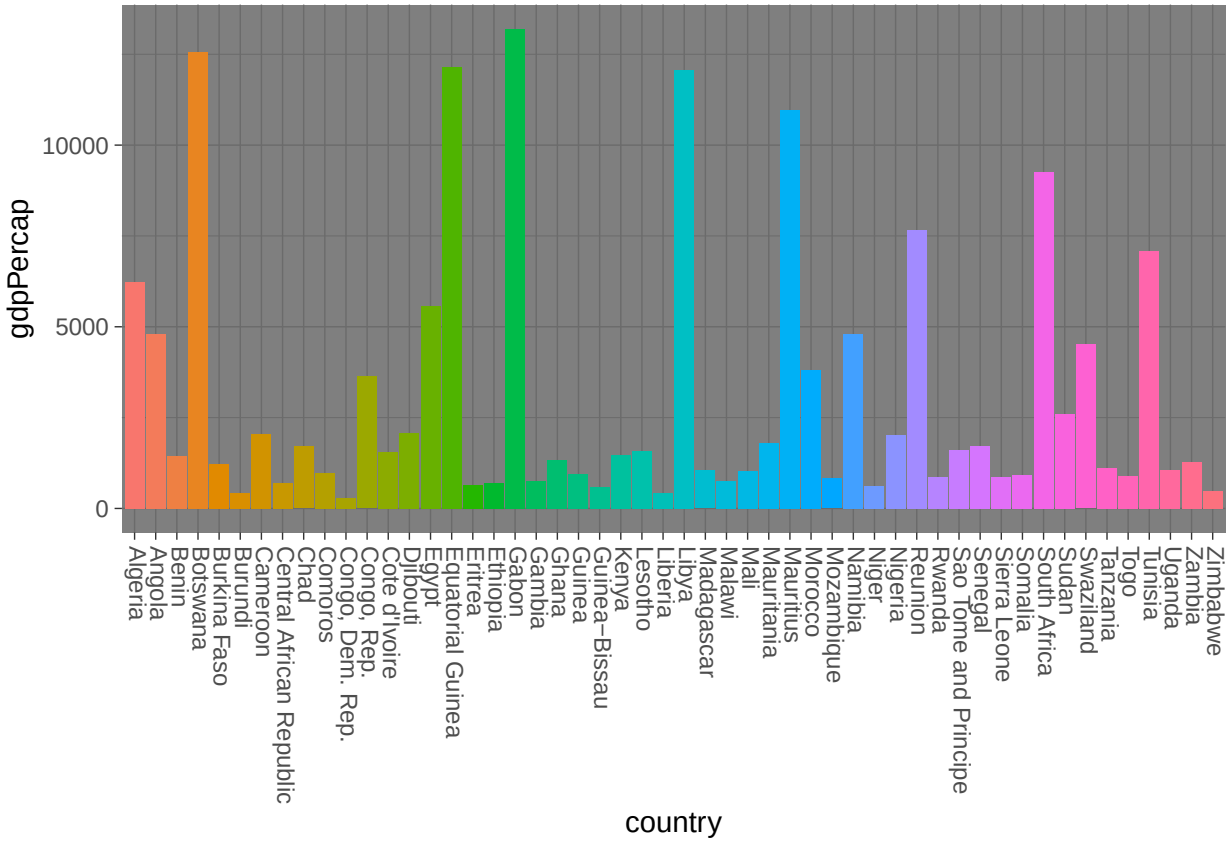



```
ggplot(df, aes(x = year, color = continent)) +
  geom_point(aes(y = totalPop)) +
  geom_line(aes(y = totalPop)) +
  scale_y_log10(expand = c(0, 0)) +
  scale_x_continuous(breaks = seq(1952, 2007, by = 5))
```

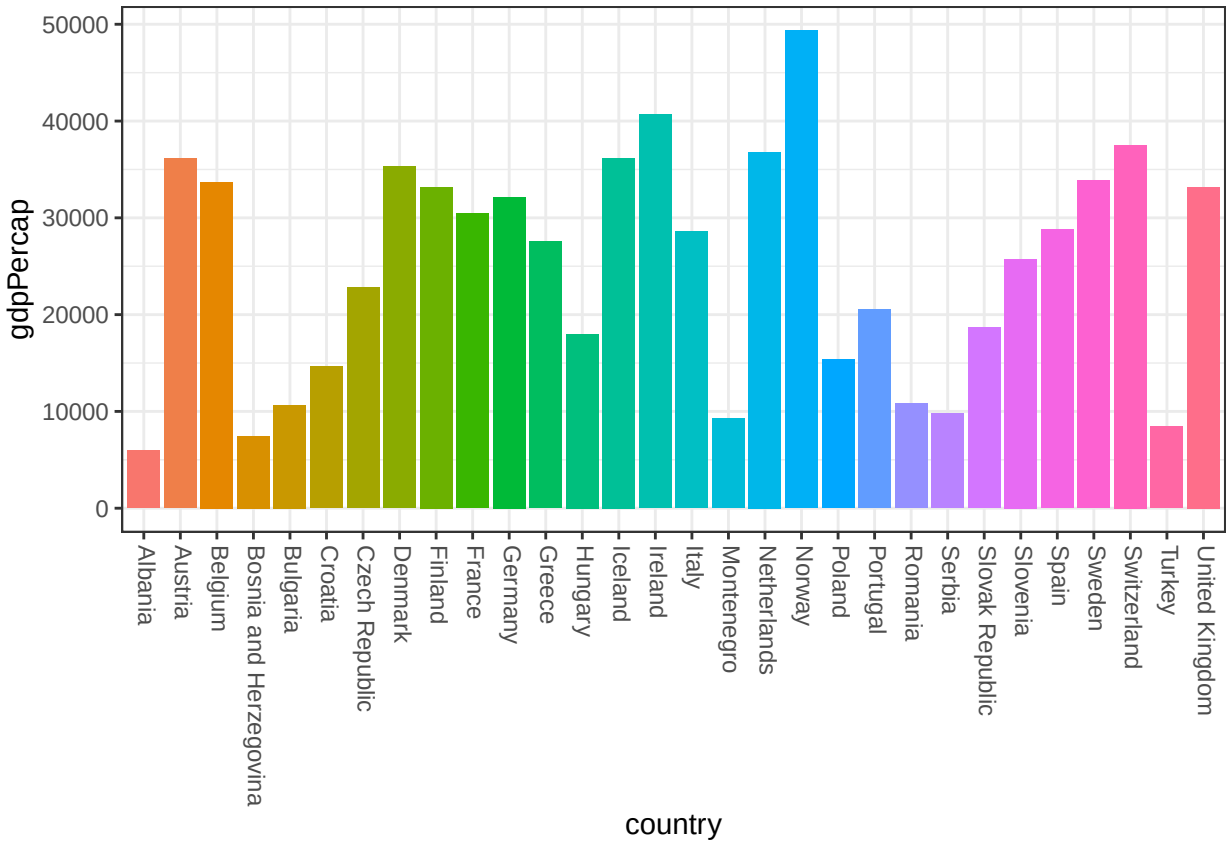


Task#3

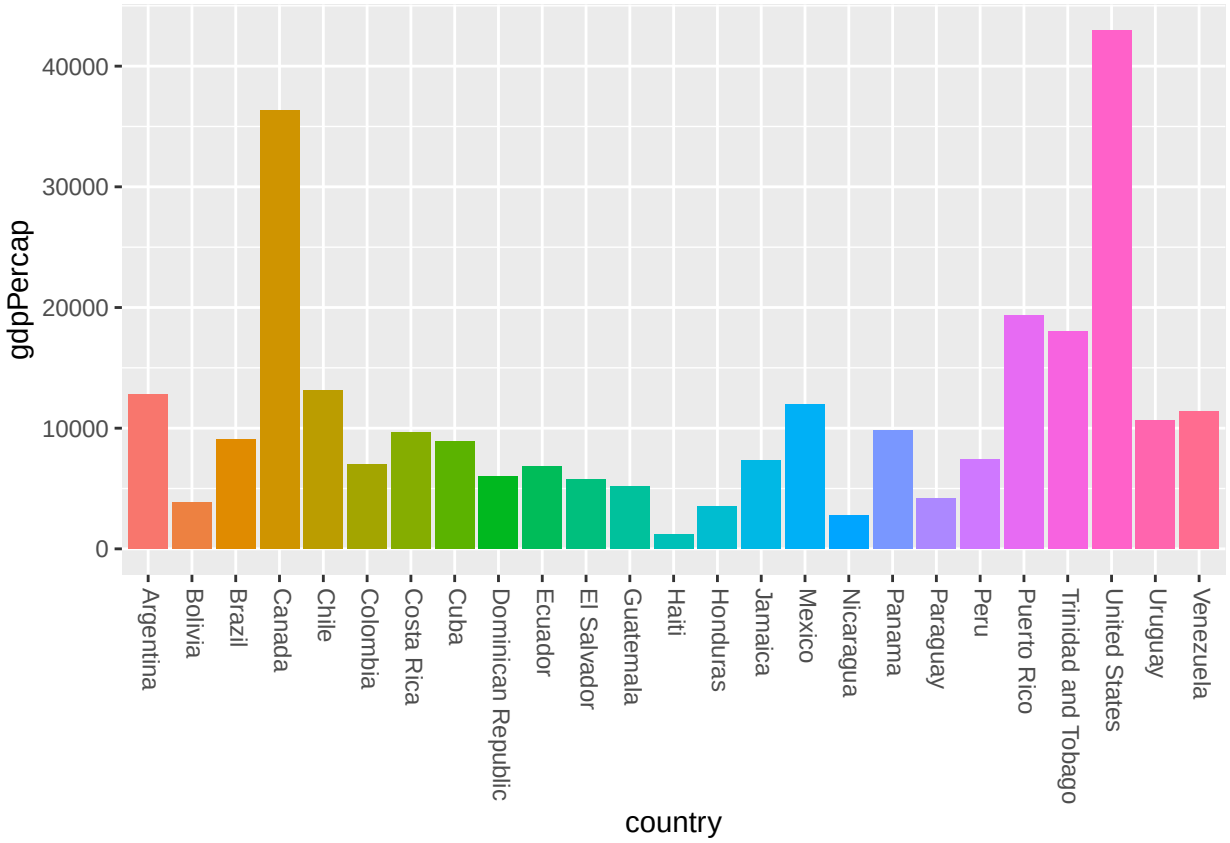
```
gapminder %>%
  filter(continent == "Africa", year == 2007) %>%
  ggplot(aes(x = country, y = gdpPercap,  fill = country)) +
  geom_bar(stat = "Identity") +
  guides(fill=FALSE) +
  theme_dark() +
  theme(axis.text.x = element_text(angle = -90, hjust = 0, vjust = 0.3))
```



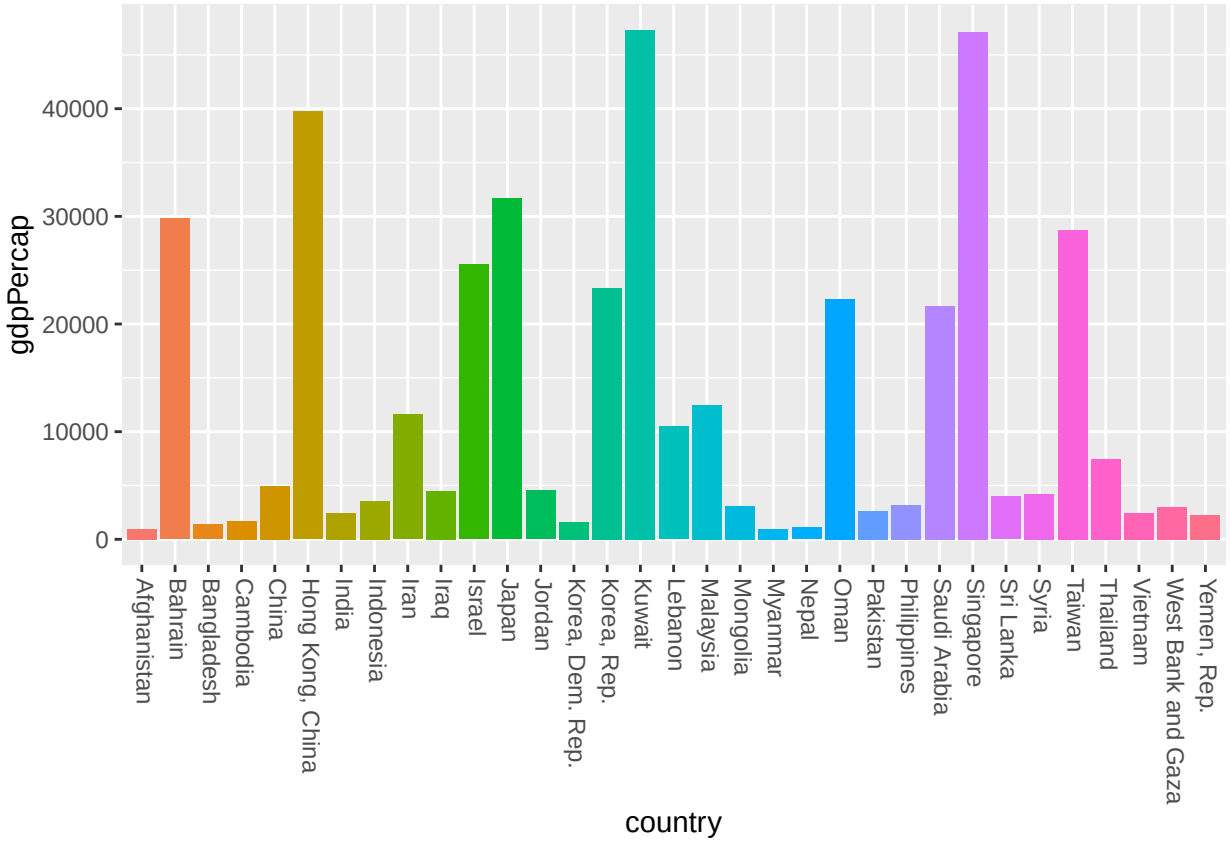

```
gapminder %>%
  filter(continent == "Europe", year == 2007) %>%
  ggplot(aes(x = country, y = gdpPercap,  fill = country)) +
  geom_bar(stat = "Identity") +
  guides(fill=FALSE) +
  theme_bw() +
  theme(axis.text.x = element_text(angle = -90, hjust = 0, vjust = 0.3))
```




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




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

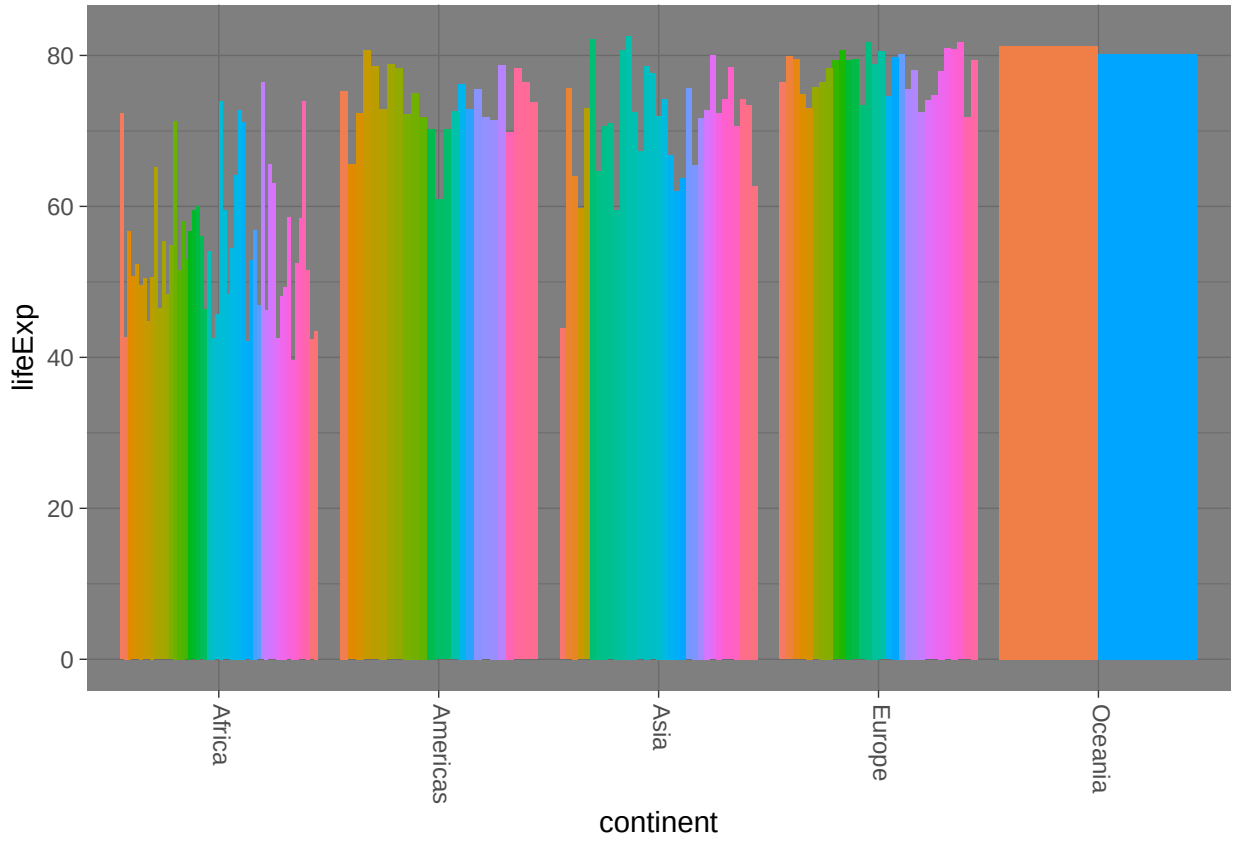



```
library(reshape)
```

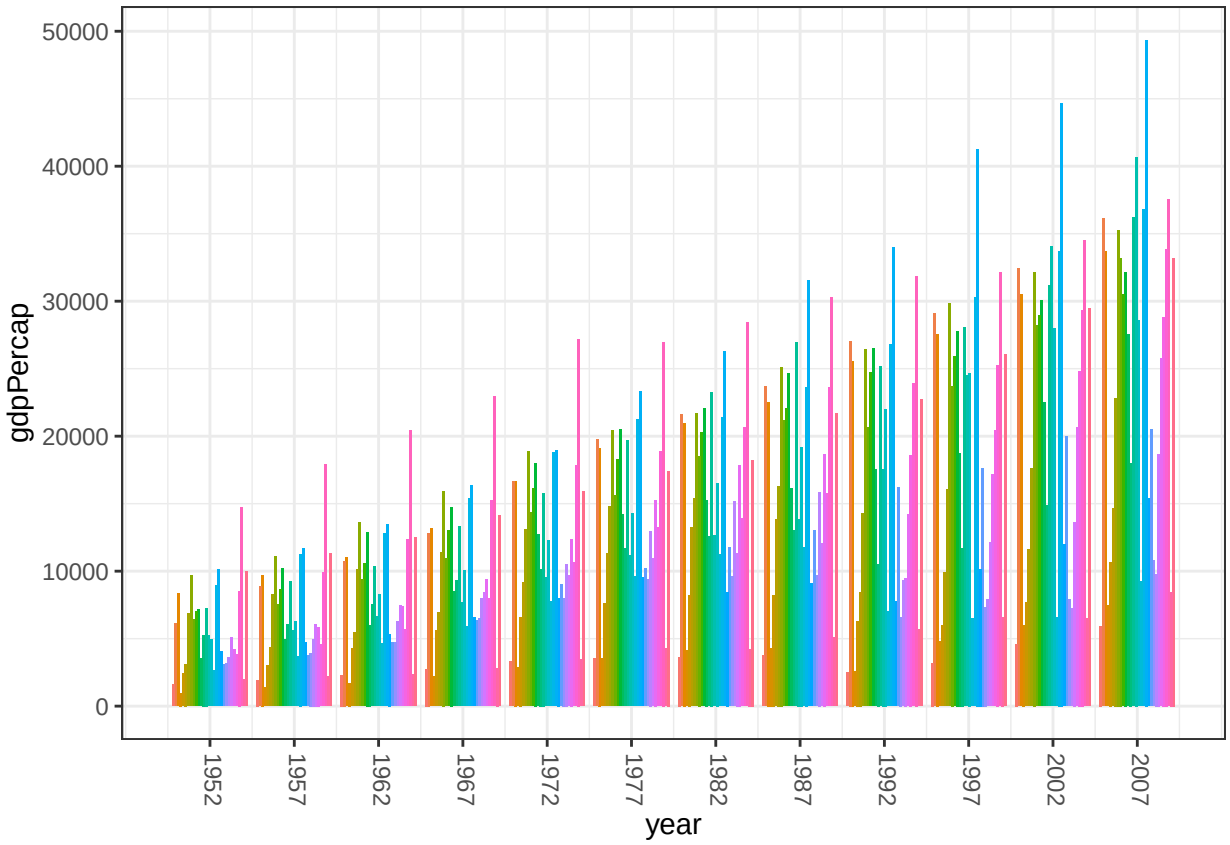
```
##
## Attaching package: 'reshape'
```

```
## The following object is masked from 'package:dplyr':
##
##     rename
```

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




```
library(reshape)
gapminder %>%
  filter(continent == "Europe") %>%
  ggplot(aes(x = year, y = gdpPercap,  fill = country)) +
  geom_bar(stat = "Identity", position=position_dodge()) +
  guides(fill = FALSE) +
  theme_bw() +
  theme(axis.text.x = element_text(angle = -90, hjust = 0, vjust = 0.3)) +
  scale_x_continuous(breaks = seq(1952, 2007, by = 5))
```


50000
40000
30000
20000
10000
0
gdpPercap
1952
1957
1962
1967
1972
1977
1982
1987
1992
1997
2002
2007
year

“‘