

Business Analysis

The most challenging project of Ludovic ROSSI

Creation of an advanced software with Excel



No challenge, no transcendence in my work, no self-surpassing
So what else? How could I create my own challenge?

At this moment, I found a new personal Challenge.

I had to find it, to continue to learn, to improve myself, to develop new skills, or maybe just to project myself in something crazy, strange or finally maybe just different.

To be a Human with his own personality, and not the extension of my last software and realizations.

I wanted to leave this mental Prison that I created in my comfort zone.

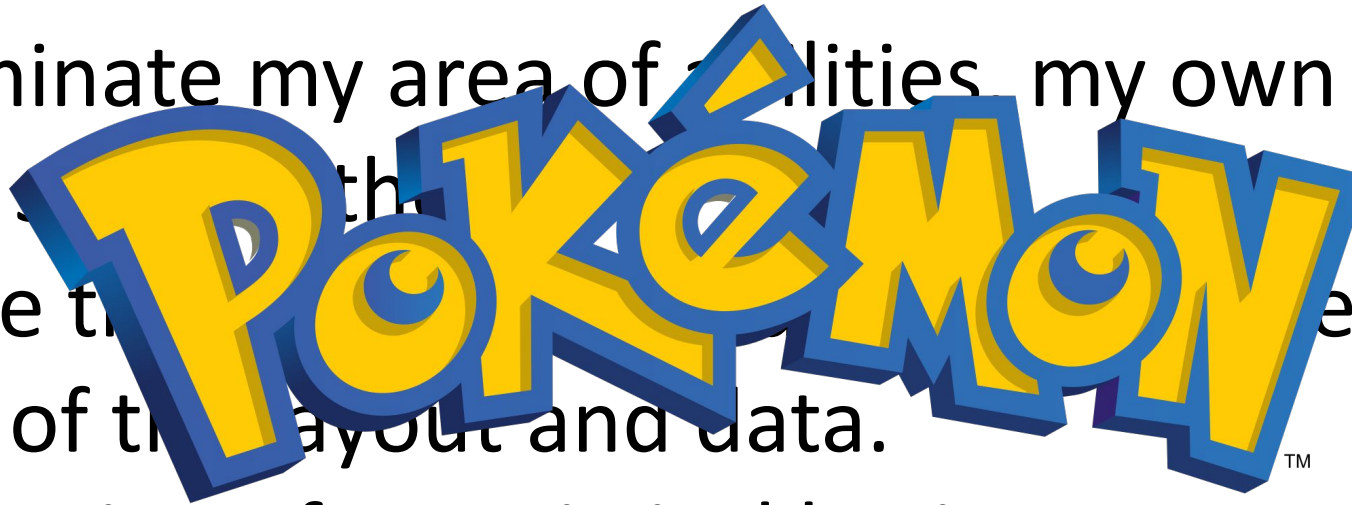
Because others considered that it would be impossible...

I had to try it, I had to achieve it.

Challenge : Create an advanced Excel-game.

What should I take in account at this moment:

- Determinate my area of abilities, my own limits and the way to solve them
- Imagine the game to be the main aspect of the layout and data.
- The creation of a statistical basis (Statistics of creatures, presentation for each creature, Evolution , Attacks...)
- The creation of the Database (Pictures of creatures, attacks, movement, players, etc....)
- The main rules to respect during the game
- The realization of the Software and programming



The main ground skills to realise this project

- VBA:
- *Advanced structuration of VBA (Autorun...)*
- *Variable (dim) and controls*
- *Graphical & Indicators & Complexes-formulas*
- *Userform / Image- & Object Integration and management*
- *Multi-loop and conditions- & Probability control*
- *Time management*
- *Error-resolution & treatment of methodology of resolution*

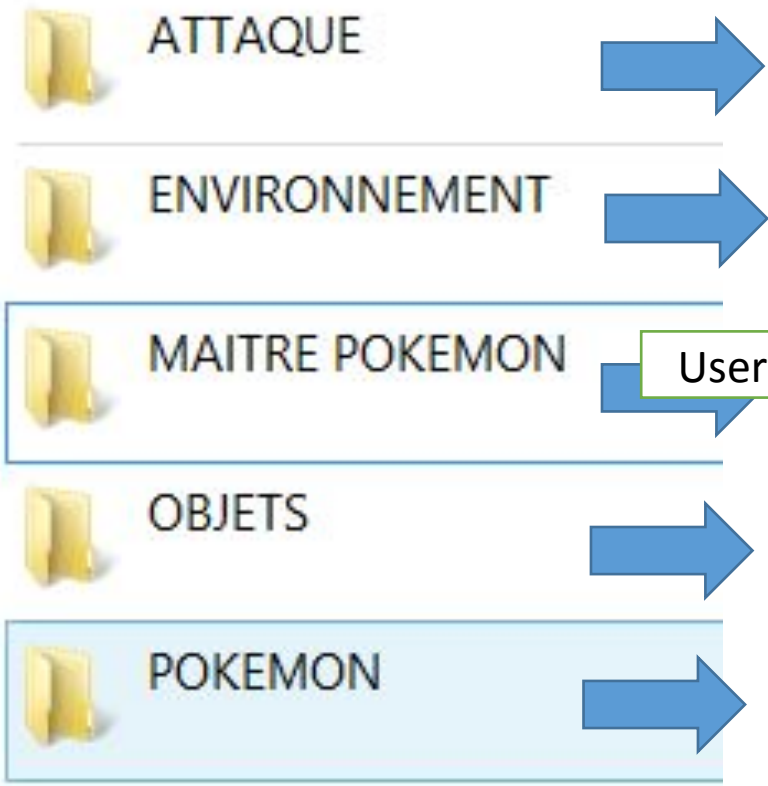
What I wanted to realise

- Create a multi-functional environment (Map with several types of environment)
- Permits Interaction between the player and his environment
- (identification of wall, of the type of field (Grass, forest, sea...) teleportation of the player....)

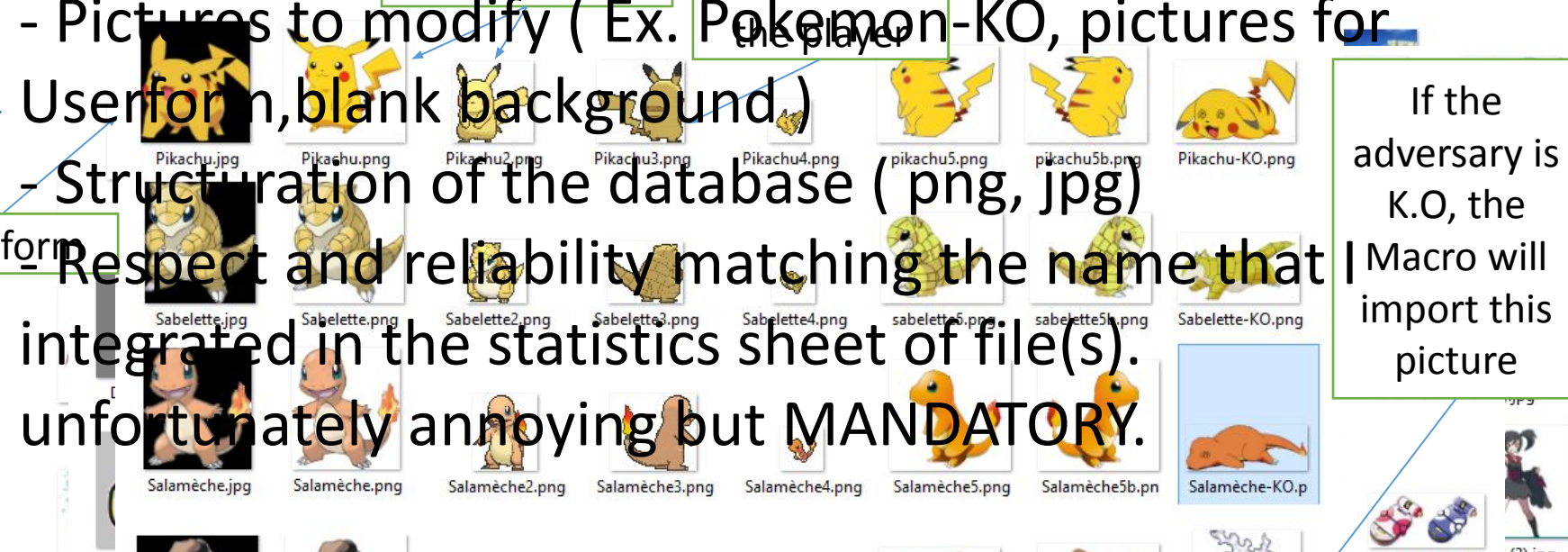
- Determine the type of environment and create some options of fight.
- Have the way to fight several type of enemies (human and Pokémon) with some specifics options (Environment of the battle, dialogs, variation of the level and statistics, evolutions)
- Allows the player to use several Pokémon to fight foes.
- Create an A.I able to take basic choices during the battles.
- With the different sprites created give the feeling to assist to a real match.

Creation of the Databank of Pictures:

Files



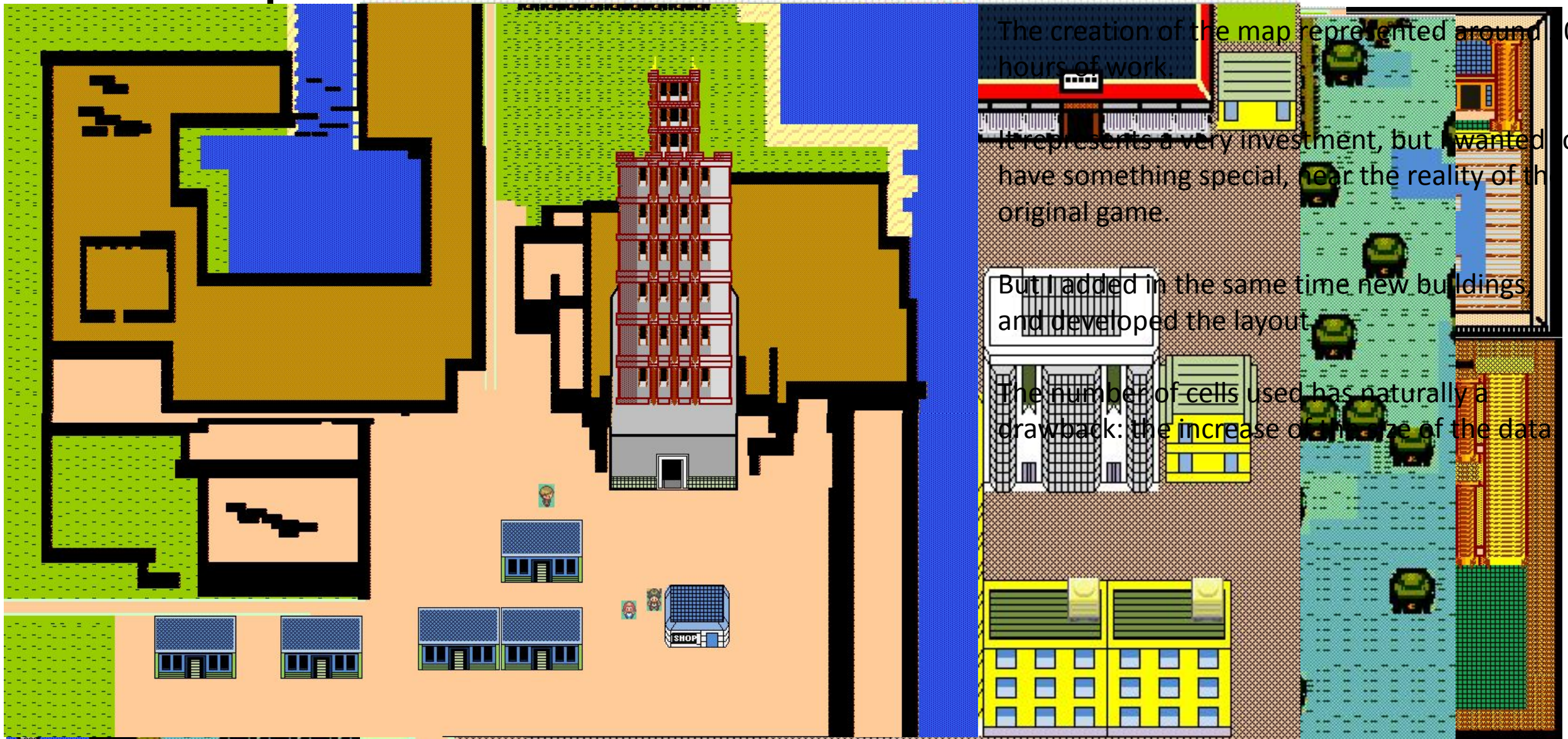
The creation of the picture database is a big job - Pictures to download - Pictures to modify (Ex. Adversaries, Pokémon of the player, Pokémon-KO, pictures for Userform, blank background) - Structuration of the database (png, jpg)



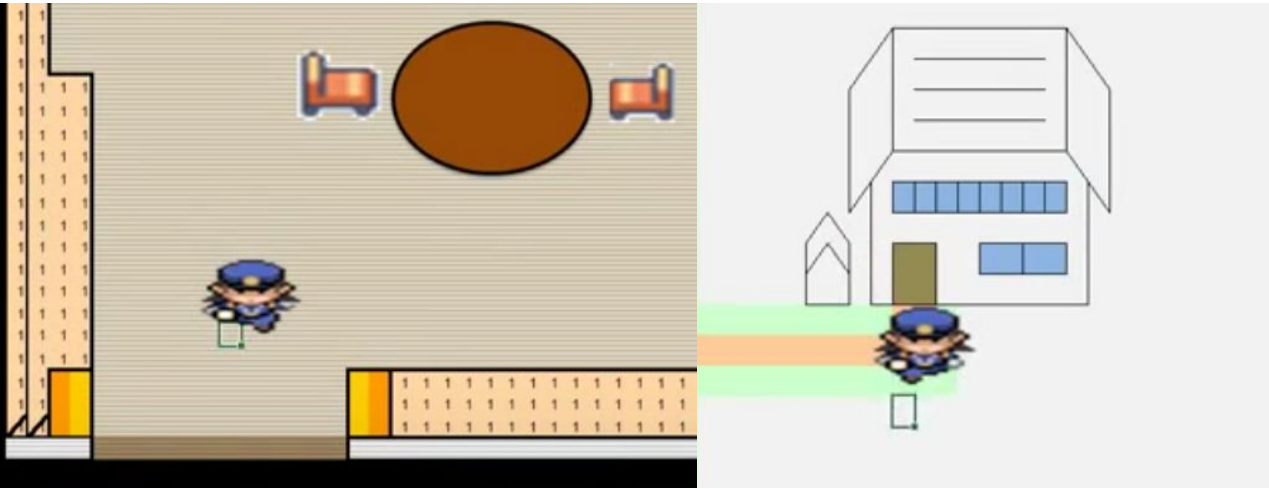
50 hours of work



Layout: Environment of the player (Examples)



The gameplay



Identification of the field: Here water => SURF
A new sprite is used when we left the continent.

Teleportation: The macro identified that I wish leave the House.



The player is meeting an adversary.
The macro will import the dialogs
planed for this adversary.



The fight will soon begin. Let's go.



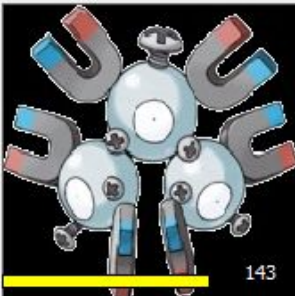





Annex functions (Layout, User form)

Concerning my version of the game, I integrated some basic functions of the game, for example, the Pokematos.



20 Hours of Work

The creation of the Pokematos with an User form represented around 20 Hours of Work. But it is in any case useful for the player.

CARTE	POKEDEX	INVENTAIRE	POKEMONS	JOUEUR
	TYPE ELECTRIQUE ATK 195 DEF 309 SPA 390 SPD 228 SPE 228 NIV 45		MAGNÉTON 143	
	TYPE ELECTRIQUE ATK 207 DEF 113 SPA 188 SPD 150 SPE 338 NIV 55		PIKACHU 132	
	TYPE EAU ATK 195 DEF 180 SPA 330 SPD 285 SPE 195 NIV 40		AQUALI 390	
	TYPE NORMAL ATK 193 DEF 201 SPA 234 SPD 248 SPE 165 NIV 35		MÉLODELFE 262	
	TYPE EAU ATK 152 DEF 192 SPA 156 SPD 192 SPE 140 NIV 28		CARABAFFE 142	
	TYPE FEU ATK 167 DEF 151 SPA 208 SPD 169 SPE 208 NIV 32		REPTINCEL 151	

Statistics and Database

To use the Software, we need to integrate all the data concerning the Pokémon and their abilities, their main statistics, the information to allow them to evolve (Stone or experience)

Ex: the Pokedex



N	Nom Franc	Nom Angl	Type	HP	Atk	Def	SpA	SpD	Spe	Total	Mass	LK/G	EV Worth	EXPV	Min Niveau	Max Niveau	Evolve
1	Bulbizarre	Bulbasaur	PLANTE	45	49	49	65	65	45	318	6,9	20	1 SpA	64	1	16	16
2	Herbizarre	Ivysaur	PLANTE	60	62	63	80	80	60	405	13	40	1 SpA/1 SpD	141	16	32	32
3	Florizarre	Venusaur	PLANTE	80	82	83	100	100	80	525	100	100	2 SpA/1 SpD	208	32	100	X
4	Salamèche	Charmander	FEU	39	52	43	60	50	65	309	8,5	20	1 Spe	65	1	16	16
5	Reptincel	Charmeleon	FEU	58	64	58	80	65	80	405	19	40	1 SpA/1 Spe	142	16	36	36
6	Dracaufeu	Charizard	FEU	78	84	78	109	85	100	534	90,5	80	3 SpA	209	36	100	X
7	Carapuce	Squirtle	EAU	44	48	65	60	54	43	314	9	20	1 Def	66	1	16	16
8	Carabaffe	Wartortle	EAU	59	63	80	65	80	58	405	22,5	40	1 Def/1 SpD	143	16	36	36
9	Tortank	Blastoise	EAU	79	83	100	85	105	78	530	85,5	80	3 SpD	210	36	100	X
10	Chenipan	Caterpie	INSECTE	45	30	35	20	20	45	195	2,9	20	1 HP	53	1	7	7
11	Chrysacier	Metapod	INSECTE	50	20	55	25	25	30	205	9,9	20	1 Def	72	7	10	10
12	Papilusion	Butterfree	INSECTE	60	45	50	80	80	70	385	32	60	2 SpA/1 SpD	160	10	100	X
13	Aspicot	Weedle	INSECTE	40	35	30	20	20	50	195	3,2	20	1 Spe	52	1	7	7
14	Coconfort	Kakuna	INSECTE	45	25	50	25	25	35	205	10	20	2 Def	71	7	10	10
15	Dardargnan	Beedrill	INSECTE	65	80	40	40	80	75	380	29,5	60	2 Atk/1 SpD	159	10	100	X
16	Roucool	Pidgey	NORMAL	40	45	40	35	35	56	251	1,8	20	1 Spe	55	1	18	18



Statistics and Database

We also need to have a database for the attacks (name, type, power and precision).



Nom Français	Nom Anglais	Type	Classe	PP	Puissance	Précision
Constriction	<i>Constrict</i>	NORMAL	<i>PHYSIQUE</i>	20	10	100
Dardnuée	<i>Pin missile</i>	INSECTE	<i>PHYSIQUE</i>	20	14	85
Torgnoles	<i>Doubleslap</i>	NORMAL	<i>PHYSIQUE</i>	10	15	85
Danseflamme	<i>Fire spin</i>	FEU	<i>SPECIAL</i>	15	15	70
Furie	<i>Fury attack</i>	NORMAL	<i>PHYSIQUE</i>	20	15	85
Ligotage	<i>Wrap</i>	NORMAL	<i>PHYSIQUE</i>	20	15	85
Pilonnage	<i>Barrage</i>	NORMAL	<i>PHYSIQUE</i>	20	15	85
Dardvenin	<i>Poison sting</i>	POISON	<i>PHYSIQUE</i>	35	15	100
Étreinte	<i>Bind</i>	NORMAL	<i>PHYSIQUE</i>	35	15	75
Combogriffe	<i>Fury swipes</i>	NORMAL	<i>PHYSIQUE</i>	15	18	80
Poingcomète	<i>Comet punch</i>	NORMAL	<i>PHYSIQUE</i>	15	18	85

Statistics and Database



But it is not enough. We need to take in account the table of correspondence CE (strengths and weaknesses) and this formula to calculate the result of the attacks

		Type offensif											
		ACIER	COMBAT	DRAGON	EAU	ELECTRIQUE	FEE	FEU	GLACE	INSECTE	NORMAL	PLANTE	POISON
		1	2	3	4	5	6	7	8	9	10	11	12
Type de défense offensive	ACIER	1	0,5	2	0,5	1	1	0,5	2	0,5	0,5	0,5	0,5
	COMBAT	2	1	1	1	1	2	1	1	0,5	1	1	1
	DRAGON	3	1	1	2	0,5	2	0,5	2	1	0,5	0,5	0,5
	EAU	4	0,5	1	1	0,5	1	0,5	0,5	1	1	2	1
	ELECTRIQUE	5	0,5	1	1	1	0,5	1	1	1	1	1	1
	FEE	6	2	0,5	0	1	1	1	1	1	0,5	1	1
	FEU	7	0,5	1	1	2	1	0,5	0,5	0,5	0,5	1	0,5
	GLACE	8	2	2	1	1	1	1	2	0,5	1	1	1
	INSECTE	9	1	0,5	1	1	1	1	2	1	1	0,5	1
	NORMAL	10	1	2	1	1	1	1	1	1	1	1	1
	PLANTE	11	1	1	1	0,5	0,5	1	2	2	2	0,5	2
	POISON	12	1	0,5	1	1	1	0,5	1	1	0,5	1	0,5
	PSY	13	1	0,5	1	1	1	1	1	1	2	1	1
	ROCHE	14	2	2	1	2	1	1	0,5	1	1	0,5	0,5
	SOL	15	1	1	1	2	0	1	1	2	1	1	0,5
	SPECTRE	16	1	0	1	1	1	1	1	1	0,5	0	0,5
	TENEBRE	17	1	2	1	1	1	2	1	1	2	1	1
	VOL	18	1	0,5	1	1	2	1	1	2	0,5	1	1

$$PV_{perdus} = \left(\frac{(Niv \times 0.4 + 2) \times Att \times Pui}{Def \times 50} + 2 \right) \times CE$$

Statistics and Database

During a fight the level of the Pokemon is important. A Pokemon with a high level knows more attacks. So we need to look for in a data base, to know the attacks that Pokemon can used.

		ENNEMI			JENNY				
		Rattata			PIKACHU				
		NORMAL			ELECTRIQUE				
Vie		0			132				
Perte		93			0				
HP MAX		35			132				
Niveau		3			55				
									
		Rattata	Puis.	Pres.		PIKACHU	Puis.	Pres.	5
1		Charge	35	95	NORMAL	Éclair	40	100	ELECTRIC
2		MimiQueue	0	100	NORMAL	Rugissement	0	100	NORMAL
3						MimiQueue	0	100	NORMAL
4						CageÉclair	0	100	ELECTRIC
5						ViveAttaque	40	100	NORMAL
6						Reflét	0	0	NORMAL
7						Souplesse	80	75	NORMAL
8						Tonnerre	95	100	ELECTRIC
9						Hâte	60	0	PSY
10						Murlumière	0	0	PSY
11						FatalFoudre	120	70	ELECTRIC
12									
13									
14									
15									

Pokemon	x	RSE	Pokemon+niv
Pikachu	Éclair		1 Pikachu1
Pikachu	Rugissement		2 Pikachu2
Pikachu	MimiQueue		5 Pikachu5
Pikachu	CageÉclair		10 Pikachu10
Pikachu	ViveAttaque		13 Pikachu13
Pikachu	Reflét		18 Pikachu18
Pikachu	Souplesse		21 Pikachu21
Pikachu	Tonnerre		26 Pikachu26
Pikachu	Hâte		34 Pikachu34
Pikachu	FatalFoudre		45 Pikachu45
Pikachu	Murlumière		42 Pikachu42

Pikachu reached the 55th level.
The last attack that he learned is “Fatalfoudre” at the level 45.
In our example, Pikachu know all the attacks.
He can use all his abilities against Rattata.

Pokemon	x	RSE	Pokemon+niv
Rattata	Charge		1 Rattata1
Rattata	MimiQueue		2 Rattata2
Rattata	ViveAttaque		4 Rattata4
Rattata	Morsure		10 Rattata10
Rattata	Puissance		7 Rattata7
Rattata	CrocDeMort		16 Rattata16
Rattata	CrocFatal		28 Rattata28
Rattata	Damoclès		31 Rattata31

Rattata in our example is weak.
He knows just 2 attacks.
But he will learn soon Viveattaque. If he survives to the battle, of course.

Statistics and Database

When we are in a meadow or in a forest, we can meet some wild Pokemon, and try to capture them.

But the probabilities of meeting are not the same everywhere. The typology of the environment has an impact about the type of Pokémon.

Example : In the water, we have 10% (1/10) of chance to meet **Stary**.

In the forest, we will meet often **Chenipan** (6/30) and sometimes **Insécateur** (1/30)

	FÔRET	EAU	AIR	PRAIRIE	CENTRALE
23	30	10	10	35	47
	Rattata	0	0	Tauros	Voltorbe
1	Bulbizarre	Carapuce	Roucool	Roucool	Voltorbe
2	Chenipan	Ptitard	Piafabec	Piafabec	Elektek
3	Aspicot	Tentacool	Roucous	Doduo	Voltorbe
4	Rattata	Ramoloss	Aéromite	Noeunoeuf	ELECTRODE
5	Mysterbe	Otaria	Canarticho	Canarticho	Pikachu
6	Paras	Kokiyas	Papilusion	Excelangue	Voltorbe
7	Mimitoss	Hypotrempe	Dardargnan	Saquedeneu	Magnéton
8	Férosinge	Poissirène	Roucous	Kangourex	Tadmorv
9	Insécateur	Stari	Rapasdepic	Tauros	Smogo
10	Scarabrute	Magicarpe	Aéromite	Ponyta	Magnéti
11	Chenipan			Doduo	Magnéti
12	Chenipan			Doduo	Magnéti
13	Chenipan			Doduo	Magnéti
14	Chenipan			Doduo	Magnéti
15	Chenipan			DODRIO	Magnéti
16	Aspicot			DODRIO	Magnéti
17	Aspicot			DODRIO	Magnéti
18	Aspicot			DODRIO	Voltorbe
19	Aspicot			DODRIO	Voltorbe
20	Aspicot			DODRIO	Voltorbe



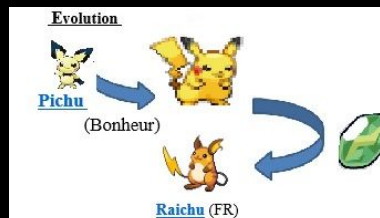
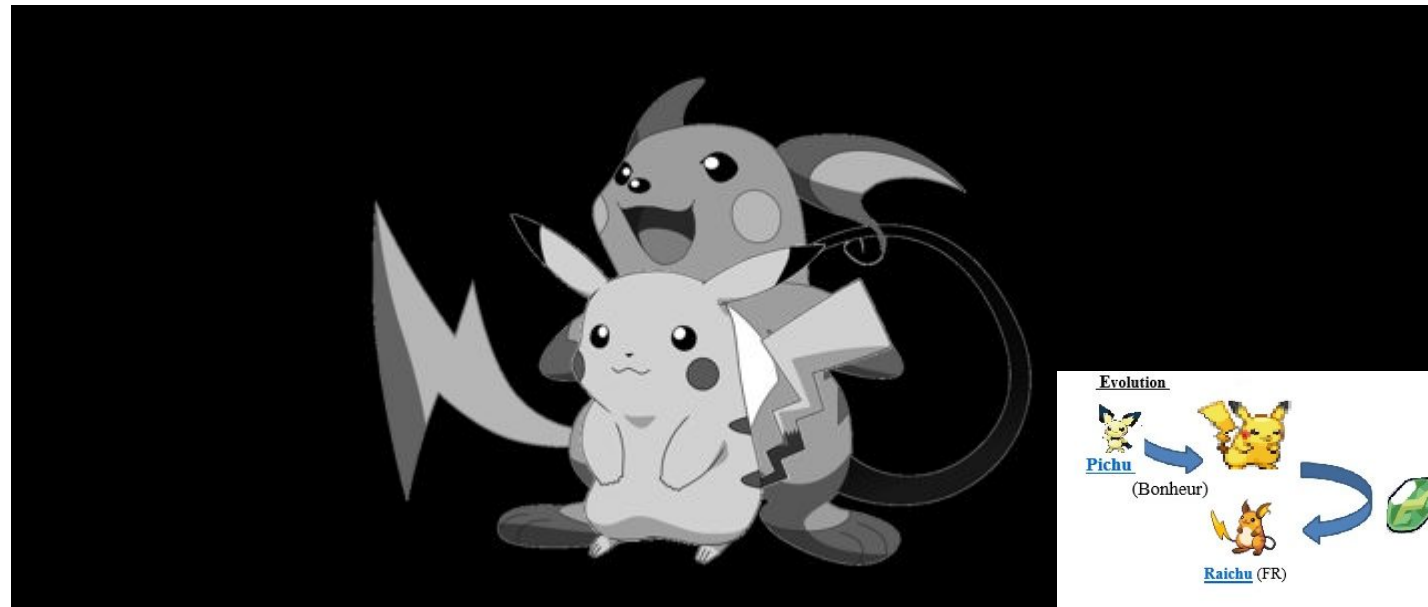
Statistics and Database

Other Example, during a fight, we can use a stone to transform our Pokemon, or our Pokemon can evolve at the end of the fight.

But we need to have this information in our Databank to know it.



POKEMON	CONDITION		EVOLUTION
PIKACHU	55	EVOLUE EN	Raichu
PIERREFOUDRE-Pikachu	PIERREFOUDRE		



N	NomFranç	Nom Angl	Type	Min Niveau	Max Niveau	Evolve
1	Bulbizarre	Bulbasaur	PLANTE	1	16	16
2	Herbizarre	Ivysaur	PLANTE	16	32	32
3	Florizarre	Venusaur	PLANTE	32	100	X
4	Salamèche	Charmander	FEU	1	16	16
5	Reptincel	Charmeleon	FEU	16	36	36
6	Dracaufeu	Charizard	FEU	36	100	X
7	Carapuce	Squirtle	EAU	1	16	16
8	Carabaffe	Wartortle	EAU	16	36	36
9	Tortank	Blastoise	EAU	36	100	X
10	Chenipan	Caterpie	INSECTE	1	7	7
11	Chrysacier	Metapod	INSECTE	7	10	10
12	Papilusion	Butterfree	INSECTE	10	100	X
13	Aspicot	Weedle	INSECTE	1	7	7
14	Coconfort	Kakuna	INSECTE	7	10	10
15	Dardargnan	Beedrill	INSECTE	10	100	X
16	Roucool	Pidgey	NORMAL	1	18	18

Attacks :

```
Private Sub ULTRASON()
```

```
secondes = 0.1
```

```
Dim chemin_principal As String
```

```
chemin_principal = Workbooks(ActiveWorkbook.Name).Path
```

```
For IX = 1 To 3
```

```
For i = 1 To 8
```

```
ActiveSheet.Pictures.Insert( _  
    chemin_principal & "\ATTAQUE" & "\" & Range("B41") & i & ".png" _  
).Select
```

```
Selection.ShapeRange.Name = "ULTRASON"
```

```
ActiveSheet.Shapes.Range(Array("Pokemon_dresseur")).Select  
Selection.ShapeRange.ZOrder msoBringToFront
```

```
With ActiveSheet.Shapes("ULTRASON")  
.LockAspectRatio = msoTrue  
.Left = Range("A12:A34").Left  
.Top = Range("A12").Top  
.Height = Range("A12:E34").Height  
.Width = Range("A12:E34").Width  
End With  
Range("A1").Select
```

```
timer_avant = Timer  
Do While Timer < timer_avant + secondes  
DoEvents  
Loop
```

```
ActiveSheet.Shapes.Range(Array("ULTRASON")).Delete
```

```
Next
```

```
Next
```

```
End Sub
```



ULTRASON1.png



ULTRASON2.png



ULTRASON3.png



ULTRASON4.png



ULTRASON5.png



ULTRASON6.png



ULTRASON7.png



ULTRASON8.png

VBA is going to use the code to animate the attack, search pictures in the databank, to import them on Excel and use it to launch the attack in the game.



e the

obox.
aucune action,

Interested to know more?

- you can consult my YouTube Channel...



LUDOVIC ROSSI

