

Day 1 - File 4

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Let's make some other cool tables. For the exercises below, you will be exploring these other packages:

- tableone
- table1
- arsenal

## Try out a cool package with the table1 package

This package makes HTML tables.

Here is the syntax code for creating a table of summary statistics for the variables of diameter, height and length by sex for the abalone dataset.

```
library(table1)
table1(~diameter + height + length | sex,
      data=abalone)
```

```
## [1] "<table class=\"Rtable1\">\n<thead>\n<tr>\n<th class='rowlabel firstrow lastrow'></th>\n<th clas
```

## Descriptive Data - a useful blog article

Learn more at <http://thatdatatho.com/2018/08/20/easily-create-descriptive-summary-statistic-tables-r-studio/>.

Let's look at the `table1` package - for HTML tables

The package vignette is <https://cran.r-project.org/web/packages/table1/vignettes/table1-examples.html>

We can add some labels and make another table.

```
table1::label(abalone$shuckedWeight) <- "Shucked Weight"
table1::label(abalone$visceraWeight) <- "Viscera Weight"
table1::label(abalone$shellWeight) <- "Shell Weight"

table1::table1(~shuckedWeight +
                visceraWeight +
                shellWeight | sex,
                data = abalone)
```

```
## [1] "<table class='Rtable1'>\n<thead>\n<tr>\n<th class='rowlabel firstrow lastrow'></th>\n<th class='>
```

## Next try the tableone package

See package vignette <https://cran.r-project.org/web/packages/tableone/vignettes/introduction.html>

```
library(tableone)
CreateTableOne(data = abalone)

##
##                                Overall
##  n                                4177
##  X1 (mean (SD))                2089.00 (1205.94)
##  sex (%)
##    F                            1307 (31.3)
##    I                            1342 (32.1)
##    M                            1528 (36.6)
##  length (mean (SD))            0.52 (0.12)
##  diameter (mean (SD))          0.41 (0.10)
##  height (mean (SD))            0.14 (0.04)
##  wholeWeight (mean (SD))       0.83 (0.49)
##  shuckedWeight (mean (SD))     0.36 (0.22)
##  visceraWeight (mean (SD))     0.18 (0.11)
##  shellWeight (mean (SD))       0.24 (0.14)
##  rings (mean (SD))            9.93 (3.22)
##  sex_factor (%)
##    Male                        1528 (36.6)
##    Female                      1307 (31.3)
##    Immature                    1342 (32.1)
```

## Also try the arsenal package

See more at <https://eheinzen.github.io/arsenal/articles/tableby.html>

**NOTE:** We have to add `results="asis"` to the code chunk options for this to look pretty in the output.

Let's make a table of the descriptive statistics for Abalone dimensions by sex. Look at height, diameter and length.

```
library(arsenal)
table_one <- tableby(sex ~ height + diameter + length, data = abalone)
summary(table_one, title = "Abalone Data")
```

Table 1: Abalone Data

	F (N=1307)	I (N=1342)	M (N=1528)	Total (N=4177)	p value
<b>height</b>					< 0.001
Mean (SD)	0.158 (0.040)	0.108 (0.032)	0.151 (0.035)	0.140 (0.042)	
Range	0.015 - 1.130	0.000 - 0.220	0.025 - 0.515	0.000 - 1.130	
<b>diameter</b>					< 0.001
Mean (SD)	0.455 (0.071)	0.326 (0.088)	0.439 (0.084)	0.408 (0.099)	
Range	0.195 - 0.650	0.055 - 0.550	0.110 - 0.630	0.055 - 0.650	
<b>length</b>					< 0.001
Mean (SD)	0.579 (0.086)	0.428 (0.109)	0.561 (0.103)	0.524 (0.120)	
Range	0.275 - 0.815	0.075 - 0.725	0.155 - 0.780	0.075 - 0.815	

## Your turn

Create a table of the abalone weights by sex. Put in variables wholeWeight, shuckedWeight, visceraWeight and shellWeight by sex.

Change the title to “Descriptive statistics of Abalone weights by sex”.

*# insert your code here*

```
table_one <-  
  tableby(sex ~ wholeWeight + shuckedWeight +  
          visceraWeight + shellWeight,  
          data = abalone)  
summary(table_one,  
         title = "Descriptive statistics of Abalone weights by sex")
```

Table 2: Descriptive statistics of Abalone weights by sex

	F (N=1307)	I (N=1342)	M (N=1528)	Total (N=4177)	p value
<b>wholeWeight</b>					< 0.001
Mean (SD)	1.047 (0.430)	0.431 (0.286)	0.991 (0.471)	0.829 (0.490)	
Range	0.080 - 2.657	0.002 - 2.050	0.015 - 2.825	0.002 - 2.825	
<b>Shucked Weight</b>					< 0.001
Mean (SD)	0.446 (0.199)	0.191 (0.128)	0.433 (0.223)	0.359 (0.222)	
Range	0.031 - 1.488	0.001 - 0.773	0.006 - 1.351	0.001 - 1.488	
<b>Viscera Weight</b>					< 0.001
Mean (SD)	0.231 (0.098)	0.092 (0.063)	0.216 (0.105)	0.181 (0.110)	
Range	0.021 - 0.590	0.001 - 0.441	0.003 - 0.760	0.001 - 0.760	
<b>Shell Weight</b>					< 0.001
Mean (SD)	0.302 (0.126)	0.128 (0.085)	0.282 (0.131)	0.239 (0.139)	
Range	0.025 - 1.005	0.002 - 0.655	0.005 - 0.897	0.002 - 1.005	

## Try different output formats

Knit this document “to HTML”, then “to PDF”, and then “to Word” (DOC) formats and see what happens.