



compareWith

User-friendly diff viewing and VCS interaction

UseR! Toulouse, July 10th 2019

Nicoletta Farabullini

- Integration of **Version Control** tools in R and RStudio is still significantly behind what is desirable
- With the uprise of git and **GitHub** for R package development:
 - issues are being tackled through separate branches
 - contributors are more numerous and heterogeneous
- Command-line git interaction can cause additional problems

- Integration of **Version Control** tools in R and RStudio is still significantly behind what is desirable
- With the uprise of git and **GitHub** for R package development:
 - issues are being tackled through separate branches
 - contributors are more numerous and heterogeneous
- Command-line git interaction can cause additional problems

- **compareWith** is a **R-package** that:
 - allows users to interact with **Meld** from within **RStudio**
 - provides addins that allow for:
 - comparing the same or two distinct files
 - editing files or directories
 - merging and resolving conflicts

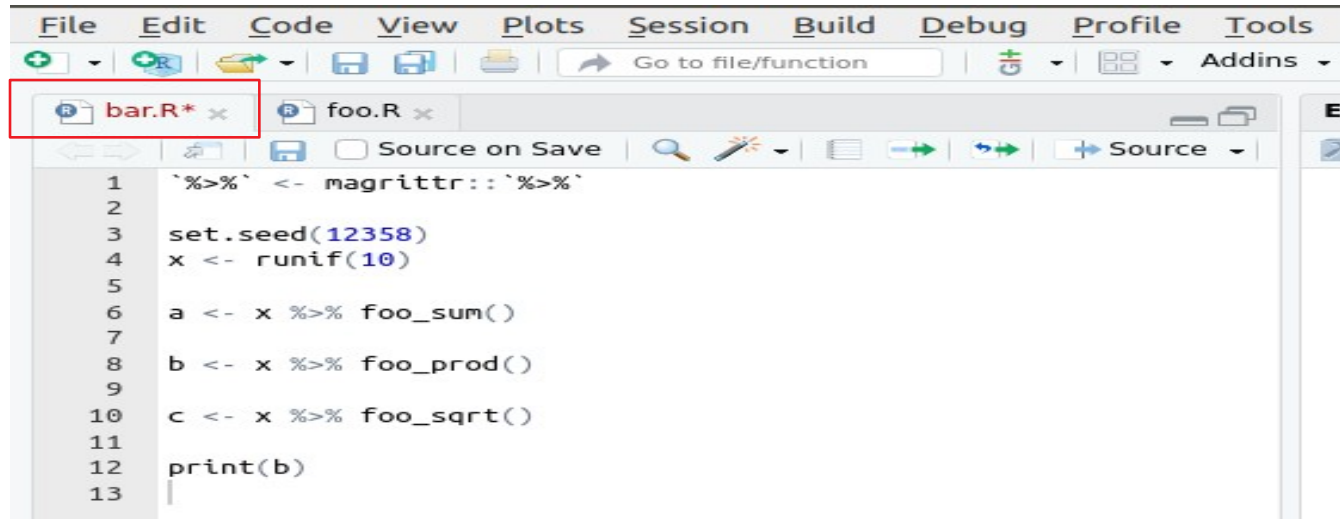
 <https://github.com/miraisolutions/compareWith>

- **compareWith** is a **R-package** that:
 - allows users to interact with **Meld** from within **RStudio**
 - provides addins that allow for:
 - comparing the same or two distinct files
 - editing files or directories
 - merging and resolving conflicts

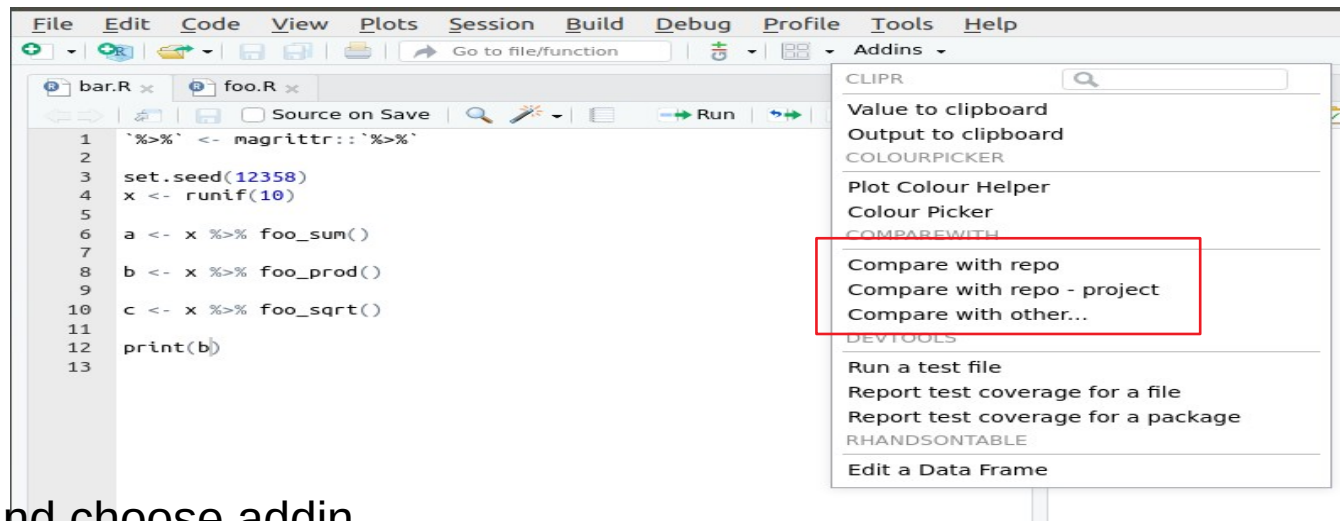


<https://github.com/miraisolutions/compareWith>

Compare with repo



```
1 `>%` <- magrittr::`>%`  
2  
3 set.seed(12358)  
4 x <- runif(10)  
5  
6 a <- x %>% foo_sum()  
7  
8 b <- x %>% foo_prod()  
9  
10 c <- x %>% foo_sqrt()  
11  
12 print(b)  
13
```



```
1 `>%` <- magrittr::`>%`  
2  
3 set.seed(12358)  
4 x <- runif(10)  
5  
6 a <- x %>% foo_sum()  
7  
8 b <- x %>% foo_prod()  
9  
10 c <- x %>% foo_sqrt()  
11  
12 print(b)  
13
```

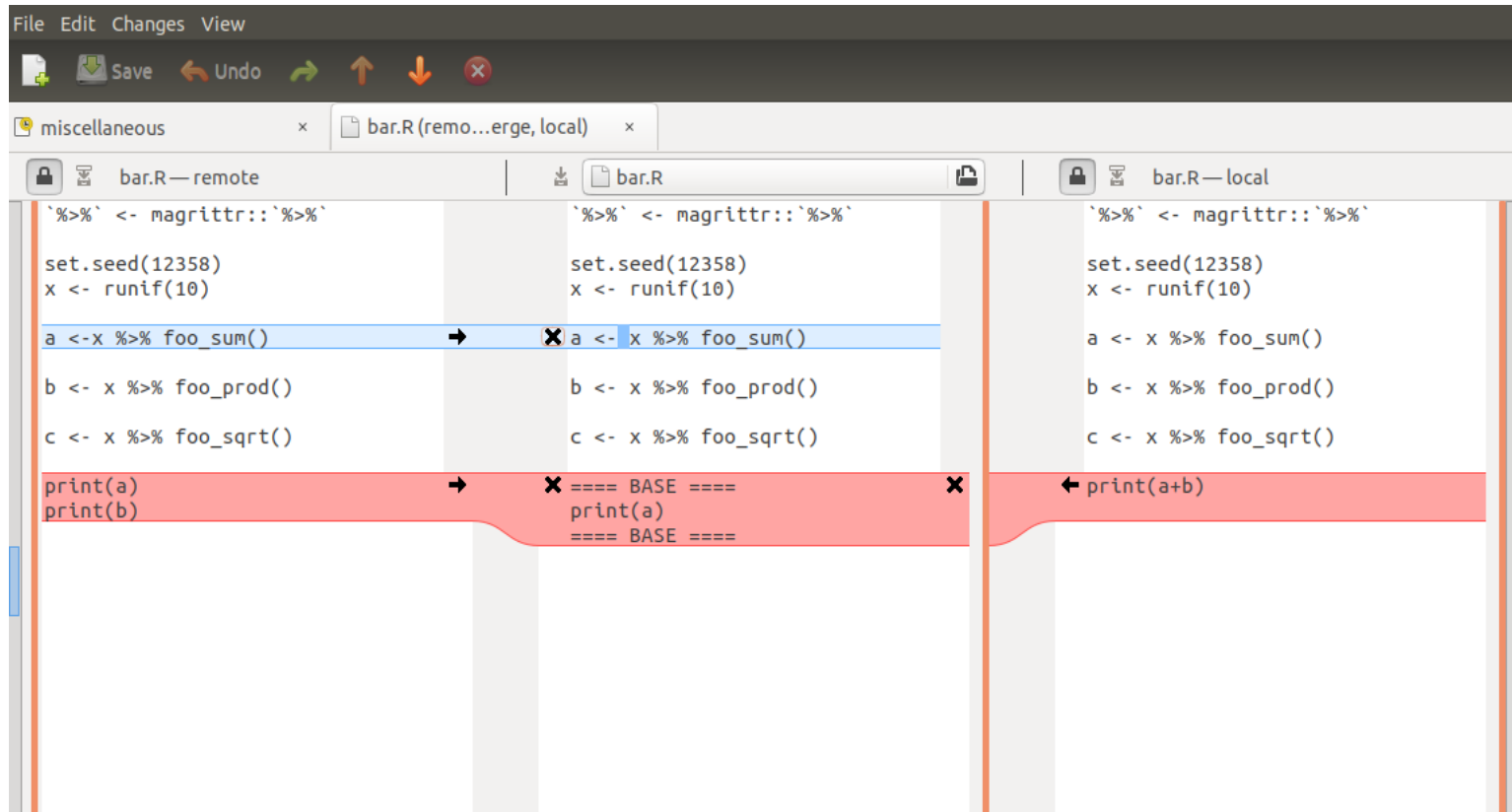
- CLIPR
 - Value to clipboard
 - Output to clipboard
- COLOURPICKER
 - Plot Colour Helper
 - Colour Picker
- COMPAREWITH
 - Compare with repo
 - Compare with repo - project
 - Compare with other...
- DEVTOOLS
 - Run a test file
 - Report test coverage for a file
 - Report test coverage for a package
- RHANDSONTABLE
 - Edit a Data Frame

Save file and choose addin

The screenshot shows a code editor with two panes comparing a local file 'bar.R' with its version in a repository. The local version has a highlighted line 'a <- x %>% foo_sum()' and the repository version has a highlighted line 'a <- x %>% foo_sum()' and a highlighted line 'print(b)'. The repository version also has a red 'X' icon next to the 'a <- x %>% foo_sum()' line.

```
`%>%` <- magrittr::`%>%`  
set.seed(12358)  
x <- runif(10)  
a <- x %>% foo_sum()  
b <- x %>% foo_prod()  
c <- x %>% foo_sqrt()  
print(b)
```

Compare and edit



The screenshot shows a three-way comparison of R code in a file named 'bar.R'. The interface has three panes: 'bar.R—remote', 'bar.R', and 'bar.R—local'. The code in all panes starts with:

```
`%>%` <- magrittr::`%>%`  
set.seed(12358)  
x <- runif(10)
```

The 'remote' pane has:

```
a <- x %>% foo_sum()  
b <- x %>% foo_prod()  
c <- x %>% foo_sqrt()  
print(a)  
print(b)
```

The 'local' pane has:

```
a <- x %>% foo_sum()  
b <- x %>% foo_prod()  
c <- x %>% foo_sqrt()  
print(a+b)
```

The central 'bar.R' pane shows a conflict on the line corresponding to the print statements:

```
==== BASE ====  
print(a)  
==== BASE ====
```

Arrows indicate the source of changes: a right arrow from the remote pane to the central pane for the 'a <- x %>% foo_sum()' line, and a left arrow from the local pane to the central pane for the 'print(a+b)' line. Red highlights are present on the conflicting lines in the central pane.

Three-way comparison!

Merge conflicts

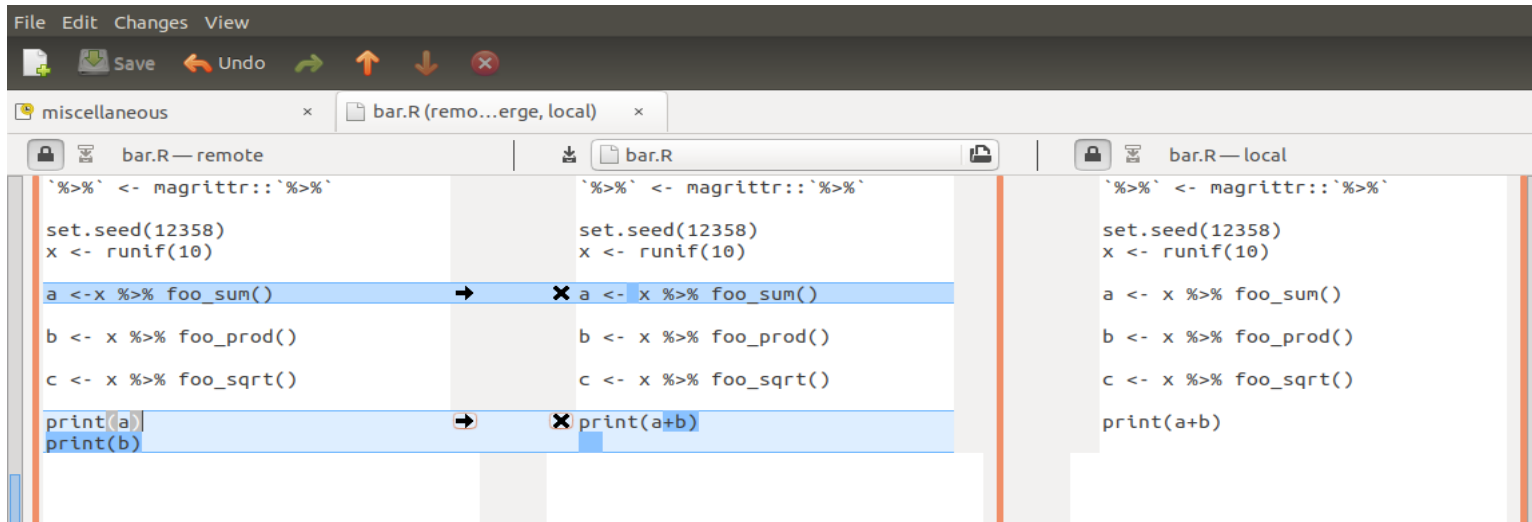
```
File Edit Changes View
miscellaneous x bar.R (remo...erge, local) x
bar.R—remote | bar.R | bar.R—local
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a)
print(b)
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a+b)
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a+b)
```

```
File Edit Changes View
miscellaneous x bar.R (remo...erge, local) x bar.R (remo...erge, local) x
bar.R—remote | bar.R | bar.R—local
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a)
print(b)
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a+b)
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a+b)
```

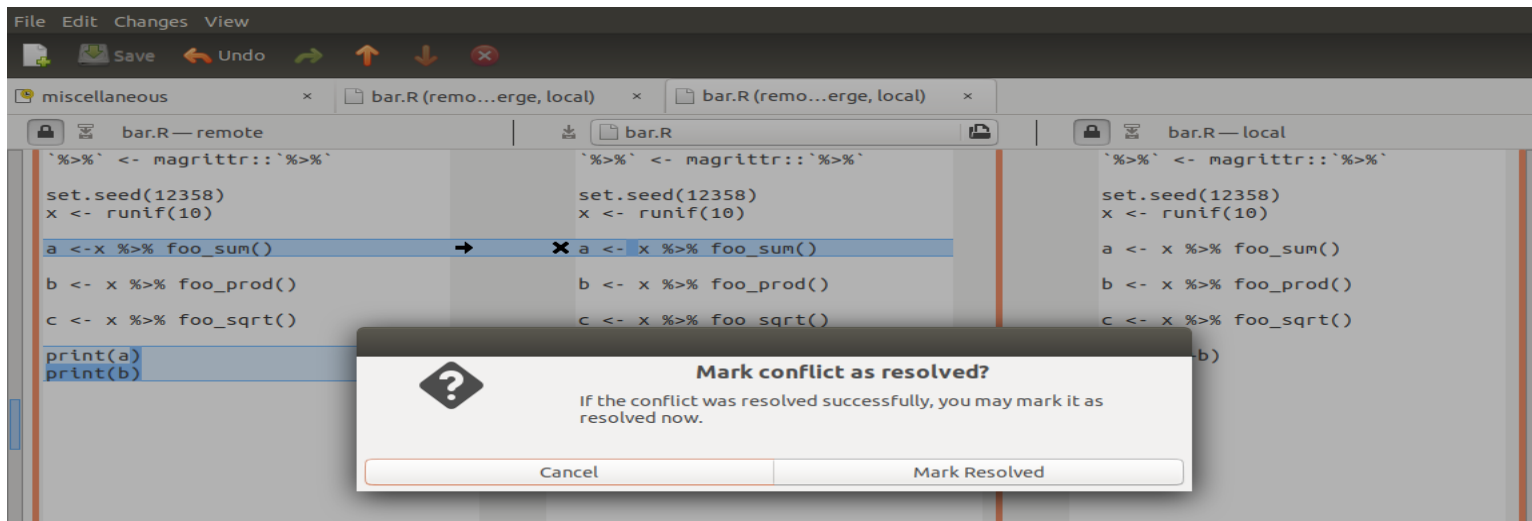
Mark conflict as resolved?
If the conflict was resolved successfully, you may mark it as resolved now.

Cancel Mark Resolved

Merge conflicts



```
File Edit Changes View
miscellaneous x bar.R (remo...erge, local) x
bar.R—remote | bar.R | bar.R—local
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a)
print(b)
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a+b)
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a+b)
```



```
File Edit Changes View
miscellaneous x bar.R (remo...erge, local) x bar.R (remo...erge, local) x
bar.R—remote | bar.R | bar.R—local
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a)
print(b)
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a+b)
`%>%` <- magrittr::`%>%`
set.seed(12358)
x <- runif(10)
a <- x %>% foo_sum()
b <- x %>% foo_prod()
c <- x %>% foo_sqrt()
print(a+b)
```

Mark conflict as resolved?
If the conflict was resolved successfully, you may mark it as resolved now.

Cancel Mark Resolved

- From the RStudio **Console**:
 - `compare_with_other(path, location)`
 - `compare_with_repo(path)`
 - `compare_active_file_with_other(location)`
 - `compare_active_file_with_repo()`
 - `compare_project_with_repo()`

path to existing file / directory

location of the other file / directory

- Instructions to install the package are available in the README:
 - <https://github.com/miraisolutions/compareWith#Installation>
 - `remotes::install_github("miraisolutions/compareWith")`

```
> remotes::install_github("miraisolutions/compareWith")
Downloading GitHub repo miraisolutions/compareWith@master
✓ checking for file '/tmp/Rtmpg6f7jl/remotes9cc5cd5f39b/miraisolutions-compareWith-65e0072/DESCRIPTION' ...
- preparing 'compareWith':
✓ checking DESCRIPTION meta-information ...
- checking for LF line-endings in source and make files and shell scripts
- checking for empty or unneeded directories
- building 'compareWith_0.0.1.tar.gz'

Installing package into '/home/mirai_user/R/x86_64-pc-linux-gnu-library/3.6'
```

- compareWith is a diff tool based on Meld that
 - provides user-friendly addins that enable and improve:
 - comparing the same or two distinct files
 - editing files or directories
 - merging and resolving conflicts
 - throws an error if:
 - Meld is not installed or version is not working properly
 - path or location are not specified correctly
 - Visit us on GitHub!

<https://github.com/miraisolutions>

- compareWith is a diff tool based on Meld that
 - provides user-friendly addins that enable and improve:
 - comparing the same or two distinct files
 - editing files or directories
 - merging and resolving conflicts
 - throws an error if:
 - Meld is not installed or version is not working properly
 - path or location are not specified correctly
 - Visit us on GitHub!

<https://github.com/miraisolutions>

- compareWith is a diff tool based on Meld that
 - provides user-friendly addins that enable and improve:
 - comparing the same or two distinct files
 - editing files or directories
 - merging and resolving conflicts
 - throws an error if:
 - Meld is not installed or version is not working properly
 - path or location are not specified correctly
 - Visit us on GitHub!

<https://github.com/miraisolutions>