

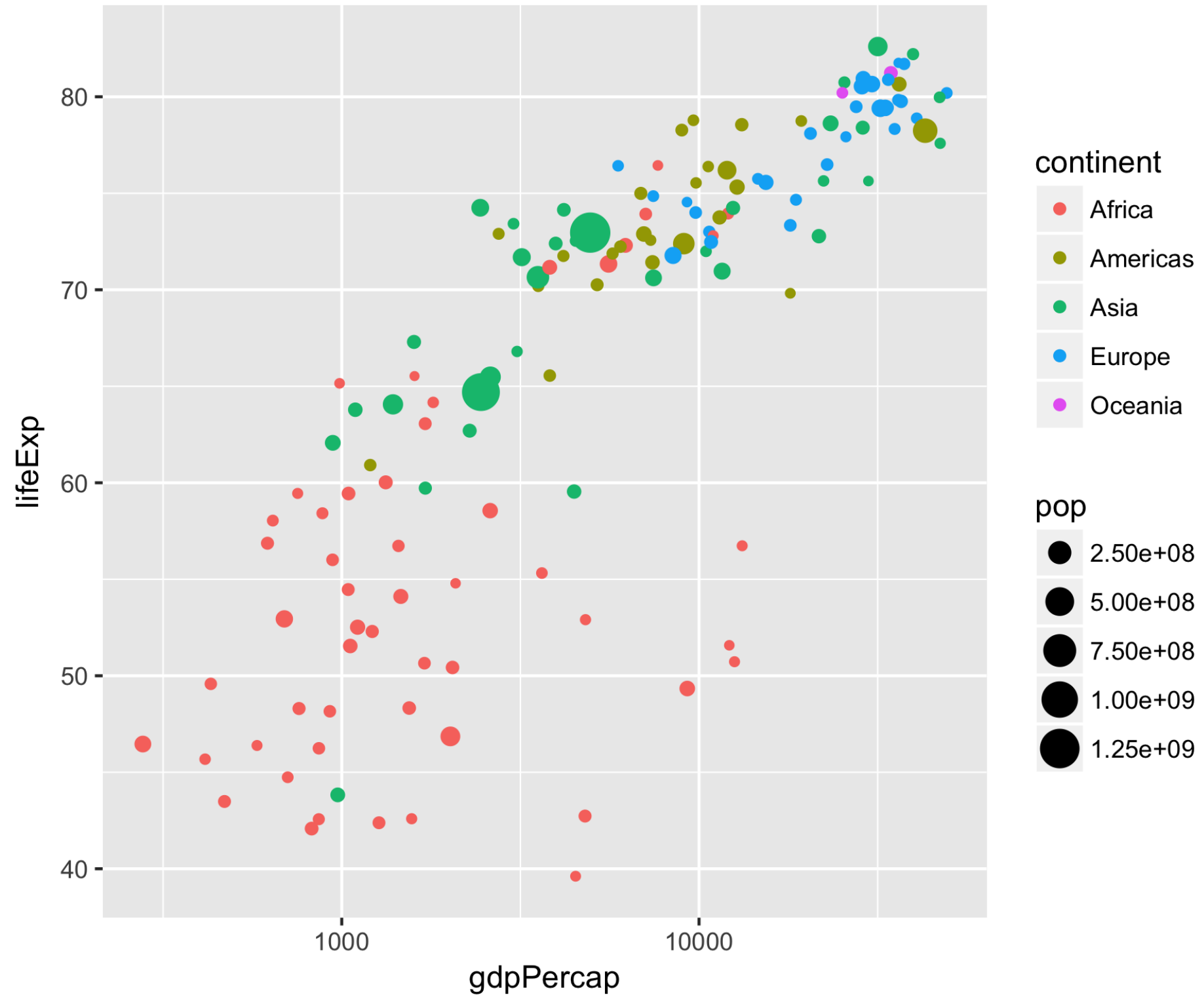
Line plots

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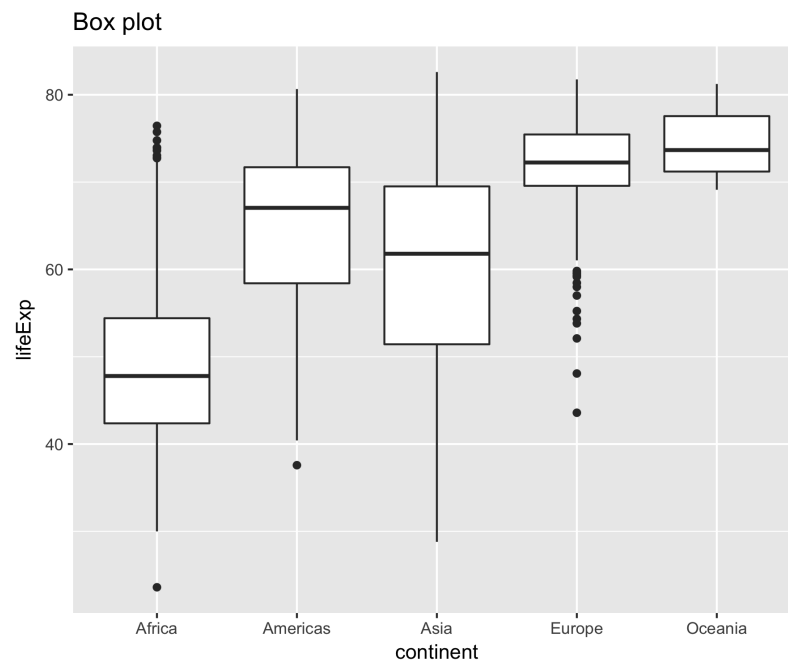
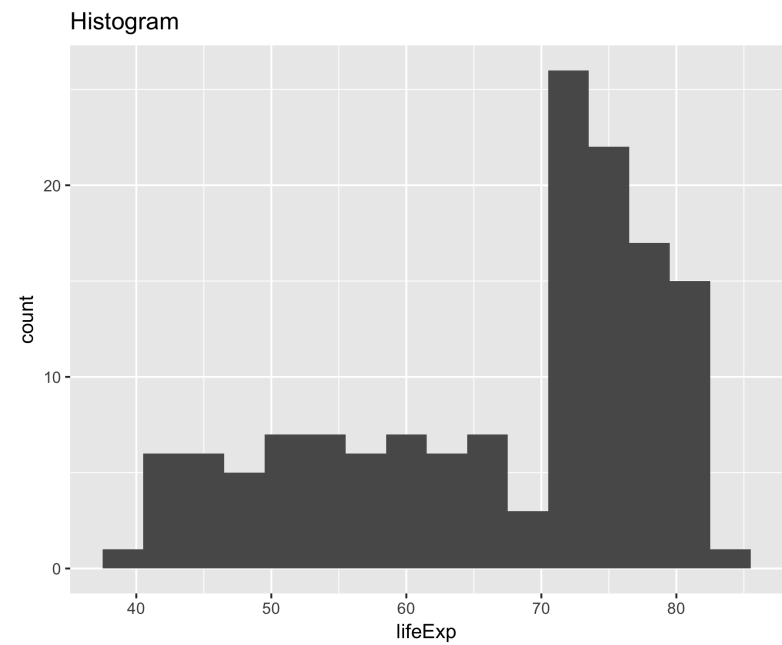
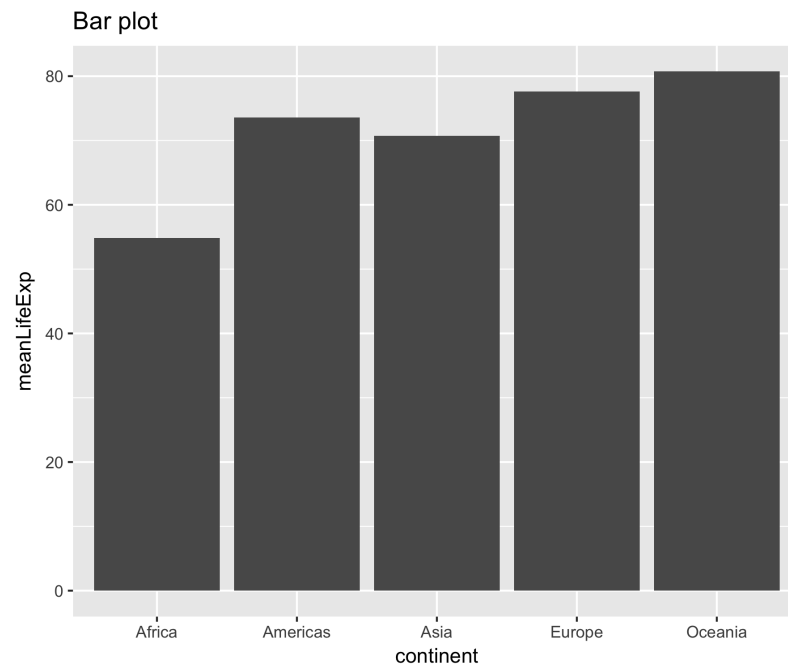
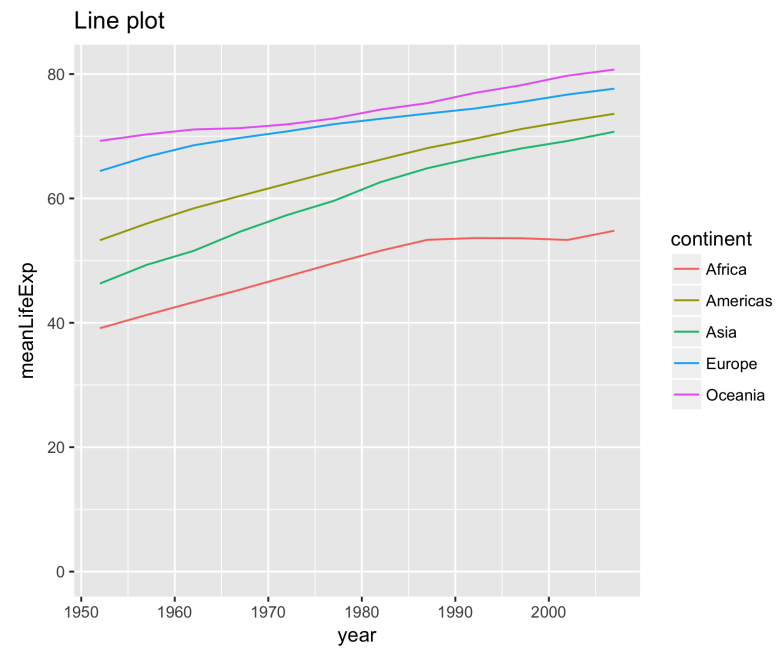


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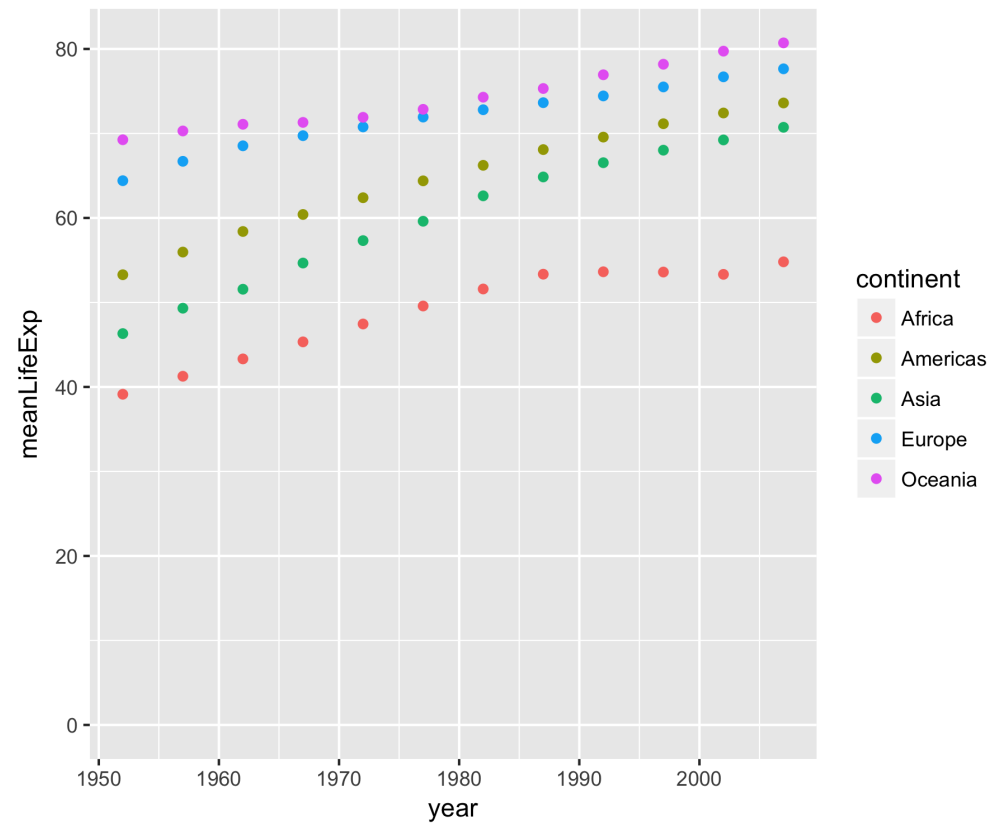
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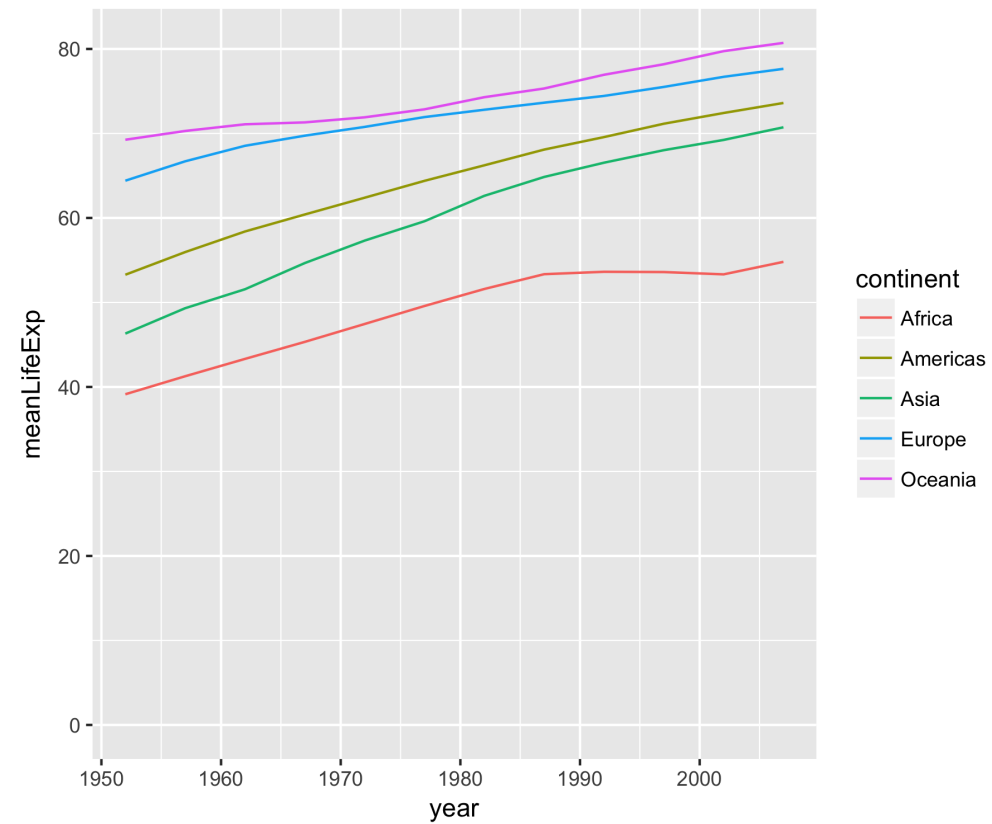
Types of plots



Scatter vs line plot

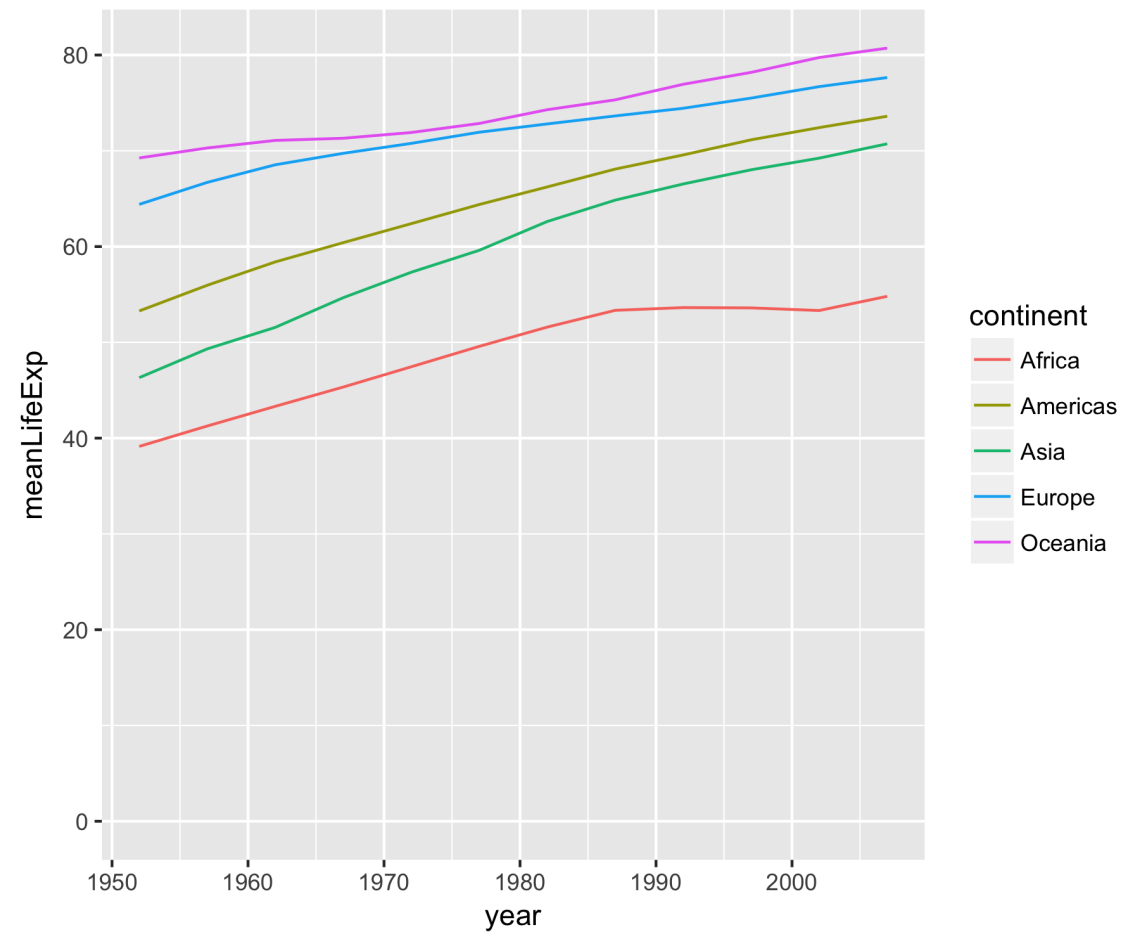


`geom_point()`



`geom_line()`

Line plot



```
ggplot(year_continent, aes(x = year, y = meanLifeExp, color = continent)) +  
  geom_line() +  
  expand_limits(y = 0)
```

Let's practice!

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Bar plots

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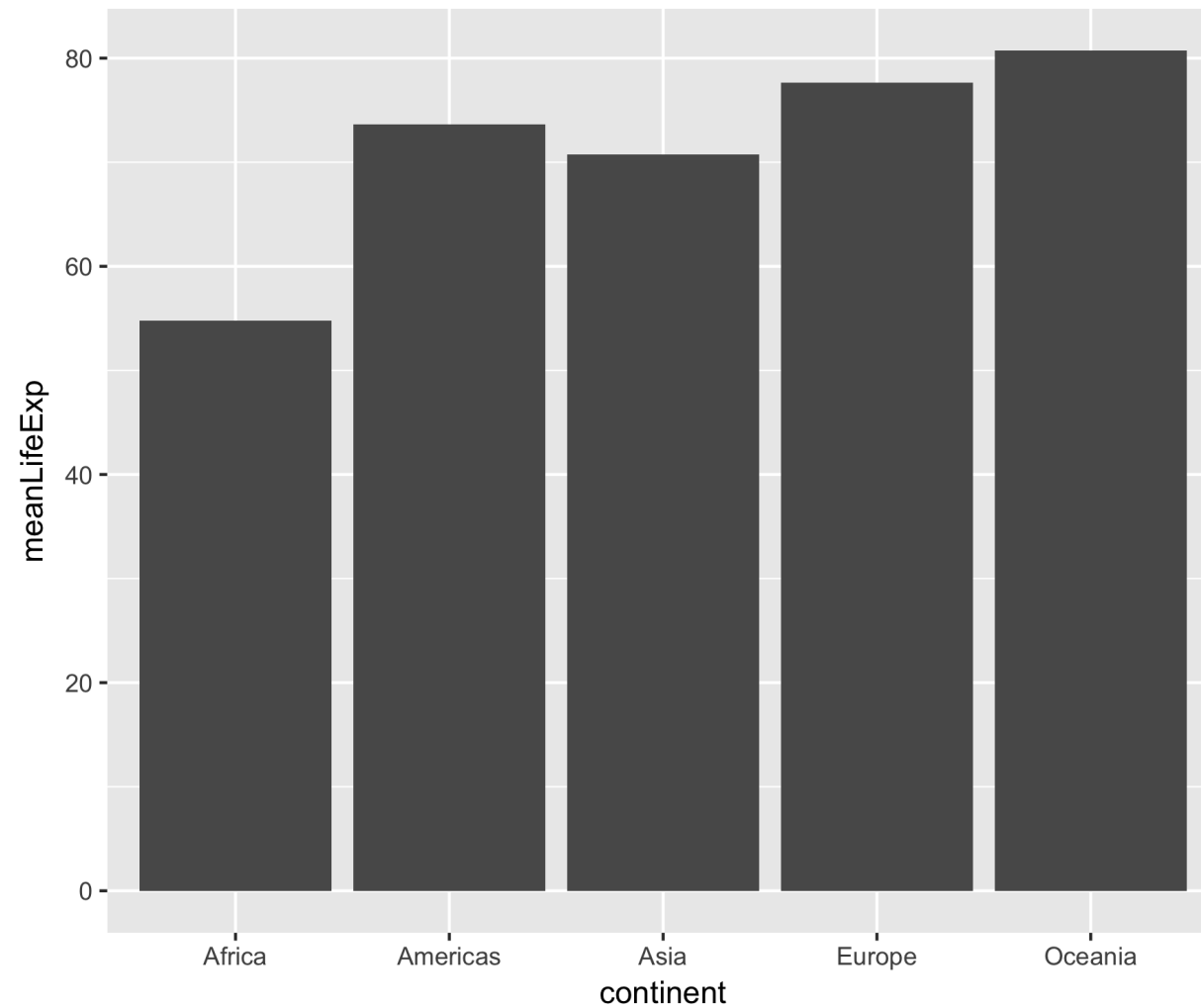
Summarizing by continent

```
by_continent <- gapminder %>%  
  filter(year == 2007) %>%  
  group_by(continent) %>%  
  summarize(meanLifeExp = mean(lifeExp))
```

by_continent

```
# A tibble: 5 x 2  
  continent meanLifeExp  
    <fctr>      <dbl>  
1   Africa  54.80604  
2 Americas  73.60812  
3    Asia   70.72848  
4   Europe  77.64860  
5 Oceania  80.71950
```


Bar plot



```
ggplot(by_continent, aes(x = continent, y = meanLifeExp)) +  
  geom_col()
```

Let's practice!

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Histograms

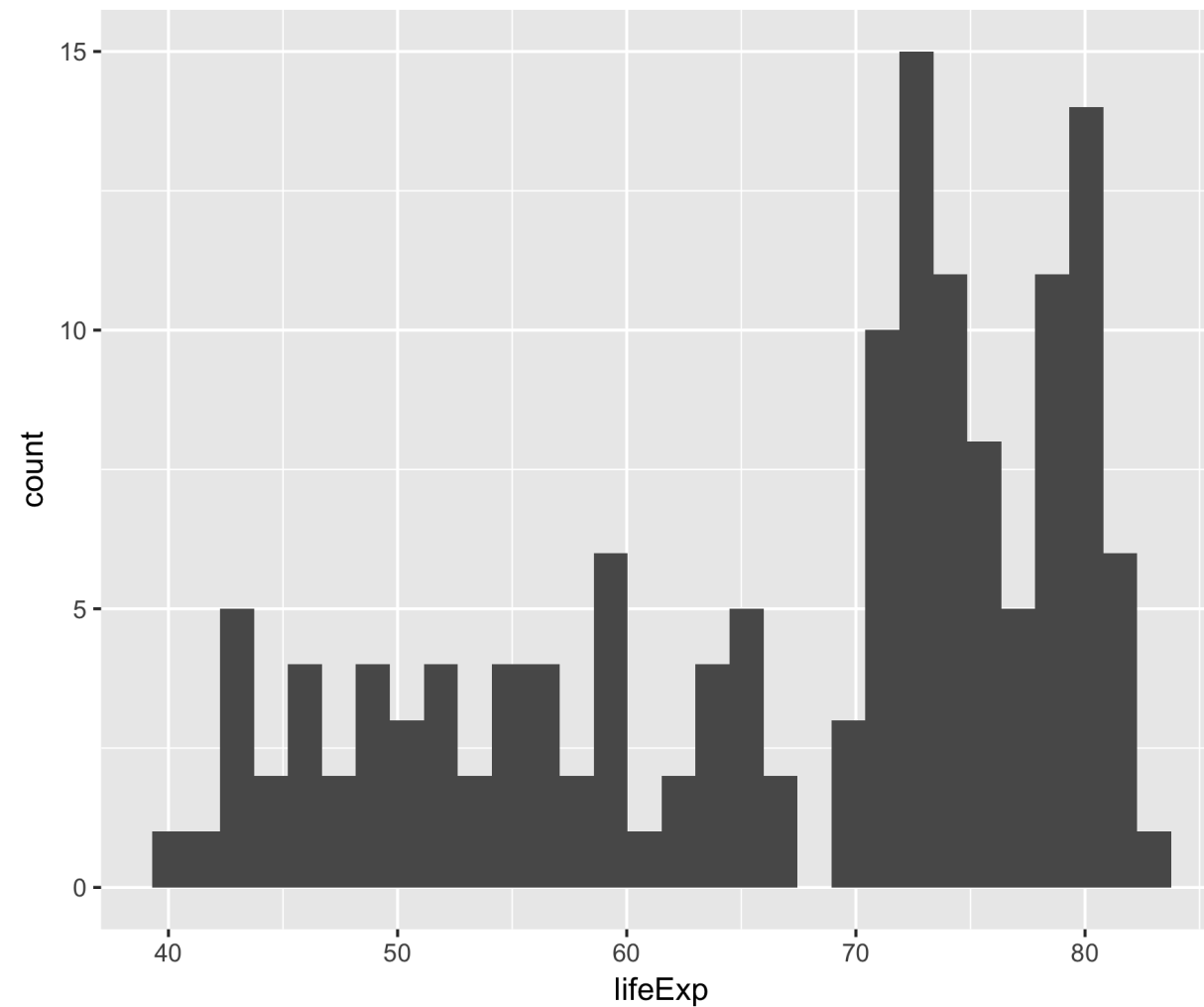
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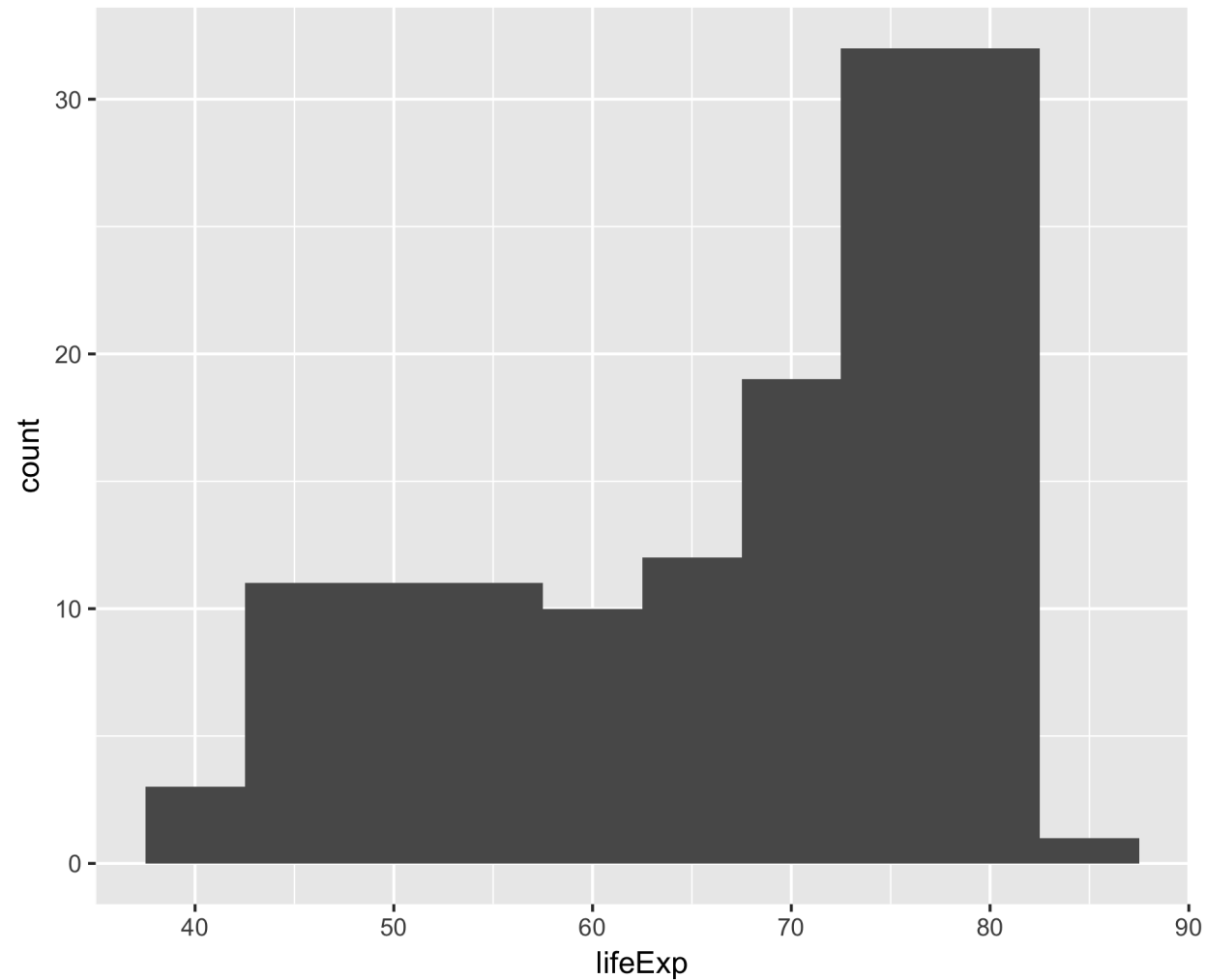
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Histogram



```
ggplot(gapminder_2007, aes(x = lifeExp)) +  
  geom_histogram()
```

Adjusting bin width



```
ggplot(gapminder_2007, aes(x = lifeExp)) +  
  geom_histogram(binwidth = 5)
```

Log x-axis

```
scale_x_log10()
```

Let's practice!

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Box plots

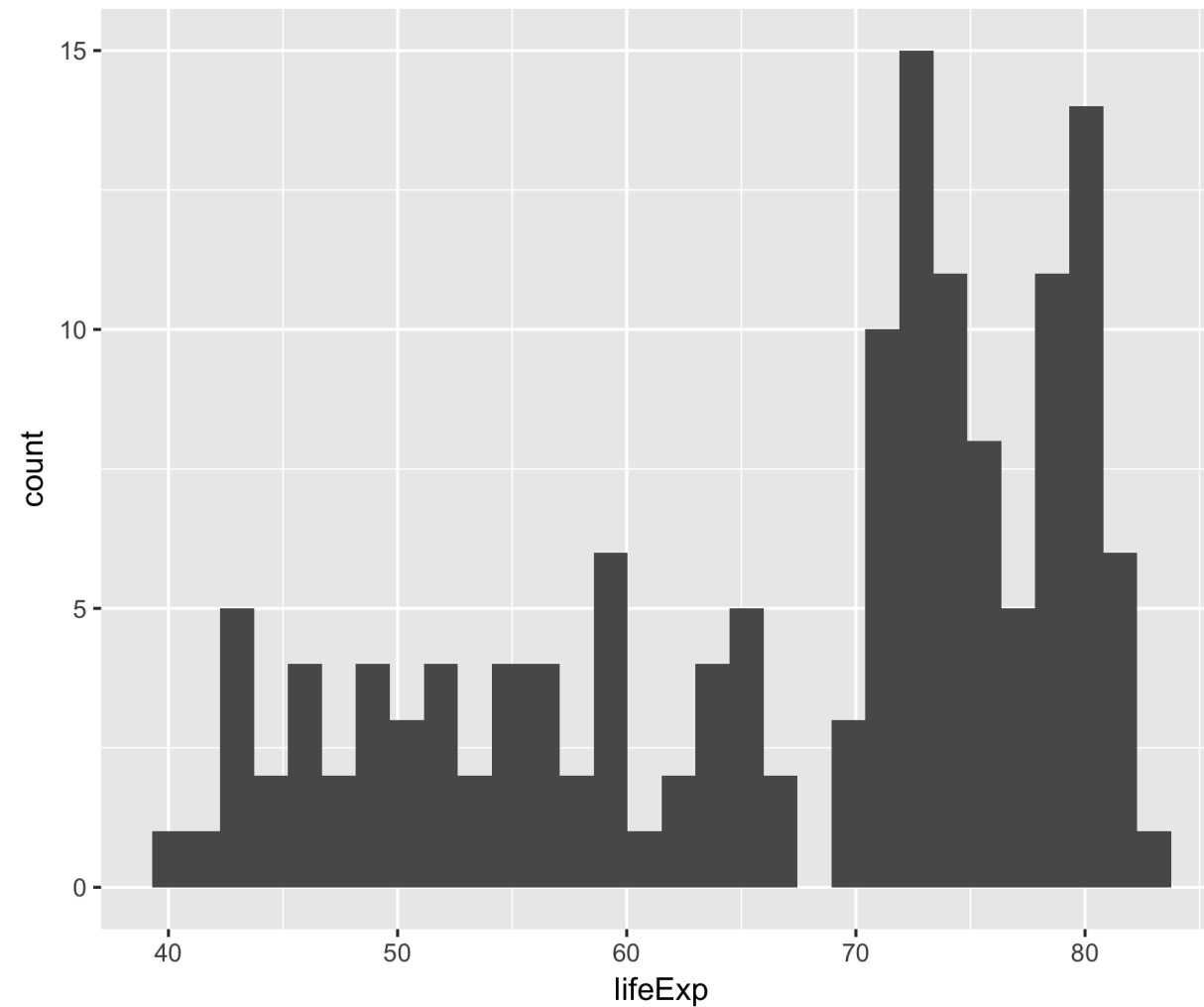
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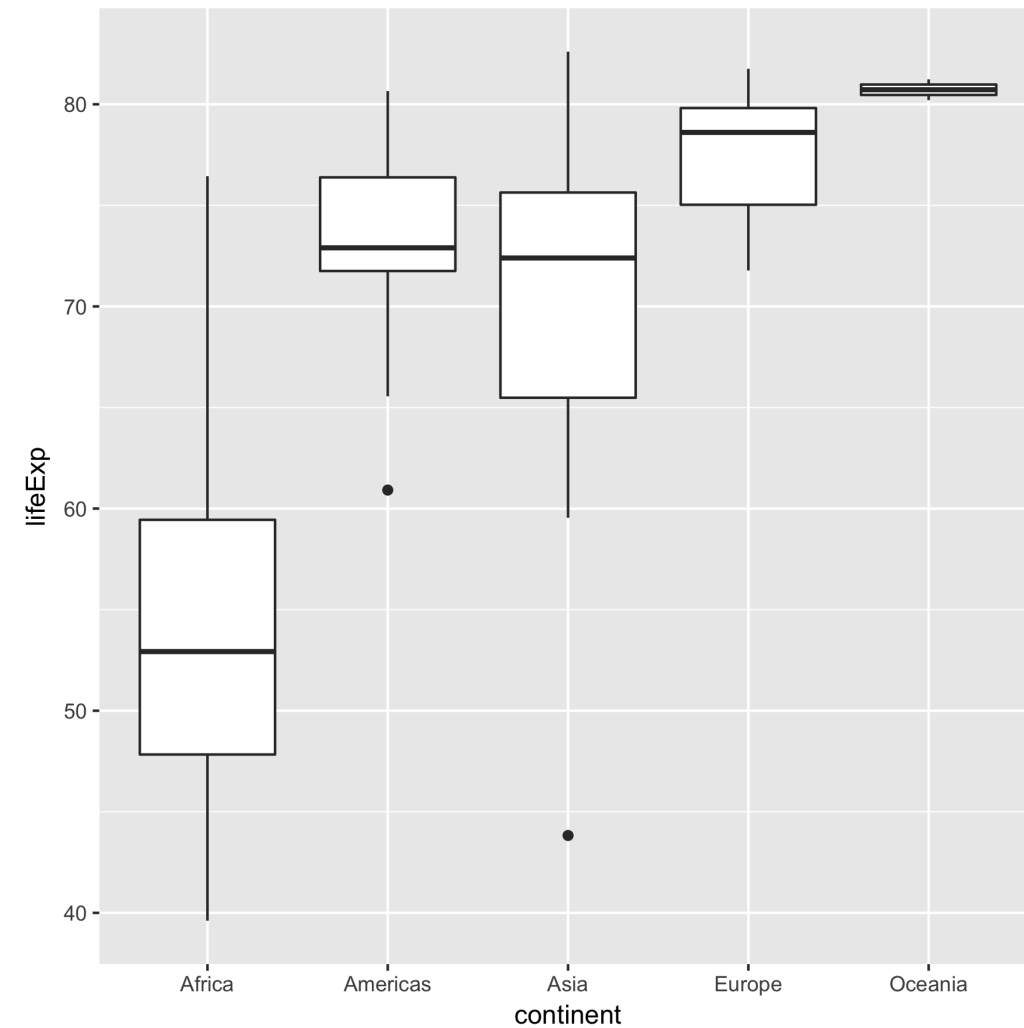
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Histograms



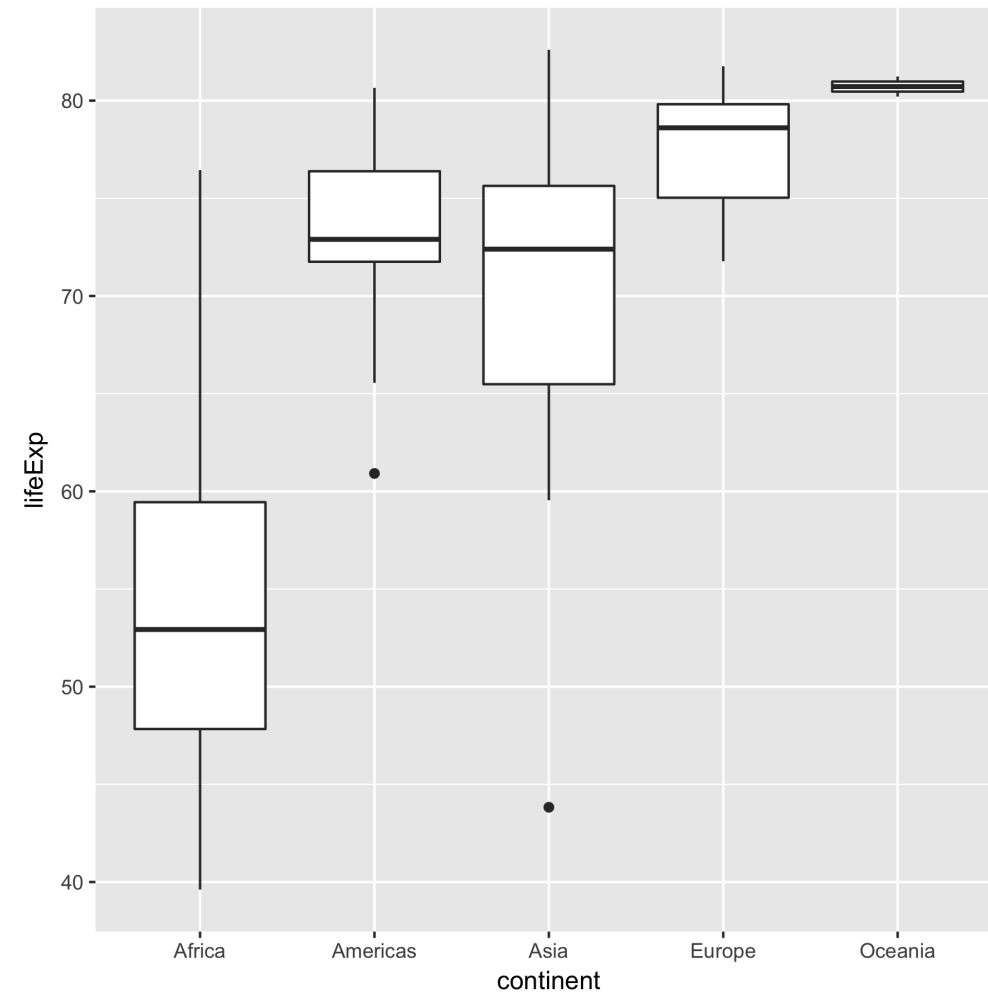
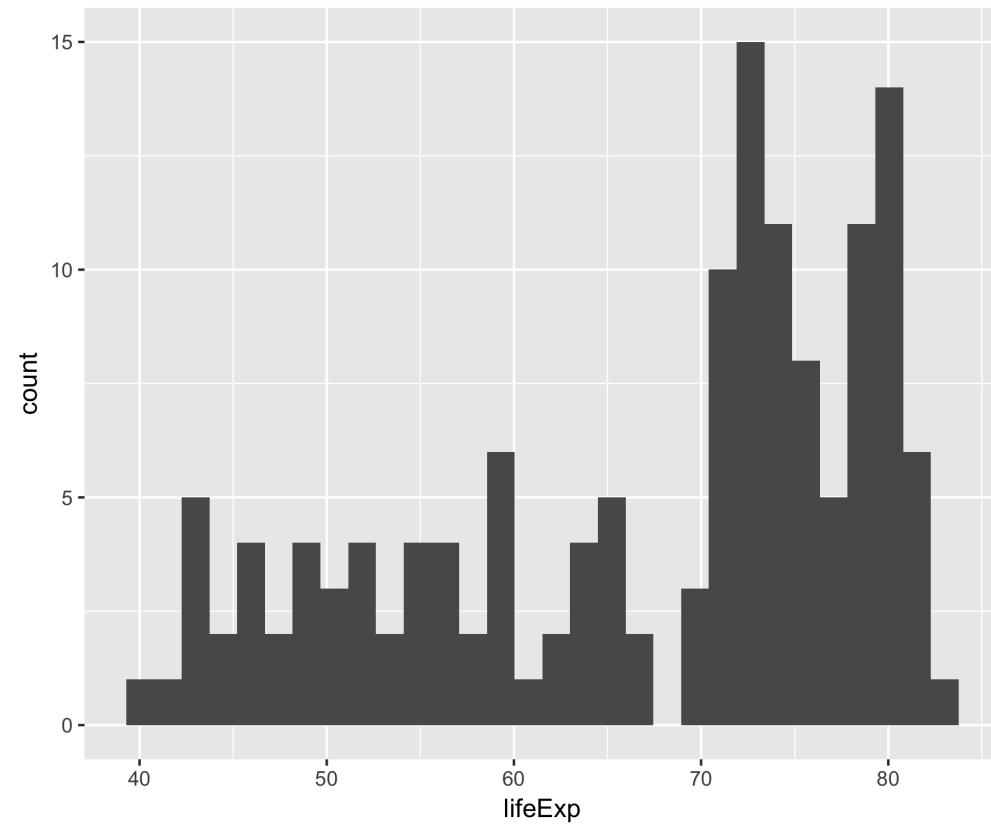
```
ggplot(gapminder_2007, aes(x = lifeExp)) +  
  geom_histogram()
```

Box plots



```
ggplot(gapminder_2007, aes(x = continent, y = lifeExp)) +  
  geom_boxplot()
```

Histogram vs box plot



Let's practice!

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Conclusion

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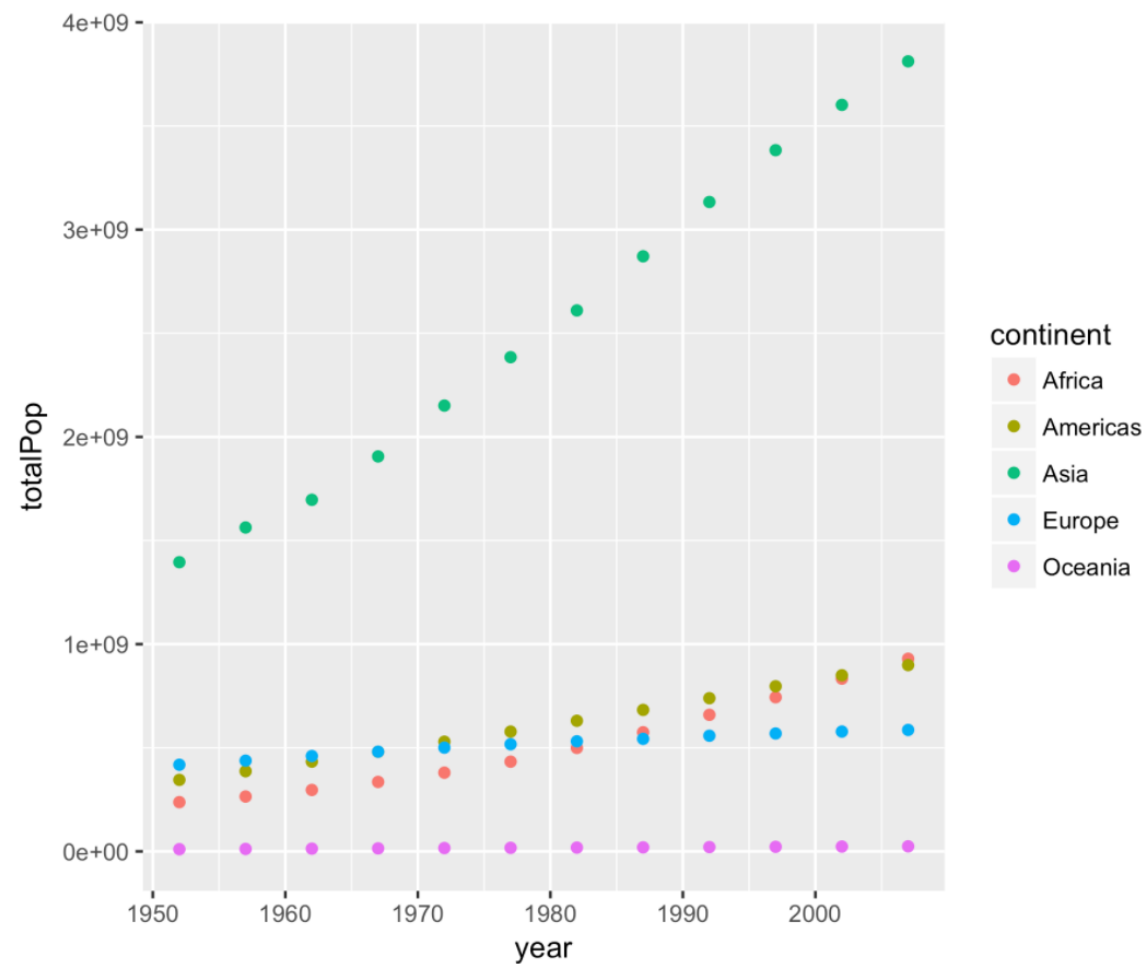


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Transforming and visualizing data with R

```
ggplot(by_year_continent, aes(x = year, y = totalPop, color = continent)) +  
  geom_point() +  
  expand_limits(y = 0)
```



Next steps: Data visualization

- Data Visualization: **Data visualization with** `ggplot2`
- Data Manipulation: **Data manipulation with** `dplyr`
- Importing and Cleaning: **Importing and cleaning data**
- Practice! **Exploratory Data Analysis in R: Case Study**

**Enjoy your data
science journey!**

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