

# Class2\_20231016\_DataVisualization\_Apichat

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```
#attach the libraries
```

```
library(socviz)
library(ggplot2)
library(tidyverse)
```

```
## -- Attaching core tidyverse packages ----- tidyverse 2.0.0 --
```

```
## v dplyr      1.1.0      v readr      2.1.4
## v forcats    1.0.0      v stringr   1.5.0
## v lubridate  1.9.2      v tibble    3.1.8
## v purrr      1.0.1      v tidyr     1.3.0
```

```
## -- Conflicts ----- tidyverse_conflicts() --
```

```
## x dplyr::filter() masks stats::filter()
```

```
## x dplyr::lag()     masks stats::lag()
```

```
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
#install.packages("gapminder")
```

```
library(gapminder)
```

```
#attach the data
```

```
gapminder
```

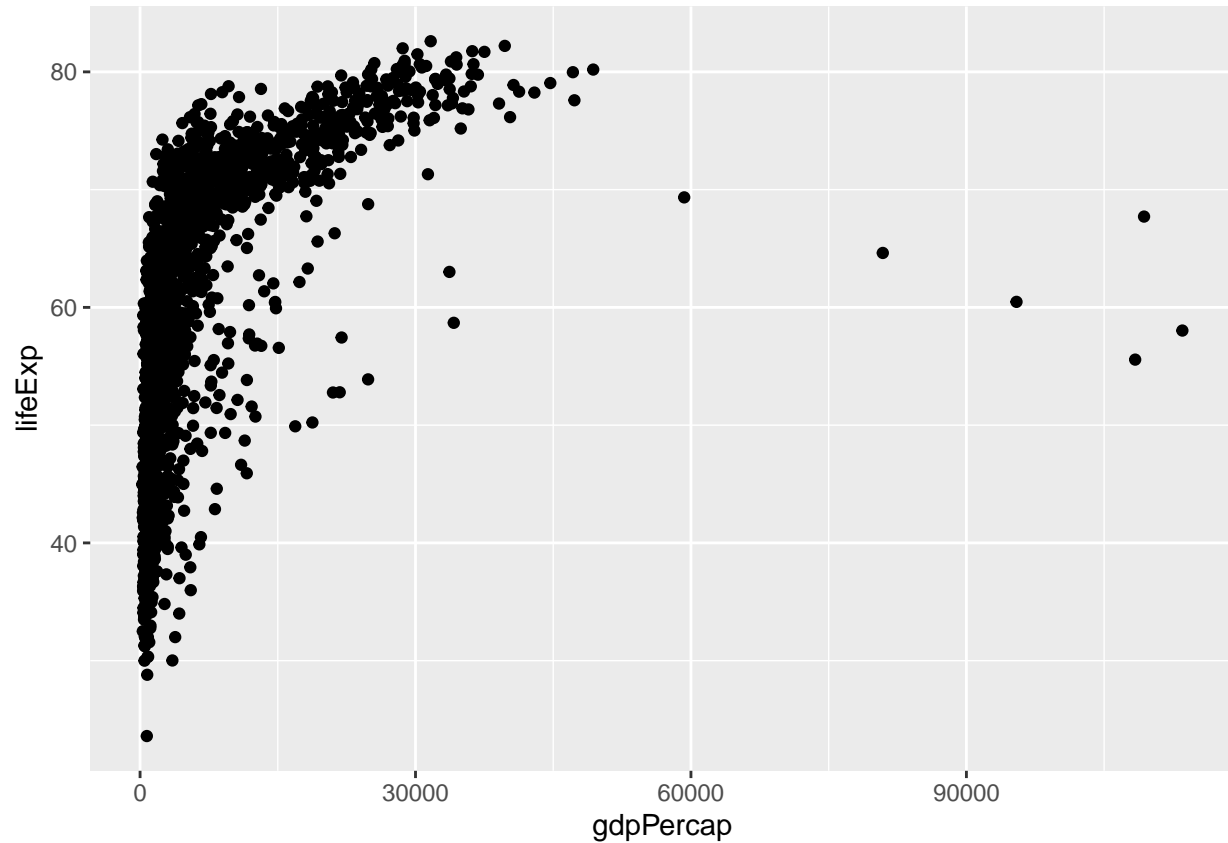
```
## # A tibble: 1,704 x 6
```

```
##   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.
## 7 Afghanistan Asia      1982   39.9 12881816    978.
## 8 Afghanistan Asia      1987   40.8 13867957    852.
## 9 Afghanistan Asia      1992   41.7 16317921    649.
## 10 Afghanistan Asia      1997   41.8 22227415    635.
```

```
## # ... with 1,694 more rows
```

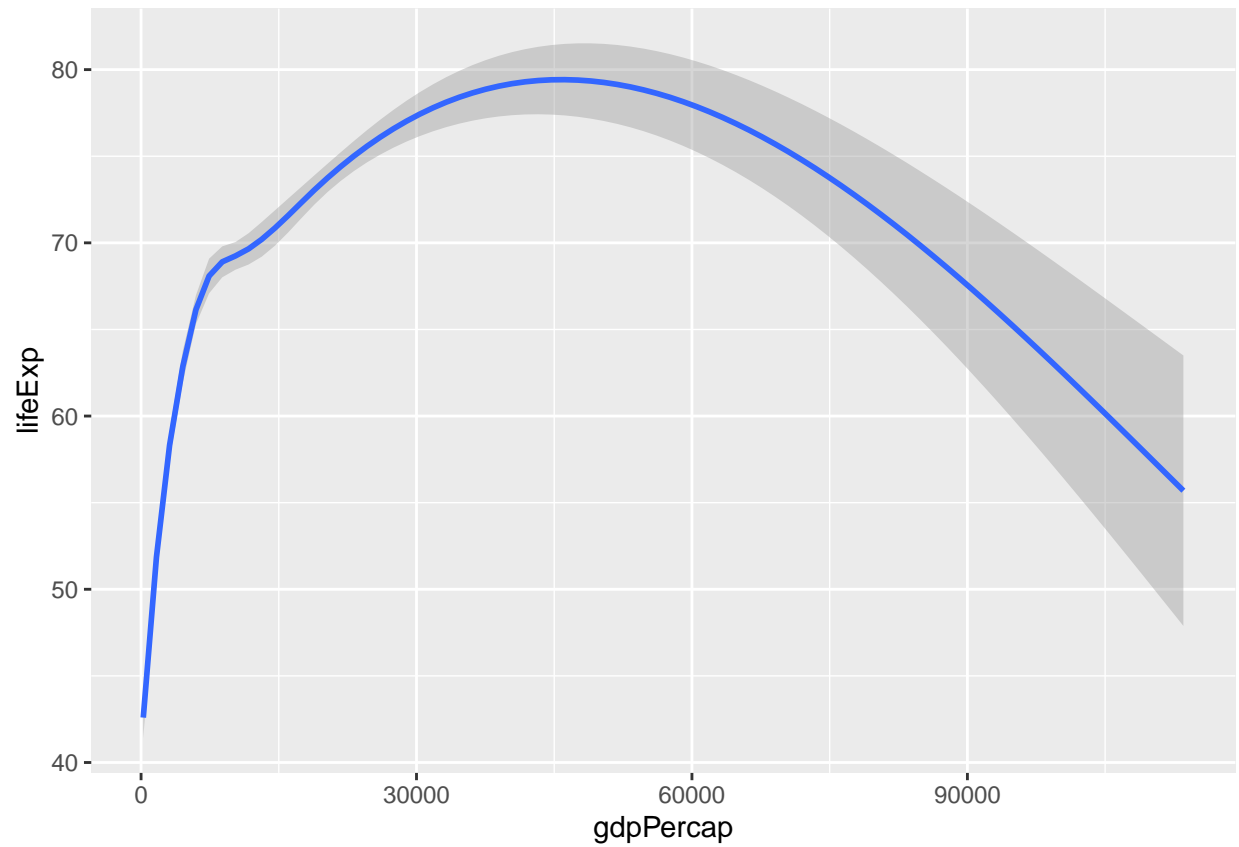
Making a picture with a ample dataset

```
#plot the graph
p <- ggplot(data = gapminder,
  mapping = aes(x=gdpPercap, y = lifeExp))
p + geom_point()
```



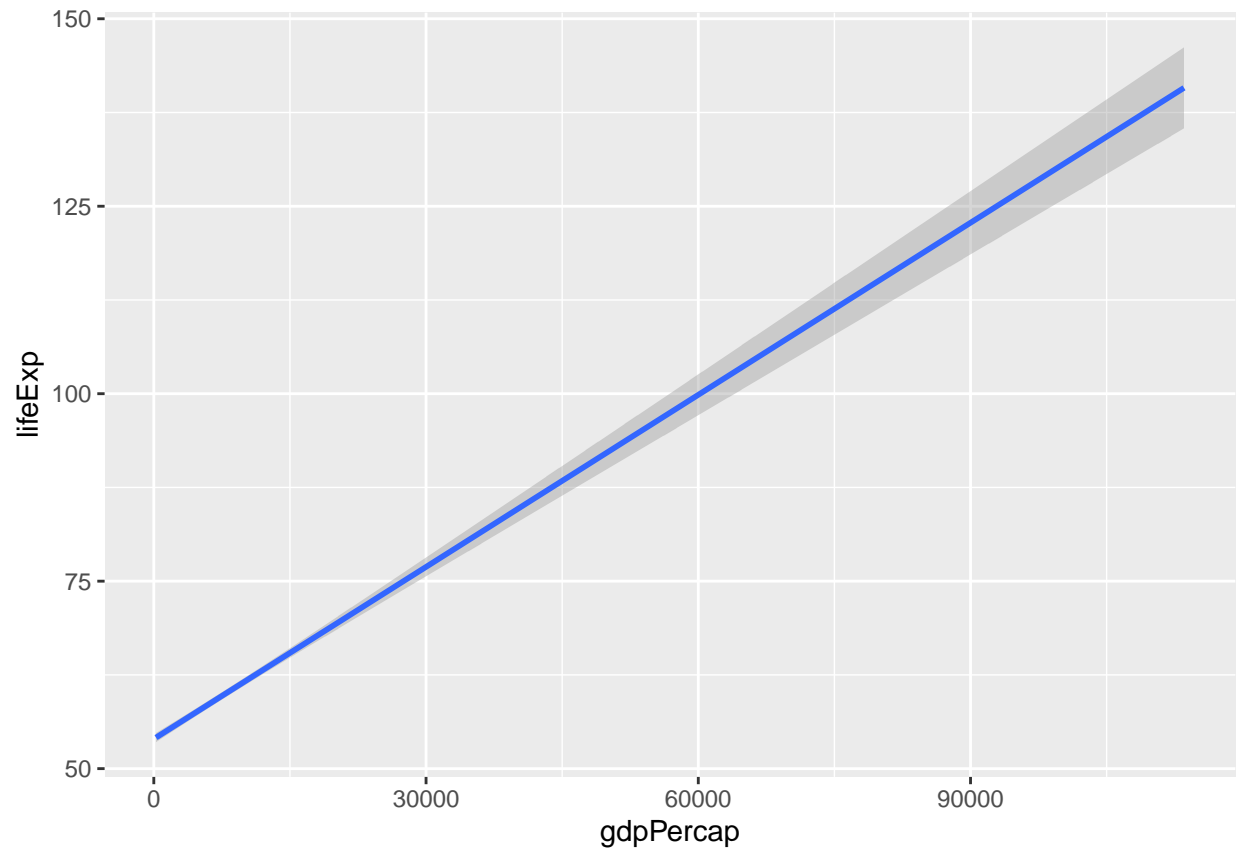
```
#make it smooth
p + geom_smooth()
```

```
## 'geom_smooth()' using method = 'gam' and formula = 'y ~ s(x, bs = "cs")'
```



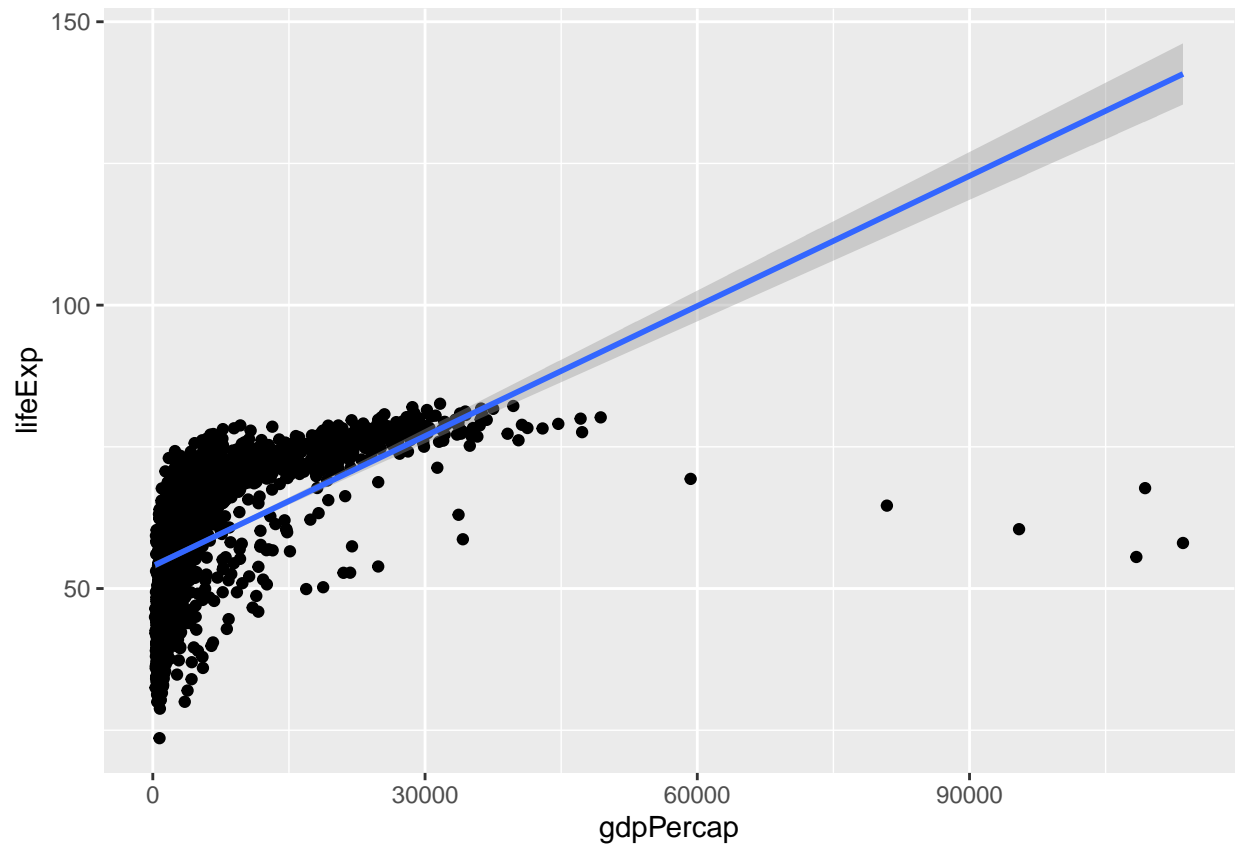
```
#make the graph in to a linear line  
p + geom_smooth(method = 'lm')
```

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



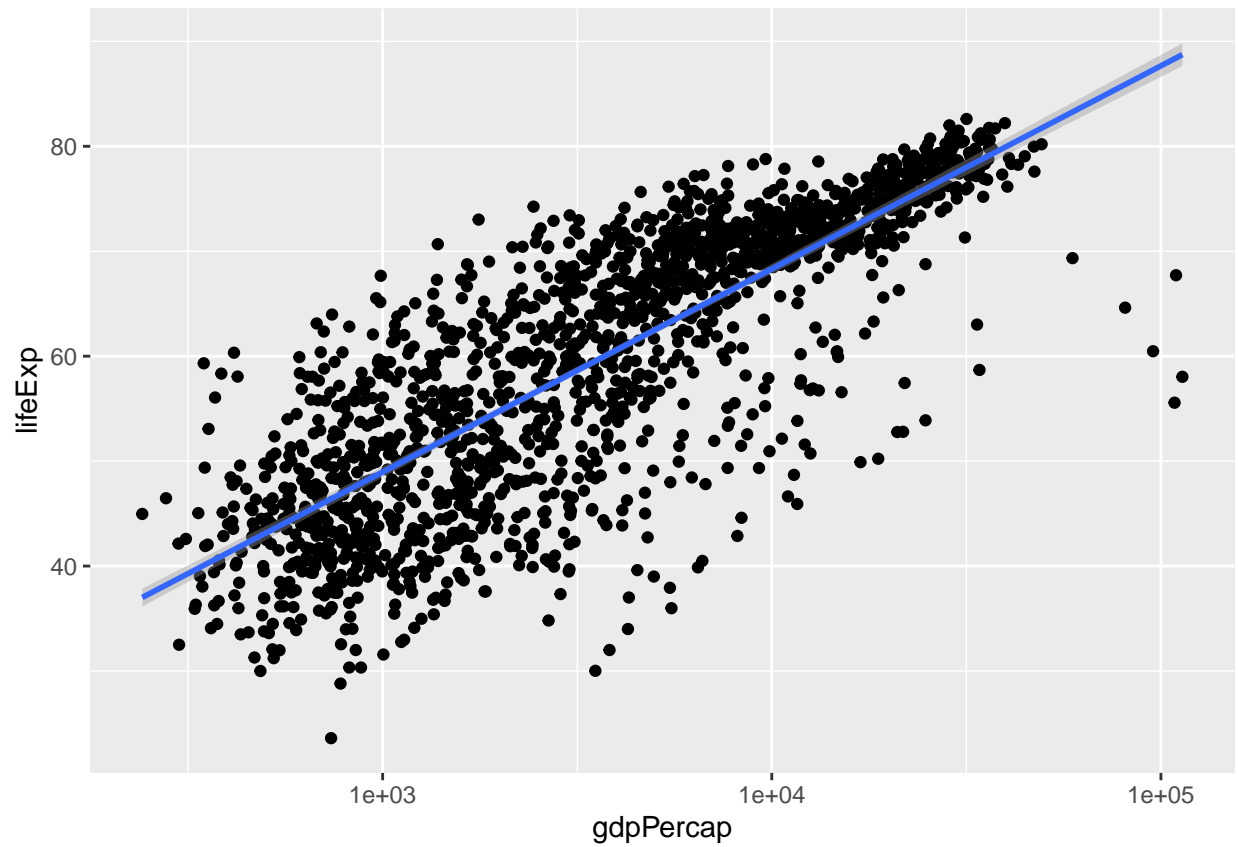
```
#mix both plot and line graph together  
p + geom_point() + geom_smooth(method = 'lm')
```

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



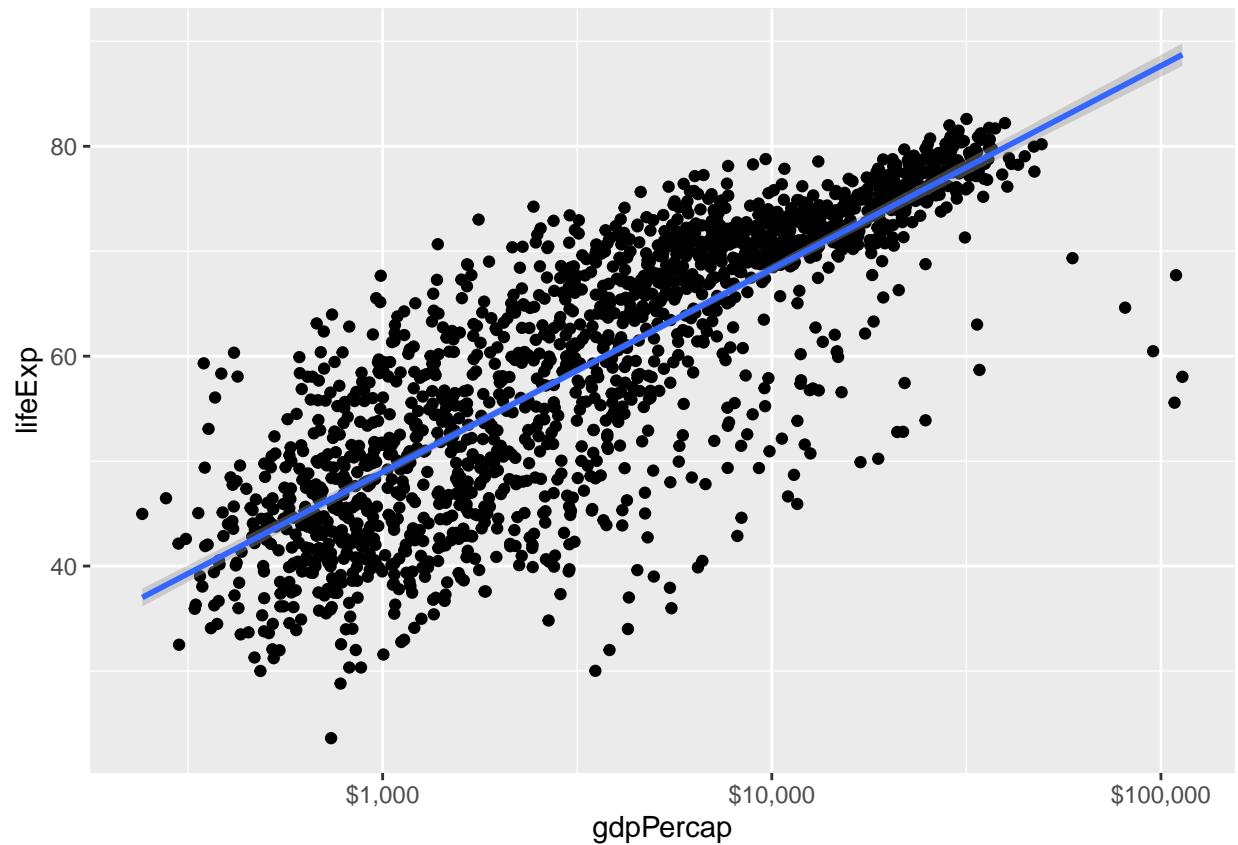
```
#make it prettier by using x_log10()  
p + geom_point() + geom_smooth(method = 'lm') + scale_x_log10()
```

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



```
#add the labels on X axis(dollars)  
p + geom_point() + geom_smooth(method = 'lm') + scale_x_log10(labels = scales::dollar)
```

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

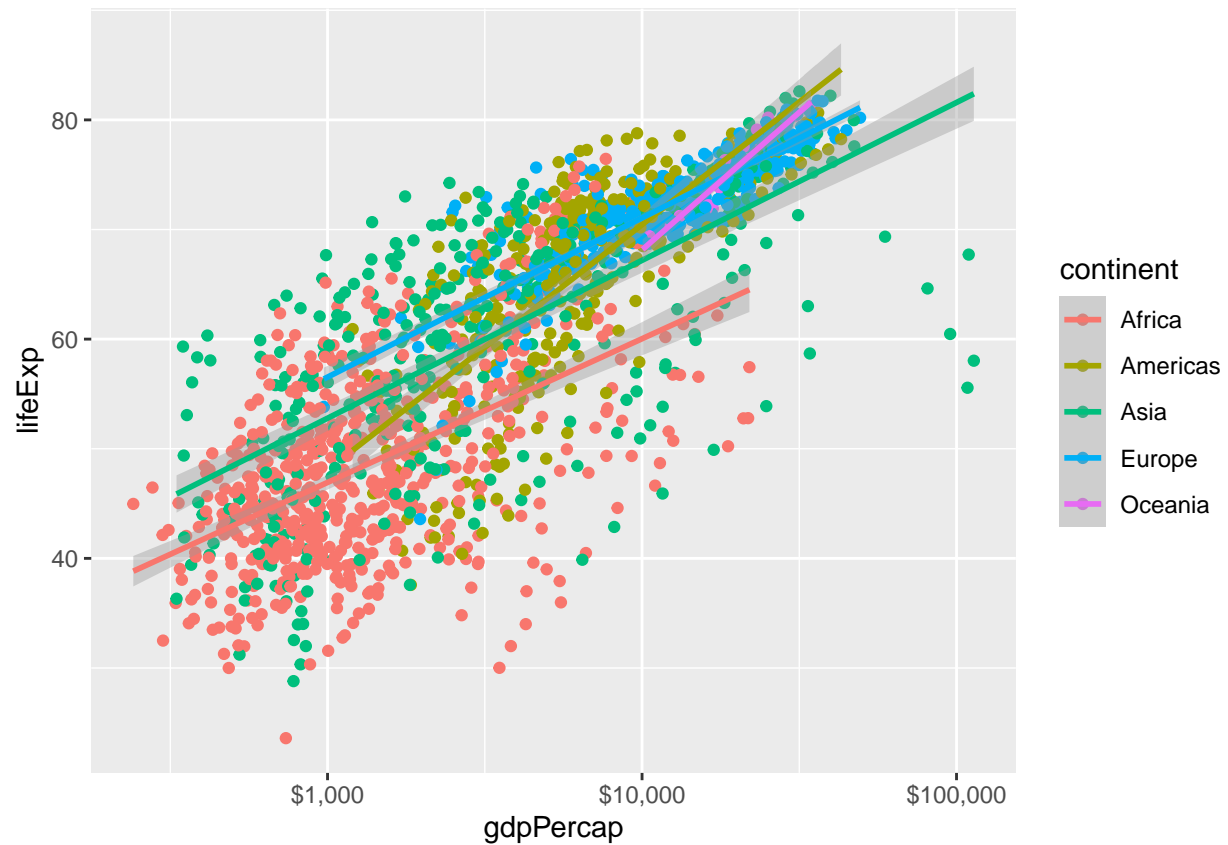


References: Recommended website: [http://www.sthda.com/english/wiki/ggplot2-axis-scales-and-transformations#use-scale\\_xx-functions](http://www.sthda.com/english/wiki/ggplot2-axis-scales-and-transformations#use-scale_xx-functions) Recommended website: <https://ggplot2-book.org/scale-position.html> Recommended website: <https://www.r-graph-gallery.com/all-graphs.html>

```
#plot the graph
p <- ggplot(data = gapminder,
            mapping = aes(x=gdpPercap, y = lifeExp,
                          color = continent))

p + geom_point() + geom_smooth(method = 'lm') + scale_x_log10(labels = scales::dollar)
```

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

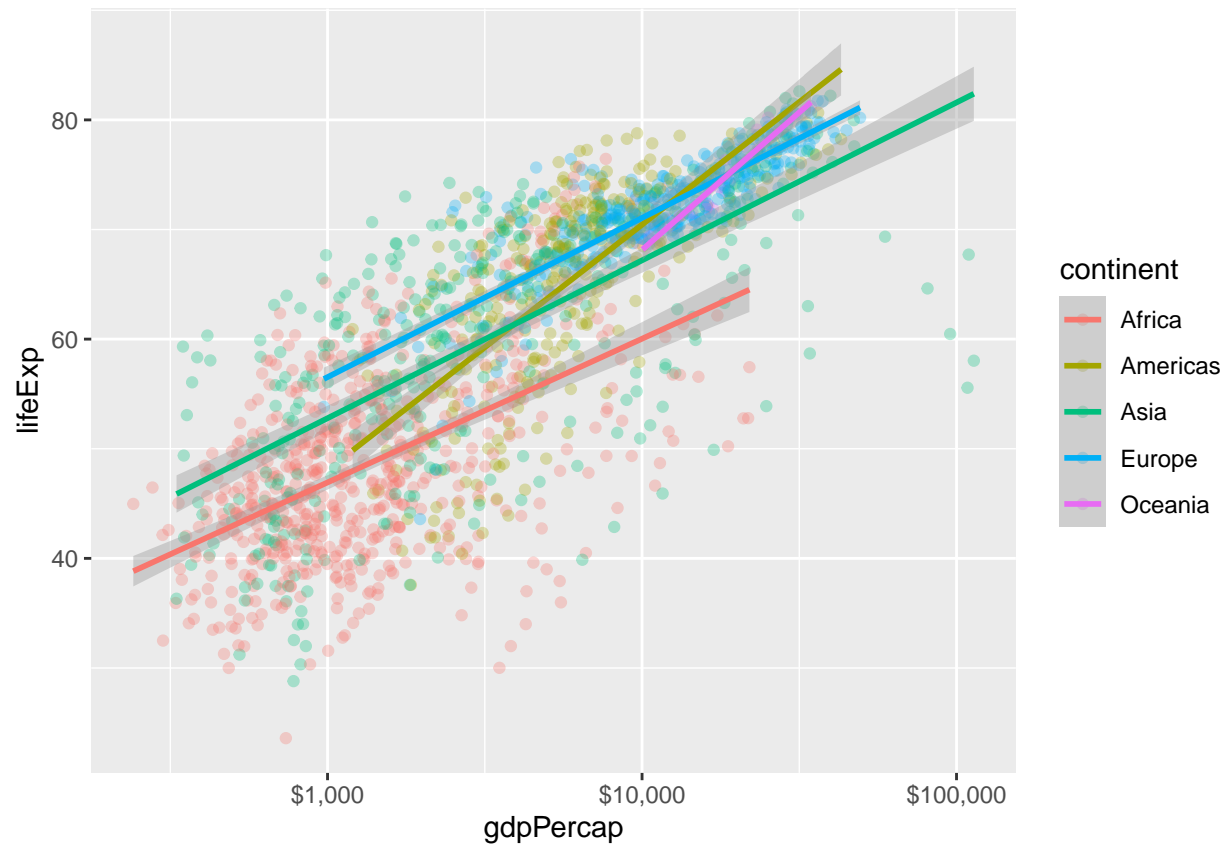


```
#plot the graph
p <- ggplot(data = gapminder,
            mapping = aes(x=gdpPerCap, y = lifeExp,
                          color = continent))

p + geom_point(alpha = 0.3) + geom_smooth(method = 'lm') + scale_x_log10(labels = scales::dollar)

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

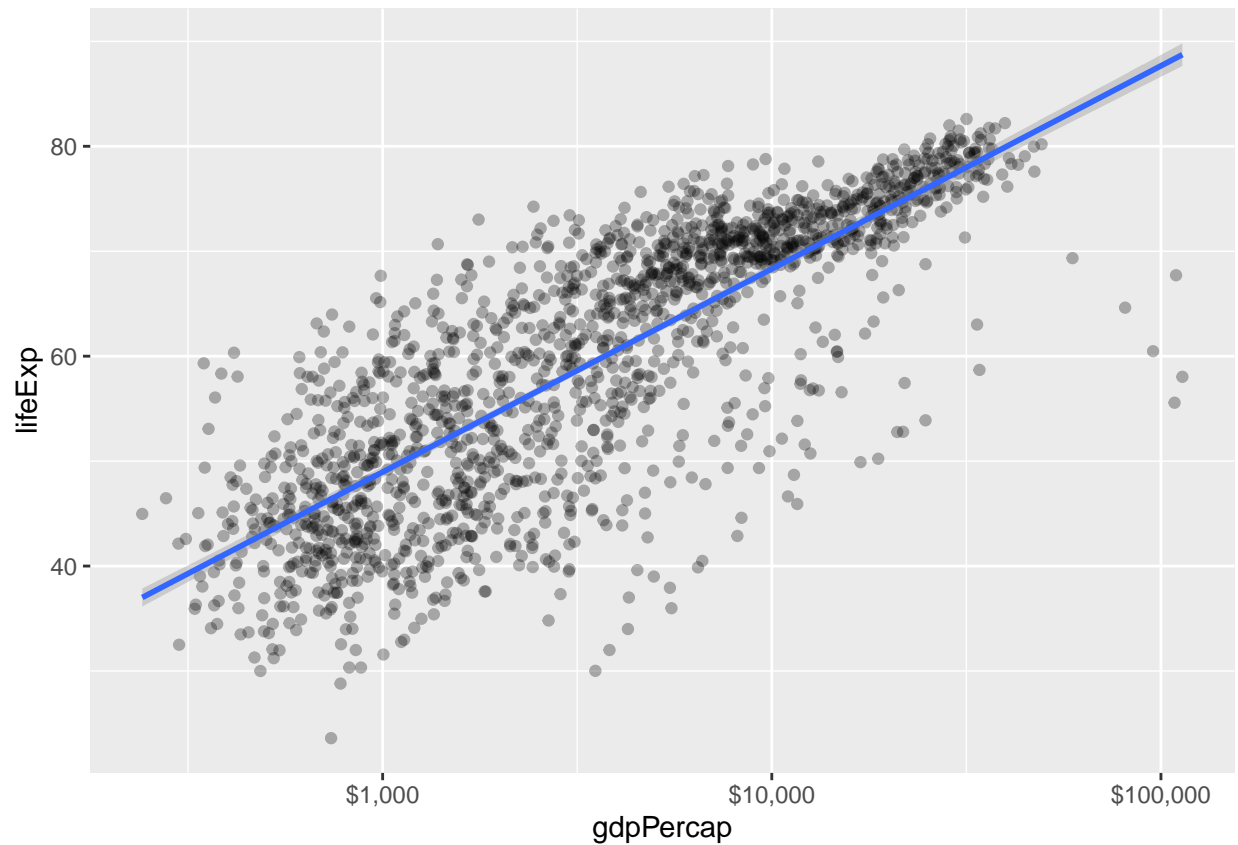




```
#plot the graph
p <- ggplot(data = gapminder,
            mapping = aes(x=gdpPerCap, y = lifeExp))

p + geom_point(alpha = 0.3) + geom_smooth(method = 'lm') + scale_x_log10(labels = scales::dollar)

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



Saving our plots

```
#save the plot
ggsave(filename = "sampleimage.png")
```

```
## Saving 6.5 x 4.5 in image
## 'geom_smooth()' using formula = 'y ~ x'
```

```
ggsave(filename = "sampleimage.pdf")
```

```
## Saving 6.5 x 4.5 in image
## 'geom_smooth()' using formula = 'y ~ x'
```

```
ggsave(filename = "sampleimage.png", height = 8, width = 10, units = "in")
```

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

<https://www.r-graph-gallery.com/all-graphs.html>

```
{r} # install.packages("rgl") # library(rgl) # install.packages("magick")
# library(magick) # install.packages("plot3D") # library(plot3D)
# # # Let's use the iris dataset # attach(iris) # # # This
is ugly # colors <- c("royalblue1", "darkcyan", "oldlace") #
iris$color <- colors[ as.numeric( as.factor(iris$Species) ) ]
# # # Static chart # plot3D(iris[,1], iris[,2], iris[,3], col
= iris$color, type = "s", radius = .2) # # # We can indicate
the axis and the rotation velocity # play3D( spin3d( axis =
c(0, 0, 1), rpm = 20), duration = 10 ) # # # Save like gif
# movie3d( # movie="3dAnimatedScatterplot", # spin3d(
axis = c(0, 0, 1), rpm = 7), # duration = 10, # dir =
"~/Desktop", # type = "gif", # clean = TRUE # ) # #
```

```
#attach the libraries
library(ggplot2)
library(dplyr)

#load the dataset
data <- gapminder
  #read.table("https://raw.githubusercontent.com/holtzy/data_to_viz/master/Example_dataset/1_OneNum.csv")

#make the histogram
# data %>%
#   filter( gapminder$infant_mortality<50 ) %>%
#   ggplot( aes(x=year)) +
#     geom_density(fill="#69b3a2", color="#e9ecef", alpha=0.8)
```