

Universidade Federal do ABC

**Bacharelado em Ciência da Computação
Banco de Dados (MC 3310)**

PoGym - Ferramenta auxiliar para batalhas no jogo “Pokémon Go”

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1. Objetivo

O vigente projeto tem como objetivo a criação de um banco de dados que contenha informações sobre o jogo “Pokémon GO” onde será possível

fazer variadas consultas desde estatísticas dos personagens e seus movimentos até cálculos de multiplicadores de vantagem baseada nos tipos dos personagens. Esse projeto também conta com uma aplicação web simples para facilitar seu consumo e as principais consultas do projeto serão:

- Permitir consultar a listagem de pokémons e seus possíveis ataques para inserção nas listas da ferramenta;
- Dado um pokemon e seus dois respectivos ataques, retornar dados sobre o mesmo;
- Permitir gerar as tabelas de multiplicadores de vantagem/desvantagem por tipo dados quaisquer dois tipos de um defensor e o tipo do atacante;

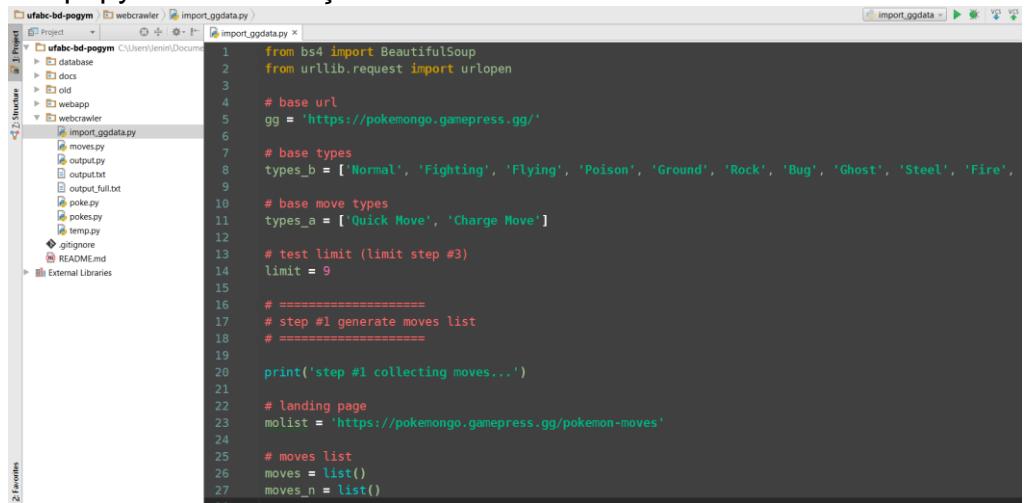
Carga de dados

As consultas do banco notadamente a consulta que agrega multiplicadores, talvez a mais importante delas, necessitam dos dados do jogo já inseridos para terem resultado satisfatório, seriam necessários os dados da tabela de pokemons, movimentos (ou ataques), tipos, e de uma tabela que relate o tipo atacando, o tipo defendendo e o multiplicador entre eles.

Como fonte dos dados utilizamos dois sites, o GamePress e o TheSilphRoad, o primeiro conta com uma comunidade ativa que gera dados de varias fontes, desde o código do jogo até distribuições que os usuários coletam e geram modelos estatísticos, o segundo é mantido por um usuário do Reddit de mesmo nome que faz também esse mesmo trabalho, os dois foram escolhidos pelo critério com que tratam estes dados. O que foi extraído de cada fonte:

- Gamepress <http://pokemongo.gamepress.gg/>
 - Foi usado como fonte primária. Um script python de extração de dados foi construído para recuperar seus dados, ele basicamente lê o código HTML das páginas, procura nas tags HTML os dados e gera uma saída em texto puro que na verdade é uma série de inserts em linguagem SQL92 para serem executadas no banco

■ Script python de extração de dados



```
from bs4 import BeautifulSoup
from urllib.request import urlopen

# base url
gg = 'https://pokemongo.gamepress.gg/'

# base types
types_b = ['Normal', 'Fighting', 'Flying', 'Poison', 'Ground', 'Rock', 'Bug', 'Ghost', 'Steel', 'Fire', 'Water', 'Electric', 'Grass', 'Ice', 'Psychic', 'Dragon', 'Dark', 'Steel']

# base move types
types_a = ['Quick Move', 'Charge Move']

# test limit (limit step #3)
limit = 9

# =====
# step #1 generate moves list
# =====

print('step #1 collecting moves...')

# landing page
molist = 'https://pokemongo.gamepress.gg/pokemon-moves'

# moves list
moves = list()
moves_n = list()
```

- Saída do script em execução

```

step #1 collecting moves...
collected 124 moves

step #2 collecting pokemons...
collected 151 pokemons

step #3 processing individual data
processing #1 Bulbasaur (https://pokemongo.gamepress.gg//pokemon/1)
processing #2 Ivysaur (https://pokemongo.gamepress.gg//pokemon/2)
processing #3 Venusaur (https://pokemongo.gamepress.gg//pokemon/3)
processing #4 Charmander (https://pokemongo.gamepress.gg//pokemon/4)

```
- Fim da saída com comandos SQL de inserção
(trecho 1)

```

step #4 output (copy everything below this line on your fancy sgdb)
=====
are you seeing this line? =====
use pogym

INSERT INTO [types] ([type_id],[type]) VALUES
(1, 'Normal')
,(2, 'Fighting')
,(3, 'Flying')
,(4, 'Poison')
,(5, 'Ground')
,(6, 'Rock')
,(7, 'Bug')

```
- Fim da saída com comandos SQL de inserção
(trecho 2)

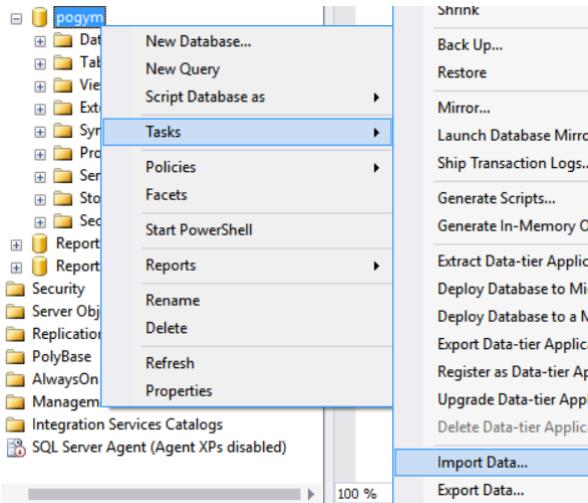
```

INSERT INTO [dbo].[pokemons_attacks] ([pokemon_id],[attack_id]) VALUES (7,33)
INSERT INTO [dbo].[pokemons_attacks] ([pokemon_id],[attack_id]) VALUES (7,45)
;

INSERT INTO [dbo].[pokemons_attacks] ([pokemon_id],[attack_id]) VALUES (7,43)
INSERT INTO [dbo].[pokemons_attacks] ([pokemon_id],[attack_id]) VALUES (7,89)
INSERT INTO [dbo].[pokemons_attacks] ([pokemon_id],[attack_id]) VALUES (7,74)
;
```

- The SilphRoad <https://thesilphroad.com/research>
 - Checagem da precisão dos dados como movimentos, dano crítico, janela, etc.
 - Fonte da planilha usada para gerar a tabela de multiplicadores de tipos, e a relação entre eles (tabelas “types” e “types_types”)
https://docs.google.com/spreadsheets/d/1xZ1daunztOgvOZxO7ABfJPF41-2mqMDzY1Qs_0OWwq8/edit#gid=1151218844
 - A carga destes dados foi feita utilizando a importação de dados do SQL Server, no assistente apontamos a planilha baixada e com somente a aba de multiplicadores e pedimos para descarregar numa nova tabela criada

automaticamente



- Em seguida estes dados foram tratados e migrados para a tabela “types_types” com os scripts “createmultipliersdata.sql” e “importmultipliersdata.sql” presentes na pasta “database” do repositório;

Este processo de carga teve de ser feito já com a modelagem do banco adiantada, no que foram úteis os diagramas da primeira versão.

2. Modelo Conceitual Ajustado / DER ajustado

O diagrama DER do banco a primeira vista parece ter sofrido alterações profundas, mas uma análise mais detalhada mostra que sua estrutura principal foi mantida, principais alterações:

- Os nomes de atributos foram utilizados no seu original em inglês para facilitar o trabalho de mapeamento dos atributos da tabela com o script que lê os dados diretamente da página da gamepress, esta alteração facilitou também o trabalho de checagem dos dados no pós importação;
- Os nomes de tabelas servem como prefixos das relacionadas, para facilitar a compreensão. Por exemplo “Pokemons (pokemons)” e a relacionada “Tipos dos Pokemons (pokemons_types)”;
- Foi adotada uma nova formatação de nome de atributo:
 - Todo em minúsculas;
 - Com nomes sem abreviatura divididos por “_” para fins de tornar mais claro seu uso;
 - Chaves estrangeiras mantém o nome de atributo original da chave primária de origem para facilitar a localização;
- Foi feita a especialização da tabela de ataques em uma superclasse “ataque” (attack) e duas subclasses uma para “ataques rápidos” (attacks_quick) e outra para “ataques especiais” (attacks_charge);

- Atributos adicionais incluídos no site posteriormente foram adicionados com base em sua utilidade, por exemplo:
 - Atributos “charge” e “energypu” nas sub-classes de “attack”;
 - Atributos que guardam informação de ícone, imagem e url em entidades como “pokemons” e “types”;

Seguem os dois modelos antes e depois das alterações realizadas:

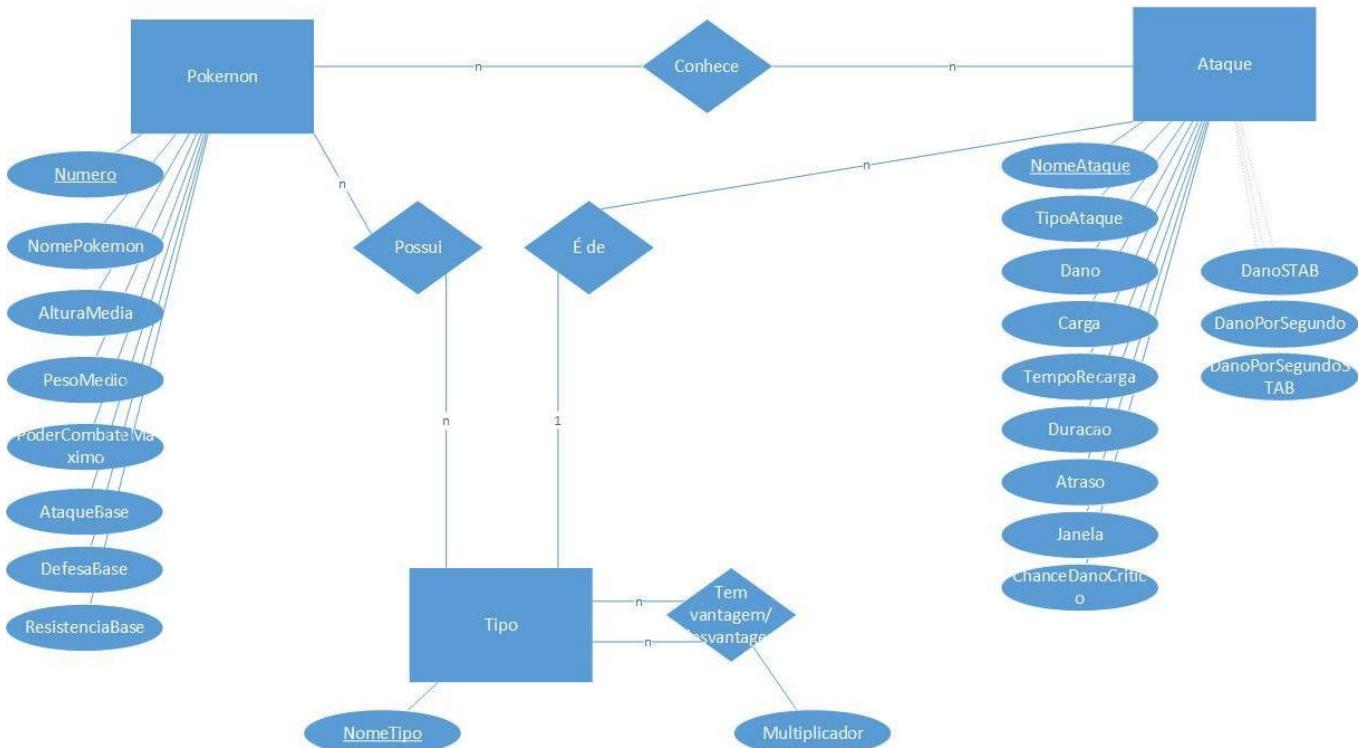


Figura 1: Diagrama original.

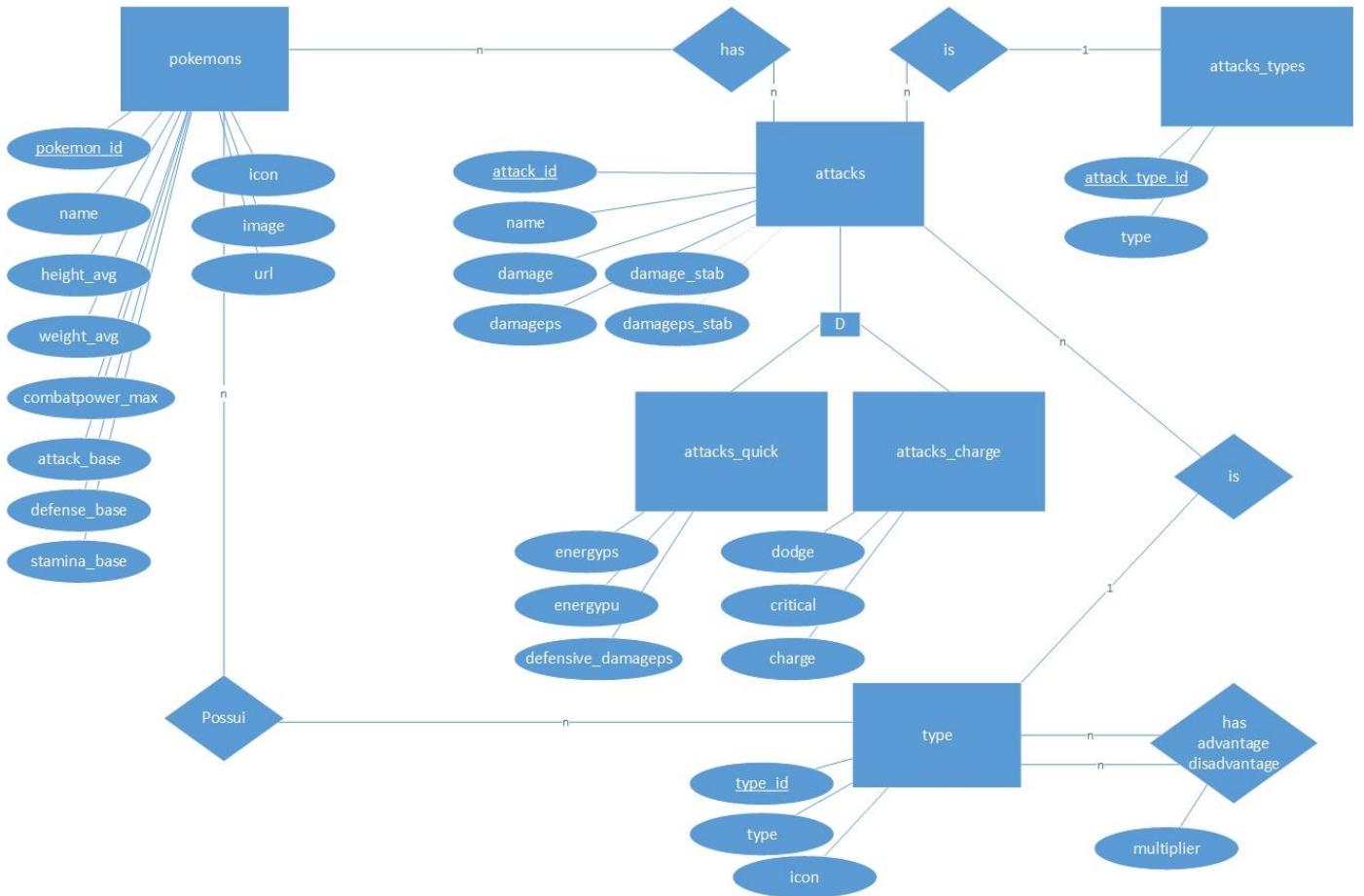


Figura 2: Diagrama alterado.

3. Modelo Relacional

A partir do DER pôde-se construir o modelo relacional do banco, que é o que segue:

attacks(attack_id,attacks_types.attack_type_id,name,types.type_id,damage,damage_stab,damageps,damageps_stab,move_cooldown);

attacks_charge(attacks.attack_id,charge,critical,dodge)

attacks_quick(attacks.attack_id,energyps,energypu,defensive_damageps)

attacks_types(attack_type_id,type)

pokemons(pokemon_id,pokemons.evolvefrom_pokemon_id,name,icon,image,url,height_avg,weight_avg,combatpower_max,attack_base,defense_base,stamina_base)

pokemons_attacks(pokemon_attack_id,pokemons.pokemon_id,attacks.attack_id,true_damageps)

pokemons_types(pokemon_type_id,pokemons.pokemon_id,types.type_id)

types(type_id,type,icon)

types_types(type_type_id,types.attacker_type_id,types.defender_type_id,multiplier)

4. Normalização

A revisão do modelo DER, e seu processo de amadurecimento a nosso ver permitiram eliminar boa parte do trabalho posterior de normalização.

Ao analisar as entidades com relação a dependência funcional por exemplo, entendemos que os atributos nas tabelas não só eram funcionalmente dependentes da sua chave como no nosso entendimento não estavam presentes atributos funcionalmente dependentes de outros atributos não presentes nas chaves. Mesmo redundâncias e campos multivvalorados presentes no primeiro DER foram eliminados no segundo.

Podemos fazer duas observações como exemplos de destaque na normalização:

- A tabela “Ataque (attack)” possuía um atributo chamado “Tipo de ataque” que poderia assumir dois valores: “Ataque rápido” ou “Ataque carregado” no primeiro diagrama. No segundo, essa redundância foi resolvida com uma nova entidade separada “Tipo de ataque (attacks_types)” e o atributo se tornou a chave estrangeira “attack_type_id”;
- A tabela “Ataque (attack)” possuía atributos utilizados somente em ataques rápidos, atributos utilizados somente em ataques carregados e atributos utilizados nos dois casos, um caso típico na nossa avaliação no qual poderíamos empregar a especialização, geramos assim duas subclasses da entidade “Ataque (attack)”: “Ataque rápido (attack_quick)” e “Ataque carregado (attack_charge)”;

5. Modelo Físico

Para a implementação do modelo físico utilizou-se o SGBD SQL Server, mas também foram gerados na pasta do projeto scripts adaptados para a criação das relações e carga de dados do banco em MySQL, com exceção para as duas procedures (sp_battle e sp_stab), a função (fn_stab) e os dois triggers (attacks_charge_disjoint e attacks_quick_disjoint) utilizadas no projeto.

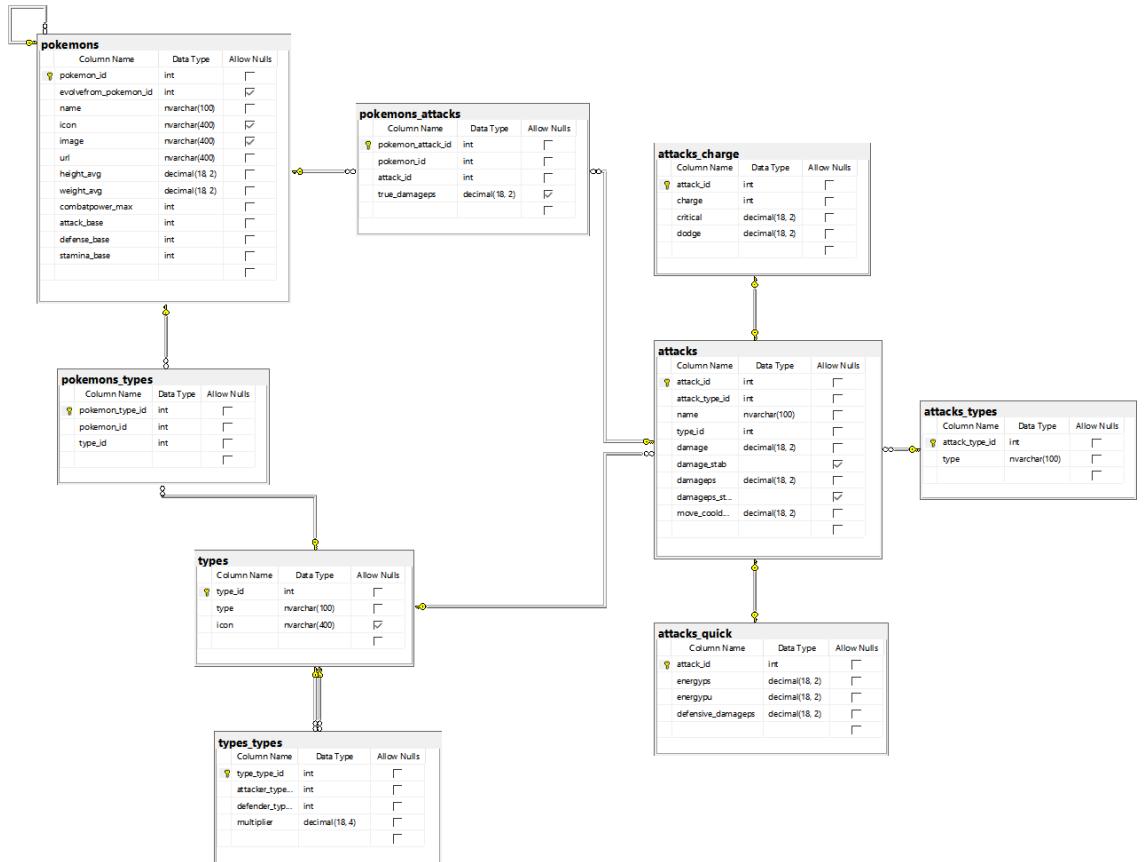


Figura 3: Diagrama do banco no SQL Server

Considerações importantes nos scripts SQL Server e MySQL:

- O MySQL chama o banco de “schema”, no SQL Server essa nomenclatura é um objeto utilizado para organizar objetos dentro do banco. Isso fez necessário remover os nomes de “schema” do script para utilização no MySQL;
- O MySQL pela questão do “schema” não utiliza chaves “[,]” para delimitar objetos;
- Os campos calculados têm criação pouco diferente:
 - SQL Server


```
21 |     [damageps_stab] AS ([damageps]*(1.25)),
```
 - MySQL


```
15 |     damageps_stab decimal(18, 2) AS (damageps*(1.25)),
```

(Essa construção para o MySQL só funciona a partir da versão de banco 5.7)
- Os tipos de campos não mostraram problemas e foram reconhecidos nas duas plataformas;
- As diferenças na criação de chaves e relações também foram mínimas:

- Relação “Ataques” no MySQL

```

7  CREATE TABLE attacks(
8      attack_id int NOT NULL,
9      attack_type_id int NOT NULL,
10     name nvarchar(100) NOT NULL,
11     type_id int NOT NULL,
12     damage decimal(18, 2) NOT NULL,
13     damage_stab decimal(18, 2) AS (damage*(1.25)),
14     damageps decimal(18, 2) NOT NULL,
15     damageps_stab decimal(18, 2) AS (damageps*(1.25)),
16     move_cooldown decimal(18, 2) NOT NULL,
17     CONSTRAINT PK_attacks PRIMARY KEY CLUSTERED
18 (
19     attack_id ASC
20 )
21 );

```

- Sua Chave estrangeira com a relação “Ataques tipos”

```

3563 ALTER TABLE attacks ADD CONSTRAINT FK_attacks_attacks_types FOREIGN KEY(attack_type_id)
3564 REFERENCES attacks_types (attack_type_id)
3565 ;

```

- Relação “Ataques” no SQL Server

```

13 CREATE TABLE [dbo].[attacks](
14     [attack_id] [int] NOT NULL,
15     [attack_type_id] [int] NOT NULL,
16     [name] [nvarchar](100) NOT NULL,
17     [type_id] [int] NOT NULL,
18     [damage] [decimal](18, 2) NOT NULL,
19     [damage_stab] AS ([damage]*(1.25)),
20     [damageps] [decimal](18, 2) NOT NULL,
21     [damageps_stab] AS ([damageps]*(1.25)),
22     [move_cooldown] [decimal](18, 2) NOT NULL,
23     CONSTRAINT [PK_attacks] PRIMARY KEY CLUSTERED
24 (
25     [attack_id] ASC
26 )
27 ) ON [PRIMARY]
28 GO

```

- Sua Chave estrangeira com a relação “Ataques tipos”

```

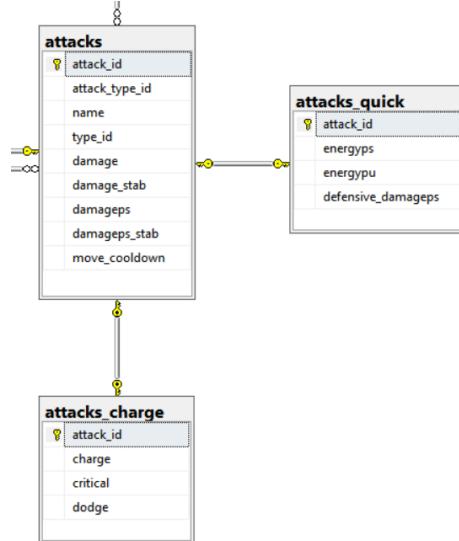
3644 ALTER TABLE [dbo].[attacks] WITH CHECK ADD CONSTRAINT [FK_attacks_attacks_types] FOREIGN KEY([attack_type_id])
3645 REFERENCES [dbo].[attacks_types] ([attack_type_id])
3646 GO

```

- Foi implementado no SQL Server o “disjoint” entre as tabelas “Ataques rápidos (attacks_quick)” e “Ataques carregados (attacks_charge)” com triggers. Existia a possibilidade de utilizar o campo chave de “Ataques (attacks)” junto ao campo chave de “Ataques tipos (attacks_types)” como chave composta na relação e adicionar uma restrição no segundo, mas optamos por economizar um atributo nas subclasses e implementar via trigger

que checa a existência da chave de “Ataques (attacks)” na outra relação do disjoint:

- Modelo do disjoint



- Trigger na tabela “Ataque rápido (attacks_quick)”

```

16 CREATE TRIGGER [dbo].[attacks_quick_disjoint]
17     ON [dbo].[attacks_quick]
18     AFTER INSERT
19     AS
20     BEGIN
21         SET NOCOUNT ON;
22
23     declare @id int = (select i.attack_id from inserted as i)
24
25     IF EXISTS (SELECT *
26                 FROM dbo.attacks_charge as a
27                 WHERE a.attack_id = @id)
28     BEGIN
29         RAISERROR ('This attack already exists on ''Charge Attacks'' table.', 16, 1);
30         ROLLBACK TRANSACTION;
31         RETURN
32     END
33 END
34 GO
    
```

- O trigger na tabela “Ataque carregado (attacks_charge)” é idêntico, mas invertem-se as tabelas na lógica do trigger;
 - A consulta de batalha agrega os multiplicadores, mas como não tínhamos esta função para uso na linguagem SQL implementada nos bancos, tivemos de utilizar uma construção (EXP+SUM+LOG) para agregar os multiplicadores “multiplicando-os”:
- ```

95 select ta.type as atacante, EXP(SUM(LOG(tt.multiplier))) as multiplicador
96 from types_types as tt inner join types as ta on ta.type_id = tt.attacker_type_id
97 inner join types as td on td.type_id = tt.defender_type_id
98 where defender_type_id in(16,3) --dragonite
99 group by ta.type
100 having EXP(SUM(LOG(tt.multiplier))) <> 1
101 order by ta.type
102 go

```
- OBS: Esta construção funciona em ambas as plataformas;

## 6. Consultas

As consultas mais importantes no banco e para consumo no aplicativo web s

- Select simples para listagem de tipos por sua ordem natural no jogo

```
6 | SELECT t.type_id as id,t.type as tipo
7 | FROM types as t
8 | ORDER BY id
9 | go
```

- Resultado

|    | id | tipo     |
|----|----|----------|
| 1  | 1  | Normal   |
| 2  | 2  | Fighting |
| 3  | 3  | Flying   |
| 4  | 4  | Poison   |
| 5  | 5  | Ground   |
| 6  | 6  | Rock     |
| 7  | 7  | Bug      |
| 8  | 8  | Ghost    |
| 9  | 9  | Steel    |
| 10 | 10 | Fire     |
| 11 | 11 | Water    |
| 12 | 12 | Grass    |
| 13 | 13 | Electric |
| 14 | 14 | Psychic  |
| 15 | 15 | Ice      |
| 16 | 16 | Dragon   |
| 17 | 17 | Dark     |
| 18 | 18 | Fairy    |

- Álgebra Relacional desta consulta

$t \leftarrow \text{types}$

$R(id, tipo) \leftarrow \exists type\_id, type(t)$

$\exists id \text{ asc } (R)$

- Selects que listam o(s) tipo(s) e ficha de um dado pokémon

```
17 | declare @id int = 1
18 |
19 | select t.type as tipo
20 | from pokemons_types as pa inner join types as t on pa.type_id = t.type_id
21 | where pokemon_id = @id
22 |
23 | select p.pokemon_id as pokedex,p.name as nome,weight_avg as peso,height_avg as altura
24 | ,p.attack_base as atk,p.defense_base as def,p.stamina_base as sta
25 | from pokemons as p
26 | where p.pokemon_id = @id
27 | go
--
```

- Resultado

|   | tipo   |
|---|--------|
| 1 | Grass  |
| 2 | Poison |

|   | pokedex | nome      | peso | altura | atk | def | sta |
|---|---------|-----------|------|--------|-----|-----|-----|
| 1 | 1       | Bulbasaur | 6.90 | 0.70   | 126 | 126 | 90  |

- Álgebra Relacional:

$@id \leftarrow 1$

```

pa ← pokemons_types
t←types
tipo←□type(t)
σpokemon_id=@id(pa ∧ pa.type_id = t.type_id t)
p←pokemons
R(pokedex, nome, peso, altura, atk, def, sta)←□pokemon_id, name, weight_avg,
height_avg, attack_base, defense_base, stamina_base(p)
σp.pokemon_id=@id(R)

```

- Select que mostra a relação da tabela tipos para ela própria com o atributo de relação denominado “multiplicador”

```

36 SELECT type_type_id as id
37 ,attacker_type_id as idatk,ta.type as atacante
38 ,defender_type_id as iddef,td.type as defensor
39 ,multiplier as multiplicador
40 FROM types_types as tt inner join types as ta on tt.attacker_type_id = ta.type_id
41 inner join types as td on tt.defender_type_id = td.type_id
42 order by idatk asc,iddef asc
43 go
--

```

- Resultado

Results    Messages

|    | id  | idatk | atacante | iddef | defensor | multiplicador |
|----|-----|-------|----------|-------|----------|---------------|
| 1  | 1   | 1     | Normal   | 1     | Normal   | 1.0000        |
| 2  | 11  | 1     | Normal   | 2     | Fighting | 1.0000        |
| 3  | 12  | 1     | Normal   | 3     | Flying   | 1.0000        |
| 4  | 13  | 1     | Normal   | 4     | Poison   | 1.0000        |
| 5  | 14  | 1     | Normal   | 5     | Ground   | 1.0000        |
| 6  | 15  | 1     | Normal   | 6     | Rock     | 0.8000        |
| 7  | 16  | 1     | Normal   | 7     | Bug      | 1.0000        |
| 8  | 17  | 1     | Normal   | 8     | Ghost    | 0.8000        |
| 9  | 18  | 1     | Normal   | 9     | Steel    | 0.8000        |
| 10 | 2   | 1     | Normal   | 10    | Fire     | 1.0000        |
| 11 | 3   | 1     | Normal   | 11    | Water    | 1.0000        |
| 12 | 4   | 1     | Normal   | 12    | Grass    | 1.0000        |
| 13 | 5   | 1     | Normal   | 13    | Electric | 1.0000        |
| 14 | 6   | 1     | Normal   | 14    | Psychic  | 1.0000        |
| 15 | 7   | 1     | Normal   | 15    | Ice      | 1.0000        |
| 16 | 8   | 1     | Normal   | 16    | Dragon   | 1.0000        |
| 17 | 9   | 1     | Normal   | 17    | Dark     | 1.0000        |
| 18 | 10  | 1     | Normal   | 18    | Fairy    | 1.0000        |
| 19 | 181 | 2     | Fighting | 1     | Normal   | 1.2500        |
| 20 | 191 | 2     | Fighting | 2     | Fighting | 1.0000        |
| 21 | 192 | 2     | Fighting | 3     | Flying   | 0.8000        |
| 22 | 193 | 2     | Fighting | 4     | Poison   | 0.8000        |
| 23 | 194 | 2     | Fighting | 5     | Ground   | 1.0000        |
| 24 | 195 | 2     | Fighting | 6     | Rock     | 1.2500        |
| 25 | 196 | 2     | Fighting | 7     | Bug      | 0.8000        |

- Selects que listam o(s) tipo(s) e ataques possíveis de um dado pokémon

```

51 declare @id int = 1
52
53 select po.name as pokemon, t.type as elementos
54 from pokemons_types as pa inner join types as t on pa.type_id = t.type_id
55 inner join pokemons as po on pa.pokemon_id = po.pokemon_id
56 where pa.pokemon_id = @id
57
58 select p.name as pokemon
59 ,a.name as movimento
60 ,ta.type as 'tipo'
61 ,t.type as 'elemento'
62
63 ,(case dbo.fn_stab(p.pokemon_id,a.type_id)
64 when 1 then 'Sim'
65 else 'Não'
66 end) as 'bônus stab'
67
68 ,a.damage as dano
69 ,a.damageps as 'dano/s'
70
71 ,cast((case dbo.fn_stab(p.pokemon_id,a.type_id)
72 when 1 then a.damage_stab
73 else a.damage
74 end) as decimal(18,2)) as 'dano +stab'
75
76 ,cast((case dbo.fn_stab(p.pokemon_id,a.type_id)
77 when 1 then a.damageps_stab
78 else a.damageps
79 end) as decimal(18,2)) as 'dano/s +stab'
80
81 from pokemons as p inner join pokemons_attacks as pa on p.pokemon_id = pa.pokemon_id
82 inner join attacks as a on pa.attack_id = a.attack_id
83 inner join attacks_types as ta on a.attack_type_id = ta.attack_type_id
84 inner join types as t on a.type_id = t.type_id
85 where p.pokemon_id = @id
86 go
87

```

- Resultado

The screenshot shows two result sets. The first result set is a table with columns 'pokemon' and 'elementos'. It contains two rows for Bulbasaur, showing 'Grass' and 'Poison' respectively. The second result set is a larger table with columns: 'pokemon', 'movimento', 'tipo', 'elemento', 'bônus stab', 'dano', 'dano/s', 'dano +stab', and 'dano/s +stab'. It lists five attacks for Bulbasaur: Tackle (Quick Move, Normal, Não, 12.00, 10.91, 12.00, 10.91), Vine Whip (Quick Move, Grass, Sim, 7.00, 10.77, 8.75, 13.46), Power Whip (Charge Move, Grass, Sim, 70.00, 25.00, 87.50, 31.25), Seed Bomb (Charge Move, Grass, Sim, 40.00, 16.67, 50.00, 20.84), and Sludge Bomb (Charge Move, Poison, Sim, 55.00, 21.15, 68.75, 26.44).

|   | pokemon   | elementos |
|---|-----------|-----------|
| 1 | Bulbasaur | Grass     |
| 2 | Bulbasaur | Poison    |

|   | pokemon   | movimento   | tipo        | elemento | bônus stab | dano  | dano/s | dano +stab | dano/s +stab |
|---|-----------|-------------|-------------|----------|------------|-------|--------|------------|--------------|
| 1 | Bulbasaur | Tackle      | Quick Move  | Normal   | Não        | 12.00 | 10.91  | 12.00      | 10.91        |
| 2 | Bulbasaur | Vine Whip   | Quick Move  | Grass    | Sim        | 7.00  | 10.77  | 8.75       | 13.46        |
| 3 | Bulbasaur | Power Whip  | Charge Move | Grass    | Sim        | 70.00 | 25.00  | 87.50      | 31.25        |
| 4 | Bulbasaur | Seed Bomb   | Charge Move | Grass    | Sim        | 40.00 | 16.67  | 50.00      | 20.84        |
| 5 | Bulbasaur | Sludge Bomb | Charge Move | Poison   | Sim        | 55.00 | 21.15  | 68.75      | 26.44        |

- Select que combina os dois tipos de um pokémon SE DEFENDENDO e gera a tabela de multiplicadores (tabela do site gamepress)

```

95 select ta.type as atacante,EXP(SUM(LOG(tt.multiplier))) as multiplicador
96 from types_types as tt inner join types as ta on ta.type_id = tt.attacker_type_id
97 inner join types as td on td.type_id = tt.defender_type_id
98 where defender_type_id in(16,3) --dragonite
99 --where defender_type_id in(15,11) --lapras
100 --where defender_type_id in(18,0) --fairy
101 --where defender_type_id in(10,0) --fire
102 group by ta.type
103 having EXP(SUM(LOG(tt.multiplier))) <> 1
104 order by ta.type
105 go

```

- Resultado

|    | atacante | multiplicador |
|----|----------|---------------|
| 1  | Bug      | 0,8           |
| 2  | Dragon   | 1,25          |
| 3  | Fairy    | 1,25          |
| 4  | Fighting | 0,8           |
| 5  | Fire     | 0,8           |
| 6  | Grass    | 0,64          |
| 7  | Ground   | 0,8           |
| 8  | Ice      | 1,5625        |
| 9  | Rock     | 1,25          |
| 10 | Water    | 0,8           |

- Select que combina os dois tipos de um pokémon ATACANDO e gera a tabela de multiplicadores

```

114 | select td.type as defensor,EXP(SUM(LOG(tt.multiplier))) as multiplicador
115 | from types_types as tt inner join types as ta on ta.type_id = tt.attacker_type_id
116 | inner join types as td on td.type_id = tt.defender_type_id
117 | where attacker_type_id in(16,3) --dragonite
118 | --where attacker_type_id in(15,11) --lapras
119 | --where attacker_type_id in(18,0) --fairy
120 | --where attacker_type_id in(1,0) --fire
121 | group by td.type
122 | having EXP(SUM(LOG(tt.multiplier))) <> 1
123 | order by td.type
124 | go

```

- Resultado

|   | defensor | multiplicador |
|---|----------|---------------|
| 1 | Bug      | 1,25          |
| 2 | Dragon   | 1,25          |
| 3 | Electric | 0,8           |
| 4 | Fairy    | 0,8           |
| 5 | Fighting | 1,25          |
| 6 | Grass    | 1,25          |
| 7 | Rock     | 0,8           |
| 8 | Steel    | 0,64          |

- Selects que listam a tabela de ataques e UMA de suas disjuntas com registros ordenados do maior ao menor dan

- Select 1

```

133 | select top 25 a.name as ataque,t.type as tipo,a.damage as dano,a.damageps as 'dano/s'
134 | ,a.move_cooldown as 'recarga (ms)',q.energyps as 'energia/s',q.energypu as 'energia gerada'
135 | from attacks_quick as q inner join attacks as a on q.attack_id = a.attack_id
136 | inner join attacks_types as t on t.attack_type_id = a.attack_type_id
137 | order by a.damage desc
138 | go

```

- Resultados

|    | ataque       | tipo       | dano  | dano/s | recarga (ms) | energia/s | energia gerada |
|----|--------------|------------|-------|--------|--------------|-----------|----------------|
| 1  | Bubble       | Quick Move | 25.00 | 10.87  | 2.30         | 10.87     | 25.00          |
| 2  | Mud Slap     | Quick Move | 15.00 | 11.11  | 1.35         | 8.89      | 12.00          |
| 3  | Steel Wing   | Quick Move | 15.00 | 11.28  | 1.33         | 9.02      | 12.00          |
| 4  | Razor Leaf   | Quick Move | 15.00 | 10.34  | 1.45         | 8.28      | 12.00          |
| 5  | Rock Smash   | Quick Move | 15.00 | 10.64  | 1.41         | 8.51      | 12.00          |
| 6  | Confusion    | Quick Move | 15.00 | 9.93   | 1.51         | 9.27      | 14.00          |
| 7  | Ice Shard    | Quick Move | 15.00 | 10.71  | 1.40         | 8.57      | 12.00          |
| 8  | Zen Headbutt | Quick Move | 12.00 | 11.43  | 1.05         | 8.57      | 9.00           |
| 9  | Feint Attack | Quick Move | 12.00 | 11.54  | 1.04         | 9.62      | 10.00          |
| 10 | Poison Jab   | Quick Move | 12.00 | 11.43  | 1.05         | 9.52      | 10.00          |
| 11 | Rock Throw   | Quick Move | 12.00 | 8.82   | 1.36         | 11.03     | 15.00          |
| 12 | Tackle       | Quick Move | 12.00 | 10.91  | 1.10         | 9.09      | 10.00          |
| 13 | Cut          | Quick Move | 12.00 | 10.62  | 1.13         | 8.85      | 10.00          |
| 14 | Shadow Claw  | Quick Move | 11.00 | 11.58  | 0.95         | 8.42      | 8.00           |
| 15 | Quick Attack | Quick Move | 10.00 | 7.52   | 1.33         | 9.02      | 12.00          |
| 16 | Ember        | Quick Move | 10.00 | 9.52   | 1.05         | 9.52      | 10.00          |
| 17 | Peck         | Quick Move | 10.00 | 8.70   | 1.15         | 8.70      | 10.00          |
| 18 | Fire Fang    | Quick Move | 10.00 | 11.90  | 0.84         | 9.52      | 8.00           |
| 19 | Bullet Punch | Quick Move | 10.00 | 8.33   | 1.20         | 8.33      | 10.00          |
| 20 | Acid         | Quick Move | 10.00 | 9.52   | 1.05         | 9.52      | 10.00          |
| 21 | Frost Breath | Quick Move | 9.00  | 11.11  | 0.81         | 8.64      | 7.00           |
| 22 | Wing Attack  | Quick Move | 9.00  | 12.00  | 0.75         | 9.33      | 7.00           |
| 23 | Metal Claw   | Quick Move | 8.00  | 12.70  | 0.63         | 11.11     | 7.00           |
| 24 | Spark        | Quick Move | 7.00  | 10.00  | 0.70         | 11.43     | 8.00           |
| 25 | Sucker Punch | Quick Move | 7.00  | 10.00  | 0.70         | 12.86     | 9.00           |

- Select 2

```

140 select top 25 a.name as ataque,t.type as tipo,a.damage as dano,a.damageps as 'dano/s'
141 ,a.move_cooldown as 'recarga em (ms)',c.dodge as 'janela esquiva (ms)'
142 ,convert(nvarchar(50),cast(c.critical*100 as int))+'%' as 'chance dano crítico'
143 ,c.charge as 'barras de energia'
144 from attacks_charge as c inner join attacks as a on c.attack_id = a.attack_id
145 inner join attacks_types as t on t.attack_type_id = a.attack_type_id
146 order by a.damage desc
147 go

```

- Resultados

|    | ataque         | tipo        | dano   | dano/s | recarga em (ms) | janela esquiva (ms) | chance dano crítico | barras de energia |
|----|----------------|-------------|--------|--------|-----------------|---------------------|---------------------|-------------------|
| 1  | Solar Beam     | Charge Move | 120.00 | 24.49  | 4.90            | 2.40                | 5%                  | 1                 |
| 2  | Hyper Beam     | Charge Move | 120.00 | 24.00  | 5.00            | 1.50                | 5%                  | 1                 |
| 3  | Fire Blast     | Charge Move | 100.00 | 24.39  | 4.10            | 1.10                | 5%                  | 1                 |
| 4  | Blizzard       | Charge Move | 100.00 | 25.64  | 3.90            | 0.70                | 5%                  | 1                 |
| 5  | Thunder        | Charge Move | 100.00 | 23.26  | 4.30            | 2.25                | 5%                  | 1                 |
| 6  | Earthquake     | Charge Move | 100.00 | 23.81  | 4.20            | 2.65                | 5%                  | 1                 |
| 7  | Hydro Pump     | Charge Move | 90.00  | 23.68  | 3.80            | 2.80                | 5%                  | 1                 |
| 8  | Moonblast      | Charge Move | 85.00  | 20.73  | 4.10            | 1.30                | 5%                  | 1                 |
| 9  | Hurricane      | Charge Move | 80.00  | 25.00  | 3.20            | 2.47                | 5%                  | 1                 |
| 10 | Heat Wave      | Charge Move | 80.00  | 21.05  | 3.80            | 1.10                | 5%                  | 1                 |
| 11 | Megahorn       | Charge Move | 80.00  | 25.00  | 3.20            | 1.00                | 5%                  | 1                 |
| 12 | Stone Edge     | Charge Move | 80.00  | 25.81  | 3.10            | 1.10                | 50%                 | 1                 |
| 13 | Bug Buzz       | Charge Move | 75.00  | 17.65  | 4.25            | 2.20                | 5%                  | 2                 |
| 14 | Sludge Wave    | Charge Move | 70.00  | 20.59  | 3.40            | 1.60                | 5%                  | 1                 |
| 15 | Dig            | Charge Move | 70.00  | 12.07  | 5.80            | 1.10                | 5%                  | 3                 |
| 16 | Power Whip     | Charge Move | 70.00  | 25.00  | 2.80            | 2.00                | 25%                 | 1                 |
| 17 | Gunk Shot      | Charge Move | 65.00  | 21.67  | 3.00            | 1.10                | 5%                  | 1                 |
| 18 | Petal Blizzard | Charge Move | 65.00  | 20.31  | 3.20            | 1.70                | 5%                  | 2                 |
| 19 | Dragon Pulse   | Charge Move | 65.00  | 18.06  | 3.60            | 1.90                | 5%                  | 2                 |
| 20 | Ice Beam       | Charge Move | 65.00  | 17.81  | 3.65            | 2.05                | 5%                  | 2                 |
| 21 | Cross Chop     | Charge Move | 60.00  | 30.00  | 2.00            | 1.00                | 25%                 | 1                 |
| 22 | Flash Cannon   | Charge Move | 60.00  | 15.38  | 3.90            | 1.80                | 5%                  | 3                 |
| 23 | Scald          | Charge Move | 55.00  | 13.75  | 4.00            | 2.80                | 5%                  | 3                 |
| 24 | Psychic        | Charge Move | 55.00  | 19.64  | 2.80            | 1.90                | 5%                  | 2                 |
| 25 | Dazzling Gleam | Charge Move | 55.00  | 13.10  | 4.20            | 1.50                | 5%                  | 3                 |

- Select que lista a tabela de ataques JUNTO a suas disjuntas com registros ordenados por nome

```

155 select top 25 a.name as ataque,t.type as tipo,a.damage as dano,a.damageps as 'dano/s'
156 ,a.move_cooldown as 'recarga em (ms)',c.charge as 'barras de energia'
157 ,q.energypu as 'energia gerada'
158 from attacks as a left outer join attacks_charge as c on c.attack_id = a.attack_id
159 left outer join attacks_quick as q on q.attack_id = a.attack_id
160 inner join attacks_types as t on t.attack_type_id = a.attack_type_id
161 order by a.name asc
162 go

```

- Resultados

Results

|    | ataque         | tipo        | dano   | dano/s | recarga em (ms) | barras de energia | energia gerada |
|----|----------------|-------------|--------|--------|-----------------|-------------------|----------------|
| 1  | Acid           | Quick Move  | 10.00  | 9.52   | 1.05            | NULL              | 10.00          |
| 2  | Aerial Ace     | Charge Move | 30.00  | 10.34  | 2.90            | 4                 | NULL           |
| 3  | Air Cutter     | Charge Move | 30.00  | 9.09   | 3.30            | 4                 | NULL           |
| 4  | Ancient Power  | Charge Move | 35.00  | 9.72   | 3.60            | 4                 | NULL           |
| 5  | Aqua Jet       | Charge Move | 25.00  | 10.64  | 2.35            | 5                 | NULL           |
| 6  | Aqua Tail      | Charge Move | 45.00  | 19.15  | 2.35            | 2                 | NULL           |
| 7  | Bite           | Quick Move  | 6.00   | 12.00  | 0.50            | NULL              | 7.00           |
| 8  | Blizzard       | Charge Move | 100.00 | 25.64  | 3.90            | 1                 | NULL           |
| 9  | Body Slam      | Charge Move | 40.00  | 25.64  | 1.56            | 2                 | NULL           |
| 10 | Bone Club      | Charge Move | 25.00  | 15.63  | 1.60            | 4                 | NULL           |
| 11 | Brick Break    | Charge Move | 30.00  | 18.75  | 1.60            | 3                 | NULL           |
| 12 | Brine          | Charge Move | 25.00  | 10.42  | 2.40            | 4                 | NULL           |
| 13 | Bubble         | Quick Move  | 25.00  | 10.87  | 2.30            | NULL              | 25.00          |
| 14 | Bubble Beam    | Charge Move | 30.00  | 10.34  | 2.90            | 4                 | NULL           |
| 15 | Bug Bite       | Quick Move  | 5.00   | 11.11  | 0.45            | NULL              | 7.00           |
| 16 | Bug Buzz       | Charge Move | 75.00  | 17.65  | 4.25            | 2                 | NULL           |
| 17 | Bulldoze       | Charge Move | 35.00  | 10.29  | 3.40            | 4                 | NULL           |
| 18 | Bullet Punch   | Quick Move  | 10.00  | 8.33   | 1.20            | NULL              | 10.00          |
| 19 | Confusion      | Quick Move  | 15.00  | 9.93   | 1.51            | NULL              | 14.00          |
| 20 | Cross Chop     | Charge Move | 60.00  | 30.00  | 2.00            | 1                 | NULL           |
| 21 | Cross Poison   | Charge Move | 25.00  | 16.67  | 1.50            | 4                 | NULL           |
| 22 | Cut            | Quick Move  | 12.00  | 10.62  | 1.13            | NULL              | 10.00          |
| 23 | Dark Pulse     | Charge Move | 45.00  | 12.86  | 3.50            | 3                 | NULL           |
| 24 | Dazzling Gleam | Charge Move | 55.00  | 13.10  | 4.20            | 3                 | NULL           |
| 25 | Dig            | Charge Move | 70.00  | 12.07  | 5.80            | 3                 | NULL           |

- Inserção de registro de ataque nas tabelas “attacks\_quick” e “attacks\_charge” para demonstrar o “disjoint” entre elas

```

172 INSERT INTO dbo.attacks_quick(attack_id,energyps,energypu,defensive_damageps)
173 VALUES(40,3,3,3)
174 go
175
176 INSERT INTO dbo.attacks_charge(attack_id,charge,critical,dodge)
177 VALUES(1,5,0.05,1.40)
178 go

```

- Resultado trigger tabela “attacks\_quick”

Messages

```

Msg 50000, Level 16, State 1, Procedure attacks_quick_Disjoint, Line 19 [Batch Start Line 171]
This attack already exists on 'Charge Attacks' table.
Msg 3609, Level 16, State 1, Line 172
The transaction ended in the trigger. The batch has been aborted.

```

- Resultado trigger tabela “attacks\_charge”

Msg 50000, Level 16, State 1, Procedure attacks\_charge\_Disjoint, Line 19 [Batch Start Line 174]  
This attack already exists on 'Quick Attacks' table.  
Msg 3609, Level 16, State 1, Line 176  
The transaction ended in the trigger. The batch has been aborted.

- Execução da procedure de batalha para gerar a tabela de multiplicadores

```
181 ┌DECLARE @type1 int = 16 --Dragon type
182 ┌DECLARE @type2 int = 3 --Flying type
183
184 EXECUTE sp_battle @type1,@type2
185 GO
```

- Resultados

|    | type_id | type     | multiplier |
|----|---------|----------|------------|
| 1  | 15      | Ice      | 1,5625     |
| 2  | 16      | Dragon   | 1,25       |
| 3  | 18      | Fairy    | 1,25       |
| 4  | 6       | Rock     | 1,25       |
| 5  | 13      | Electric | 1          |
| 6  | 14      | Psychic  | 1          |
| 7  | 17      | Dark     | 1          |
| 8  | 1       | Normal   | 1          |
| 9  | 3       | Flying   | 1          |
| 10 | 4       | Poison   | 1          |
| 11 | 8       | Ghost    | 1          |
| 12 | 9       | Steel    | 1          |
| 13 | 10      | Fire     | 0,8        |
| 14 | 11      | Water    | 0,8        |
| 15 | 5       | Ground   | 0,8        |
| 16 | 2       | Fighting | 0,8        |
| 17 | 7       | Bug      | 0,8        |
| 18 | 12      | Grass    | 0,64       |

- Execução da procedure de verificação de bônus “STAB”

```
195 ┌DECLARE @pokemon_id int = 1 --Bulbassaur
196 ┌DECLARE @attack_id int = 48 --Poison Fang
197 ┌DECLARE @stab int
198
199 EXECUTE sp_stab @pokemon_id,@attack_id,@stab output
200 select @stab
201 GO
```

- Resultados

|   | (No column name) |
|---|------------------|
| 1 | 1                |

- Execução de select que lista todos os pokémons presentes no jogo, junto a sua url, alguns dados e a quantidade de ataques “rápidos” e

“especiais” disponíveis para ele

```
6 SELECT pokemon_id, name, ('https://http://pokemongo.gamepress.gg'+url) as 'url'
7 ,height_avg as 'altura', weight_avg as 'peso', combatpower_max as 'cp máximo'
8 ,attack_base as 'ataque', defense_base as 'defesa', stamina_base as 'resistência'
9 ,(select count(*)
10 from attacks as a inner join attacks_quick as q on a.attack_id = q.attack_id
11 inner join pokemons_attacks as pa on pa.attack_id = a.attack_id
12 where pa.pokemon_id = p.pokemon_id) as 'rápidos'
13 ,(select count(*)
14 from attacks as a inner join attacks_charge as c on a.attack_id = c.attack_id
15 inner join pokemons_attacks as pa on pa.attack_id = a.attack_id
16 where pa.pokemon_id = p.pokemon_id) as 'carregados'
17 FROM pokemons as p
18 go
```

- Resultados 1-25

|    | pokemon_id | name       | url                                              | altura | peso   | cp máximo | ataque | defesa | resistência | rápidos | carregados |
|----|------------|------------|--------------------------------------------------|--------|--------|-----------|--------|--------|-------------|---------|------------|
| 1  | 1          | Bulbasaur  | https://http://pokemongo.gamepress.gg/pokemon/1  | 0.70   | 6.90   | 1071      | 126    | 126    | 90          | 2       | 3          |
| 2  | 2          | Ivysaur    | https://http://pokemongo.gamepress.gg/pokemon/2  | 1.00   | 13.00  | 1632      | 156    | 158    | 120         | 2       | 3          |
| 3  | 3          | Venusaur   | https://http://pokemongo.gamepress.gg/pokemon/3  | 2.00   | 100.00 | 2580      | 198    | 200    | 160         | 2       | 3          |
| 4  | 4          | Charmander | https://http://pokemongo.gamepress.gg/pokemon/4  | 0.60   | 8.50   | 955       | 128    | 108    | 78          | 2       | 3          |
| 5  | 5          | Chameleón  | https://http://pokemongo.gamepress.gg/pokemon/5  | 1.10   | 19.00  | 1557      | 160    | 140    | 116         | 2       | 3          |
| 6  | 6          | Charizard  | https://http://pokemongo.gamepress.gg/pokemon/6  | 1.70   | 90.50  | 2602      | 212    | 182    | 156         | 2       | 3          |
| 7  | 7          | Squirtle   | https://http://pokemongo.gamepress.gg/pokemon/7  | 0.50   | 9.00   | 1008      | 112    | 142    | 88          | 2       | 3          |
| 8  | 8          | Wartortle  | https://http://pokemongo.gamepress.gg/pokemon/8  | 1.00   | 22.50  | 1582      | 144    | 176    | 118         | 2       | 3          |
| 9  | 9          | Blastoise  | https://http://pokemongo.gamepress.gg/pokemon/9  | 1.60   | 85.50  | 2542      | 186    | 222    | 158         | 2       | 3          |
| 10 | 10         | Caterpie   | https://http://pokemongo.gamepress.gg/pokemon/10 | 0.30   | 2.00   | 443       | 62     | 66     | 90          | 2       | 1          |
| 11 | 11         | Metapod    | https://http://pokemongo.gamepress.gg/pokemon/11 | 0.70   | 9.90   | 477       | 56     | 86     | 100         | 2       | 1          |
| 12 | 12         | Butterfree | https://http://pokemongo.gamepress.gg/pokemon/12 | 1.10   | 32.00  | 1454      | 144    | 144    | 120         | 2       | 3          |
| 13 | 13         | Weedle     | https://http://pokemongo.gamepress.gg/pokemon/13 | 0.30   | 3.20   | 449       | 68     | 64     | 80          | 2       | 1          |
| 14 | 14         | Kakuna     | https://http://pokemongo.gamepress.gg/pokemon/14 | 0.60   | 10.00  | 485       | 62     | 82     | 90          | 2       | 1          |
| 15 | 15         | Beedrill   | https://http://pokemongo.gamepress.gg/pokemon/15 | 1.00   | 29.50  | 1439      | 144    | 130    | 130         | 2       | 3          |
| 16 | 16         | Pidgey     | https://http://pokemongo.gamepress.gg/pokemon/16 | 0.30   | 1.80   | 679       | 94     | 90     | 80          | 2       | 3          |
| 17 | 17         | Pidgeotto  | https://http://pokemongo.gamepress.gg/pokemon/17 | 1.10   | 30.00  | 1223      | 126    | 122    | 126         | 2       | 3          |
| 18 | 18         | Pidgeot    | https://http://pokemongo.gamepress.gg/pokemon/18 | 1.50   | 39.50  | 2091      | 170    | 166    | 166         | 2       | 3          |
| 19 | 19         | Rattata    | https://http://pokemongo.gamepress.gg/pokemon/19 | 0.30   | 3.50   | 581       | 92     | 86     | 60          | 2       | 3          |
| 20 | 20         | Raticate   | https://http://pokemongo.gamepress.gg/pokemon/20 | 0.70   | 18.50  | 1444      | 146    | 150    | 110         | 2       | 3          |
| 21 | 21         | Spearow    | https://http://pokemongo.gamepress.gg/pokemon/21 | 0.30   | 2.00   | 686       | 102    | 78     | 80          | 2       | 3          |
| 22 | 22         | Fearow     | https://http://pokemongo.gamepress.gg/pokemon/22 | 1.20   | 38.00  | 1746      | 168    | 146    | 130         | 2       | 3          |
| 23 | 23         | Ekans      | https://http://pokemongo.gamepress.gg/pokemon/23 | 2.00   | 6.90   | 824       | 112    | 112    | 70          | 2       | 3          |
| 24 | 24         | Arbok      | https://http://pokemongo.gamepress.gg/pokemon/24 | 3.50   | 65.00  | 1767      | 166    | 166    | 120         | 2       | 3          |
| 25 | 25         | Pikachu    | https://http://pokemongo.gamepress.gg/pokemon/25 | 0.40   | 6.00   | 887       | 124    | 108    | 70          | 2       | 3          |

- Resultados 26-50

|    |    |            |                                                  |      |       |      |     |     |     |   |   |
|----|----|------------|--------------------------------------------------|------|-------|------|-----|-----|-----|---|---|
| 26 | 26 | Raichu     | https://http://pokemongo.gamepress.gg/pokemon/26 | 0.80 | 30.00 | 2028 | 200 | 154 | 120 | 2 | 3 |
| 27 | 27 | Sandshrew  | https://http://pokemongo.gamepress.gg/pokemon/27 | 0.60 | 12.00 | 798  | 90  | 114 | 100 | 2 | 3 |
| 28 | 28 | Sandlash   | https://http://pokemongo.gamepress.gg/pokemon/28 | 1.00 | 29.50 | 1810 | 150 | 172 | 150 | 2 | 3 |
| 29 | 29 | Nidoran?   | https://http://pokemongo.gamepress.gg/pokemon/29 | 0.40 | 7.00  | 876  | 100 | 104 | 110 | 2 | 3 |
| 30 | 30 | Nidorina   | https://http://pokemongo.gamepress.gg/pokemon/30 | 0.80 | 20.00 | 1404 | 132 | 136 | 140 | 2 | 3 |
| 31 | 31 | Nidoqueen  | https://http://pokemongo.gamepress.gg/pokemon/31 | 1.30 | 60.00 | 2485 | 184 | 190 | 180 | 2 | 3 |
| 32 | 32 | Nidoran?   | https://http://pokemongo.gamepress.gg/pokemon/32 | 0.50 | 9.00  | 843  | 110 | 94  | 92  | 2 | 3 |
| 33 | 33 | Nidorino   | https://http://pokemongo.gamepress.gg/pokemon/33 | 0.90 | 19.50 | 1372 | 142 | 128 | 122 | 2 | 3 |
| 34 | 34 | Nidoking   | https://http://pokemongo.gamepress.gg/pokemon/34 | 1.40 | 62.00 | 2475 | 204 | 170 | 162 | 2 | 3 |
| 35 | 35 | Clefairy   | https://http://pokemongo.gamepress.gg/pokemon/35 | 0.60 | 7.50  | 1200 | 116 | 124 | 140 | 2 | 3 |
| 36 | 36 | Clefable   | https://http://pokemongo.gamepress.gg/pokemon/36 | 1.30 | 40.00 | 2397 | 178 | 178 | 190 | 2 | 3 |
| 37 | 37 | Vulpix     | https://http://pokemongo.gamepress.gg/pokemon/37 | 0.60 | 9.90  | 831  | 106 | 118 | 76  | 2 | 3 |
| 38 | 38 | Ninetales  | https://http://pokemongo.gamepress.gg/pokemon/38 | 1.10 | 19.90 | 2188 | 176 | 194 | 146 | 2 | 3 |
| 39 | 39 | Jigglypuff | https://http://pokemongo.gamepress.gg/pokemon/39 | 0.50 | 5.50  | 917  | 98  | 54  | 230 | 2 | 3 |
| 40 | 40 | Wigglytuff | https://http://pokemongo.gamepress.gg/pokemon/40 | 1.00 | 12.00 | 2177 | 168 | 108 | 280 | 2 | 3 |
| 41 | 41 | Zubat      | https://http://pokemongo.gamepress.gg/pokemon/41 | 0.80 | 7.50  | 642  | 88  | 90  | 80  | 2 | 3 |
| 42 | 42 | Golbat     | https://http://pokemongo.gamepress.gg/pokemon/42 | 1.60 | 55.00 | 1921 | 164 | 164 | 150 | 2 | 3 |
| 43 | 43 | Oddish     | https://http://pokemongo.gamepress.gg/pokemon/43 | 0.50 | 5.40  | 1148 | 134 | 130 | 90  | 2 | 3 |
| 44 | 44 | Gloom      | https://http://pokemongo.gamepress.gg/pokemon/44 | 0.80 | 8.60  | 1689 | 162 | 158 | 120 | 2 | 3 |
| 45 | 45 | Vileplume  | https://http://pokemongo.gamepress.gg/pokemon/45 | 1.20 | 18.60 | 2492 | 202 | 190 | 150 | 2 | 3 |
| 46 | 46 | Paras      | https://http://pokemongo.gamepress.gg/pokemon/46 | 0.30 | 5.40  | 916  | 122 | 120 | 70  | 2 | 3 |
| 47 | 47 | Parasect   | https://http://pokemongo.gamepress.gg/pokemon/47 | 1.00 | 29.50 | 1747 | 162 | 170 | 120 | 2 | 3 |
| 48 | 48 | Venonat    | https://http://pokemongo.gamepress.gg/pokemon/48 | 1.00 | 30.00 | 1029 | 108 | 118 | 120 | 2 | 3 |
| 49 | 49 | Venomoth   | https://http://pokemongo.gamepress.gg/pokemon/49 | 1.50 | 12.50 | 1890 | 172 | 154 | 140 | 2 | 3 |
| 50 | 50 | Diglett    | https://http://pokemongo.gamepress.gg/pokemon/50 | 0.20 | 0.80  | 456  | 108 | 86  | 20  | 2 | 3 |

- Resultados 51-75

|    |    |            |                                                                                                                 |      |        |      |     |     |     |   |   |
|----|----|------------|-----------------------------------------------------------------------------------------------------------------|------|--------|------|-----|-----|-----|---|---|
| 51 | 51 | Dugtrio    | <a href="https://http://pokemongo.gamepress.gg/pokemon/51">https://http://pokemongo.gamepress.gg/pokemon/51</a> | 0.70 | 33.30  | 1168 | 148 | 140 | 70  | 2 | 3 |
| 52 | 52 | Meowth     | <a href="https://http://pokemongo.gamepress.gg/pokemon/52">https://http://pokemongo.gamepress.gg/pokemon/52</a> | 0.40 | 4.20   | 756  | 104 | 94  | 80  | 2 | 3 |
| 53 | 53 | Persian    | <a href="https://http://pokemongo.gamepress.gg/pokemon/53">https://http://pokemongo.gamepress.gg/pokemon/53</a> | 1.00 | 32.00  | 1631 | 156 | 146 | 130 | 2 | 3 |
| 54 | 54 | Psyduck    | <a href="https://http://pokemongo.gamepress.gg/pokemon/54">https://http://pokemongo.gamepress.gg/pokemon/54</a> | 0.80 | 19.60  | 1109 | 132 | 112 | 100 | 2 | 3 |
| 55 | 55 | Golduck    | <a href="https://http://pokemongo.gamepress.gg/pokemon/55">https://http://pokemongo.gamepress.gg/pokemon/55</a> | 1.70 | 76.60  | 2386 | 194 | 176 | 160 | 2 | 3 |
| 56 | 56 | Mankey     | <a href="https://http://pokemongo.gamepress.gg/pokemon/56">https://http://pokemongo.gamepress.gg/pokemon/56</a> | 0.50 | 28.00  | 878  | 122 | 96  | 80  | 2 | 3 |
| 57 | 57 | Primeape   | <a href="https://http://pokemongo.gamepress.gg/pokemon/57">https://http://pokemongo.gamepress.gg/pokemon/57</a> | 1.00 | 32.00  | 1864 | 178 | 150 | 130 | 2 | 3 |
| 58 | 58 | Growlithe  | <a href="https://http://pokemongo.gamepress.gg/pokemon/58">https://http://pokemongo.gamepress.gg/pokemon/58</a> | 0.70 | 19.00  | 1335 | 156 | 110 | 110 | 2 | 3 |
| 59 | 59 | Arcanine   | <a href="https://http://pokemongo.gamepress.gg/pokemon/59">https://http://pokemongo.gamepress.gg/pokemon/59</a> | 1.90 | 155.00 | 2983 | 230 | 180 | 180 | 2 | 3 |
| 60 | 60 | Poliwag    | <a href="https://http://pokemongo.gamepress.gg/pokemon/60">https://http://pokemongo.gamepress.gg/pokemon/60</a> | 0.60 | 12.40  | 795  | 108 | 98  | 80  | 2 | 3 |
| 61 | 61 | Poliwhirl  | <a href="https://http://pokemongo.gamepress.gg/pokemon/61">https://http://pokemongo.gamepress.gg/pokemon/61</a> | 1.00 | 20.00  | 1340 | 132 | 132 | 130 | 2 | 3 |
| 62 | 62 | Poliwrath  | <a href="https://http://pokemongo.gamepress.gg/pokemon/62">https://http://pokemongo.gamepress.gg/pokemon/62</a> | 1.30 | 54.00  | 2505 | 180 | 202 | 180 | 2 | 3 |
| 63 | 63 | Abra       | <a href="https://http://pokemongo.gamepress.gg/pokemon/63">https://http://pokemongo.gamepress.gg/pokemon/63</a> | 0.90 | 19.50  | 600  | 110 | 76  | 50  | 1 | 3 |
| 64 | 64 | Kadabra    | <a href="https://http://pokemongo.gamepress.gg/pokemon/64">https://http://pokemongo.gamepress.gg/pokemon/64</a> | 1.30 | 56.50  | 1131 | 150 | 112 | 80  | 2 | 3 |
| 65 | 65 | Alakazam   | <a href="https://http://pokemongo.gamepress.gg/pokemon/65">https://http://pokemongo.gamepress.gg/pokemon/65</a> | 1.50 | 48.00  | 1813 | 186 | 152 | 110 | 2 | 3 |
| 66 | 66 | Machop     | <a href="https://http://pokemongo.gamepress.gg/pokemon/66">https://http://pokemongo.gamepress.gg/pokemon/66</a> | 0.80 | 19.50  | 1089 | 118 | 96  | 140 | 2 | 3 |
| 67 | 67 | Machoke    | <a href="https://http://pokemongo.gamepress.gg/pokemon/67">https://http://pokemongo.gamepress.gg/pokemon/67</a> | 1.50 | 70.50  | 1760 | 154 | 144 | 160 | 2 | 3 |
| 68 | 68 | Machamp    | <a href="https://http://pokemongo.gamepress.gg/pokemon/68">https://http://pokemongo.gamepress.gg/pokemon/68</a> | 1.60 | 130.00 | 2594 | 198 | 180 | 180 | 2 | 3 |
| 69 | 69 | Bellsprout | <a href="https://http://pokemongo.gamepress.gg/pokemon/69">https://http://pokemongo.gamepress.gg/pokemon/69</a> | 0.70 | 4.00   | 1117 | 158 | 78  | 100 | 2 | 3 |
| 70 | 70 | Weepinbell | <a href="https://http://pokemongo.gamepress.gg/pokemon/70">https://http://pokemongo.gamepress.gg/pokemon/70</a> | 1.00 | 6.40   | 1723 | 190 | 110 | 130 | 2 | 3 |
| 71 | 71 | Victreebel | <a href="https://http://pokemongo.gamepress.gg/pokemon/71">https://http://pokemongo.gamepress.gg/pokemon/71</a> | 1.70 | 15.50  | 2530 | 222 | 152 | 160 | 2 | 3 |
| 72 | 72 | Tentacool  | <a href="https://http://pokemongo.gamepress.gg/pokemon/72">https://http://pokemongo.gamepress.gg/pokemon/72</a> | 0.90 | 45.50  | 905  | 106 | 136 | 80  | 2 | 3 |
| 73 | 73 | Tentacruel | <a href="https://http://pokemongo.gamepress.gg/pokemon/73">https://http://pokemongo.gamepress.gg/pokemon/73</a> | 1.60 | 55.00  | 2220 | 170 | 196 | 160 | 2 | 3 |
| 74 | 74 | Geodude    | <a href="https://http://pokemongo.gamepress.gg/pokemon/74">https://http://pokemongo.gamepress.gg/pokemon/74</a> | 0.40 | 20.00  | 849  | 106 | 118 | 80  | 2 | 3 |
| 75 | 75 | Graveler   | <a href="https://http://pokemongo.gamepress.gg/pokemon/75">https://http://pokemongo.gamepress.gg/pokemon/75</a> | 1.00 | 105.00 | 1433 | 142 | 156 | 110 | 2 | 3 |

- Resultados 76-100

|     |     |            |                                                                                                                   |      |        |      |     |     |     |   |   |
|-----|-----|------------|-------------------------------------------------------------------------------------------------------------------|------|--------|------|-----|-----|-----|---|---|
| 76  | 76  | Golem      | <a href="https://http://pokemongo.gamepress.gg/pokemon/76">https://http://pokemongo.gamepress.gg/pokemon/76</a>   | 1.40 | 300.00 | 2303 | 176 | 198 | 160 | 2 | 3 |
| 77  | 77  | Ponyta     | <a href="https://http://pokemongo.gamepress.gg/pokemon/77">https://http://pokemongo.gamepress.gg/pokemon/77</a>   | 1.00 | 30.00  | 1516 | 168 | 138 | 100 | 2 | 3 |
| 78  | 78  | Rapidash   | <a href="https://http://pokemongo.gamepress.gg/pokemon/78">https://http://pokemongo.gamepress.gg/pokemon/78</a>   | 1.70 | 95.00  | 2199 | 200 | 170 | 130 | 2 | 3 |
| 79  | 79  | Slowpoke   | <a href="https://http://pokemongo.gamepress.gg/pokemon/79">https://http://pokemongo.gamepress.gg/pokemon/79</a>   | 1.20 | 36.00  | 1218 | 110 | 110 | 180 | 2 | 3 |
| 80  | 80  | Slowbro    | <a href="https://http://pokemongo.gamepress.gg/pokemon/80">https://http://pokemongo.gamepress.gg/pokemon/80</a>   | 1.60 | 78.50  | 2597 | 184 | 198 | 190 | 2 | 3 |
| 81  | 81  | Magnemite  | <a href="https://http://pokemongo.gamepress.gg/pokemon/81">https://http://pokemongo.gamepress.gg/pokemon/81</a>   | 0.30 | 6.00   | 890  | 128 | 138 | 50  | 2 | 3 |
| 82  | 82  | Magneton   | <a href="https://http://pokemongo.gamepress.gg/pokemon/82">https://http://pokemongo.gamepress.gg/pokemon/82</a>   | 1.00 | 60.00  | 1879 | 186 | 180 | 100 | 2 | 3 |
| 83  | 83  | Farfetch'd | <a href="https://http://pokemongo.gamepress.gg/pokemon/83">https://http://pokemongo.gamepress.gg/pokemon/83</a>   | 0.80 | 15.00  | 1263 | 138 | 132 | 104 | 2 | 3 |
| 84  | 84  | Doduo      | <a href="https://http://pokemongo.gamepress.gg/pokemon/84">https://http://pokemongo.gamepress.gg/pokemon/84</a>   | 1.40 | 39.20  | 855  | 126 | 96  | 70  | 2 | 3 |
| 85  | 85  | Dodrio     | <a href="https://http://pokemongo.gamepress.gg/pokemon/85">https://http://pokemongo.gamepress.gg/pokemon/85</a>   | 1.80 | 85.20  | 1836 | 182 | 150 | 120 | 2 | 3 |
| 86  | 86  | Seel       | <a href="https://http://pokemongo.gamepress.gg/pokemon/86">https://http://pokemongo.gamepress.gg/pokemon/86</a>   | 1.10 | 90.00  | 1107 | 104 | 138 | 130 | 2 | 3 |
| 87  | 87  | Dewgong    | <a href="https://http://pokemongo.gamepress.gg/pokemon/87">https://http://pokemongo.gamepress.gg/pokemon/87</a>   | 1.70 | 120.00 | 2145 | 156 | 192 | 180 | 2 | 3 |
| 88  | 88  | Grimer     | <a href="https://http://pokemongo.gamepress.gg/pokemon/88">https://http://pokemongo.gamepress.gg/pokemon/88</a>   | 0.90 | 30.00  | 1284 | 124 | 110 | 160 | 2 | 3 |
| 89  | 89  | Muk        | <a href="https://http://pokemongo.gamepress.gg/pokemon/89">https://http://pokemongo.gamepress.gg/pokemon/89</a>   | 1.20 | 30.00  | 2602 | 180 | 188 | 210 | 2 | 3 |
| 90  | 90  | Shellder   | <a href="https://http://pokemongo.gamepress.gg/pokemon/90">https://http://pokemongo.gamepress.gg/pokemon/90</a>   | 0.30 | 4.00   | 822  | 120 | 112 | 60  | 2 | 3 |
| 91  | 91  | Cloyster   | <a href="https://http://pokemongo.gamepress.gg/pokemon/91">https://http://pokemongo.gamepress.gg/pokemon/91</a>   | 1.50 | 132.50 | 2052 | 196 | 196 | 100 | 2 | 3 |
| 92  | 92  | Gastly     | <a href="https://http://pokemongo.gamepress.gg/pokemon/92">https://http://pokemongo.gamepress.gg/pokemon/92</a>   | 1.30 | 0.10   | 804  | 136 | 82  | 60  | 2 | 3 |
| 93  | 93  | Haunter    | <a href="https://http://pokemongo.gamepress.gg/pokemon/93">https://http://pokemongo.gamepress.gg/pokemon/93</a>   | 1.60 | 0.10   | 1380 | 172 | 118 | 90  | 2 | 3 |
| 94  | 94  | Gengar     | <a href="https://http://pokemongo.gamepress.gg/pokemon/94">https://http://pokemongo.gamepress.gg/pokemon/94</a>   | 1.50 | 40.50  | 2078 | 204 | 156 | 120 | 2 | 3 |
| 95  | 95  | Onix       | <a href="https://http://pokemongo.gamepress.gg/pokemon/95">https://http://pokemongo.gamepress.gg/pokemon/95</a>   | 8.80 | 210.00 | 857  | 90  | 186 | 70  | 2 | 3 |
| 96  | 96  | Drowzee    | <a href="https://http://pokemongo.gamepress.gg/pokemon/96">https://http://pokemongo.gamepress.gg/pokemon/96</a>   | 1.00 | 32.40  | 1075 | 104 | 140 | 120 | 2 | 3 |
| 97  | 97  | Hypno      | <a href="https://http://pokemongo.gamepress.gg/pokemon/97">https://http://pokemongo.gamepress.gg/pokemon/97</a>   | 1.60 | 75.60  | 2184 | 162 | 196 | 170 | 2 | 3 |
| 98  | 98  | Krabby     | <a href="https://http://pokemongo.gamepress.gg/pokemon/98">https://http://pokemongo.gamepress.gg/pokemon/98</a>   | 0.40 | 6.50   | 792  | 116 | 110 | 60  | 2 | 3 |
| 99  | 99  | Kingler    | <a href="https://http://pokemongo.gamepress.gg/pokemon/99">https://http://pokemongo.gamepress.gg/pokemon/99</a>   | 1.30 | 60.00  | 1823 | 178 | 168 | 110 | 2 | 3 |
| 100 | 100 | Voltorb    | <a href="https://http://pokemongo.gamepress.gg/pokemon/...">https://http://pokemongo.gamepress.gg/pokemon/...</a> | 0.50 | 10.40  | 839  | 102 | 124 | 80  | 2 | 3 |

- Resultados 101-125

|     |     |            |                                                   |      |        |      |     |     |     |   |   |
|-----|-----|------------|---------------------------------------------------|------|--------|------|-----|-----|-----|---|---|
| 100 | 100 | Voltorb    | https://http://pokemongo.gamepress.gg/pokemon/... | 0.50 | 10.40  | 839  | 102 | 124 | 80  | 2 | 3 |
| 101 | 101 | Electrode  | https://http://pokemongo.gamepress.gg/pokemon/... | 1.20 | 66.60  | 1646 | 150 | 174 | 120 | 2 | 3 |
| 102 | 102 | Exeggcute  | https://http://pokemongo.gamepress.gg/pokemon/... | 0.40 | 2.50   | 1099 | 110 | 132 | 120 | 1 | 3 |
| 103 | 103 | Exeggutor  | https://http://pokemongo.gamepress.gg/pokemon/... | 2.00 | 120.00 | 2955 | 232 | 164 | 190 | 2 | 3 |
| 104 | 104 | Cubone     | https://http://pokemongo.gamepress.gg/pokemon/... | 0.40 | 6.50   | 1006 | 102 | 150 | 100 | 2 | 3 |
| 105 | 105 | Marowak    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.00 | 45.00  | 1656 | 140 | 202 | 120 | 2 | 3 |
| 106 | 106 | Hitmonlee  | https://http://pokemongo.gamepress.gg/pokemon/... | 1.50 | 49.80  | 1492 | 148 | 172 | 100 | 2 | 3 |
| 107 | 107 | Hitmonchan | https://http://pokemongo.gamepress.gg/pokemon/... | 1.40 | 50.20  | 1516 | 138 | 204 | 100 | 2 | 4 |
| 108 | 108 | Lickitung  | https://http://pokemongo.gamepress.gg/pokemon/... | 1.20 | 65.50  | 1626 | 126 | 160 | 180 | 2 | 3 |
| 109 | 109 | Koffing    | https://http://pokemongo.gamepress.gg/pokemon/... | 0.60 | 1.00   | 1151 | 136 | 142 | 80  | 1 | 3 |
| 110 | 110 | Weezing    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.20 | 9.50   | 2250 | 190 | 198 | 130 | 1 | 3 |
| 111 | 111 | Rhyhorn    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.00 | 115.00 | 1182 | 110 | 116 | 160 | 2 | 3 |
| 112 | 112 | Rhydon     | https://http://pokemongo.gamepress.gg/pokemon/... | 1.90 | 120.00 | 2243 | 166 | 160 | 210 | 2 | 3 |
| 113 | 113 | Chansey    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.10 | 34.60  | 675  | 40  | 60  | 500 | 2 | 3 |
| 114 | 114 | Tangela    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.00 | 35.00  | 1739 | 164 | 152 | 130 | 1 | 3 |
| 115 | 115 | Kangaskhan | https://http://pokemongo.gamepress.gg/pokemon/... | 2.20 | 80.00  | 2043 | 142 | 178 | 210 | 2 | 3 |
| 116 | 116 | Horsea     | https://http://pokemongo.gamepress.gg/pokemon/... | 0.40 | 8.00   | 794  | 122 | 100 | 60  | 2 | 3 |
| 117 | 117 | Seadra     | https://http://pokemongo.gamepress.gg/pokemon/... | 1.20 | 25.00  | 1713 | 176 | 150 | 110 | 2 | 3 |
| 118 | 118 | Goldeen    | https://http://pokemongo.gamepress.gg/pokemon/... | 0.60 | 15.00  | 965  | 112 | 126 | 90  | 2 | 3 |
| 119 | 119 | Seaking    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.30 | 39.00  | 2043 | 172 | 160 | 160 | 2 | 3 |
| 120 | 120 | Staryu     | https://http://pokemongo.gamepress.gg/pokemon/... | 1.10 | 80.00  | 937  | 130 | 128 | 60  | 2 | 3 |
| 121 | 121 | Starmie    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.10 | 80.00  | 2182 | 194 | 192 | 120 | 2 | 3 |
| 122 | 122 | Mr. Mime   | https://http://pokemongo.gamepress.gg/pokemon/... | 1.30 | 54.50  | 1494 | 154 | 196 | 80  | 2 | 3 |
| 123 | 123 | Scyther    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.50 | 56.00  | 2073 | 176 | 180 | 140 | 2 | 3 |
| 124 | 124 | Jynx       | https://http://pokemongo.gamepress.gg/pokemon/... | 1.40 | 40.60  | 1716 | 172 | 134 | 130 | 2 | 3 |
| 125 | 125 | Electabuzz | https://http://pokemongo.gamepress.gg/pokemon/... | 1.10 | 30.00  | 2119 | 198 | 160 | 130 | 2 | 3 |

- Resultados 126-151

|     |     |            |                                                   |      |        |      |     |     |     |   |   |
|-----|-----|------------|---------------------------------------------------|------|--------|------|-----|-----|-----|---|---|
| 126 | 126 | Magmar     | https://http://pokemongo.gamepress.gg/pokemon/... | 1.30 | 44.50  | 2265 | 214 | 158 | 130 | 2 | 3 |
| 127 | 127 | Pinsir     | https://http://pokemongo.gamepress.gg/pokemon/... | 1.50 | 55.00  | 2121 | 184 | 186 | 130 | 2 | 3 |
| 128 | 128 | Tauros     | https://http://pokemongo.gamepress.gg/pokemon/... | 1.40 | 88.40  | 1844 | 148 | 184 | 150 | 2 | 3 |
| 129 | 129 | Magikarp   | https://http://pokemongo.gamepress.gg/pokemon/... | 0.90 | 10.00  | 262  | 42  | 84  | 40  | 1 | 1 |
| 130 | 130 | Gyarados   | https://http://pokemongo.gamepress.gg/pokemon/... | 6.50 | 235.00 | 2688 | 192 | 196 | 190 | 1 | 3 |
| 131 | 131 | Lapras     | https://http://pokemongo.gamepress.gg/pokemon/... | 2.50 | 220.00 | 2980 | 186 | 190 | 260 | 2 | 3 |
| 132 | 132 | Ditto      | https://http://pokemongo.gamepress.gg/pokemon/... | 0.30 | 4.00   | 919  | 110 | 110 | 96  | 1 | 1 |
| 133 | 133 | Eevee      | https://http://pokemongo.gamepress.gg/pokemon/... | 0.30 | 6.50   | 1077 | 114 | 128 | 110 | 2 | 3 |
| 134 | 134 | Vaporeon   | https://http://pokemongo.gamepress.gg/pokemon/... | 1.00 | 29.00  | 2816 | 186 | 168 | 260 | 1 | 3 |
| 135 | 135 | Jolteon    | https://http://pokemongo.gamepress.gg/pokemon/... | 0.80 | 24.50  | 2140 | 192 | 174 | 130 | 1 | 3 |
| 136 | 136 | Flareon    | https://http://pokemongo.gamepress.gg/pokemon/... | 0.90 | 25.00  | 2643 | 238 | 178 | 130 | 1 | 3 |
| 137 | 137 | Porygon    | https://http://pokemongo.gamepress.gg/pokemon/... | 0.80 | 36.50  | 1691 | 156 | 158 | 130 | 2 | 3 |
| 138 | 138 | Omanyte    | https://http://pokemongo.gamepress.gg/pokemon/... | 0.40 | 7.50   | 1119 | 132 | 160 | 70  | 2 | 3 |
| 139 | 139 | Omastar    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.00 | 35.00  | 2233 | 180 | 202 | 140 | 2 | 3 |
| 140 | 140 | Kabuto     | https://http://pokemongo.gamepress.gg/pokemon/... | 0.50 | 11.50  | 1104 | 148 | 142 | 60  | 2 | 3 |
| 141 | 141 | Kabutops   | https://http://pokemongo.gamepress.gg/pokemon/... | 1.30 | 40.50  | 2130 | 190 | 190 | 120 | 2 | 3 |
| 142 | 142 | Aerodactyl | https://http://pokemongo.gamepress.gg/pokemon/... | 1.80 | 59.00  | 2165 | 182 | 162 | 160 | 2 | 3 |
| 143 | 143 | Snorlax    | https://http://pokemongo.gamepress.gg/pokemon/... | 2.10 | 460.00 | 3112 | 180 | 180 | 320 | 2 | 3 |
| 144 | 144 | Articuno   | https://http://pokemongo.gamepress.gg/pokemon/... | 1.70 | 55.40  | 2978 | 198 | 242 | 180 | 1 | 3 |
| 145 | 145 | Zapdos     | https://http://pokemongo.gamepress.gg/pokemon/... | 1.60 | 52.60  | 3114 | 232 | 194 | 180 | 1 | 3 |
| 146 | 146 | Moltres    | https://http://pokemongo.gamepress.gg/pokemon/... | 2.00 | 60.00  | 3240 | 242 | 194 | 180 | 1 | 3 |
| 147 | 147 | Dratini    | https://http://pokemongo.gamepress.gg/pokemon/... | 1.80 | 3.30   | 983  | 128 | 110 | 82  | 1 | 3 |
| 148 | 148 | Dragonair  | https://http://pokemongo.gamepress.gg/pokemon/... | 4.00 | 16.50  | 1747 | 170 | 152 | 122 | 1 | 3 |
| 149 | 149 | Dragonite  | https://http://pokemongo.gamepress.gg/pokemon/... | 2.20 | 210.00 | 3500 | 250 | 212 | 182 | 2 | 3 |
| 150 | 150 | Mewtwo     | https://http://pokemongo.gamepress.gg/pokemon/... | 2.00 | 122.00 | 4144 | 284 | 202 | 212 | 2 | 3 |
| 151 | 151 | Mew        | https://http://pokemongo.gamepress.gg/pokemon/... | 0.40 | 4.00   | 3299 | 220 | 220 | 200 | 1 | 8 |

## 7. Conclusão

A ferramenta de consumo e apresentação dos dados foi feita utilizando a tecnologia ASP.NET MVC 5.2.3 da plataforma .NET 4.6.1 da microsoft, a linguagem utilizada foi C#, o acesso a dados utiliza tecnologia Entity Framework 6.1.3, um serializador/deserializador JSON Newtonsoft.JSON 9.0.1 e finalmente a apresentação utiliza saída HTML5/CSS3 pura com os frameworks Bootstrap 3.3.7 e jQuery 3.1.1. O Bootstrap a partir da versão 3 é “mobile-first”.

## PoGym - Battle calculator for Pokemon GO

| Favorite Pokemons                                                                                                                            |                            |                                                  |       | Pokemons at Gym |                                                                                                                                               |  |  | Best attack order                                                                                                                              |         |                                                                                                                                                 |  |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------------------------------------|-------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Pokemon                                                                                                                                      | Moves                      | Type                                             | DMG   | DPS             | Pokemon                                                                                                                                       |  |  | Match                                                                                                                                          |         |                                                                                                                                                 |  |
|  Snorlax<br><small>Normal</small>                           | Zen Headbutt<br>Earthquake | <small>FIGHTING</small><br><small>GROUND</small> | 12,00 | 11,43           |  Dragonite<br><small>DRAGON</small><br><small>FLYING</small> |  |  |  Lapras<br><small>ICE</small><br><small>WATER</small>       | x1,5625 |  Dragonite<br><small>DRAGON</small><br><small>FLYING</small> |  |
|  Vicreebel<br><small>GRASS</small><br><small>POISON</small> | Razor Leaf<br>Leaf Blade   | <small>GRASS</small><br><small>POISON</small>    | 18,75 | 12,93           |  Dragonite<br><small>DRAGON</small><br><small>FLYING</small> |  |  |  Clefable<br><small>FAIRY</small>                           | x1,25   |  Dragonite<br><small>DRAGON</small><br><small>FLYING</small> |  |
|  Clefable<br><small>FAIRY</small>                           | Pound<br>Moonblast         | <small>NORMAL</small><br><small>PSYCHIC</small>  | 7,00  | 12,96           |  Vaporeon<br><small>WATER</small>                            |  |  |  Vicreebel<br><small>GRASS</small><br><small>POISON</small> | x1,25   |  Vaporeon<br><small>WATER</small>                            |  |
|  Lapras<br><small>ICE</small><br><small>WATER</small>       | Frost Breath<br>Ice Beam   | <small>ICE</small><br><small>WATER</small>       | 11,25 | 13,89           |  Exeggutor<br><small>GRASS</small><br><small>PSYCHIC</small> |  |  |  Arcanine<br><small>FIRE</small>                            | x1,25   |  Exeggutor<br><small>GRASS</small><br><small>PSYCHIC</small> |  |
|  Arcanine<br><small>FIRE</small>                            | Bite<br>Fire Blast         | <small>DARK</small><br><small>FIRE</small>       | 6,00  | 12,00           |                                                                                                                                               |  |  |                                                                                                                                                |         |                                                                                                                                                 |  |
|  Starmie<br><small>PSYCHIC</small><br><small>WATER</small>  | Water Gun<br>Psychic       | <small>WATER</small><br><small>PSYCHIC</small>   | 7,50  | 15,00           |                                                                                                                                               |  |  |                                                                                                                                                |         |                                                                                                                                                 |  |
|                                                                                                                                              |                            |                                                  | 68,75 | 24,55           |                                                                                                                                               |  |  |                                                                                                                                                |         |                                                                                                                                                 |  |

[Battle!](#)

All data in this site comes from [pokemongo.gamepress.gg](#) and [thesilphroad.com](#) without their efforts this tool could not be possible.  
PoGym 2016

Figura 4: Ferramenta em execução

## Anexos

Repositório GitHub do projeto: <https://github.com/Inncrs/PoGym>