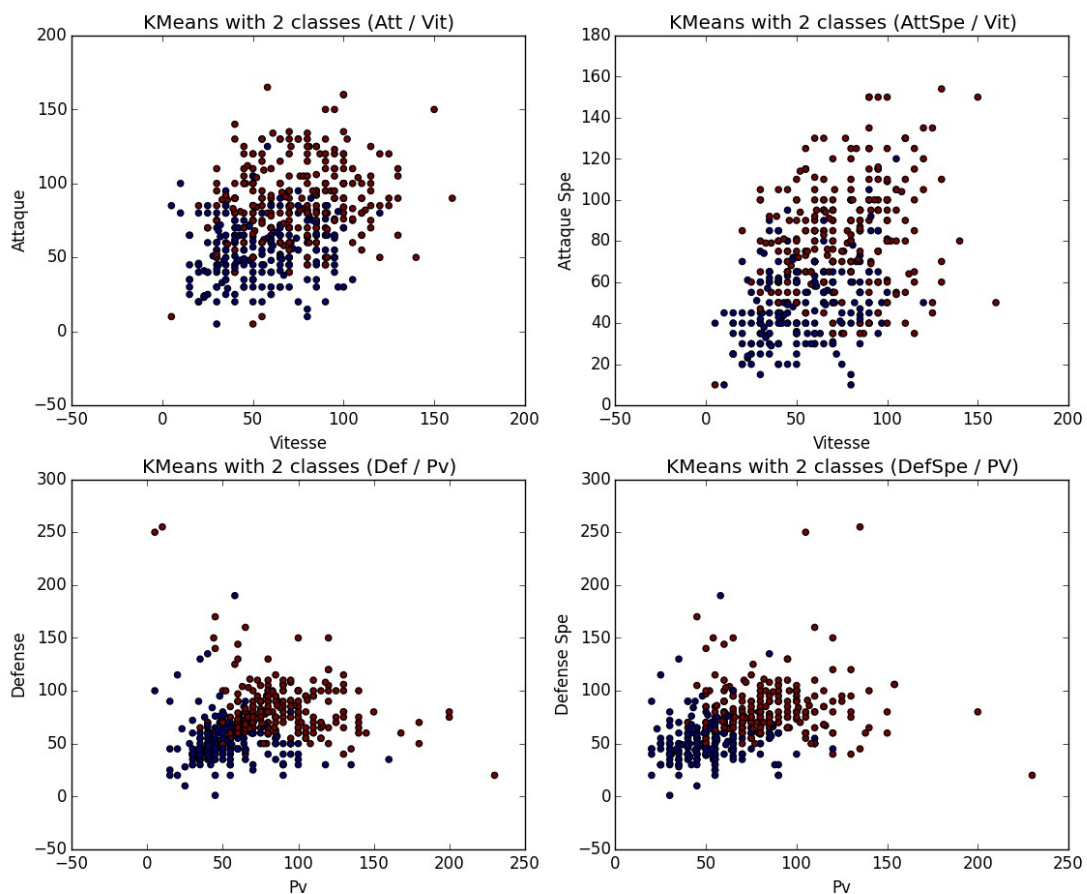


## PokeVisualisation – Results interpretations

After the kmeans algorithm splits up pokemons using their statistics, it's possible to see some interesting things. The first analysis is made after using kmeans with 2 classes.

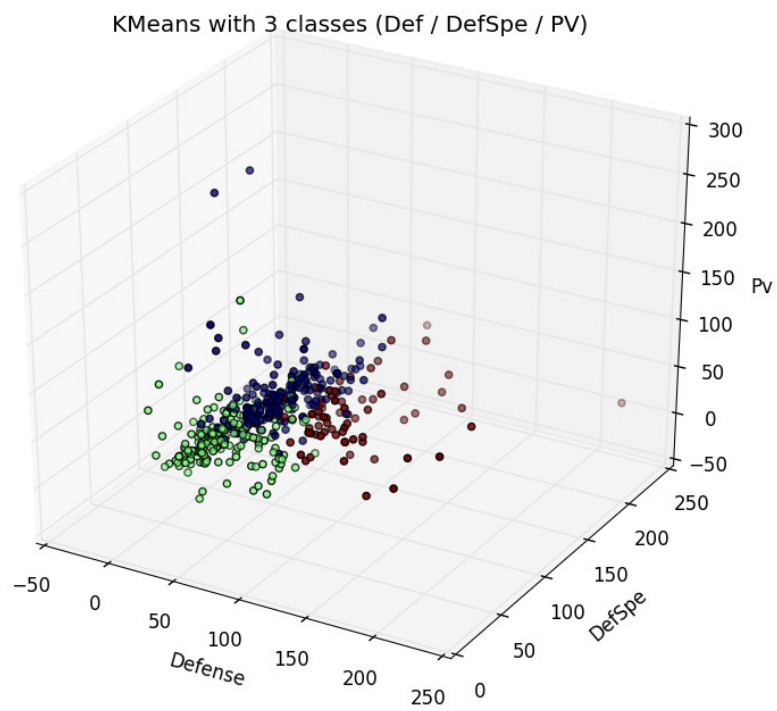
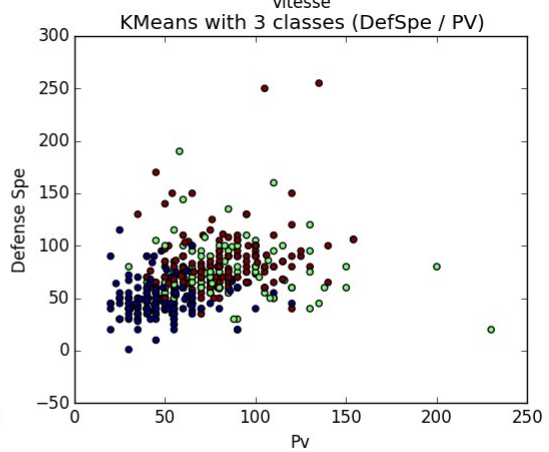
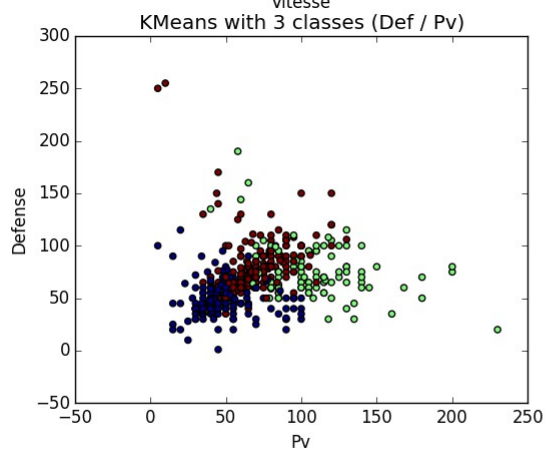
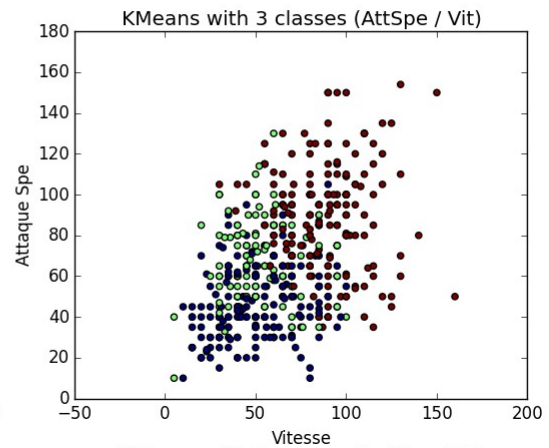
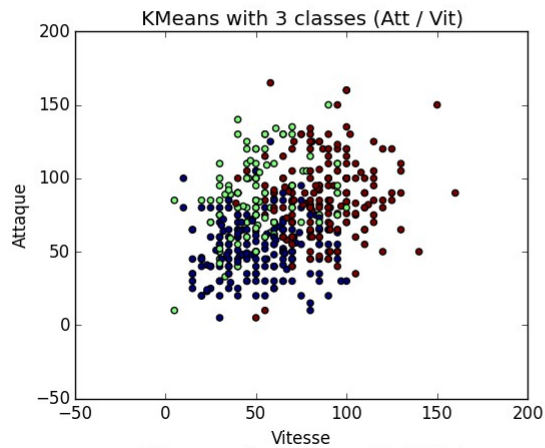
The kmeans launched with only 2 classes can be used to separate good with bad pokemons. For example, the file `pokedexKmeans2.json` is clearly showing this. The first class contains pokemons like Abra, Bulbizarre, Magikarpe... which are mostly unevolved pokemons. However, the second class contains pokemon like Demolos, Dracaufeu, Ecremeuh, and of course legendary pokemons like Deoxys etc.

Here is a data visualization with Kmeans (2 classes) :



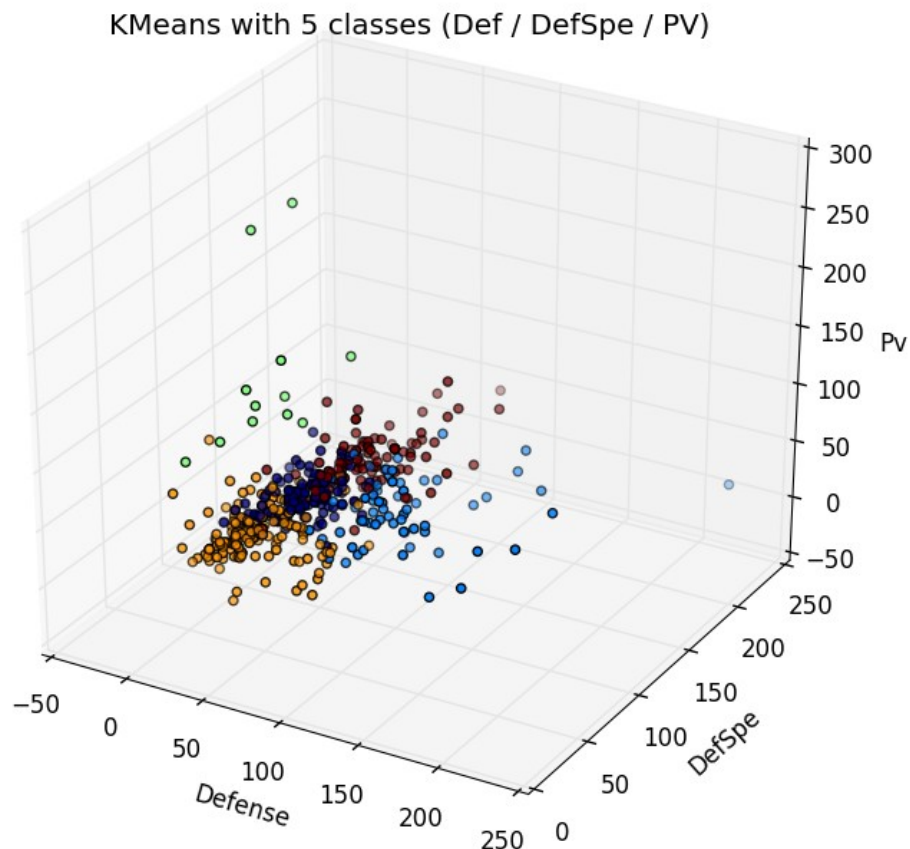
The two first plots are showing sweeper pokemons (pokemons which are focused on attack) and the two others are showing staller pokemons (more defensive pokemons).

In order to have a less global view, a Kmeans with 3 classes is launched. Here are the graphical results :



The first thing to note is that concerning sweeper pokemons, there is no utility to have 3 classes. However, for staller pokemons, there is clearly an improvement : it's possible to make a difference between staller more turned with defense / def\_spe or with pv. Finally, a 3D-plot is perfectly showing that pokemons have either good defense or good def\_spe but hardly both. Even if it's the case, those pokemons don't have many pv.

Finally, the program tests the Kmeans algorithm with 5 classes. Here is the 3D-results :



This program class staller pokemons by different tendencies :

- **Orange** : bad staller pokemons with not much Def, Def\_spe and pv  
Abra, Tentacool, Voltorbe are pokemons in this class
- **Green** : pokemons with a lot of pv, but compensated by less Def and Def\_spe  
Leuphorie, Qulbutoke, Ronflex, Roigada are pokemons in this class
- **Blue** : pokemons with a lot of Def and Def\_spe compensated by less pv  
Caratroc, Airmure, Galeking, Metalosse are pokemons in this class
- **Red** : rather pokemons with good pv, def and def\_spe  
Legendary pokemons mostly
- **Black** : rather pokemons in the lower mean for staller  
Colossinge, Feuforeve, Insecateur, Nostenfer...