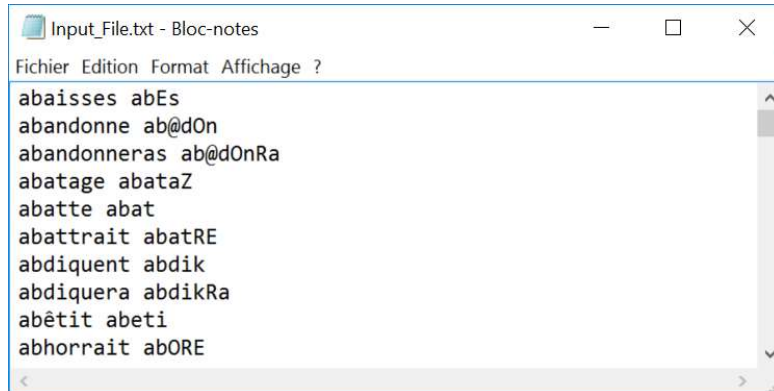# Syllabification

The file "**Input_file.txt**" contains the orthographic and phonetic forms of words in French.

Orthographic coding: the following characters used:

Consonants: "**p t k b d g f s c v z g j m n r l h ç x w q**";
Vowels : "**a e i o u y é è ê î ô â ê ë ï à ù** û»

Phonetic coding: the following signs used:

> stop consonants: /**p t k b d g**/
> fricatives: /**f s S v z Z**/
> liquids: /**R l**/
> nasals: /**m n N G**/
> semi-vowels: /**w j 8**/
> oral vowels: / **a e i u o y E 9 2 O * /**
> nasal vowels: / **@ 1 5 /**
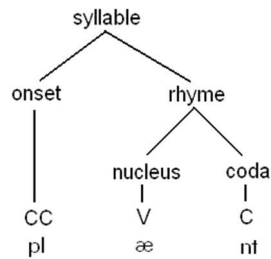
Create the following forms for every word:

> 'C''V' representation of the orthographic forms (ex: "bouteille" → "**CVVCVVCCV**")
> 'C''V' representation of the phonetic forms (ex: "butEj" → "**CVCVC**")
> Syllabic representation of the phonetic forms (ex: "butEj" → "**bu-tEj**")
> 'C''V' representation of the syllabic (phonetic) forms (ex: "bu-tEj" "**CV-CVC**")
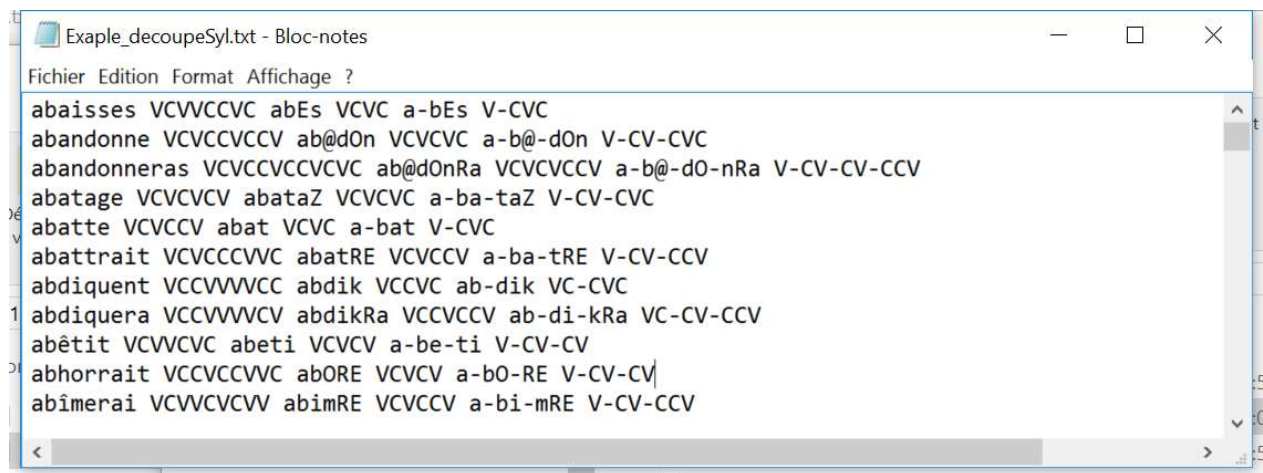
The syllabic structure defined in phonology is the following (see the figure hereafter): every syllable has a **nucleus** that contains a **vowel** (obligatory in French) **followed** by one or several optional consonants in **coda** position. The **nucleus** can be **preceded** by one or several consonants in **onset** position.

For the syllabic segmentation in French, apply the following rules:

- **1 consonant between 2 vowels** → consonant in onset position of the second syllable;
- **2 adjacent vowels** → 2 syllables;
- **2 consonants between two vowels:**
  - the first consonant is **different from liquids and semi-vowels** and the **second is a liquid or a semivowel** → the whole consonant cluster in **onset position** of the next syllable *(note: never separate a consonant from a semivowel or a liquid).*
  - **2 liquids** → syllabic boundary between the two liquids;
  - the **first consonant is a liquid** and a **second is not a liquid neither a semi-vowel** → syllabic boundary between the two consonants.
  - **the first consonant is a semi-vowel** and the **second any consonant** → syllabic boundary between the semi-vowel and the second consonant.
  - **the two adjacent consonants are neither liquids nor semi-vowel** → syllabic boundary between the two consonants.

- **3 consonants between 2 vowels:**
  - the first is not a **liquid** nor a **semi-vowel**, the second is **a liquid** and the **third a semi-vowel** → the whole consonant cluster in **onset** position.
  - **3 consonants** (or more): they are neither **liquids nor semi-vowels** → syllabic boundary between the two first or two last consonants.

Your output file should have the following form:

```
Exaple_decoupeSyl.txt - Bloc-notes                                    —   □   ×
Fichier  Edition  Format  Affichage  ?
abaisses VCVVCCVC abEs VCVC a-bEs V-CVC
abandonne VCVCCVCCV ab@dOn VCVCVC a-b@-dOn V-CV-CVC
abandonneras VCVCCVCCVCVC ab@dOnRa VCVCVCCV a-b@-dO-nRa V-CV-CV-CCV
abatage VCVCVCV abataZ VCVCVC a-ba-taZ V-CV-CVC
abatte VCVCCV abat VCVC a-bat V-CVC
abattrait VCVCCCVVC abatRE VCVCCV a-ba-tRE V-CV-CCV
abdiquent VCCVVVVCC abdik VCCVC ab-dik VC-CVC
abdiquera VCCVVVVCV abdikRa VCCVCCV ab-di-kRa VC-CV-CCV
abêtit VCVVCVC abeti VCVCV a-be-ti V-CV-CV
abhorrait VCCVCCVVC abORE VCVCV a-bO-RE V-CV-CV
abîmerai VCVVCVCVV abimRE VCVCCV a-bi-mRE V-CV-CCV
```

What are the 15 most frequent syllabic structures in French expressed with:

- 'C' and 'V' forms,
- macro-classe forms (fricativeV, ficativeU, stopV, stopU, nasal, liquid, Semi-Vow, vowel – you can use shorter labels)
- by consonants and vowels