

Jul 2, 2014

***Revised Dec 1, 2014**

R AnalyticFlow 3

An Environment for Data Analysis with R

Ryota Suzuki, Tatsuhiro Nagai
Ef-prime, Inc.

Introduction

■ R AnalyticFlow

– GUI for R

- Written in Java
- Open source
- Windows / Linux / Mac OS X



Introduction

■ Background

- Data analysis consulting
- We need to...
 - Work on a team
 - Share the results with our clients
 - Help our clients to apply the results

Introduction

■ Our Goal

- Simplify the process of data analysis to:
 - Clear our thoughts
 - Share with others
 - Make it easily reusable

Introduction

■ Source code

- Best explains everything, but...
 - Too detailed
 - Requires knowledge of the language

```
# 1. Loading dataset
data(iris)

# 2. Exploratory Analysis
plot(iris[, 1:4], col = as.integer(iris$Species) + 1)
boxplot(Petal.Length ~ Species, data = iris, col = 3, main = "Petal.Length")

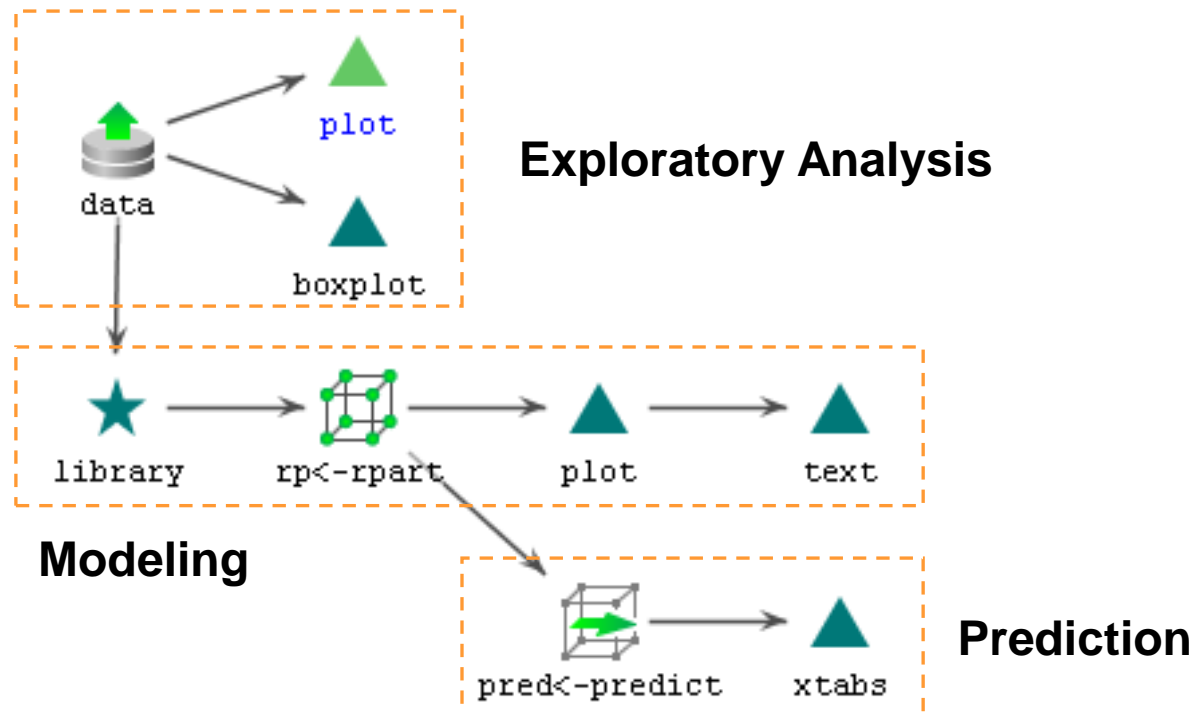
# 3. Modeling
library(rpart)
rp <- rpart(Species ~ ., iris)

# 4. Model checking
plot(rp, margin = 0.1, branch = 0.3)
text(rp, fancy = T, all = T, use.n = T)

# 5. Prediction and Validation
pred <- predict(rp, type = "class")
xtabs(~pred + iris$Species)
```

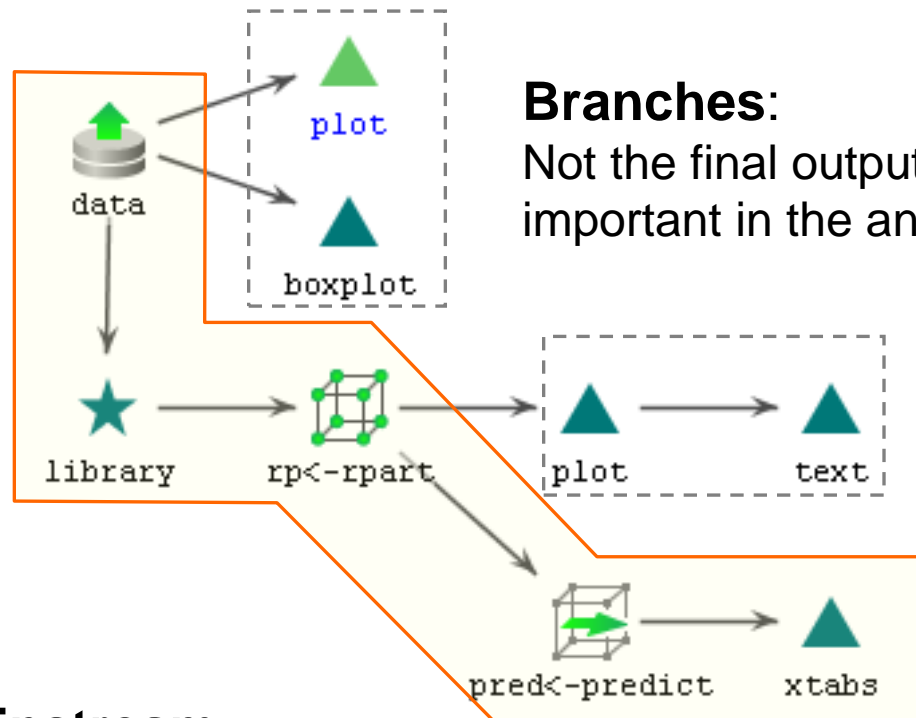
Introduction

■ Analysis flow



Introduction

■ Branching



Mainstream:

The final output of the analysis

R AnalyticFlow 2.1



R AnalyticFlow - 1. Introduction (Tutorial)

File Edit View Node Run Preferences Help

File Object Search Breakpoint Task

R Objects

- iris : dataframe [150,5]
 - Sepal.Length : numeric [150]
 - Sepal.Width : numeric [150]
 - Petal.Length : numeric [150]
 - Petal.Width : numeric [150]
 - Species : factor [150]
- pred : factor [150]
- rp : rpart [14]

R Console

```
> data(iris)
> library(rpart)
> rp <- rpart(Species ~ ., iris)
> pred <- predict(rp, type = "class")
> xtabs(~pred + iris$Species)
```

pred	setosa	versicolor	virginica
setosa	50	0	0
versicolor	0	49	5
virginica	0	1	45

Top Graphics:2 x

▲ xtabs(~pred + iris\$Species)

An "analysis flow" is a representation of processing flow.
A "node" is a diagram which represents a process.
Nodes are connected by arrows called "edges".

Right-click and "Run" on this node.
The results are displayed in the R console on the bottom-left of this window.

Plots are drawn in a new tab.
Close the tab to turn back.

Proceed to the next tutorial by "Help" menu.

R AnalyticFlow 2.1

■ Features

- Data analysis support
 - Object viewer
 - R object cache
- Coding support
 - Code editor
 - Breakpoints
 - R scripts import / export
- Usability
 - Auto-backup / restore
 - Tutorials
 - Easy installation

R AnalyticFlow 2.1

■ System Requirements

- Windows
 - R ($\geq 2.12.0$)
- Linux / Mac OS X
 - Java (≥ 6), R ($\geq 2.12.0$), rJava

■ Architecture

- Java, Swing, JRI (Java R Interface)
- Other open source libraries
 - rJava, JavaGD, JUNG, Apache libraries, etc.

<http://www.ef-prime.com/> or  **R AnalyticFlow**

The Next Step

3

Now under development

R AnalyticFlow 3



connect scripts.
up a file here.

	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

R AnalyticFlow 3

■ The Real GUI

- No coding
 - Or less coding for trivial matters
 - Help R beginners
 - > Avoid coding, or learn with auto-generated code
- Project Management
 - Organize all the resources
 - > Flows, files, scripts, etc.
- Share your work
 - Visual and comprehensible
 - Build your own GUI modules!

R AnalyticFlow 3

- Get the latest news
 - Follow us on twitter
 - [@efprime](https://twitter.com/efprime)
 - Get the trial version
 - http://download.ef-prime.com/raf3_trial/
 - Try [R AnalyticFlow 2](#)
 - Update information will be shown on startup



<http://www.ef-prime.com/> or  **R AnalyticFlow**

Thank you!

- Enjoy your analysis with



<http://www.ef-prime.com/> or  R AnalyticFlow