

Gapminder Exploration

Function #1: mean()

Calculate the average life expectancy of all countries in gapminder:

```
mean(gapminder$lifeExp)
```

```
## [1] 59.47444
```

Calculate the average life expectancy of Canada:

```
mean(gapminder[which(gapminder$country ==  
                      "Canada"),]$lifeExp)
```

```
## [1] 74.90275
```

Function #1: mean()

Calculate the continental average for each numeric data column:

```
header <- c("Life Expectancy", "Population", "GDP per Capita")
temp <- data.frame()
for (continent in unique(gapminder$continent)) {
  current <- c(
    mean(gapminder[gapminder$continent==continent,]$lifeExp,
        na.rm = TRUE),
    mean(gapminder[gapminder$continent==continent,]$pop,
        na.rm = TRUE),
    mean(gapminder[gapminder$continent==continent,]$gdpPercap,
        na.rm=TRUE))
  temp <- rbind(temp,current)
}
names(temp) <- header
rownames(temp) <- unique(gapminder$continent)

temp
```

##	Life Expectancy	Population	GDP per Capita
## Asia	60.06490	77038722	7902.150
## Europe	71.90369	17169765	14469.476
## Africa	48.86533	9916003	2193.755
## Americas	64.65874	24504795	7136.110
## Oceania	74.32621	8874672	18621.609

Function #2: max() and which()

Extract the country (or countries) with the highest life expectancy:

```
gapminder[which(gapminder$lifeExp ==  
                max(gapminder$lifeExp)),]
```

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

```
##   country continent  year lifeExp      pop gdpPercap  
##   <fct>    <fct>      <int>   <dbl>    <int>    <dbl>  
## 1 Japan    Asia        2007    82.6 127467972  31656.
```

Function #3: min() and which()

Extract the country (or countries) with the lowest GDP per capita:

```
gapminder[which(gapminder$gdpPercap ==  
                min(gapminder$gdpPercap)),]
```

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

```
##   country          continent  year lifeExp      pop gdpPercap  
##   <fct>            <fct>    <int>   <dbl>   <int>    <dbl>  
## 1 Congo, Dem. Rep. Africa    2002   45.0 55379852    241.
```

Function #4: length() and unique()

Extract the number of unique countries in gapminder:

```
length(unique(gapminder$country))
```

```
## [1] 142
```

Function #5: summary()

Get a summary of gapminder:

```
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
##
```