Making R « any-user-friendly »

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Leaders in analytical solutions for MS Excel
Where we’re coming from

1993
First XLSTAT version with Excel 4.0 macros

1996
First sales

2001
VBA+Delphi 4 languages

2006
VBA + C++ 7 languages

2013
Continuous integration 5 employees

2016
Office.js XLSTAT 365 in Azure

2017
R integration XLSTAT-R

2018
Flat files access R 365 20 employees

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Dealing with R weaknesses and strengths

• Some packages are **buggy or with slow code**
  -> XLSTAT functions solve the issues identified in the R functions through its own functions developed in C++

• Some packages are **limited in scope**
  -> XLSTAT allows a unique and easy interface to access functions

• Some packages require strong expertise
  -> XLSTAT-R interfaces simplify the options to what’s mostly used

• Some packages are the state of the art
  -> XLSTAT-R gives access to these methods with a point and click approach
1. First approach: XLSTAT-R

- Make R functions available within the XLSTAT interface
1. First approach: XLSTAT-R

- Make R functions available within the XLSTAT interface
1.1 First approach: XLSTAT-R

• How does it work?

1. Build your XML code to
   1. Describe the function
   2. Generate the interface
   3. Inject the R code

2. Update the function list in XLSTAT, and run it from the XLSTAT-R menu

3. Get your results in Excel
1.2 XML based

• One XML per R script (or at least per function)
  • XML has been found to be well adapted as it is visual, trans-platform, it is compatible with many editors
  • (But we are preparing a translation to json for our cloud version)
  • Copy and paste makes the creation pretty fast
• Header:

  <Method text="Kohonen SOM" datastructure="data" function="som" group="kohonen" packages="kohonen"
  family="Classification methods, Neural networks, Self organizing maps" question="How can I classify data into
  homogeneous groups?" synonyms="Kohonen self organizing maps" keywords="kohonen,self,organizing,map,clustering" >

  • Identify the authors

  <AuthorRFunction>Ron Wehrens and Johannes Kruisselbrin</AuthorRFunction>
1.3 Interface description

• Script the VBA interface in XML language
1.4 Interface description

- Enter the R code and specify which results should be displayed
1.5 Results in Excel

• The report format is the same as for XLSTAT
1.6 Results in Excel

- XLSTAT-R imports in Excel what is computed by R
2. Second approach: XLSTAT-R-Notebook

• Make R functions available in a sheet, with just one formula

  \[ =\text{XLSTAT}\_R(\text{Data}, \text{Rcode}, \text{OutPutCell}) \]

• Example:
2. Second approach: XLSTAT-R-Notebook

To display an R output in Excel, add `tabletosheet()`

To display an R plot in Excel, add `plottosheet()`
Contact us

• Please email us if:

  • You want us to make your R function available in XLSTAT-R

  • You want to send us an XLSTAT-R-Notebook that includes a scenario you would like to share

  • Contact: support@xlstat.com