



# An Introduction to R

# Apakah itu R

- Diciptakan oleh Ross Ihaka dan Robert Gentleman
- R bahasa pemrograman untuk analisis statistika dari yang sederhana sampai dengan rumit
- Bahasa R merupakan versi *open-source* dari bahasa pemrograman S (Azola dan Harrel, 2006)
- Berisi tentang ringkasan dan eksplorasi, presentasi grafik dan memodelkan data
- Kelebihan:
  1. Open source
  2. Sistem help dan grafik yang canggih
  3. Sintax nya mudah dipahami

# Data Format..

Features	Stata	SPSS	SAS	R
Data extensions	*.dta	*.sav, *.por (portable file)	*.sas7bcat, *.sas#bcat, *.xpt (xport files)	*.Rdata
User interface	Programming/point-and-click	Mostly point-and-click	Programming	Programming
Data manipulation	Very strong	Moderate	Very strong	Very strong
Data analysis	Powerful	Powerful	Powerful/versatile	Powerful/versatile
Graphics	Very good	Very good	Good	Excellent
Cost	Affordable (perpetual licenses, renew only when upgrade)	Expensive (but not need to renew until upgrade, long term licenses)	Expensive (yearly renewal)	Open source
Program extensions	*.do (do-files)	*.sps (syntax files)	*.sas	*.txt (log files)
Output extension	*.log (text file, any word processor can read it), *.smcl (formatted log, only Stata can read it).	*.spo (only SPSS can read it)	(various formats)	*.R, *.txt(log files, any word processor can read)

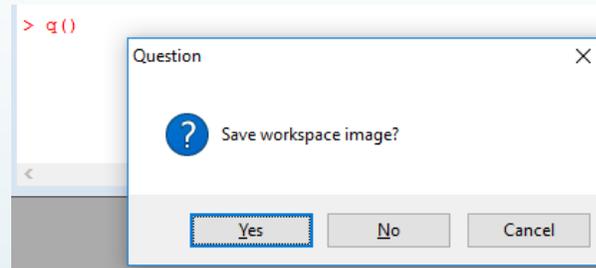


# Manajemen R

- ▶ R dapat diperoleh gratis di CRAN –archive
- ▶ <http://cran.r-project.org>
- ▶ Cara kerja → bekerja dengan satu direktori untuk satu projek
- ▶ R akan menyimpan file image dari semua objek atau internal data dan history dari semua perintah yang pernah diketikkan di jendela R-Console pada direktori kerja secara otomatis

# Saving & Ending the Session

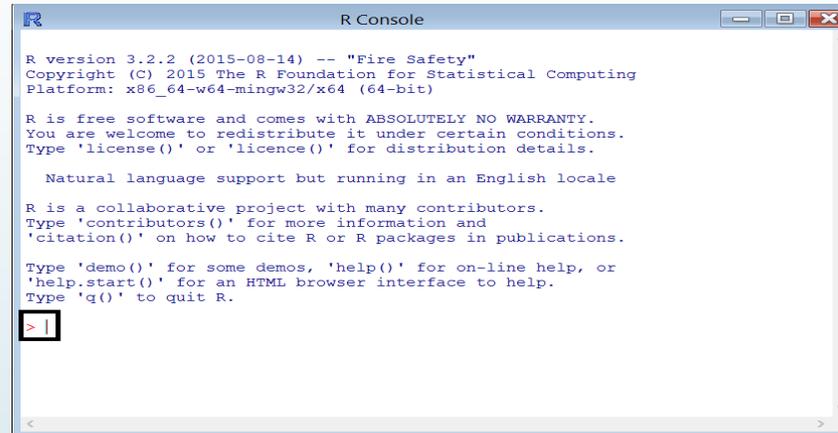
- File - Save to file
- File bisa disimpan dalam tipe notepad
- Untuk keluar dari R dapat dengan mengetik `q()`



- Jika Yes maka new session dapat ditulis pada direktori kerja yang sama
- Data yang disaved tersimpan dalam R sessions
- Jika selesai bekerja dengan R maka dapat dilakukan dengan dua cara
  1. Ketikkan `q()`
  2. File-Exit-klik Yes pada dialog Save Workspace Image
- R dapat melakukan berbagai analisis data dan statistik yang diorganisasi dalam bentuk paket (package). Untuk melihat list paket yang sudah terinstall pada console, ketik `library()`.

# Starting R

- R biasanya bs dijalankan under Windows, Mac OS, Linux, UNIX
- Tampilan awal untuk versi standar seperti



```
R
R version 3.2.2 (2015-08-14) -- "Fire Safety"
Copyright (C) 2015 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

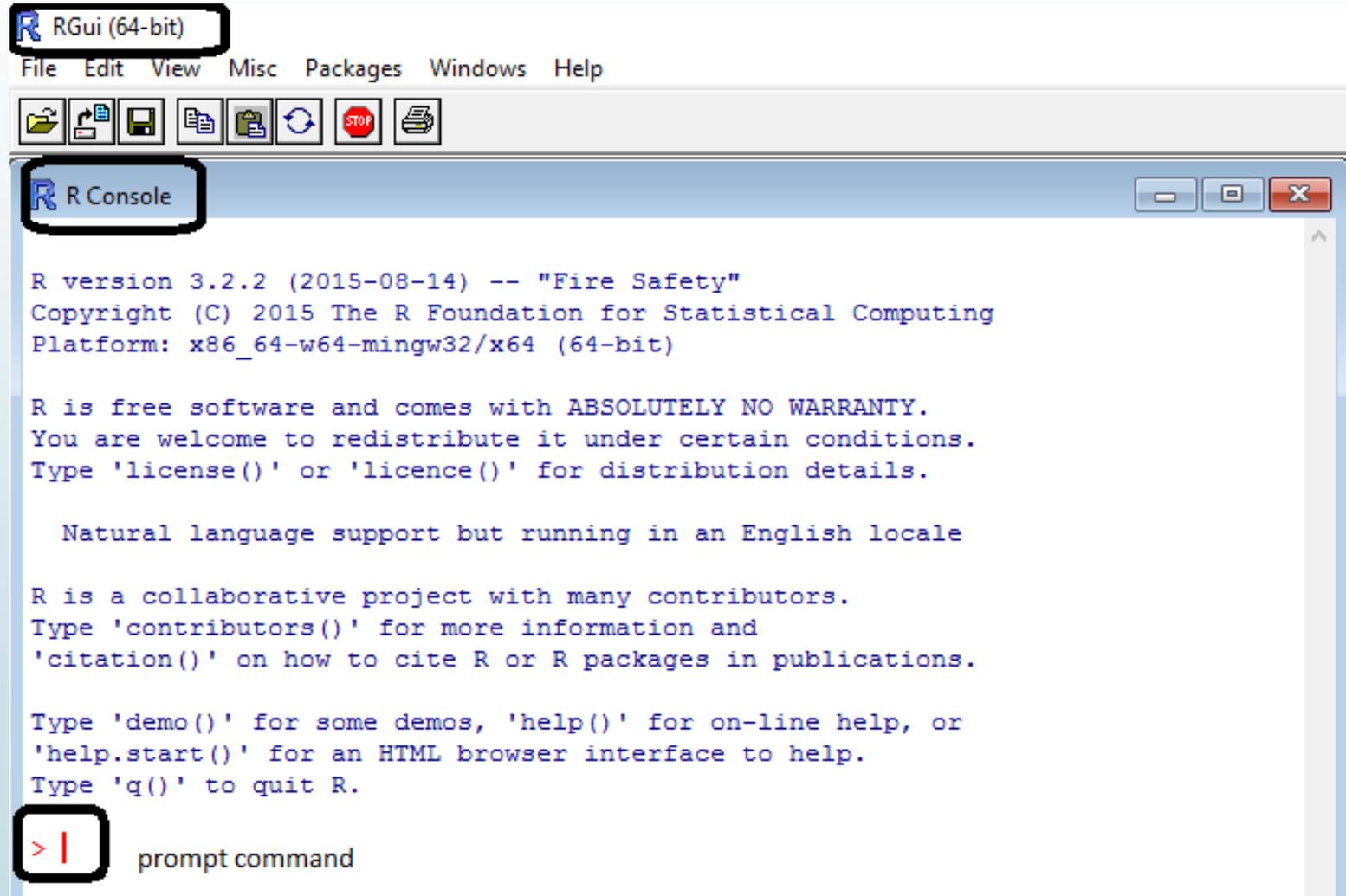
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> |
```

- Tanda kotak untuk isi perintah, disebut dengan prompt
- Prompt otomatis muncul
- Packages adalah menu khusus pada R tergantung instalasi user

# Mengetik Commands pada R console



```
RGui (64-bit)
File Edit View Misc Packages Windows Help

R Console

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> | prompt command
```