

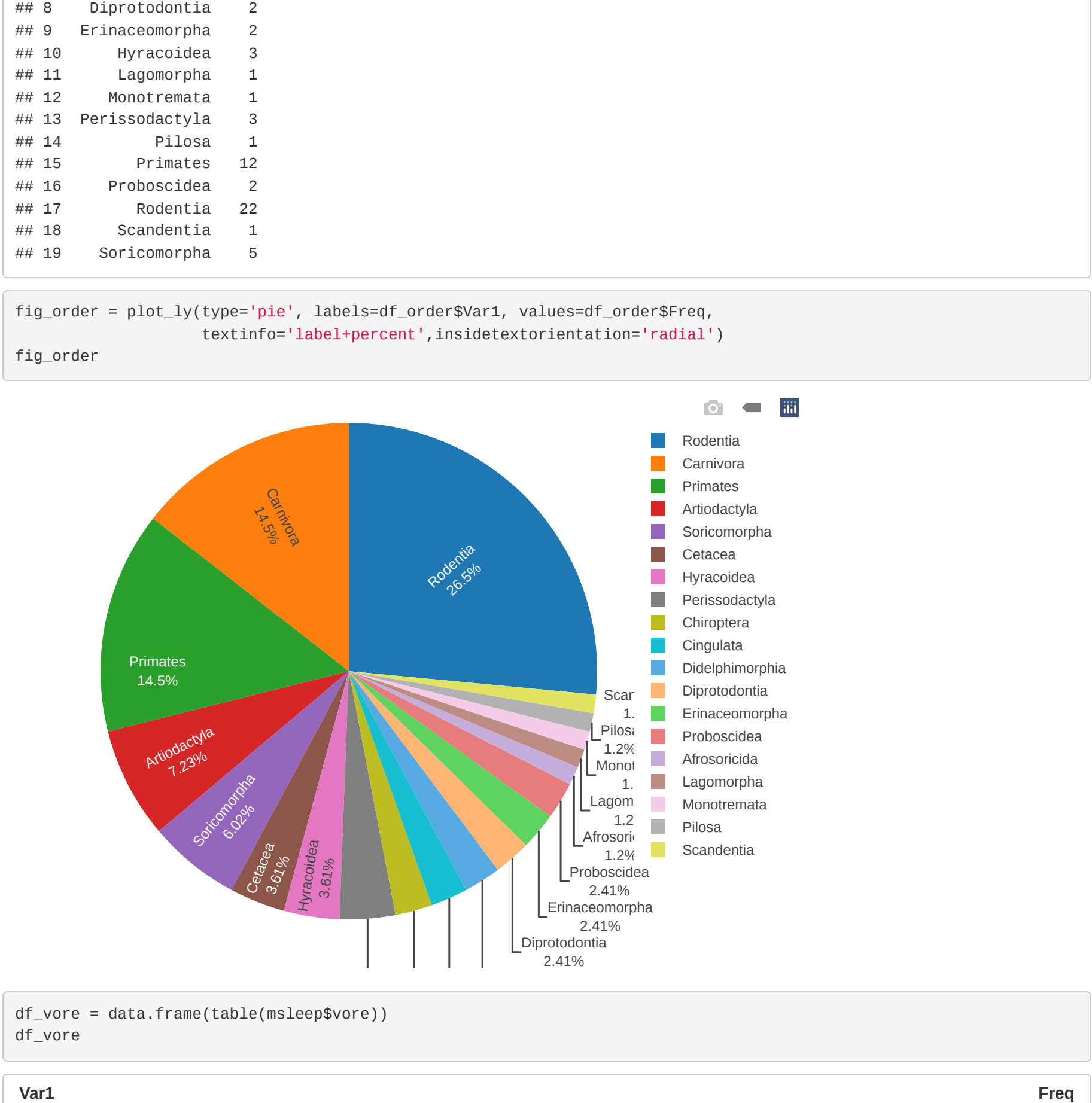
# R Notebook

| <pre>library(plotly)</pre>   |             |                                 |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
|--|-------------|---------------------------------|--------------|--------------|-------------|------|-------|------|-------|--------------|-------------|-------|-------|-------|-------|-------|-------|---------|----------|-------|-----------|----|------|------------|-------|------|----------|----|------|-----------------|-----------|-------|----------|----|------|----------------------------|---------|------|--------------|----|------|-----|-----|-------|--------------|--------------|-----|------------------|----------|-------|---------|----|------|-------------------|-------------|-------|-----------|----|-----|--------------|---------|----|----------|----|-----|-----|-------|-------|-----------|--------------|------|----------|-----------|-------|--------------|----|-----|
| <pre>##</pre> <pre>## Attaching package: 'plotly'</pre>  |             |                                 |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| <pre>##</pre> <pre>## The following object is masked from 'package:ggplot2':</pre> <pre>##</pre> <pre>## last_plot</pre>   |             |                                 |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| <pre>##</pre> <pre>## The following object is masked from 'package:stats':</pre> <pre>##</pre> <pre>## filter</pre>  |             |                                 |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| <pre>##</pre> <pre>## The following object is masked from 'package:graphics':</pre> <pre>##</pre> <pre>## layout</pre>   |             |                                 |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| msleep   |             |                                 |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| <table><thead><tr><th>name</th><th>genus</th><th>vore</th><th>order</th><th>conservation</th><th>sleep_total</th></tr><tr><th>&lt;chr&gt;</th><th>&lt;chr&gt;</th><th>&lt;chr&gt;</th><th>&lt;chr&gt;</th><th>&lt;chr&gt;</th><th>&lt;dbl&gt;</th></tr></thead><tbody><tr><td>Cheetah</td><td>Acinonyx</td><td>carni</td><td>Carnivora</td><td>lc</td><td>12.1</td></tr><tr><td>Owl monkey</td><td>Aotus</td><td>omni</td><td>Primates</td><td>NA</td><td>17.0</td></tr><tr><td>Mountain beaver</td><td>Apodontia</td><td>herbi</td><td>Rodentia</td><td>nt</td><td>14.4</td></tr><tr><td>Greater short-tailed shrew</td><td>Blarina</td><td>omni</td><td>Soricomorpha</td><td>lc</td><td>14.9</td></tr><tr><td>Cow</td><td>Bos</td><td>herbi</td><td>Artiodactyla</td><td>domesticated</td><td>4.0</td></tr><tr><td>Three-toed sloth</td><td>Bradypus</td><td>herbi</td><td>Ptilosa</td><td>NA</td><td>14.4</td></tr><tr><td>Northern fur seal</td><td>Callorhinus</td><td>carni</td><td>Carnivora</td><td>vu</td><td>8.7</td></tr><tr><td>Vesper mouse</td><td>Calomys</td><td>NA</td><td>Rodentia</td><td>NA</td><td>7.0</td></tr><tr><td>Dog</td><td>Canis</td><td>carni</td><td>Carnivora</td><td>domesticated</td><td>10.1</td></tr><tr><td>Roe deer</td><td>Capreolus</td><td>herbi</td><td>Artiodactyla</td><td>lc</td><td>3.0</td></tr></tbody></table> |             |                                 |              |              |             | name | genus | vore | order | conservation | sleep_total | <chr> | <chr> | <chr> | <chr> | <chr> | <dbl> | Cheetah | Acinonyx | carni | Carnivora | lc | 12.1 | Owl monkey | Aotus | omni | Primates | NA | 17.0 | Mountain beaver | Apodontia | herbi | Rodentia | nt | 14.4 | Greater short-tailed shrew | Blarina | omni | Soricomorpha | lc | 14.9 | Cow | Bos | herbi | Artiodactyla | domesticated | 4.0 | Three-toed sloth | Bradypus | herbi | Ptilosa | NA | 14.4 | Northern fur seal | Callorhinus | carni | Carnivora | vu | 8.7 | Vesper mouse | Calomys | NA | Rodentia | NA | 7.0 | Dog | Canis | carni | Carnivora | domesticated | 10.1 | Roe deer | Capreolus | herbi | Artiodactyla | lc | 3.0 |
| name   | genus       | vore                            | order        | conservation | sleep_total |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| <chr>  | <chr>       | <chr>                           | <chr>        | <chr>        | <dbl>       |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Cheetah  | Acinonyx    | carni                           | Carnivora    | lc           | 12.1        |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Owl monkey   | Aotus       | omni                            | Primates     | NA           | 17.0        |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Mountain beaver  | Apodontia   | herbi                           | Rodentia     | nt           | 14.4        |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Greater short-tailed shrew   | Blarina     | omni                            | Soricomorpha | lc           | 14.9        |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Cow  | Bos         | herbi                           | Artiodactyla | domesticated | 4.0         |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Three-toed sloth   | Bradypus    | herbi                           | Ptilosa      | NA           | 14.4        |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Northern fur seal  | Callorhinus | carni                           | Carnivora    | vu           | 8.7         |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Vesper mouse   | Calomys     | NA                              | Rodentia     | NA           | 7.0         |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Dog  | Canis       | carni                           | Carnivora    | domesticated | 10.1        |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| Roe deer   | Capreolus   | herbi                           | Artiodactyla | lc           | 3.0         |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| 1-10 of 83 rows   1-6 of 11 columns  |             | Previous 1 2 3 4 5 6 ... 9 Next |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| cat(factor(msleep\$order))   |             |                                 |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |
| <pre>## 3 15 17 19 2 14 3 17 3 2 2 17 15 17 19 17 6 10 7 16 5 13 13 9 15 17 3 15 2 4 3 10 15 15 16 7 15 17 17 17 5 17 15 17 17 11 2 15 3 3 3 15 9 15 17 8 3 4 8 6 10 17 17 15 19 17 17 17 17 19 2 12 17 13 1 18 4 3 3 3</pre>  |             |                                 |              |              |             |      |       |      |       |              |             |       |       |       |       |       |       |         |          |       |           |    |      |            |       |      |          |    |      |                 |           |       |          |    |      |                            |         |      |              |    |      |     |     |       |              |              |     |                  |          |       |         |    |      |                   |             |       |           |    |     |              |         |    |          |    |     |     |       |       |           |              |      |          |           |       |              |    |     |

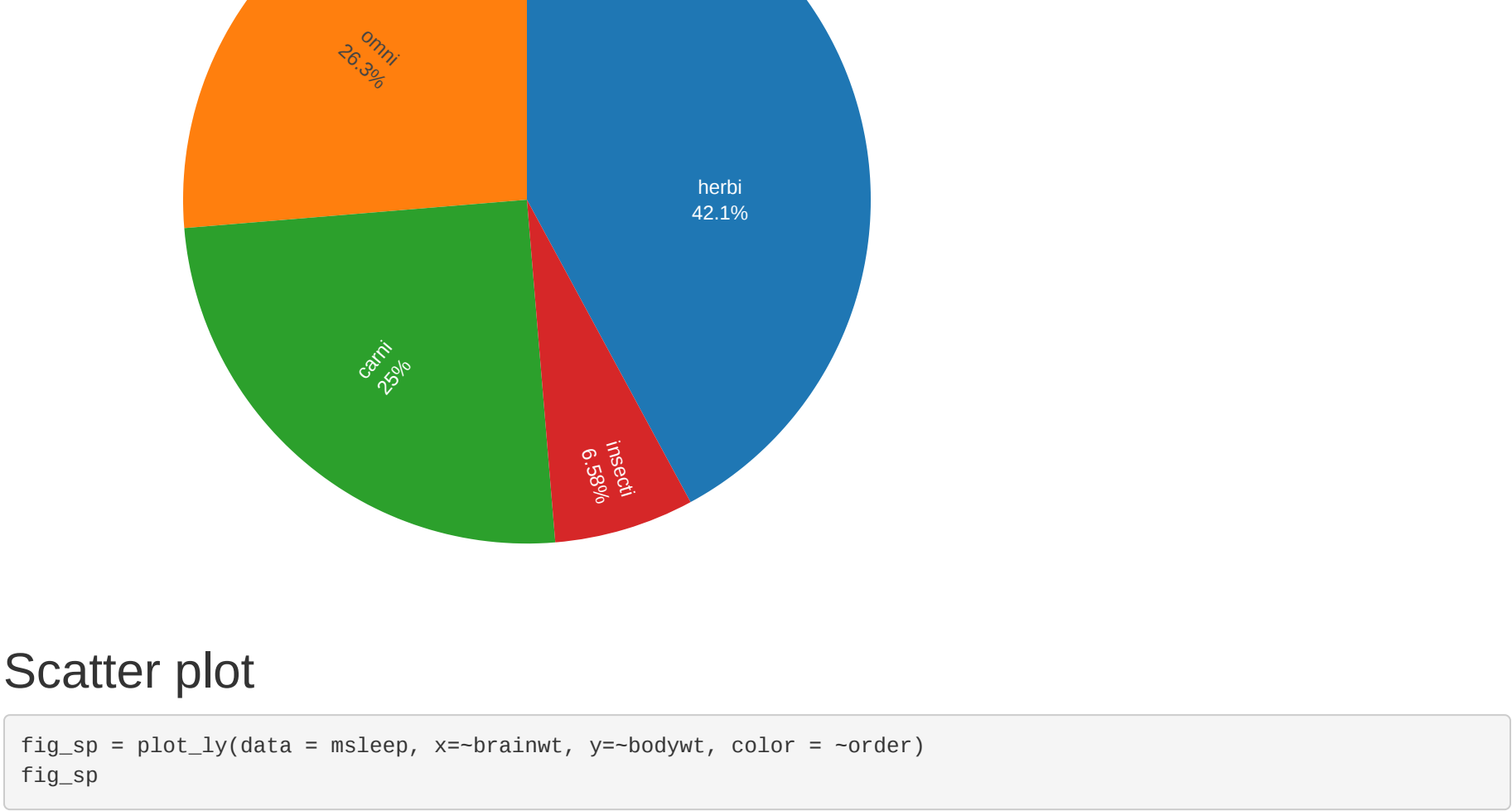
Pie-Chart

|   |                |
|---|----------------|
| <pre>df_order = data.frame(table(msleep\$order))</pre> <pre>print(df_order)</pre> |                |
| ##  | Var1 Freq      |
| ## 1  | Afrosericida 1 |
| ## 2  | Artiodactyla 6 |
| ## 3  | Carnivora 12   |
| ## 4  | Cetacea 3      |

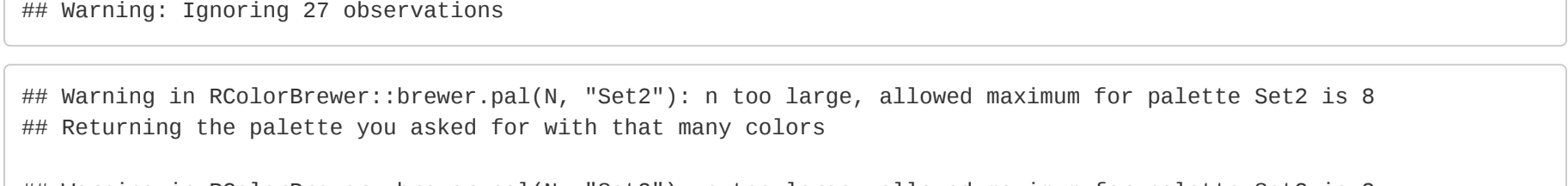
## Pie-Chart



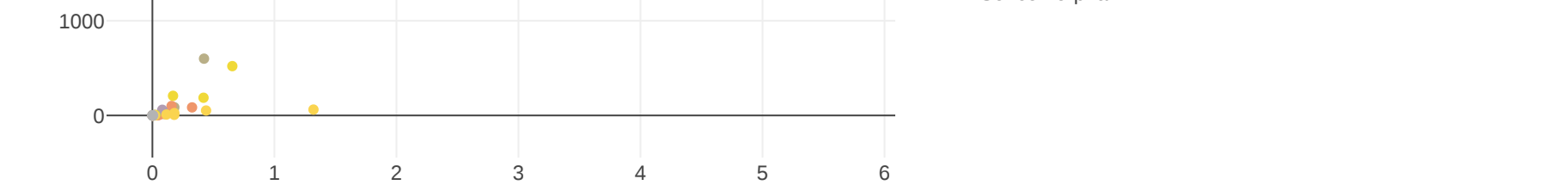
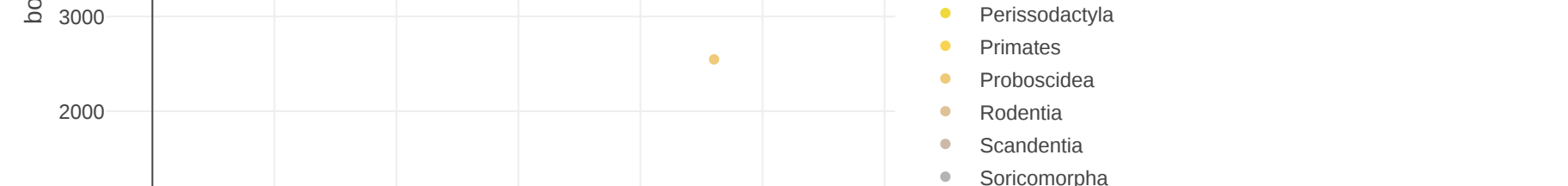
## Scatter plot



## Using Normalization

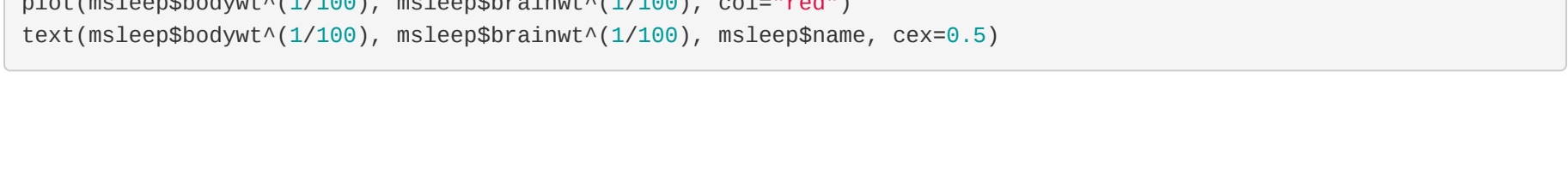
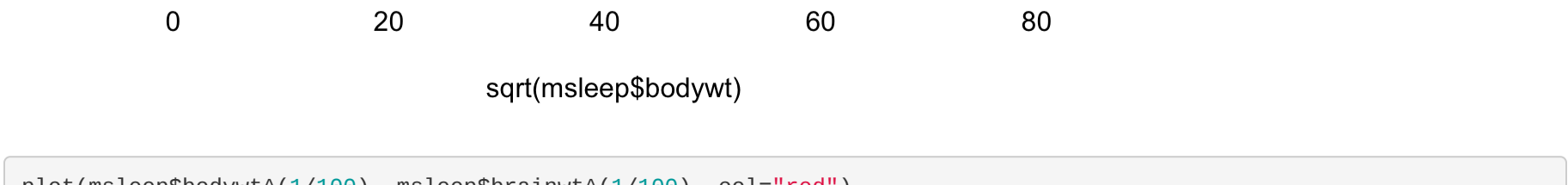
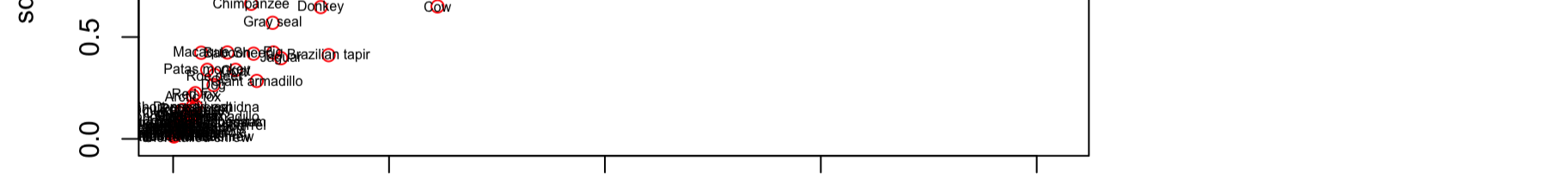
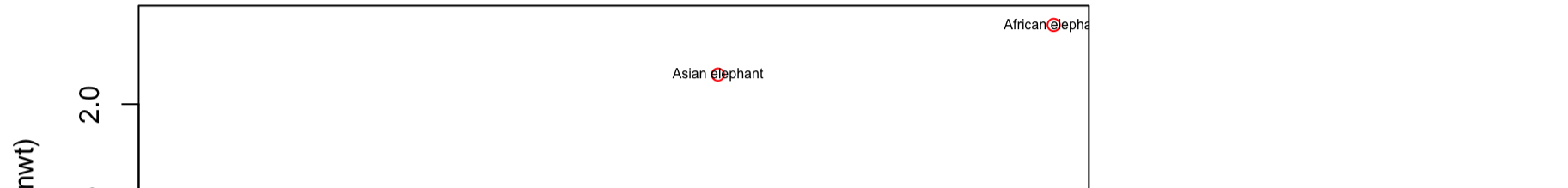


## Scatter plot

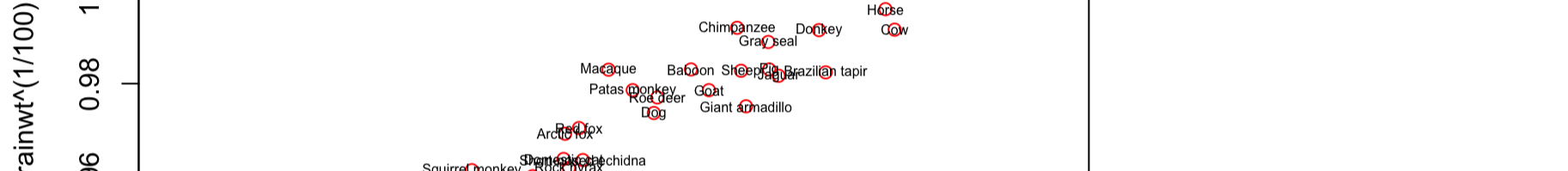


This shows a clear linear relationship between Body weight and Brain weight

## Barplot



## Histogram



## Kernel Density Plot

