

# Palmer penguins report

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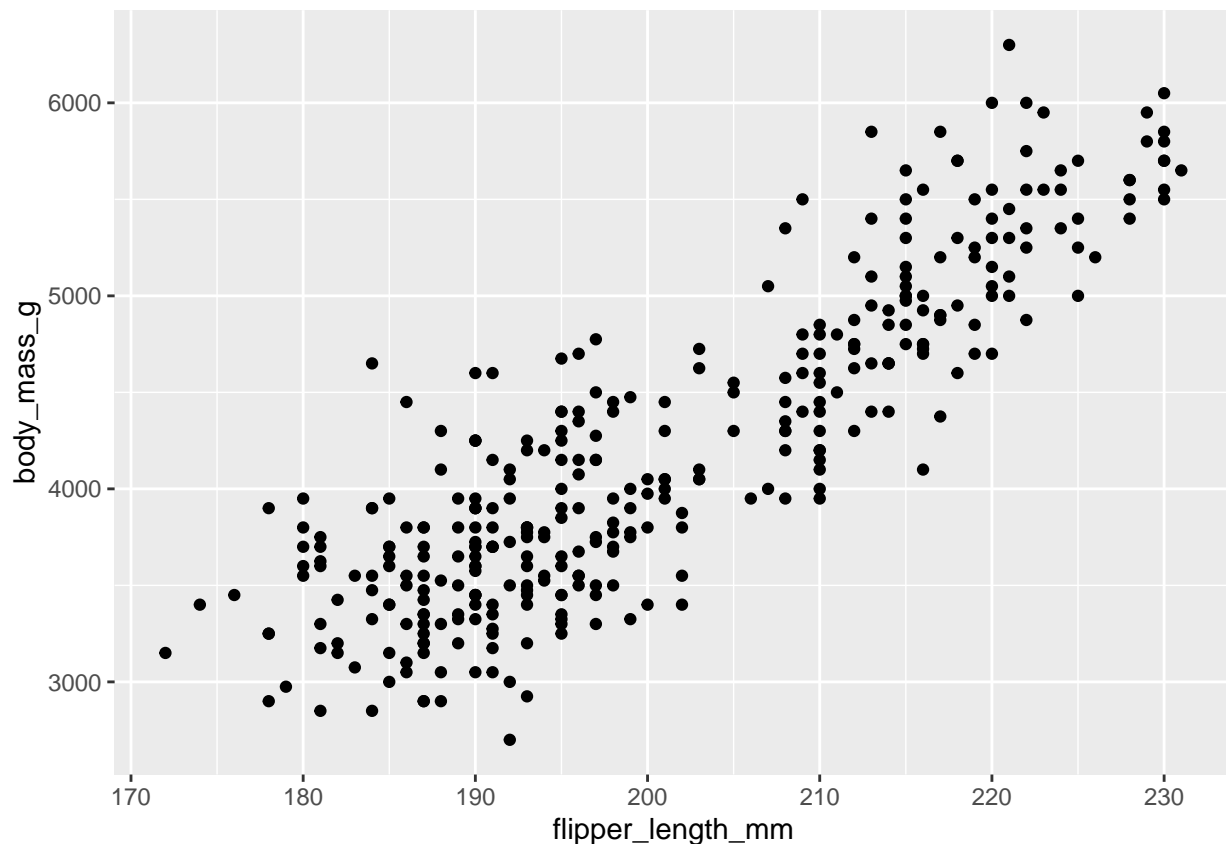
In this report we want to verify if there exists a correlation between the flipper length and the body mass of the penguins from the data set **palmerpenguins**.

## Loading librarys and the data set

```
library(ggplot2)
library(palmerpenguins)
library(tidyverse)
data(penguins)
```

## Correlation flipper length vs body mass

we plot the variables flipper length vs body mass to check if there is a correlation between them:

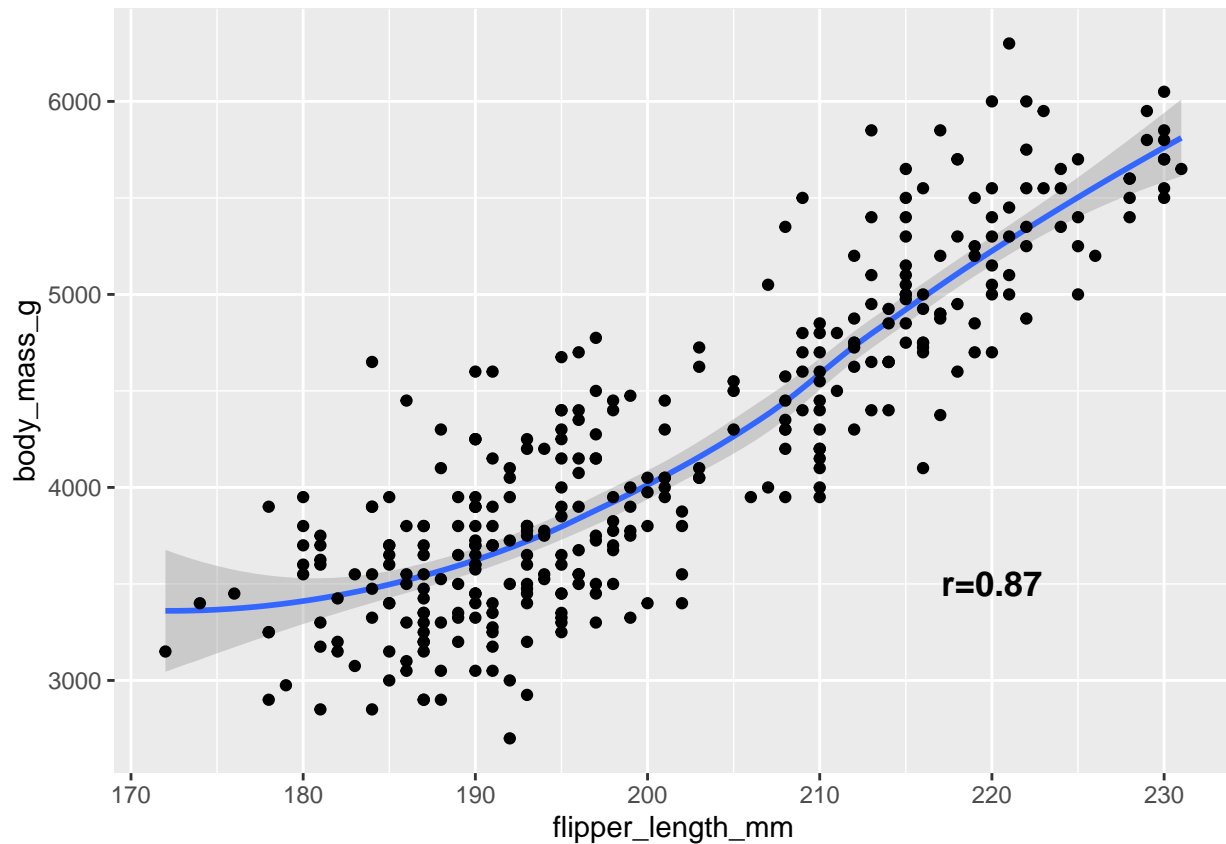


This image strongly suggest that our two variables are correlated. However, just to be sure we verify this by adding a trend line over the plot and calculating the correlation coefficient

## Correlation coefficient

```
cor(x=penguins$flipper_length_mm, y=penguins$body_mass_g, use='complete.obs')
```

```
## [1] 0.8712018
```



## Correlation flipper length vs body mass by species

Now, we are also interested to see if this behavior continue if we make the same analysis by species:

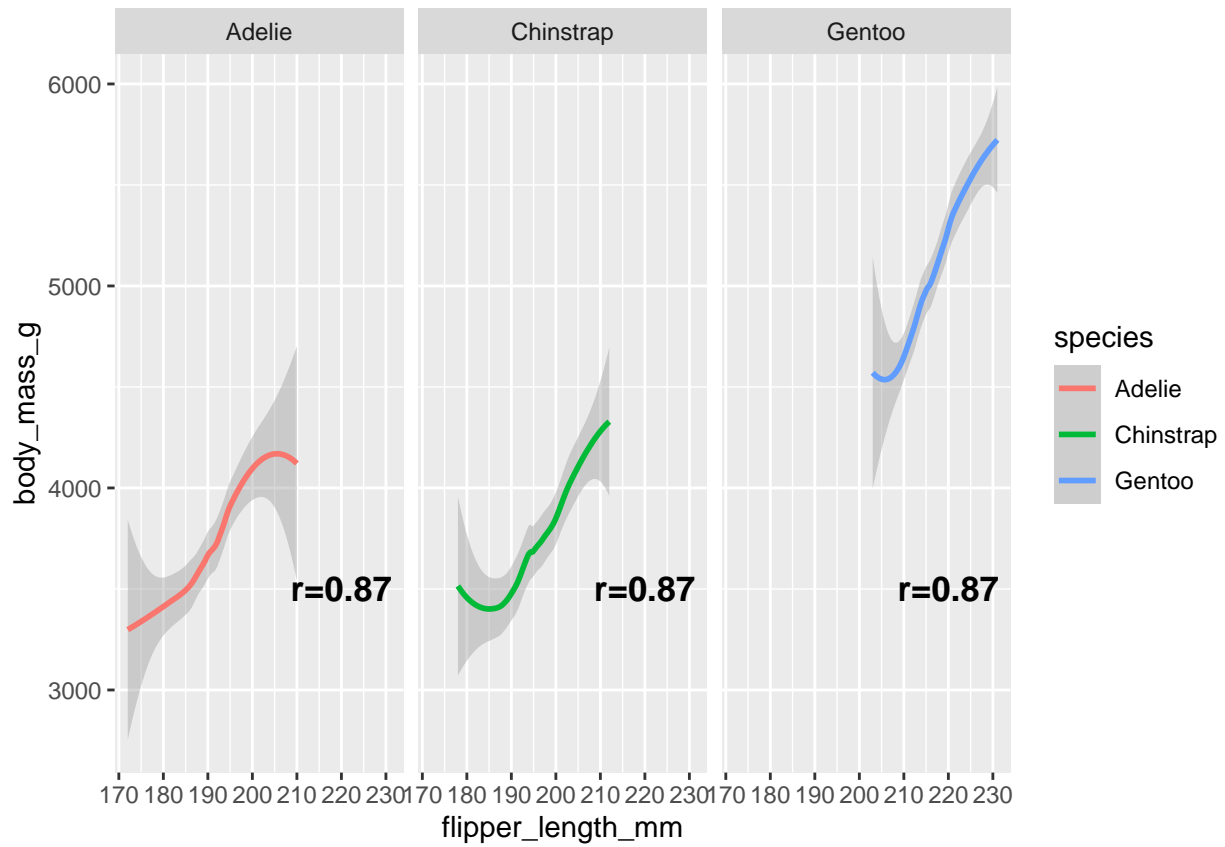


again we calculate the correlation coefficient:

```
penguins %>% group_by(species) %>% summarize(r=cor(x=penguins$flipper_length_mm, y=penguins$body_mass_g))
```

```
## # A tibble: 3 x 2
```

	species	r
## 1	Adelie	0.871
## 2	Chinstrap	0.871
## 3	Gentoo	0.871



## Conclusions

In fact, there exists a correlation between the variables flipper length and body mass; not only considering the data as a whole but also making the analysis by species.