

# Package ‘rFocal’

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**Type** Package

**Title** Run 'FOCAL' Language Source Code

**Version** 1.0

**Date** 2025-05-04

**Description** Execute 'FOCAL' (<[https://en.wikipedia.org/wiki/FOCAL\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/FOCAL_(programming_language))>) source code directly in 'R'. This is achieved by translating 'FOCAL' code into equivalent 'R' commands and controlling the sequence of execution.

**License** LGPL-3

**Imports** utils, methods

**NeedsCompilation** no

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**Repository** CRAN

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## Description

Execute 'FOCAL' (<[https://en.wikipedia.org/wiki/FOCAL\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/FOCAL_(programming_language))>) source code directly in 'R'. This is achieved by translating 'FOCAL' code into equivalent 'R' commands and controlling the sequence of execution.

**The ‘DESCRIPTION’ File**

```

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Version:      1.0
Date:         2025-05-04
Authors@R:    c(person(given = "Carl", family = "Witthoft", role = c("aut","cre"), email= "cellocgw@gmail.com"))
Description:   Execute 'FOCAL' (<https://en.wikipedia.org/wiki/FOCAL\_\(programming\_language\)>) source code directly in R
License:      LGPL-3
Imports:      utils, methods
Author:       Carl Witthoft [aut, cre]
Maintainer:   Carl Witthoft <cellocgw@gmail.com>

```

**Author(s)**

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rFocal

*Run FOCAL Code in R*

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**Description**

rFocal is an interpreter function. It takes as input FOCAL commands and macros and executes the intended operations in R.

**Usage**

```
rFocal(focFile, rFile, runit=TRUE, saveit = FALSE)
```

**Arguments**

focFile	Any of the following: – a text file containing valid FOCAL commands, including the line numbers. – a character string or vector of character strings containing valid FOCAL commands, including the line numbers. – an R object of class "focfile" , generated in a previous call to rFocal.
rFile	A character string providing the name of a file to be created which will contain the interpreted code and associated tables. If left empty, this name is generated from the input focFile.
runit	If TRUE, the R code generated is executed.
saveit	If TRUE, two files are generated. One file, "runseq.txt" , is written to the current working directory. It contains the index numbers of the R code strings executed in sequence order. The other is a file named focFile, written to the current working directory or, if focFile is a path/filename string, to that directory.

## Details

The FOCAL language was created in the prehistoric times before lower-case letters were available on computers. rFocal is case-insensitive with respect to the input code, should anyone wish to write new source FOCAL code. The original FOCAL character set included an up-arrow to indicate exponentiation. Given the number of different UTF-8 up-arrows available, rFocal does not support this item. The user must replace it with "^" in any source code. Some FOCAL commands are unsupported because they have no functionality in the R environment. These commands, including ERASE, MODIFY, GO, if found in the input, are captured as "comment" lines. The FOCAL floating-point formatting syntax is ignored at this time. Future revisions may incorporate this feature.

## Value

A list object of class focfile, containing the following.

code	A vector containing the R code equivalent to each FOCAL command.
retidx	An array of index values used to control the sequence of R commands executed
strnum	An array of the FOCAL line numbers
newvar	A collection of variable names created by the interpreter. This is used to re-create environment variables if the output is invoked in a future rFocal command. Note: these data are written to rFile when saveit is TRUE.

## Author(s)

Carl Witthoft, <carl@witthoft.com>

## References

See <[https://en.wikipedia.org/wiki/FOCAL\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/FOCAL_(programming_language))> for a brief overview. The original 1968 manual can be found at <<http://www.bitsavers.org/www.computer.museum.uq.edu.au/pdf/DEC-08-AJAB-D>>

## Examples

```
##---- Should be DIRECTLY executable !! ----
##-- ==> Define data, use random,
##--or standard data sets, see data().
focloop <- '1.1 FOR KK = 0,5 ; TYPE "KK SQUARED IS " , KK*KK, !'
rFocal(focloop)
focvals <- c('1.1 SET X = 3','1.2 SET Y = 5','1.3 TYPE "X AND Y",!','1.4 TYPE X, Y')
rFocal(focvals)
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