INTRODUCTION TO R FOR FINANCE

What is a list?

Lists

```
> cash
  company cash_flow year
1       A      1000    1
2       A      4000    3
3       A       550    4
4       B      1500    1
5       B      1100    2
6       B       750    4
7       B      6000    5

> company_name <- "DataCampers Inc"
```

Lists

```
> my_company <- list(company_name, cash)

> my_company
[[1]]
[1] "DataCampers Inc."

[[2]]
  company cash_flow year
1       A      1000    1
2       A      4000    3
3       A       550    4
4       B      1500    1
5       B      1100    2
6       B       750    4
7       B      6000    5
```

Subsetting lists

```
> my_company[1]
[[1]]
[1] "DataCampers Inc."

> my_company[[1]]
[1] "DataCampers Inc."

> my_company[[2]]
  company cash_flow year
1       A      1000    1
2       A      4000    3
3       A       550    4
4       B      1500    1
5       B      1100    2
6       B       750    4
7       B      6000    5
```

INTRODUCTION TO R FOR FINANCE

Let’s practice!

INTRODUCTION TO R FOR FINANCE

A few list creating functions

split() it up

```
> debt
  name payment
1  Dan     100
2  Dan     200
3  Dan     150
4  Rob      50
5  Rob      75
6  Rob     100
```

split() it up

```
> grouping <- debt$name

> split_debt <- split(debt, grouping)

> split_debt
$Dan
  name payment
1  Dan     100
2  Dan     200
3  Dan     150

$Rob
  name payment
4  Rob      50
5  Rob      75
6  Rob     100
```

split() it up

```
> split_debt$Dan
  name payment
1  Dan     100
2  Dan     200
3  Dan     150

> split_debt$Dan$payment
[1] 100 200 150

> unsplit(split_debt, grouping)
  name payment
1  Dan     100
2  Dan     200
3  Dan     150
4  Rob      50
5  Rob      75
6  Rob     100
```

`split()` example

- Unique calculation for Dan versus Rob
- Dan gets a 20% discount, Rob a 10% discount
    - split data frame by name
    - apply discounts
    - combine data frames back
- "split-apply-combine"

split-apply-combine

```
> grouping <- debt$name
> split_debt <- split(debt, grouping)

> split_debt$Dan$new_payment <- split_debt$Dan$payment * .8
> split_debt$Rob$new_payment <- split_debt$Rob$payment * .9

> split_debt
$Dan
  name payment new_payment
1  Dan     100          80
2  Dan     200         160
3  Dan     150         120

$Rob
  name payment new_payment
4  Rob      50        45.0
5  Rob      75        67.5
6  Rob     100        90.0
```

split-apply-combine

```
> unsplit(split_debt, grouping)
  name payment new_payment
1  Dan     100         80.0
2  Dan     200        160.0
3  Dan     150        120.0
4  Rob      50         45.0
5  Rob      75         67.5
6  Rob     100         90.0
```

Attributes

```
> my_matrix <- matrix(c(1,2,3,4,5,6), nrow = 2, ncol = 3)

> attributes(my_matrix)
$dim
[1] 2 3

> attributes(debt)
$names
[1] "name"    "payment"

$row.names
[1] 1 2 3 4 5 6

$class
[1] "data.frame"
```

INTRODUCTION TO R FOR FINANCE

Let’s practice!

INTRODUCTION TO R FOR FINANCE

Congratulations!

PREMIUM COURSE

Financial Trading in R

Start Course For Free

21 Videos · 66 Exercises · 5 hours · 4,291 Participants · 5200 XP

Course Description

This course covers the basics on financial trading, and gives you an overview of how to use quantstrat to build signal-based trading strategies in R. It will teach you how to set up a quantstrat strategy, apply transformations of market data called indicators, create signals based on the interactions of those indicators, and simulate orders. Lastly, you will learn how to analyze your results both from a statistical and a visual perspective.

1 Trading basics FREE 0%

Instructor(s):

Ilya Kipnis

Ilya Kipnis is a professional quantitative analyst and R programmer. He received

PREMIUM COURSE

Working with Geospatial Data in R

Start Course For Free

15 Videos · 58 Exercises · 4 hours · 1,757 Participants · 5000 XP

Course Description

Where should you buy a house to get the most value for your money? Your first step might be to make a map, but spatial data can be intimidating in R because of the complicated objects it often lives in. This course will introduce you to spatial data by starting with objects you already know about, data frames, before introducing you to the special objects from the sp and raster packages used to represent spatial data in R. You'll learn to read, explore, and manipulate these objects with the big payoff of being able to use the tmap package to make maps. By the end of the course you will have made maps of property sales in a small town, populations of the countries of the world, the distribution of people in the North East of the USA, and median income in the neighborhoods of New York

Instructor(s):

Charlotte Wickham

PREMIUM COURSE

Machine Learning Toolbox

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24 Videos · 88 Exercises · 4 hours · 4,559 Participants · 6250 XP

Course Description

Machine learning is the study and application of algorithms that learn from and make predictions on data. From search results to self-driving cars, it has manifested itself in all areas of our lives and is one of the most exciting and fast growing fields of research in the world of data science. This course teaches the big ideas in machine learning: how to build and evaluate predictive models, how to tune them for optimal performance, how to preprocess data for better results, and much more. The popular `caret` R package, which provides a consistent interface to all of R's most powerful machine learning facilities, is used throughout the course.

1 Regression models: fitting them and evaluating their performance FREE 0%

In the first chapter of this course, you'll fit regression models with `train()` and evaluate their out-of-sample

Instructor(s):

Zachary Deane-Mayer

Zach is a Data Scientist at DataRobot and co-author of the caret R package. He's fascinated by predicting the future and spends his free time competing in predictive modeling competitions. He's

Thanks!