

Código R & Python

Reticulate

```
## [1] ".RData"                ".Rhistory"
## [3] "00-install.R"           "00-primer-rmd.html"
## [5] "00-primer-rmd.pdf"       "00-primer-rmd.Rmd"
## [7] "00-test.R"              "01-chunks.pdf"
## [9] "01-chunks.Rmd"          "01-summarize.R"
## [11] "02-documentacion.log"    "02-documentacion.pdf"
## [13] "02-documentacion.Rmd"    "03-codigo-mixto.html"
## [15] "03-codigo-mixto.pdf"     "03-codigo-mixto.Rmd"
## [17] "04-datos.R"             "add.py"
## [19] "binomio-newton.html"     "binomio-newton.log"
## [21] "binomio-newton.pdf"      "binomio-newton.Rmd"
## [23] "Data Frames"            "datos-tarea.R"
## [25] "Distribuciones"         "Estadística Descriptiva"
## [27] "Graficos"               "Regresión Lineal"
## [29] "tarea-4.html"           "tarea-4.pdf"
## [31] "tarea-4.Rmd"            "test-markdown.log"
## [33] "test-markdown.Rmd"       "test-markdown.tex"
```

```
source_python("add.py")
add(3,4)
```

```
## [1] 7
```

```
np <- import("numpy", convert = FALSE)
x <- np$array(c(1:4))
sum <- x$cumsum()

print(sum)
```

```
## [ 1  3  6 10]
```

```
sum_r <- py_to_r(sum)
sum_r
```

```
## [1] 1 3 6 10
```

```
# help("py_to_r")
# py_help(os.getcwd())
```

```
datos <- iris
head(datos)
```

```
## Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 1           5.1           3.5           1.4           0.2 setosa
## 2           4.9           3.0           1.4           0.2 setosa
## 3           4.7           3.2           1.3           0.2 setosa
## 4           4.6           3.1           1.5           0.2 setosa
## 5           5.0           3.6           1.4           0.2 setosa
```

```
## 6          5.4          3.9          1.7          0.4 setosa
datos_py <- r_to_py(datos)

import numpy as np
import pandas as pd

r.datos_py.head()

##      Sepal.Length Sepal.Width Petal.Length Petal.Width Species
## 0          5.1          3.5          1.4          0.2 setosa
## 1          4.9          3.0          1.4          0.2 setosa
## 2          4.7          3.2          1.3          0.2 setosa
## 3          4.6          3.1          1.5          0.2 setosa
## 4          5.0          3.6          1.4          0.2 setosa
```

Sparse Matrix

```
library(Matrix)
N <- 6
set.seed(123)
sparse_mat <- sparseMatrix(
  i = sample(N, N, replace = F),
  j = sample(N, N, replace = F),
  x = runif(N),
  dims = c(N, N)
)
sparse_mat

## 6 x 6 sparse Matrix of class "dgCMatrix"
##
## [1,] .          .          0.8895393 .          .          .
## [2,] .          0.04205953 .          .          .          .
## [3,] .          .          .          .          0.899825 .
## [4,] .          .          .          .          .          0.3279207
## [5,] 0.9545036 .          .          .          .          .
## [6,] .          .          .          0.2460877 .          .

sparse_mat_py <- r_to_py(sparse_mat)

r.sparse_mat_py

## <6x6 sparse matrix of type '<class 'numpy.float64''>'
## with 6 stored elements in Compressed Sparse Column format>
py_to_r(sparse_mat_py)

## 6 x 6 sparse Matrix of class "dgCMatrix"
##
## [1,] .          .          0.8895393 .          .          .
## [2,] .          0.04205953 .          .          .          .
## [3,] .          .          .          .          0.899825 .
## [4,] .          .          .          .          .          0.3279207
## [5,] 0.9545036 .          .          .          .          .
## [6,] .          .          .          0.2460877 .          .
```

$$\prod_{i=1}^n i$$