Homework 1_Gapminder Exploration Presentation

A basic look at the gapminder rows and columns

```
gpmd <- gapminder
 ncol(gpmd) # number of columns
```

```
## [1] 6
```

```
 nrow(gpmd) # number of rows
```

```
## [1] 1704
```

```
colnames(gpmd) # column names
```

```
## [1] "country"   "continent" "year"      "lifeExp"   "pop"       "gdpPercap"
```

Let's learn more about the structure of the data

```
str(gpmd,strict.width="wrap") #basic summary of data structure
```

```
## 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 22227415 ...
## $ gdpPercap: num 779 821 853 836 740 ...
```

The range of years included in the data are:

```
range(gpmd$year)
```

```
## [1] 1952 2007
```

How many countries are there in the dataset:

```
sum(nlevels(gpmd$country))
```

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

Let's explore life-expectancies from the dataset a bit:

What are the ranges of life expectancies?

```
range(gpmd$lifeExp)
```

```
## [1] 23.599 82.603
```

Which countries have the highest and lowest life-expectancies?

```
gpmd$country[max(gpmd$lifeExp)] #highest
```

```
## [1] Austria
## 142 Levels: Afghanistan Albania Algeria Angola Argentina ... Zimbal
```

```
gpmd$country[min(gpmd$lifeExp)] #lowest
```

```
## [1] Albania
## 142 Levels: Afghanistan Albania Algeria Angola Argentina ... Zimbal
```

Average Life expectancy per continent:

```
aggregate(lifeExp~continent,gpmd,mean) #includes all years
```

```
##   continent  lifeExp
## 1    Africa 48.86533
## 2  Americas 64.65874
## 3      Asia 60.06490
## 4    Europe 71.90369
## 5   Oceania 74.32621
```

Let's learn about the median GDP per capita for each continent

```
aggregate(gdpPercap~continent,gpmd,median) #includes all years
```

```
##   continent gdpPercap
## 1    Africa  1192.138
## 2  Americas  5465.510
## 3      Asia  2646.787
## 4    Europe 12081.749
## 5   Oceania 17983.304
```

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