Module 1, Assignment 3

2023-02-13

5.

```
## -- Attaching packages --------------------------------------- tidyverse 1.3.1 --
```

```
## v ggplot2 3.3.5     v purrr   0.3.4
## v tibble  3.1.6     v dplyr   1.0.7
## v tidyr   1.1.4     v stringr 1.4.0
## v readr   2.1.1     v forcats 0.5.1
```

```
## -- Conflicts ------------------------------------------- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
```

8.

```
## # A tibble: 108 x 4
##    length_in width_in depth_in species
##        <dbl>    <dbl>    <dbl> <chr>
## 1      1        1      0.5   Opuntia ficus-indica
## 2      2        1      0.3   Opuntia ficus-indica
## 3      2        1      0.125 Opuntia ficus-indica
## 4      2        3      0.5   Opuntia ficus-indica
## 5      2.5      2.5    0.5   Opuntia santa-rita
## 6      3.5      2.5    0.25  Opuntia ficus-indica
## 7      4        3.75   0.5   Opuntia santa-rita
## 8      4        3.8    0.25  Opuntia santa-rita
## 9      4        3.8    0.5   Opuntia santa-rita
## 10     4        3.5    0.25  Opuntia santa-rita
## # ... with 98 more rows
```

9.

```
## # A tibble: 6 x 11
##   group_id paddle_id length_in width_in depth_in spines insects damage location
##      <dbl>     <dbl>     <dbl>    <dbl>    <dbl> <chr>  <chr>   <chr>  <chr>
## 1       4         6       9        8      1.5   N      N       Most   Fifth
## 2       9         5       9.5      8      1.5   Y      Y       Most   First
## 3       9         6       9.5     11      1.5   Y      Y       Most   First
## 4       9         9      10        7.5    1.25  Y      N       None   Third
## 5       9         2      11       10.8    1.25  Y      N       Most   First
## 6       9        10      12        8.5    1.25  Y      Y       Some   Third
## # ... with 2 more variables: species <chr>, size <chr>
```

11.

```
## # A tibble: 108 x 2
##    length_in length_cm
##        <dbl>     <dbl>
## 1         1      2.54
## 2         2      5.08
## 3         2      5.08
## 4         2      5.08
## 5       2.5      6.35
## 6       3.5      8.89
## 7         4      10.2
## 8         4      10.2
## 9         4      10.2
## 10        4      10.2
## # ... with 98 more rows
```

12.

```
## # A tibble: 1 x 2
##   mean_width sd_width
##        <dbl>    <dbl>
## 1       5.66     2.31
```

13.

```
## # A tibble: 108 x 12
##    group_id paddle_id length_in width_in depth_in spines insects damage location
##       <dbl>     <dbl>     <dbl>    <dbl>    <dbl> <chr>  <chr>   <chr>  <chr>
## 1         1         5         1        1      0.5  N      N       Most   Sixth
## 2         1         4         2        1      0.3  N      N       None   Eigth
## 3         3         7         2        1    0.125  Y      N       None   Sixth
## 4         2         9         2        3      0.5  N      N       All    Seventh
## 5         7         9       2.5      2.5      0.5  Y      Y       None   Fifth
## 6         3         8       3.5      2.5     0.25  N      Y       All    Third
## 7         7         4         4     3.75      0.5  Y      Y       Some   Sixth
## 8         7         5         4      3.8     0.25  Y      Y       None   Fifth
## 9         7         8         4      3.8      0.5  Y      Y       Some   Fifth
## 10        7        10         4      3.5     0.25  Y      Y       Most   First
## # ... with 98 more rows, and 3 more variables: species <chr>, size <chr>,
## #   volume_in3 <dbl>
```

14.

```
## # A tibble: 3 x 3
##   species              mean_volume sd_volume
##   <chr>                      <dbl>     <dbl>
## 1 Opuntia engelemannii       52.2      41.8
## 2 Opuntia ficus-indica       21.4      19.2
## 3 Opuntia santa-rita         7.87      7.55
```

16.

```
## # A tibble: 3 x 4
##   species            mean_volume sd_volume    CV
##   <chr>                    <dbl>     <dbl> <dbl>
## 1 Opuntia engelemannii      52.2      41.8  80.2
## 2 Opuntia ficus-indica      21.4      19.2  89.7
## 3 Opuntia santa-rita         7.87      7.55  96.0
```