Case Study 3

Hang Tian
UB PERSON ID: 50413372

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1. Import packages and get data

```
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(ggplot2)
library(gapminder)
data(gapminder)
gapminder2 = filter(gapminder,country != "Kuwait")
head(gapminder2)
```

```
## # A tibble: 6 x 6
##   country     continent  year lifeExp      pop gdpPercap
##   <fct>       <fct>     <int>   <dbl>    <int>     <dbl>
## 1 Afghanistan Asia       1952    28.8  8425333      779.
## 2 Afghanistan Asia       1957    30.3  9240934      821.
## 3 Afghanistan Asia       1962    32.0 10267083      853.
## 4 Afghanistan Asia       1967    34.0 11537966      836.
## 5 Afghanistan Asia       1972    36.1 13079460      740.
## 6 Afghanistan Asia       1977    38.4 14880372      786.
```

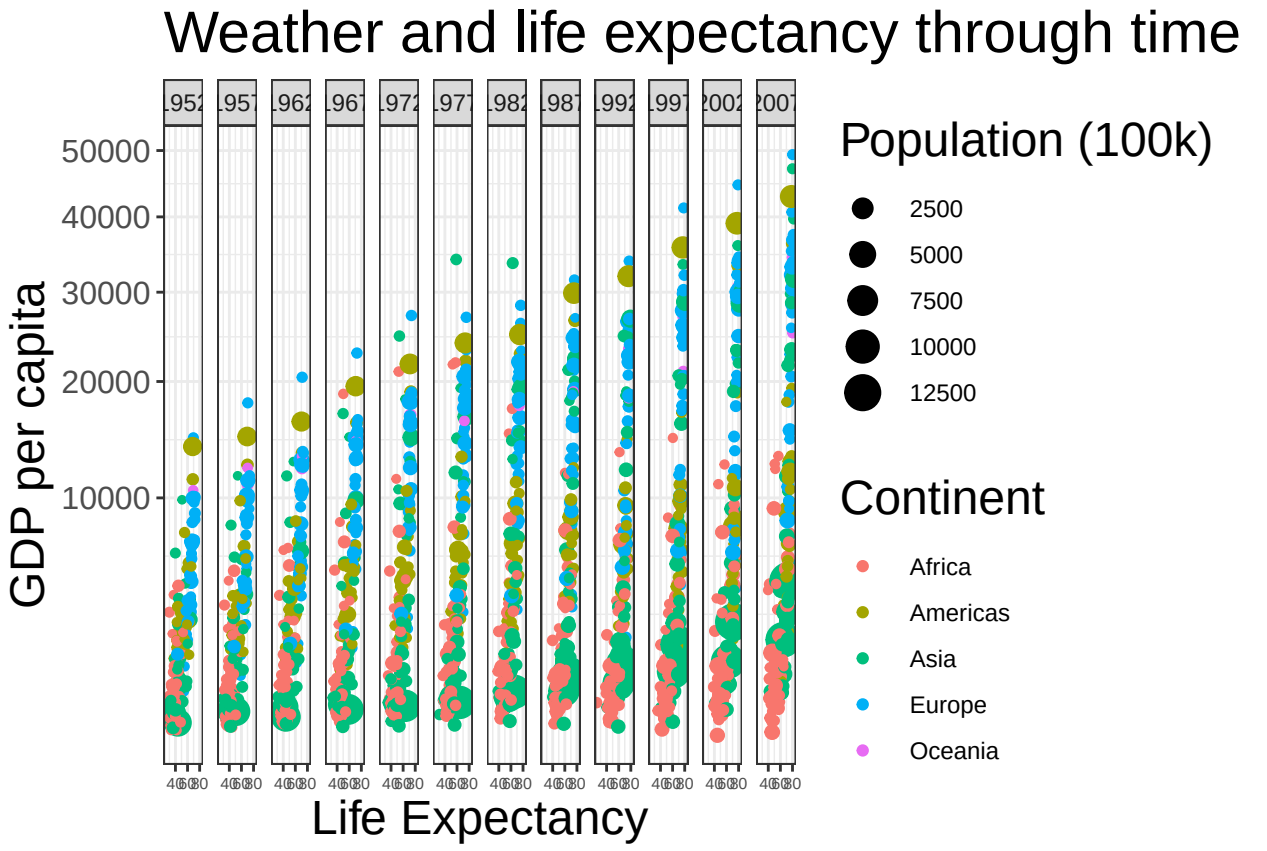
```
glimpse(gapminder2)
```

```
## Rows: 1,692
## Columns: 6
## $ country   <fct> "Afghanistan", "Afghanistan", "Afghanistan", "Afghanistan", ~
```

```
## $ continent <fct> Asia, Asia, Asia, Asia, Asia, Asia, Asia, Asia, Asia, Asia, ~
## $ year      <int> 1952, 1957, 1962, 1967, 1972, 1977, 1982, 1987, 1992, 1997, ~
## $ lifeExp   <dbl> 28.801, 30.332, 31.997, 34.020, 36.088, 38.438, 39.854, 40.8~
## $ pop       <int> 8425333, 9240934, 10267083, 11537966, 13079460, 14880372, 12~
## $ gdpPercap <dbl> 779.4453, 820.8530, 853.1007, 836.1971, 739.9811, 786.1134, ~
```

2. Make an image

```
ggplot(gapminder2) +
  geom_point(aes(x = lifeExp, y = gdpPercap, size=pop/100000, color = continent)) +
  facet_wrap(~year, nrow = 1) +
  scale_y_sqrt() +
  theme_bw() +
  labs(x = "Life Expectancy", y = "GDP per capita", size = "Population (100k)", color = "Continent", ti
  theme(axis.text.x = element_text(size = 6),axis.text.y = element_text(size = 12),title = element_text
```

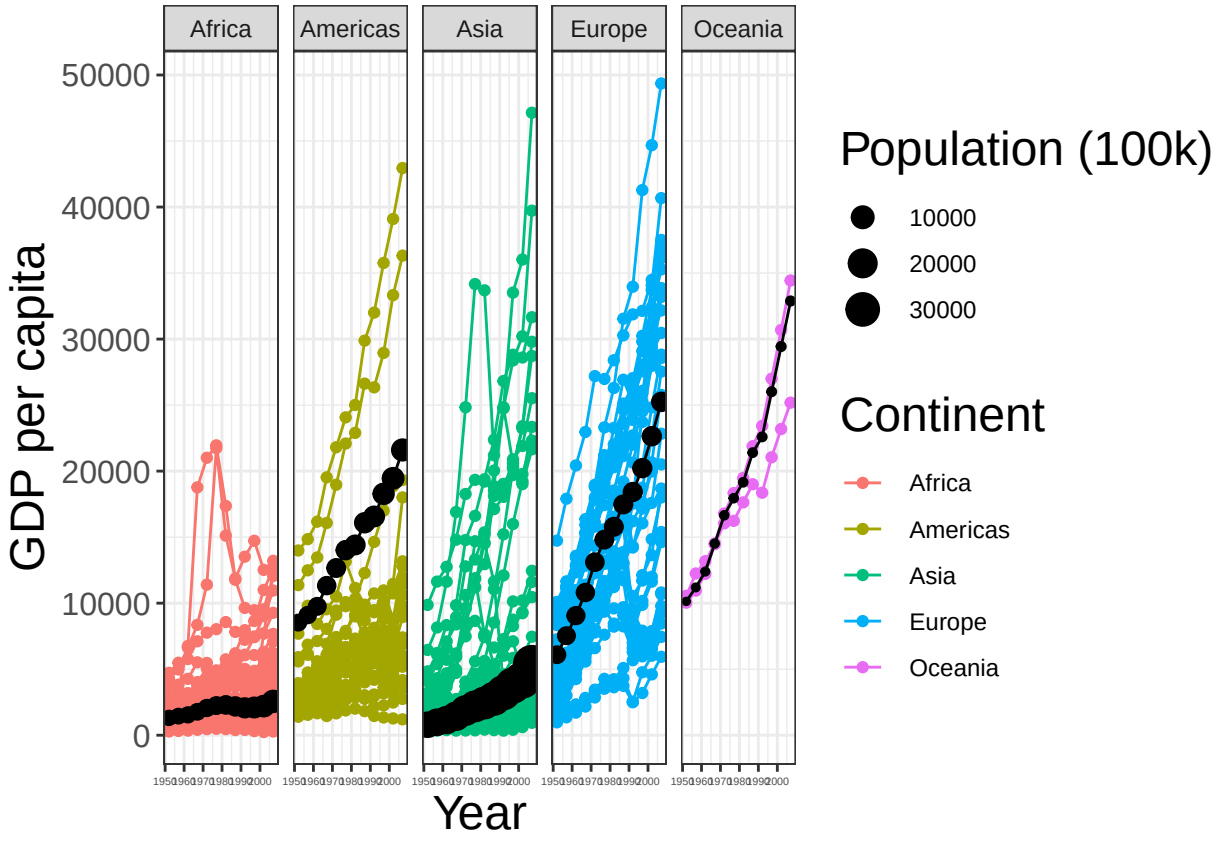



```
ggsave(
  filename = "Plot1 .png",
  width = 17,
  height = 9,
  units = "in",
  dpi = 300
)
```

3. And another one

```
options(dplyr.summarise.inform = FALSE)
gapminder3 = gapminder2 %>%
  group_by(continent, year) %>%
  summarise(gdpPercapweighted = weighted.mean(x = gdpPercap, w = pop),
                    pop = sum(as.numeric(pop)))
```

```
ggplot(gapminder2) +
  geom_line(aes(x = year, y = gdpPercap, color = continent, group = country)) +
  geom_point(aes(x = year, y = gdpPercap, color = continent, group = country)) +
  geom_point(data = gapminder3, aes(x = year, y = gdpPercapweighted, size = pop/100000)) +
  geom_line(data = gapminder3, aes(x = year, y = gdpPercapweighted)) +
  facet_wrap(~continent, nrow = 1) +
  theme_bw() +
  labs(x = "Year", y = "GDP per capita", size = "Population (100k)", color = "Continent") +
  theme(axis.text.x = element_text(size = 4),axis.text.y = element_text(size = 12),title = element_text
```




```
ggsave(
  filename = "Plot2 .png",
  width = 24,
  height = 7,
  units = "in",
  dpi = 300
)
```