

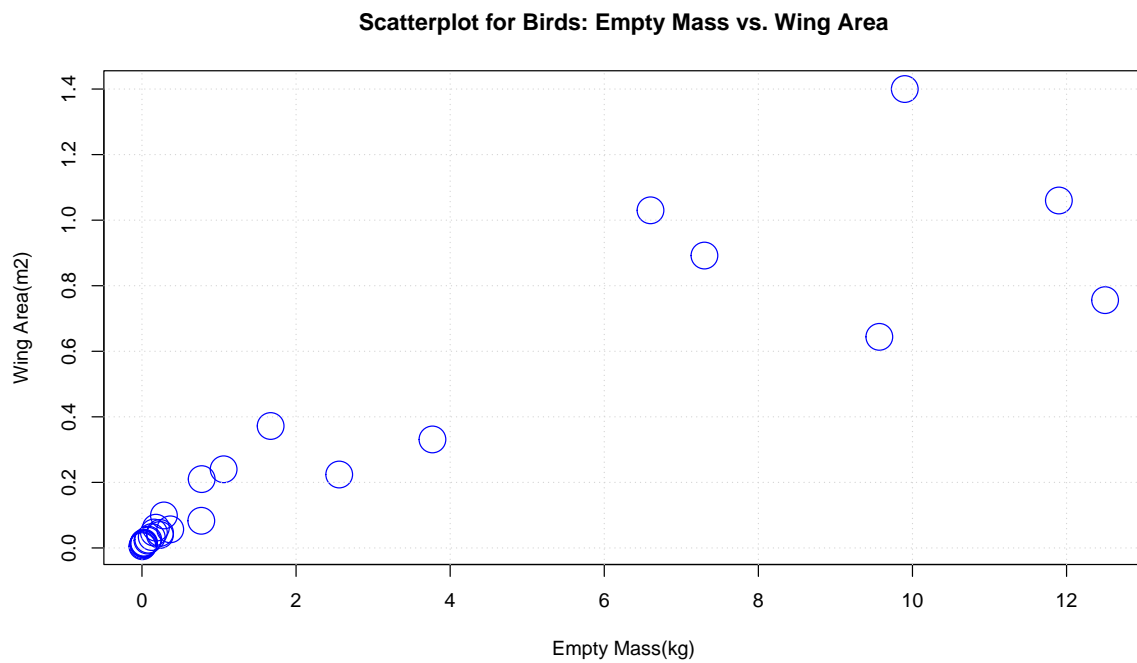
# Homework1

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## 1 Plot

Welcome to package FlyingR



## 2 Explanation

The above plot shows the relation between **Empty Mass**  $kg$  and **Wing Area**  $m^2$  of birds. As can be seen from the plot, there are roughly two types of birds: large birds and small birds:

- Small birds: Most birds have a *small* weight and wing area, they scatter near the origin, their wing area does not exceed  $0.1m^2$  and their weight does not exceed  $1kg$
- Large birds: A small number of birds are very *large*, ranging from  $2kg$  to  $12kg$ , and their wing area gradually increases, up to  $1.4m^2$

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In addition, we can also see that there is a **proportional relationship** here. Obviously, the heavier the bird, the larger the wing area, which is consistent with daily cognition. And most birds are small, only a small number of birds are large.

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This is also in line with common sense in the Earth's biosphere, because bird flight requires very high energy, and smaller birds are easier to fly. Compared with giant birds, they consume less energy and are more likely to obtain enough food from the biosphere to survive.

## 3 Source

The documentation for the R dataset **FlyingR**: [Source](#)