

# Exercise 2: R Markdown for Gapminder Exploration

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```
suppressPackageStartupMessages(library(gapminder))
suppressPackageStartupMessages(library(tidyverse))
suppressPackageStartupMessages(library(dplyr))
suppressPackageStartupMessages(library(ggplot2))
```

## Data on Gapminder

In this document, we will explore basic R functions on the gapminder data.

### Population of Countries

Here we show that gapminder has information on life expectancy, population, and GDP per capita of 142 countries from 1952

```
str(gapminder)
```

```
## Classes 'tbl_df', 'tbl' and 'data.frame':   1704 obs. of  6 variables:
## $ country   : Factor w/ 142 levels "Afghanistan",...: 1 1 1 1 1 1 1 1 1 1 ...
## $ continent : Factor w/ 5 levels "Africa","Americas",...: 3 3 3 3 3 3 3 3 3 3 ...
## $ year      : int   1952 1957 1962 1967 1972 1977 1982 1987 1992 1997 ...
## $ lifeExp   : num   28.8 30.3 32 34 36.1 ...
## $ pop       : int  8425333 9240934 10267083 11537966 13079460 14880372 12881816 13867957 16317921 22...
## $ gdpPercap: num   779 821 853 836 740 ...
```

### Summary of Gapminder Data

We summarize the gapminder data and show that life expectancy, populations and GDP per capita were collected between 1952 and 2007 in 5 continents.

```
summary(gapminder)
```

```
##      country      continent      year      lifeExp
## Afghanistan: 12 Africa :624 Min. :1952 Min. :23.60
## Albania : 12 Americas:300 1st Qu.:1966 1st Qu.:48.20
## Algeria : 12 Asia :396 Median :1980 Median :60.71
## Angola : 12 Europe :360 Mean :1980 Mean :59.47
## Argentina : 12 Oceania : 24 3rd Qu.:1993 3rd Qu.:70.85
## Australia : 12 Max. :2007 Max. :82.60
## (Other) :1632
##      pop      gdpPercap
## Min. :6.001e+04 Min. : 241.2
## 1st Qu.:2.794e+06 1st Qu.: 1202.1
## Median :7.024e+06 Median : 3531.8
## Mean :2.960e+07 Mean : 7215.3
## 3rd Qu.:1.959e+07 3rd Qu.: 9325.5
## Max. :1.319e+09 Max. :113523.1
##
```

## Number of Countries per continent in 1952

Here we show the number of countries per continent that data was collected from when the study started in 1952.

```
gapminder %>%
  arrange(country)%>%
  filter(year == 1952) %>%
  mutate(continent = fct_infreq(continent)) %>%
  ggplot(aes(continent)) +
  geom_bar(aes()) +
  theme_light()
```

