# IHM visuelle et représentation de l'information – Worlde

Télécharger et installer le logiciel Processing pour IHM visuelle <a href="http://processing.org/">http://processing.org/</a>, le but de ce TD est de créer un nuage de mots (image ci-dessous) :

A partir d'un texte choisi, faîtes ressortir les mots les plus importants, par exemple en grossissant les lettres ou en jouant sur la couleur.

## 1. prise en main Processing

Faîtes les exemples et tutoriels fournis par le logiciel ou sur http://processing.org/learning/text/.

```
Classe String
```

String sometext = "How do I make String? Type some characters between quotation
marks!";

The method **charAt()** returns the individual character in the String at a given index.

The methods length(), createFont(),

```
f = createFont("Arial",16,true); // Arial, 16 point, anti-aliasing on
```

The method specifies a color using **fill()**, **fill(**255);

Call the **text()** function to display text. (This function is just like shape or image drawing, it takes 3 arguments -- the text to be displayed, and the x & y coordinate to display that text.)

```
text("Hello Strings!",10,100);
```

```
Exemple 1
```



#### Exemple 2

```
PFont f;
String message = "Each character is written individually.";
void setup() {
  size(400, 150);
  f = createFont("Arial",20,true);
void draw() {
  background(255);
  fill(0):
  textFont(f);
  int x = 10;
  for (int i = 0; i < message.length(); i++) {
    textSize(random(12,36));
    text(message.charAt(i),x,height/2);
    // textWidth() spaces the characters out properly.
    x += textWidth(message.charAt(i));
 noLoop();
}
```

# 2. calcul de la pertinence d'un mot

- 1. calculez l'occurrence des mots, P(x), et soulignez **visuellement** leur importance (couleur taille des mots, la casse du texte, souligné, gras, *italique*, l'orientation, etc...).
- 2. calculez l'information/l'incertitude I selon le critère de Shannon : I(x) = -log(P(x))
- 3. calculez l'information moyenne véhiculée/entropie  $H: H(x) = -\sum P(x) \log(P(x))$

Nuage de mots : les mots les plus pertinents ressortent plus que les autres.

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## 3. zoom sémantique

1. en zoomant/dézoomant sur le texte, de nouvelles informations apparaissent (histogramme, etc...)