

<https://github.com/DanChaltiel/autoimport>

Autoimport

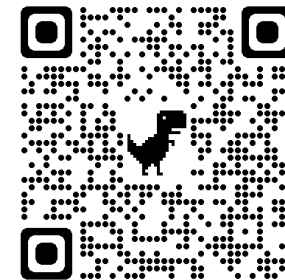
Pour gérer l'enfer des `@importFrom`



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autoimport: contexte

- Création de packages 📦 avec dépendances (imports)
 - Documenté dans [R Packages \(2^e\)](#)
 - Basé sur le package {roxygen2}
- Solution 1: importer tout un package

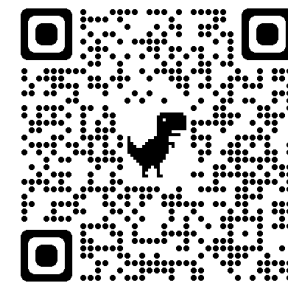
```
#' @import rlang
```

After calling `devtools::document()`, this roxygen tag causes this directive to appear in the `NAMESPACE` file:

```
import(rlang)
```

This is the least recommended solution because it can make your code harder to read (you can't tell where a function is coming from), and if you `@import` many packages, it increases the chance of function name conflicts. Save this for very special situations.





autoimport: contexte

- Solution 2 :

- Utiliser les préfixes partout dans le code: `pkg::fun()`
- Méthode recommandée par défaut
- MAIS rend le code plus long et moins lisible



mais

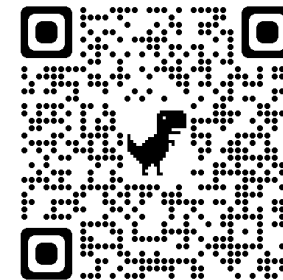


quand même


- Solution 3 :

- Importer seulement les fonctions : `@importFrom pkg fun1 fun2`
- Sub-question : où mettre cette mention ?
 - Centralisée dans la documentation « package-level »
 - Au plus près de l'appel de fonction





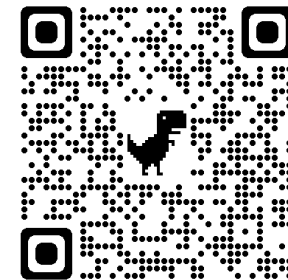
autoimport: concept

- Centraliser rend les fonctions moins portables 
- Mettre @importFrom au dessus de chaque fonction qui l'appelle

```
1 #' @importFrom dplyr across any_of everything
2 #' @importFrom ...
3 #' @importFrom tidyr unite
4 crosstable = function( ... )
5
6
7 #' @importFrom glue glue
8 #' @importFrom ...
9 #' @importFrom purrr map
10 as_flextable = function( ... )
```

- Un ENFER à maintenir à la main !



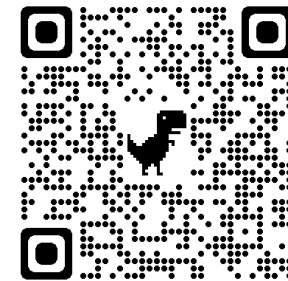


autoimport: step 1

- 1^{ère} étape: *reading*
- Lit toutes les fonctions de tous les fichiers sous le chemin "R/"
- Utilise le parser interne de R (parse() & getSrcref())

```
> autoimport::autoimport()

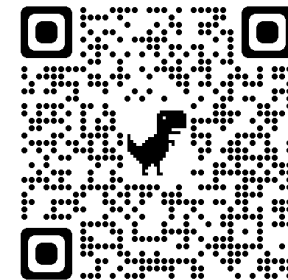
-- Reading -----
i Found 2 functions in file R/burgled.R (77 lines)
i Found 8 functions in file R/compact.R (170 lines)
i Found 1 function in file R/cross_by.R (108 lines)
i Found 15 functions in file R/cross_categorical.R (376 lines)
i Found 4 functions in file R/cross_numeric.R (156 lines)
i Found 3 functions in file R/cross_survival.R (169 lines)
i Found 1 function in file R/crosstable-package.R (13 lines)
i Found 3 functions in file R/crosstable.R (468 lines)
i Found 2 functions in file R/dataset.R (76 lines)
i Found 15 functions in file R/effect.R (413 lines)
i Found 9 functions in file R/flextable.R (396 lines)
i Found 13 functions in file R/funs.R (295 lines)
i Found 3 functions in file R/gt.R (122 lines)
i Found 14 functions in file R/labels.R (402 lines)
i Found 5 functions in file R/methods.R (36 lines)
i Found 21 functions in file R/officer.R (897 lines)
i Found 2 functions in file R/openxlsx.R (164 lines)
i Found 3 functions in file R/options.R (186 lines)
i Found 3 functions in file R/pivot.R (158 lines)
i Found 8 functions in file R/reexport.R (32 lines)
i Found 12 functions in file R/test.R (444 lines)
i Found 32 functions in file R/utils.R (688 lines)
v Found a total of 179 internal functions in 22 files (5846 lines).
```

autoimport: step 2

- 2^{ème} étape: *parsing*
- Parse toutes les fonctions trouvées pour détecter l'appel de fonctions externes
- Système de cache pour accélérer les appels futurs
- Utilise le parser interne de R (parse() & getParseData())

```
-- Parsing --
> File R/burgled.R
i Parsing code block `unnamed_1`
i Parsing code block `unnamed_2`
! Updating cache
i Found 33 functions to import in 2 functions or code chunks.
> File R/compact.R
i Parsing function `ct_compact()`
i Parsing function `ct_compact.data.frame()`
i Parsing function `ct_compact.crosstable()`
i Parsing function `ct_compact.default()`
i Parsing function `compact()`
i Parsing function `compact.data.frame()`
i Parsing function `compact.crosstable()`
i Parsing function `compact.default()`
! Updating cache
i Found 49 functions to import in 8 functions or code chunks.
i Found 227 functions to import in 32 functions or code chunks.
v Found a total of 1561 potential functions to import
```



autoimport: step 3

- 3^{ème} étape: *attributing*
- Pour les fonctions équivoques, on demande à l'utilisateur
- Système de fichier pour retenir les choix (IMPORTLIST)

```
-- Attributing
i Automatically attributing 2 functions imports from inst/IMPORTLIST

There are 3 functions that can be imported from several packages. What do you want to do?

1: Choose the package for each
2: Choose for me please
3: Abort mission

Selection: 1
`align()` can be found in several packages.
From which one do you want to import it:

1: pillar (0 function imported)
2: xtable (0 function imported)

`filter()` can be found in several packages.
From which one do you want to import it:

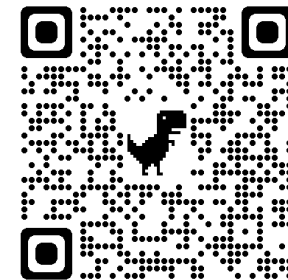
1: stats (6 functions imported)
2: dplyr (3 functions imported)

Selection: 2

Do you want to save your choices about these 3 functions in `inst/IMPORTLIST`?

1: Yes
2: No

Selection: 1
i 3 lines added to inst/IMPORTLIST
```

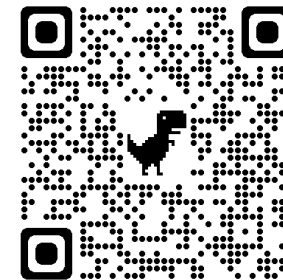


autoimport: step 4

- 4^{ème} étape: *writing*
- Réécrit les imports dans des fichiers temporaires
- Réorganise les imports par ordre alphabétique

```
-- Writing -----  
i 2 inserts in R/burgled.R  
> Nothing done in R/burgled.R (all is already OK)  
i 16 inserts in R/compact.R  
v Added 8 and removed 3 lines from R/compact.R.  
i 7 inserts in R/cross_by.R  
v Added 2 and removed 1 line from R/cross_by.R.  
i 29 inserts in R/cross_categorical.R  
v Added 8 and removed 7 lines from R/cross_categorical.R.  
i 18 inserts in R/cross_numeric.R  
v Added 5 and removed 4 lines from R/cross_numeric.R.  
i 17 inserts in R/cross_survival.R  
v Added 4 and removed 3 lines from R/cross_survival.R.  
v Ignoring R/crosstable-package.R. Use `ignore_package=FALSE` to override.  
i 13 inserts in R/crosstable.R  
v Added 5 and removed 3 lines from R/crosstable.R.  
i 0 inserts in R/dataset.R  
> Nothing done in R/dataset.R (all is already OK)  
i 28 inserts in R/effect.R  
v Added 4 and removed 3 lines from R/effect.R.  
i 21 inserts in R/flextable.R  
v Added 6 and removed 4 lines from R/flextable.R.
```

```
-- Finished -----  
v To view the diff and choose whether or not accepting the changes, run:  
i autoimport::import_review()
```

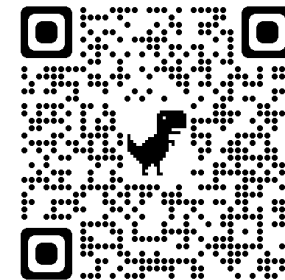
autoimport: review

- `autoimport::import_review()`
- En cliquant sur « Accept », on vient remplacer les lignes générées automatiquement
- Utilise l'appli shiny du package `diffviewer`, inspiré de `testthat`

```
@@ -24,14 +24,17 @@
24 24 #' @rdname ct_compact
25 25 #'
26 26 #' @author Dan Chaltiel
27 27 #' @export
28 28 #' @importFrom checkmate assert_scalar
29 - #' @importFrom dplyr across any_of everything lag mutate row_number select sym
30 - #' @importFrom flextable align bold border
31 + #' @importFrom crayon bold
32 + #' @importFrom dplyr across lag mutate row_number select
33 + #' @importFrom error align
34 31 #' @importFrom officer fp_border
35 + #' @importFrom rlang sym
36 32 #' @importFrom tidyr replace_na
37 + #' @importFrom tidyrselect any_of everything
38 33 #'
```



autoimport: conclusion



- Package encore très expérimental lifecycle experimental
 - Quelques bugs en cours de création
 - Quelques bugs en cours d'incorporation
- Bien utile en pratique
- Suggestions et PR bienvenues 😊

Merci de votre attention