Ottr Sample Notebook

This assumes you have already installed ottr from the repo.

In [6]:
```
library(testthat)
library(datasets)
library(dplyr)
library(readr)
```

```
Warning message:
"package 'testthat' was built under R version 3.5.2"
Attaching package: 'testthat'

The following object is masked from 'package:dplyr':

    matches
```

Question 1: Find the radius of a circle that has a 90 deg. arc of length 2. Assign this value to `ans.1`.

In [4]:
```
ans.1 <- 2 * 2 * pi * 2 / pi / pi / 2 # SOLUTION
```

In [ ]:
```
. = ottr::check("tests/q1.R")
```

Question 2: Load the iris dataset. Use dplyr's `filter` function to create `setosas` as the subset of `iris` containing only setosas.

In [12]:
```
data(iris) # SOLUTION
setosas <- iris %>% filter(Species == "setosa") # SOLUTION
```

In [ ]:
```
. = ottr::check("tests/q2.R")
```

Question 3: Using the iris dataset, create two indicator variables for the iris species and then create a linear regression model regressing sepal length on sepal width and the species dummy variables.

In [16]:
```
# BEGIN SOLUTION
iris$setosa = iris$Species == "setosa"
iris$versicolor = iris$Species == "versicolor"
model = lm(Sepal.Length ~ Sepal.Width + setosa + versicolor, data=iris)
# END SOLUTION
```

In [ ]:
```
. = ottr::check("tests/q3.R")
```

Question 4: Use dplyr to load `data/galton.csv` . Create a linear regression model of child height on father and mother height.

In [23]:
```
# BEGIN SOLUTION NO PROMPT
galton = read_csv("data/galton.csv")
model = lm(childHeight ~ mother + father, data=galton)
# END SOLUTION
. = " # BEGIN PROMPT
# put your code here
...
" # END PROMPT
```

```
Parsed with column specification:
cols(
  family = col_character(),
  father = col_double(),
  mother = col_double(),
  midparentHeight = col_double(),
  children = col_double(),
  childNum = col_double(),
  gender = col_character(),
  childHeight = col_double()
)
```

In [ ]:
```
. = ottr::check("tests/q4.R")
```

Question 5: Simplify $\sum_{i=1}^{n} n$.

Type your answer here, replacing this text.

SOLUTION: $\frac{n(n+1)}{2}$