

A photograph of a modern building with a glass facade and a courtyard. The building has a white brick wall on the left and a glass facade on the right. The courtyard features a walkway, a pergola, and various plants. The sky is blue with a few clouds. The text 'UpSet graphes' is overlaid on the image.

UpSet graphes

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Mardi 25 mai 2021

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OMICS

Avant toutes choses

Nous aurons besoin des packages `ggvenn` et `UpSetR` :

- Vérifier que les packages `ggvenn` et `UpSetR` sont bien installés
- Si non, les installer, puis les charger

```
library(ggvenn)  
library(UpSetR)
```

Nous allons également avoir besoin des données `fruits` :

```
data("fruits", package = "tidyViz")
```

Visualiser des relations entre listes

Créons une liste d'objets :

```
flist <- with(fruits,  
  list(  
    Sucres = nom[Sucres > 20],  
    Fibres = nom[Fibres > 2],  
    Energie = nom[Energie > 50],  
    Potassium = nom[Potassium > 100],  
    Crus = nom[groupe == "crus"]  
  ))
```

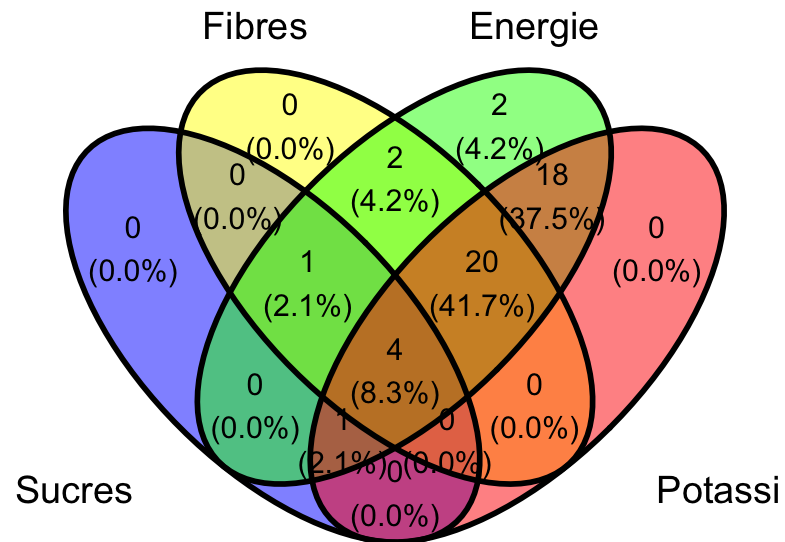
Et une matrice binaire

```
fbin <- with(fruits,  
  data.frame(  
    Sucres = Sucres > 20,  
    Fibres = Fibres > 2,  
    Energie = Energie > 50,  
    Potassium = Potassium > 100,  
    Crus = groupe == "crus"  
  )) + 0
```

Diagramme de Venn

Compliqués à lire à partir de 4 ensembles :

```
ggvenn(flist, set_name_size = 5)
```



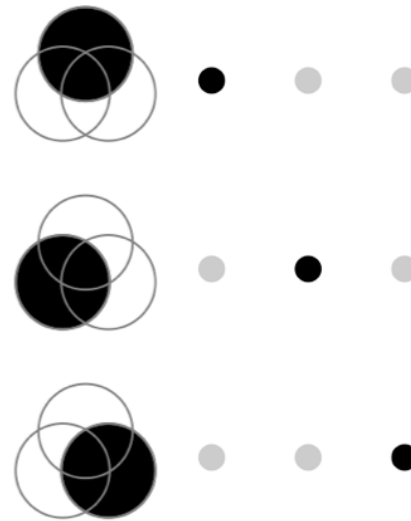
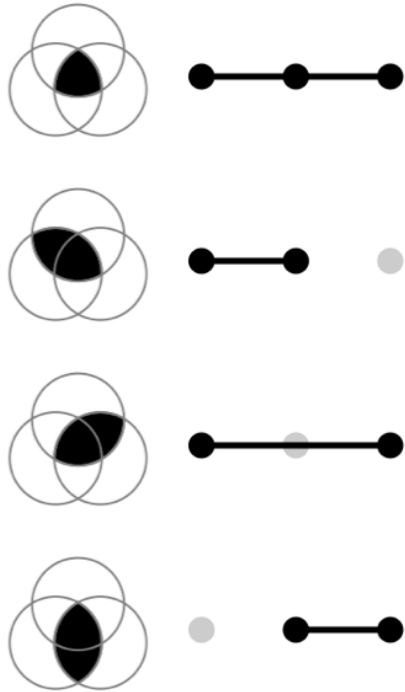
UpSet plot

C'est une méthode de visualisation (récente !) alternative au diagramme de Venn.

Référence : Jake R Conway, Alexander Lex, Nils Gehlenborg, UpSetR: an R package for the visualization of intersecting sets and their properties, *Bioinformatics*, Volume 33, Issue 18, 15 September 2017, Pages 2938–2940, <https://doi.org/10.1093/bioinformatics/btx364>

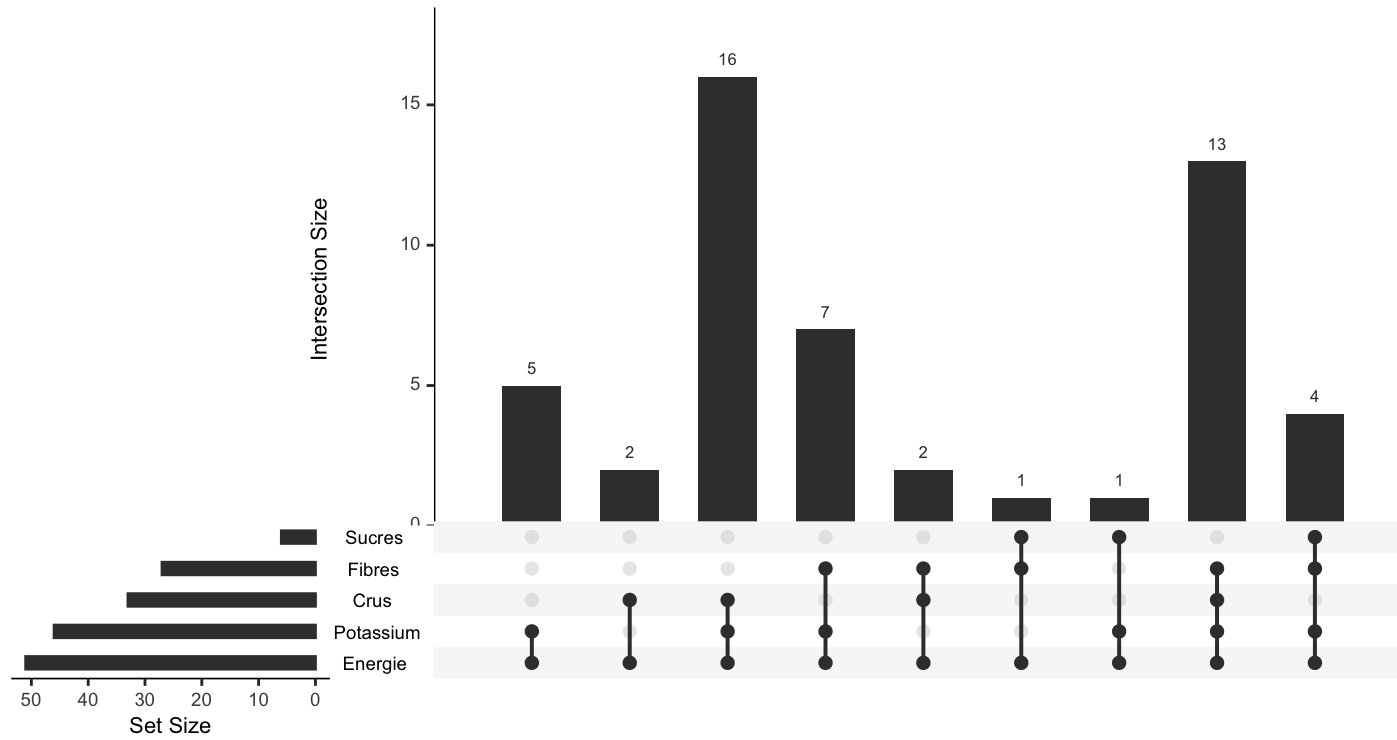
Correspondance

intersect



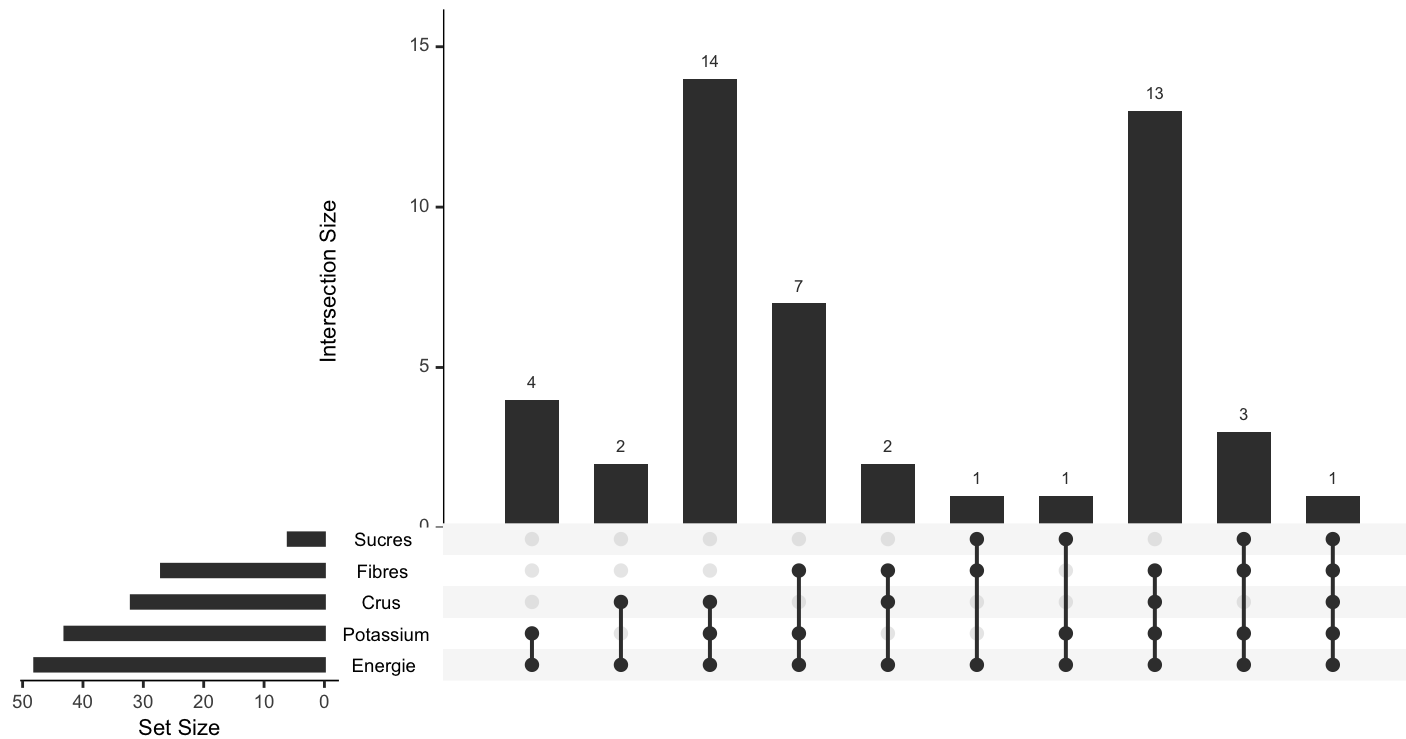
Exemple

upset (fbin)



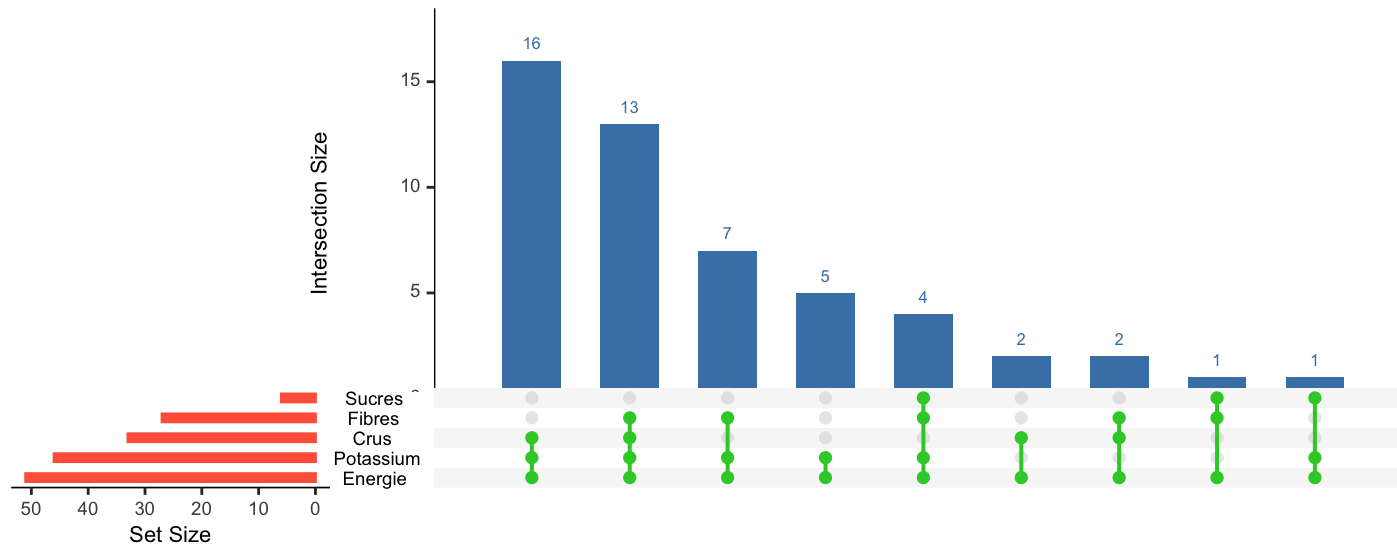
Mais c'est la même chose que...

```
upset(fromList(flist))
```



On peut (beaucoup) personnaliser ce graphe

```
upset (  
  fbin, nintersects = NA, order.by = "freq",  
  main.bar.color = "steelblue", matrix.color = "limegreen",  
  sets.bar.color = "tomato", point.size = 2)
```



A vous !

Imaginez une situation dans laquelle vous pourriez avoir besoin de ce type de graphes.