

```

> library(tidyverse)
— Attaching packages — tidyverse 1.2.1 —
✓ ggplot2 3.2.1   ✓ purrr 0.3.2
✓ tibble 2.1.3   ✓ dplyr 0.8.3
✓ tidyr 1.0.0    ✓ stringr 1.4.0
✓ readr 1.3.1    ✓ forcats 0.4.0
— Conflicts — tidyverse_conflicts() —
✖ dplyr::filter() masks stats::filter()
✖ dplyr::lag() masks stats::lag()
> library(dslabs)
> library(caret)
> class(mnist_27)
[1] "list"
> names(mnist_27)
[1] "train" "test" "index_train" "index_test" "true_p"
> head(mnist_27$train)
  y x_1 x_2
1 2 0.03947368 0.18421053
2 7 0.16071429 0.08928571
3 2 0.02127660 0.27659574
4 2 0.13580247 0.22222222
5 7 0.39024390 0.36585366
6 2 0.04854369 0.28155340
> length(mnist_27$train$y)
[1] 800
>
>
> set.seed(1995, sample.kind = 'Rounding')
Warning message:
In set.seed(1995, sample.kind = "Rounding") :
  non-uniform 'Rounding' sampler used
> indexes <- createResample(mnist_27$train$y, 10)
> class(indexes)
[1] "list"
> names(indexes)
[1] "Resample01" "Resample02" "Resample03" "Resample04" "Resample05"
[6] "Resample06" "Resample07" "Resample08" "Resample09" "Resample10"
> length(indexes$Resample10)
[1] 800
> sum(indexes$Resample01 == 3)
[1] 1
> sum(indexes$Resample01 == 4)
[1] 4
> sum(indexes$Resample01 == 7)
[1] 0
>
>
> length(indexes)
[1] 10
> x <- sapply(indexes, function(ind) {
+ sum(ind == 3)
+ })
> x
Resample01 Resample02 Resample03 Resample04 Resample05 Resample06 Resample07
         1         3         1         0         0         3         0
Resample08 Resample09 Resample10
         1         2         0
> sum(x)
[1] 11
>
>
> y <- rnorm(100, 0, 1)
> class(y)
[1] "numeric"
> length(y)

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[1] 100
> y[1:10]
[1] -0.60925482  1.38787908 -0.94751600 -0.13015348  1.22854945 -0.10020523
[7]  0.53594750 -0.81577331  0.42967886 -0.09580517
> set.seed(1, sample.kind = 'Rounding')
Warning message:
In set.seed(1, sample.kind = "Rounding") :
  non-uniform 'Rounding' sampler used
> B <- 1e5
> Q <- replicate(B, {
+ y <- rnorm(100, 0, 1)
+ quantile(y, 0.75)
+ })
> mean(Q)
[1] 0.6654465
> sd(Q)
[1] 0.1351181
>
>
> set.seed(1, sample.kind = 'Rounding')
Warning message:
In set.seed(1, sample.kind = "Rounding") :
  non-uniform 'Rounding' sampler used
> y <- rnorm(100, 0, 1)
> set.seed(1, sample.kind = 'Rounding')
Warning message:
In set.seed(1, sample.kind = "Rounding") :
  non-uniform 'Rounding' sampler used
> indexes <- createResample(y, 10)
> x <- sapply(indexes, function(ind) {
+ y_star <- y[ind]
+ quantile(y_star, 0.75)
+ })
> mean(x)
[1] 0.7312648
> sd(x)
[1] 0.07419278
>
>
> set.seed(1, sample.kind = 'Rounding')
Warning message:
In set.seed(1, sample.kind = "Rounding") :
  non-uniform 'Rounding' sampler used
> y <- rnorm(100, 0, 1)
> set.seed(1, sample.kind = 'Rounding')
Warning message:
In set.seed(1, sample.kind = "Rounding") :
  non-uniform 'Rounding' sampler used
> indexes <- createResample(y, 10000)
> x <- sapply(indexes, function(ind) {
+ y_star <- y[ind]
+ quantile(y_star, 0.75)
+ })
> mean(x)
[1] 0.6737512
> sd(x)
[1] 0.0930575
>

```