Hmw II: Regression, Package development

2025-04-16

> **!** Important
>
> - Due : April 16, 2025
> - Work in pairs
> - Deliver your work as a `qmd` file through a github repository
> - Use the `quarto` package for reproducible research
> - The report should be rendered at least in HTML format, and possibly also in PDF format

Objectives

This homework is concerned with developping methods for objects produced by factorial methods like Correspondence Analysis, Multiple Correspondence Analysis, Canonical Correlation Analysis, … (`R`).

Supplementing the `broom` package

The `broom` package offers `S3` generic functions for building dataframes from the output of a variety of statistical techniques (for example `lm`, `prcomp`, or `kmeans`): `augment`, `tidy`, and `glance`.

The first goal of this homework is to design and code methods for generic functions `augment`, `tidy`, and `glance` for classes .

Function `autoplot()`

Programming with `dplyr` and `ggplot2`

The second goal of this homework is to design and code functions that take as input the output of `augment`, `tidy`, and `glance` (possibly simultaneously) to build `ggplot` objects corresponding to the plots associated with `gpava`.

> **Note**
>
> `ggplot2` offers a generic function `autoplot()`. See Tidyverse documentation on `autoplot`, More generally have a look at automatic plotting

The third goal of this homework is to design and code methods for generic function `autoplot()` for classes

> **Tip**
>
> Have a look at `autolayer()` generic. Could be useful for implementing symmetric plots (biplots).

Package development

The function and methods coded in this homework should be delivered as a `package`.

Follow the package devlopment guidelines in R Packages (2e).

- Define a dedicated rstudio project for this homework
- Don't forget documentation and testing

References

- Advanced R Programming
- S3
- Programming with/for `ggplot2`
- Cheatsheets
- Packages
- `isotone`

🎓 Grading criteria

Criterion	Points	Details
Documentation	25%	English/French
Testing	25%	✔
Coding	50%	</>