si618hw1_report_jlwohlf

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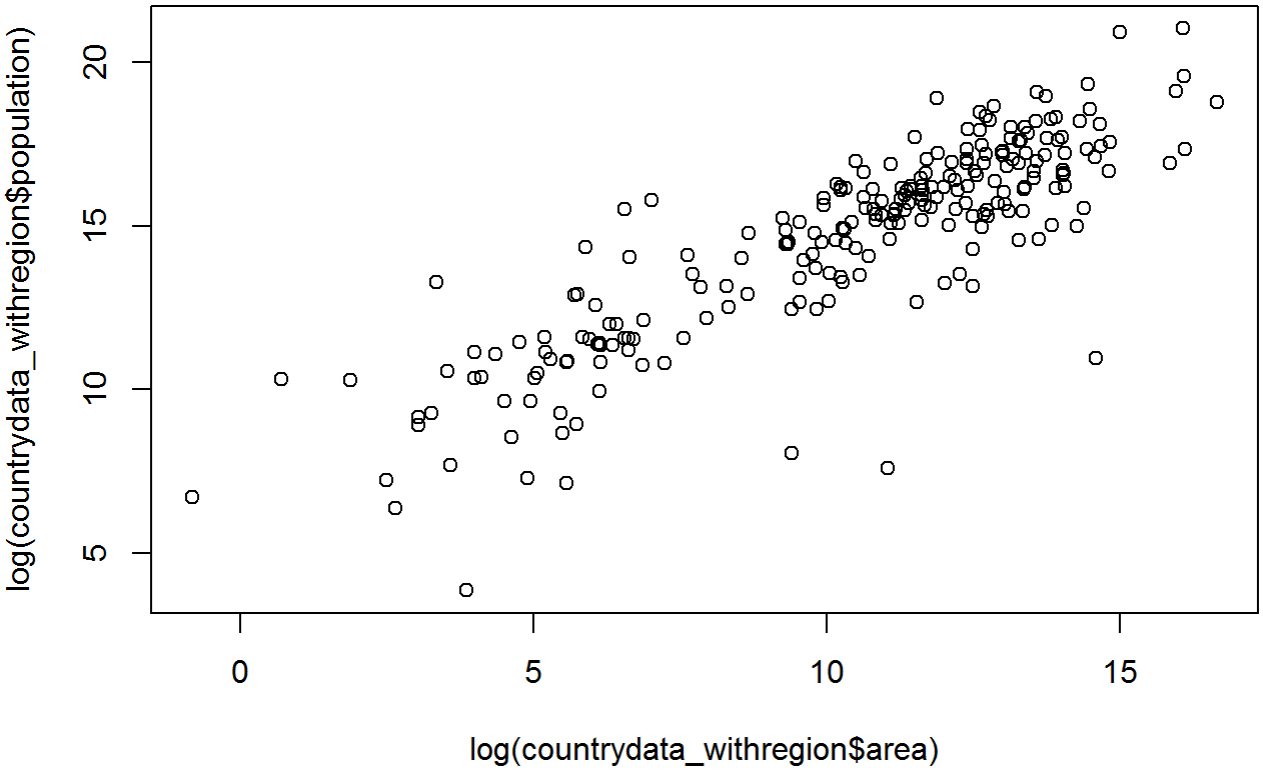
Step 1: Load data

First the provided TSV data file is loaded into R using the read.table() function. Here are the first 15 rows of the data frame:

```
##                country                           region      area
## 1          AFGHANISTAN                             Asia  652230.0
## 2              ALBANIA                           Europe   28748.0
## 3              ALGERIA                           Africa 2381741.0
## 4       AMERICAN SAMOA                          Oceania     199.0
## 5              ANDORRA                           Europe     468.0
## 6               ANGOLA                           Africa 1246700.0
## 7             ANGUILLA Central America & the Caribbean      91.0
## 8  ANTIGUA AND BARBUDA Central America & the Caribbean     442.6
## 9            ARGENTINA                    South America 2780400.0
## 10             ARMENIA                             Asia   29743.0
## 11               ARUBA Central America & the Caribbean     180.0
## 12           AUSTRALIA                          Oceania 7741220.0
## 13             AUSTRIA                           Europe   83871.0
## 14          AZERBAIJAN                             Asia   86600.0
## 15        BAHAMAS, THE Central America & the Caribbean   13880.0
##    population
## 1    30419928
## 2     3002859
## 3    37367226
## 4       54947
## 5       85082
## 6    18056072
## 7       15423
## 8       89018
## 9    42192494
## 10    2970495
## 11     107635
## 12   22015576
## 13    8219743
## 14    9493600
## 15     316182
```

Step 2: Scatter plot of log transformed data

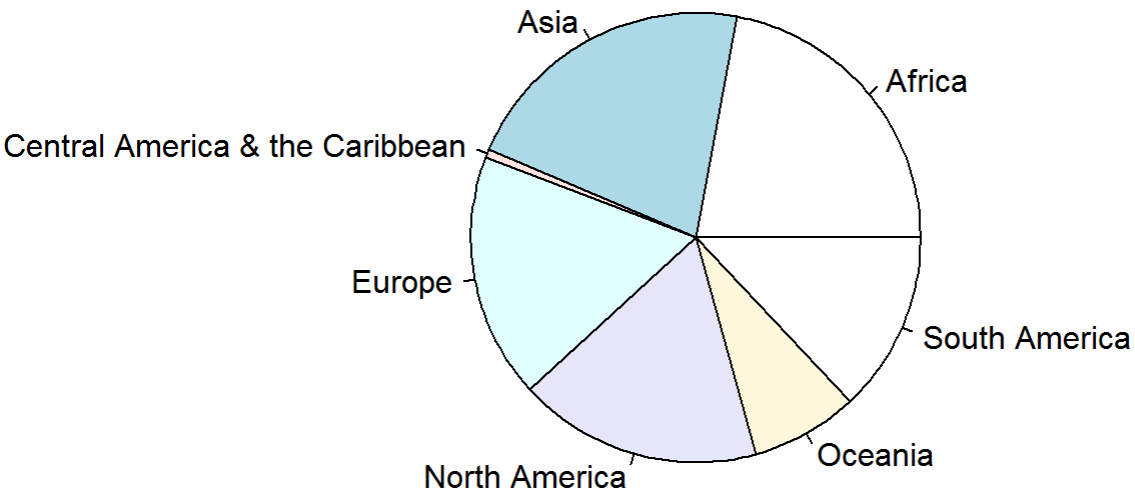
Natural logarithms of the area and the population of each country are computed and used to produce the following scatter plot using the plot() function.



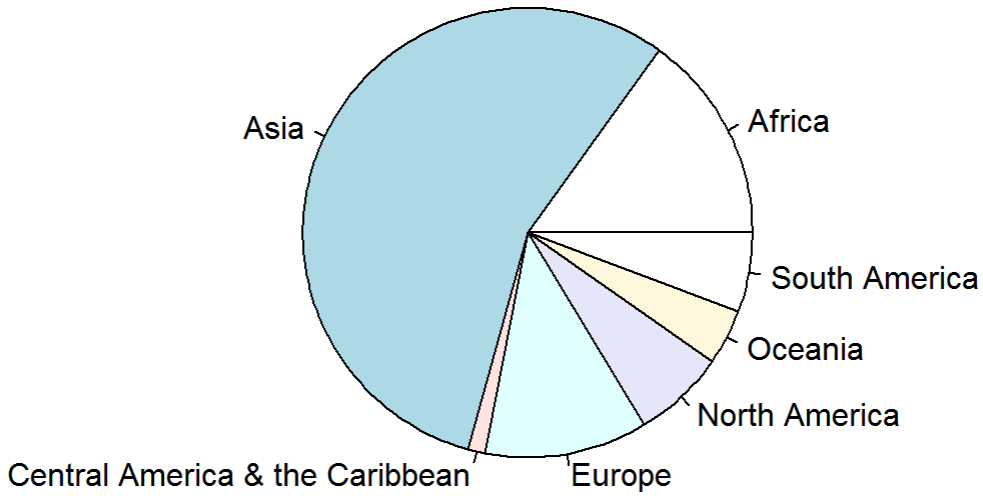
Step 3: Data aggregation by region

The areas and populations of all countries in a region are summed up using the aggregate() function, respectively. Then the following two pie charts are created using the pie() function.

Area of Regions



Population of Regions



Step 4:

Visualization of Population per sq km of Regions

A new data frame is created to contain the population per sq km of each region using the data.frame() function. The data frame is then sorted by population per sq km in decreasing order with the help of the order() function. Finally, the following bar plot is created using the barplot() function.