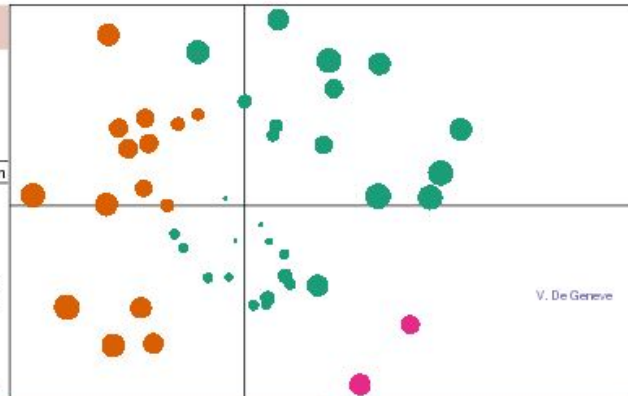
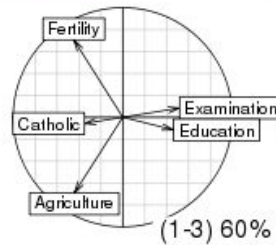
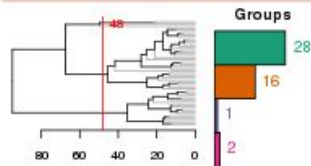




PCA 5 vars
`princomp(x = data, cor = cor)`



Clustering 4 groups



Factor 1 [41%]

Factor 3 [19%]



Introducción al lenguaje R

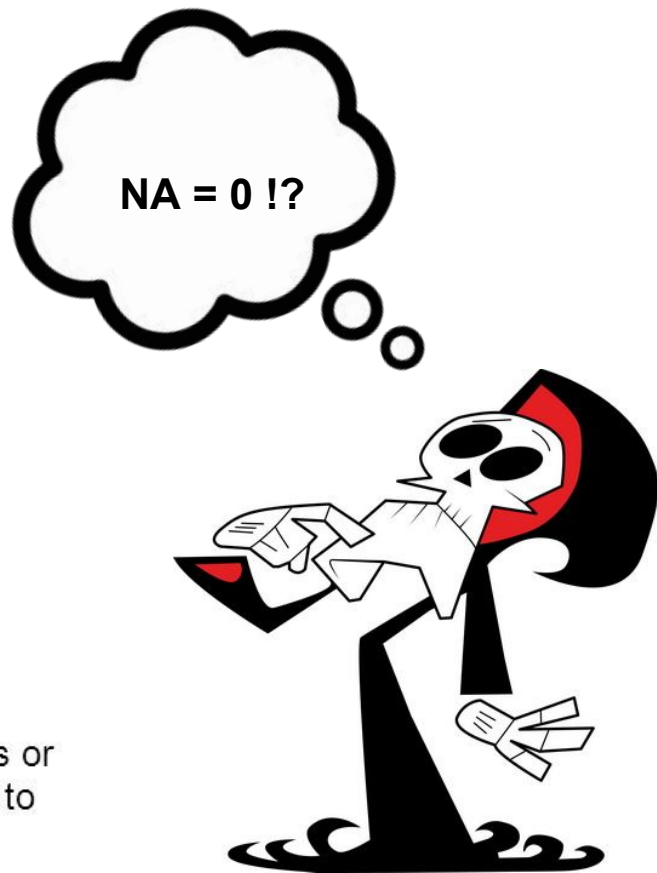
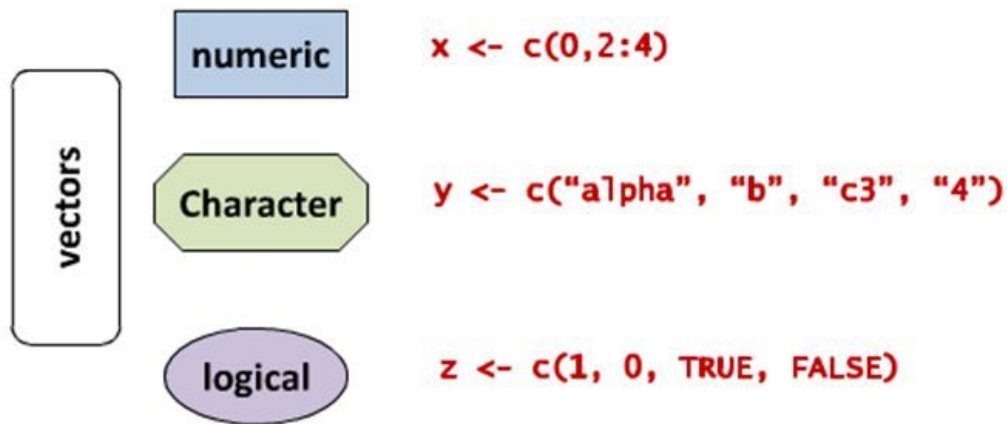
Basic Dictionary

1. Summary
2. File
3. Choose
4. FieldBook
5. Data
6. Read
7. Write
8. Row
9. Colum
10. Object
11. String



1. Analysis of Variance (ANOVA)
2. Design
3. Table
4. Data frame
5. Library
6. Package
7. Help
8. Plot
9. Structure (str)
10. Lineal model
11. Sheet

Starting R: Data types

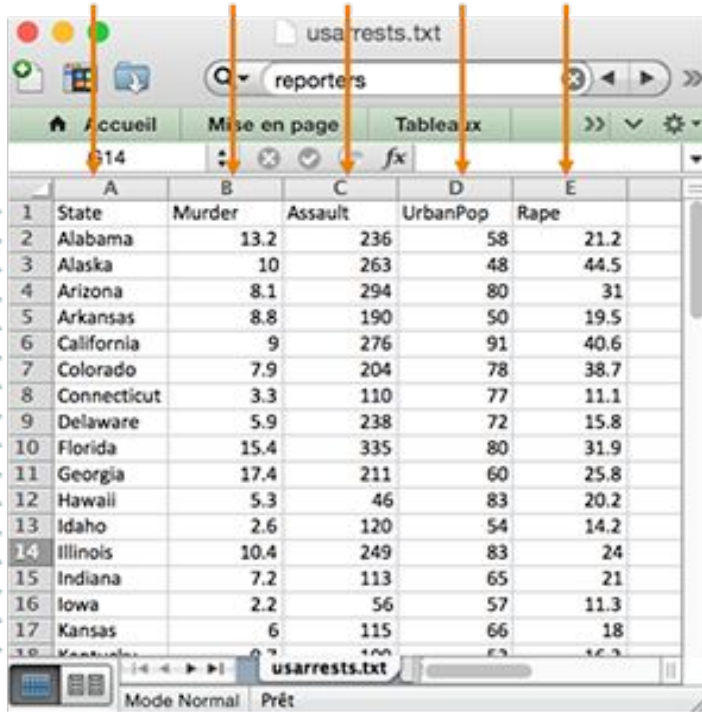


The `c()` function combines its arguments into a vector.

In R the term **modes** is used to describe data types. There are 4 basic types or **modes**: numeric, character, complex, and logical. These can be combined to form collections or what are called **objects** in R.

Cheat Sheet

Variables



usarrests.txt

reporters

Accueil Mise en page Tableaux

14

	A	B	C	D	E
1	State	Murder	Assault	UrbanPop	Rape
2	Alabama	13.2	236	58	21.2
3	Alaska	10	263	48	44.5
4	Arizona	8.1	294	80	31
5	Arkansas	8.8	190	50	19.5
6	California	9	276	91	40.6
7	Colorado	7.9	204	78	38.7
8	Connecticut	3.3	110	77	11.1
9	Delaware	5.9	238	72	15.8
10	Florida	15.4	335	80	31.9
11	Georgia	17.4	211	60	25.8
12	Hawaii	5.3	46	83	20.2
13	Idaho	2.6	120	54	14.2
14	Illinois	10.4	249	83	24
15	Indiana	7.2	113	65	21
16	Iowa	2.2	56	57	11.3
17	Kansas	6	115	66	18
18	Kentucky	0.7	100	53	16.3

Mode Normal Prêt

country	year	cases	population
Afghanistan	2000	245	14007071
Afghanistan	2000	2666	20495360
Brazil	1999	31737	17206362
Brazil	2000	80488	17404898
China	1999	212258	1272015272
China	2000	210066	1280423583

variables

country	year	cases	population
Afghanistan	2000	245	14007071
Afghanistan	2000	2666	20495360
Brazil	1999	31737	17206362
Brazil	2000	80488	17404898
China	1999	212258	1272015272
China	2000	210066	1280423583

observations

country	year	cases	population
Afghanistan	00	245	14007071
Afghanistan	00	2666	20495360
Brazil	99	31737	17206362
Brazil	00	80488	17404898
China	99	212258	1272015272
China	00	210066	1280423583

values

Data Format



Excel



Google
Sheets

Tablas dinámicas

Typically a scientist or anyone who works with data will end up with several files with different copies of the data and several files with intermediate steps. If you are working with data, there should have been a time where you had a file with name *data*, but now you probably have:

StatTools, 2014

datasharing , 2014

- data
- data_V01
- data_V02
- data_V02_1
- data_DDMMYY
- lastdata
- finaldata
- veryfinaldata
- and some others.

FieldBook: Have only one data file!!

FieldBook .: Structure

1. General Information
2. Variables list
3. Exp. Units Info
4. Field Design
5. Field Book
6. Calendar
7. Diary

Field Book's name:

Year

Month

Day

Location

General Name



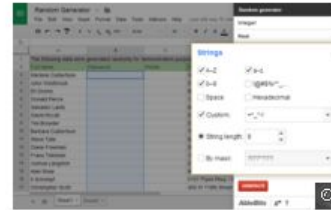
FieldBook

Random Generator for Google Sheets

Create almost any type of random data in your sheet

Add this sidebar add-on to your Google Sheets and select from 5 types of random data to fill the selected range. This add-on is an excellent tool for creating strong passwords, generating random numbers, and populating the cells with dates within a certain time period. [Learn how to work with the add-on.](#)

- Fill the selected cells with unique random numbers or dates
- Get random strings of any length and character set
- Select the range, choose data type and click Generate



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DBCA

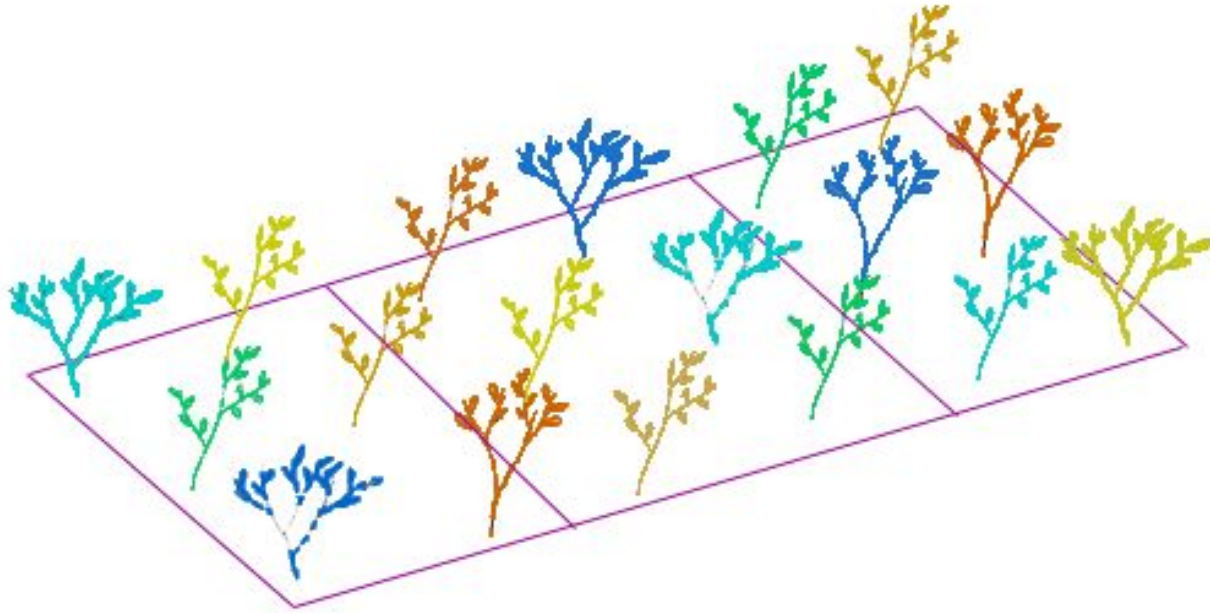
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DCL

Diseño Cuadrado Latino



Experimental Design



Experimental Design

