Presentación de R - rstudio.

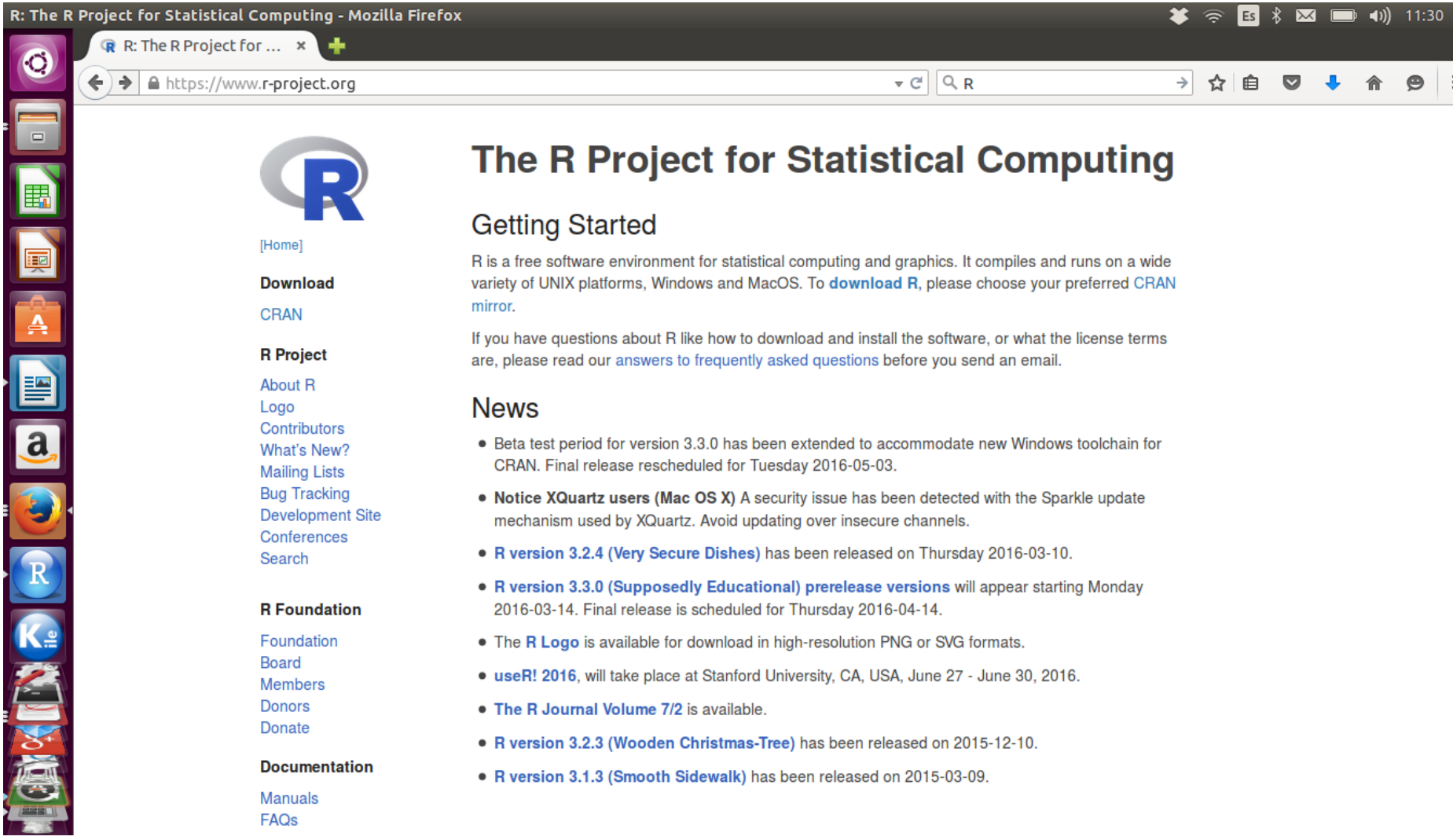
Mariela Sued

Instituto de Cálculo - marielasued@gmail.com

Que es R?

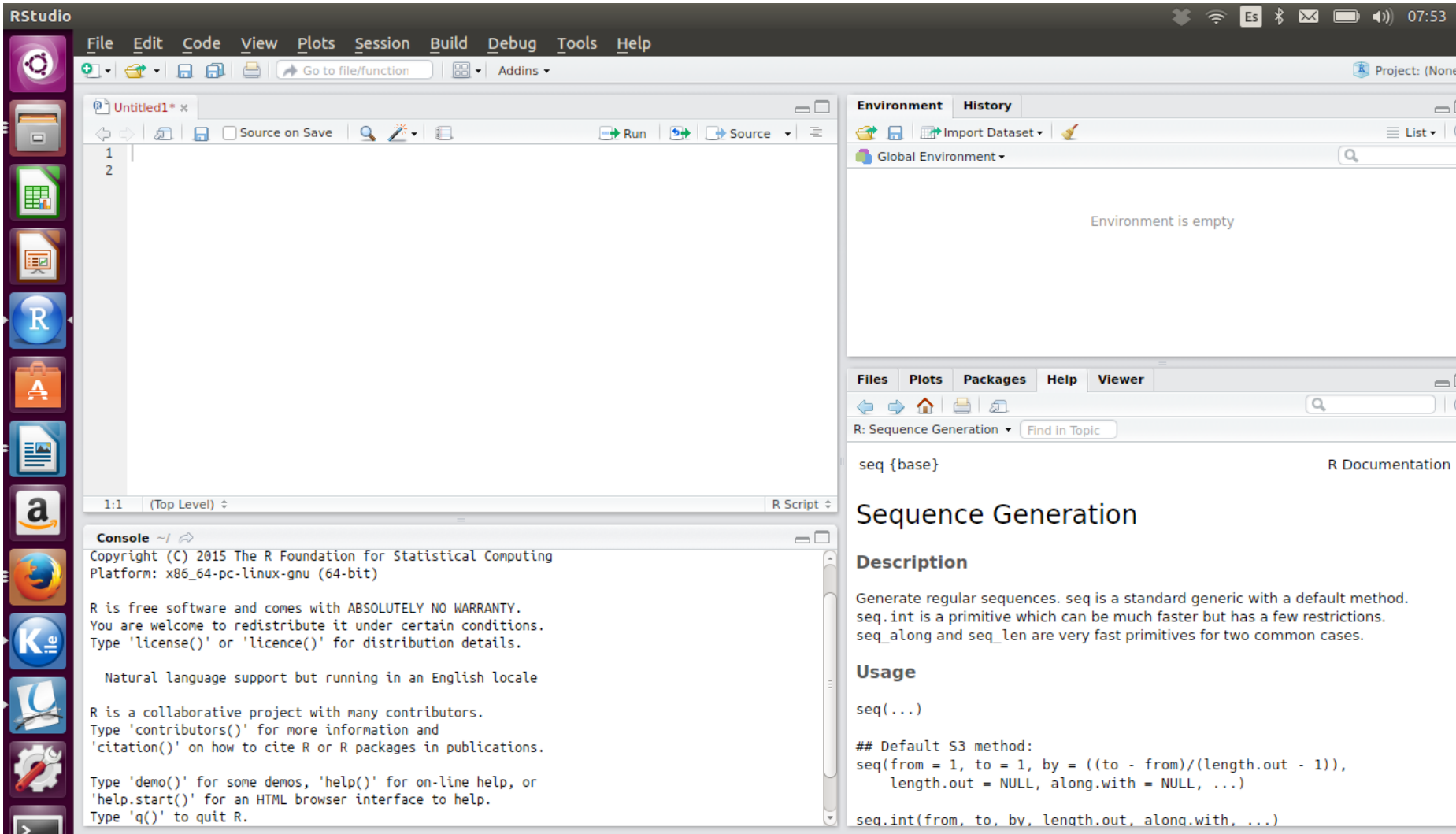
- R es un lenguaje de programación para análisis de datos y elaboración de gráficos
- Software libre, corre en diferentes sistemas operativos.
- Interacción por linea de comandos (reglas de sintaxis).
- *https://www.r-project.org/*

Pagina de R

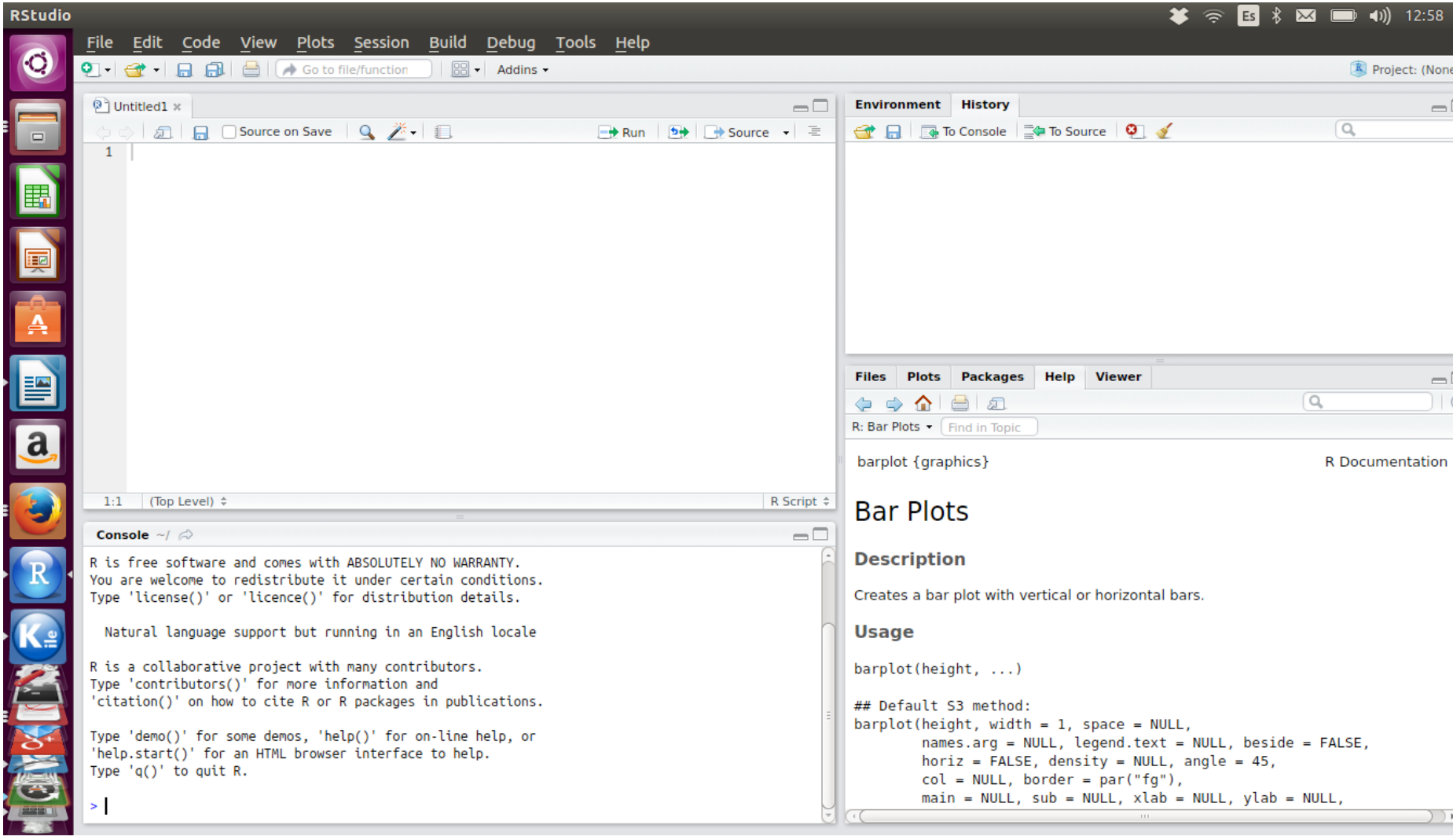

R: The R Project for Statistical Computing - Mozilla Firefox
11:30
R: The R Project for ...
https://www.r-project.org
R
[Home]
Download
CRAN
R Project
About R
Logo
Contributors
What's New?
Mailing Lists
Bug Tracking
Development Site
Conferences
Search
R Foundation
Foundation
Board
Members
Donors
Donate
Documentation
Manuals
FAQs
The R Project for Statistical Computing
Getting Started
R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. To download R, please choose your preferred CRAN mirror.
If you have questions about R like how to download and install the software, or what the license terms are, please read our answers to frequently asked questions before you send an email.
News
Beta test period for version 3.3.0 has been extended to accommodate new Windows toolchain for CRAN. Final release rescheduled for Tuesday 2016-05-03.
Notice XQuartz users (Mac OS X) A security issue has been detected with the Sparkle update mechanism used by XQuartz. Avoid updating over insecure channels.
R version 3.2.4 (Very Secure Dishes) has been released on Thursday 2016-03-10.
R version 3.3.0 (Supposedly Educational) prerelease versions will appear starting Monday 2016-03-14. Final release is scheduled for Thursday 2016-04-14.
The R Logo is available for download in high-resolution PNG or SVG formats.
useR! 2016, will take place at Stanford University, CA, USA, June 27 - June 30, 2016.
The R Journal Volume 7/2 is available.
R version 3.2.3 (Wooden Christmas-Tree) has been released on 2015-12-10.
R version 3.1.3 (Smooth Sidewalk) has been released on 2015-03-09.

Que es Rstudio?

- Es un entorno *amigable* donde ejecutar R.
- *https://www.rstudio.com/*



Rstudio: Pantalla



Pantalla de Rstudio

- Console: Ejecuta comandos y muestra los resultados.
- Editor: Aca se escribe lo que se quiere ejecutar (script)
- History - Environment
- Files - Plots - Packages - Help - Viewer

Operadores

Aritméticos		Comparativos		Lógicos	
$+$	Adición	$==$	Igual a	&	Y lógico
-	Substracción	$!=$	Diferente de	!	NO lógico
$*/$	Multiplicación División	$<, >$	Menor que, Mayor que	|	O lógico

Asignación

$$<-$$

- $<-$: se consigue con el menor, seguido del guión.
- pepe$<-$ B: crea el objeto pepe y le asigna B.

Vectores

c(a,b,c)	crea vector concatenando a,b,c
rep (a,n)	repite a n-veces
seq(1:n)	$(1, 2, 3, \ldots, n)$
seq(a,b,by=c)	$(a, a + c, a + 2c, \ldots)$ hasta b
x[4]	selecciona la cuarta coordenada del vector x
x[c(2,5)]	selecciona la segunda y quinta coordenada del ve
sample(x,size=k,replace=TRUE)	saca muestra de x, tamaño k, CON rep
sample(x,size=k,replace=FALSE)	saca muestra de x, tamaño k, SIN rep
length(x)	calcula la longitud del vector x

Funciones

Funciones matemáticas		Funciones estadísticas	
sqrt(x)	Raíz de x	mean(x)	Media
exp(x)	Exponencial de x	sd(x)	Desvio
log(x)	Logaritmo natural de x	var(x)	Varianza
log10(x)	Logaritmo base 10	median(x)	Mediana
length(x)	Número de elementos	quantile(x,p)	Quantiles
sum(x)	Suma los elementos de x	max(x)	El máximo
prod(x)	Producto de los elementos	min(x)	El mínimo
sin(x)	Seno	summary(x)	Resumen
cos(x)	Coseno	sort(x)	Ordena (creciente)
tan(x)	Tangente		
round(x,n)	redondea a n dígitos		
cumsum(x)	calcula las sumas acumuladas		
choose(n, k)	calcula en combinatorio		

Gráficos

plot(x,y)	grafica los pares x vs. y - help(plot)
hist(x)	realiza un histograma con los valores del vector x - help(hist)
boxplot(x)	realiza un boxplot con los valores del vector x - help(boxplot
barplot(x)	realiza gráfico de barras de x - help(barplot)
pie(table(x))	realiza gráfico de torta de la tabla de x - help(pie)
$par(mfrow = c(1, 2))$	particiona el entonrno gráfico

Dos referencias

- http://cms.dm.uba.ar/academico/materias/1ercuat2016/probabilidades_y_estadistica_C/
- http://cms.dm.uba.ar/academico/materias/1ercuat2016/estadisticaQ/practicas