Proyecto "Is this game good?"
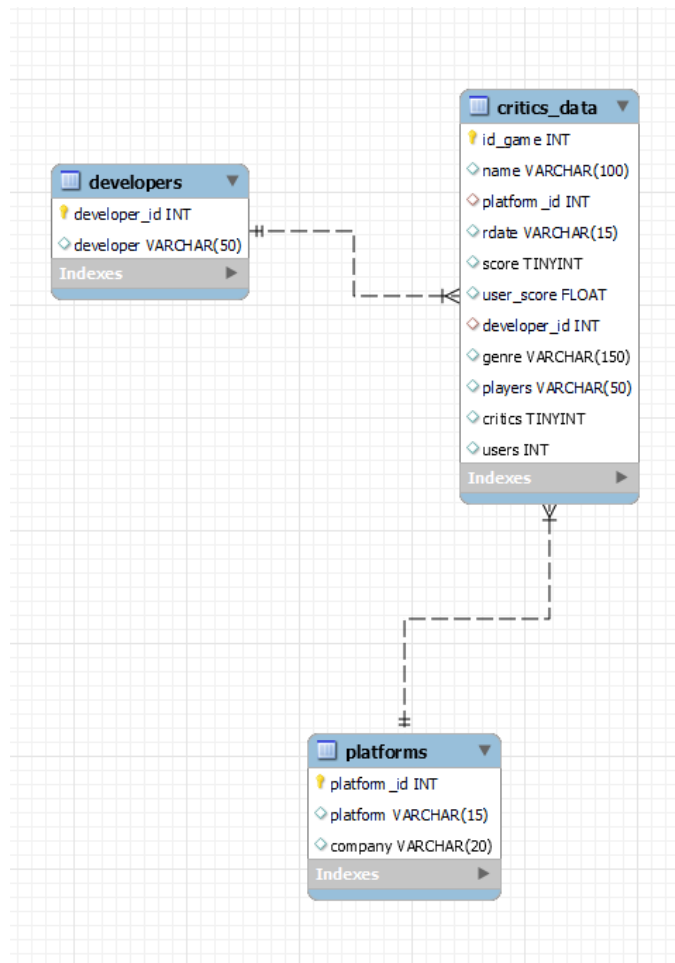
1. Definición del proyecto.

- La base de datos se obtuvo de Kaggle, cuyo link se puede acceder aquí.

- La base de datos se encuentra actualizada desde el inicio de Metacritic hasta finales del 2020.

- Este proyecto busca predecir, dependiendo de la consola, desarrollador y género, qué tipo de videojuegos son más populares.

2. Definición de la base de datos.

La base de datos principal (games-data-exp.csv) cuenta con 17944 juegos, mientras que el archivo platforms.csv cuenta con 22 datos y el archivo developer-exp.csv cuenta con 4249 datos. A continuación se presenta el diagrama de relaciones:

Relación entre tablas.

3. Creación de la base de datos.

Se limpiaron y normalizaron los datos para que se pudieran importar al MySQL Workbench. En MySQL se acortó la tabla a 498 videojuegos y, a base de esto, la tabla de developers a 182 datos; se tomó esta decisión para ver el funcionamiento de los queries y, por otra parte, el rendimiento de MySQL al importar los datos.

```
43  •    SELECT * from platforms;
44  •    SELECT * from developers;
45  •    SELECT * from critics_data;
46
```

id_game	name	platform_id	rdate	score	user_score	developer_id	genre	players	critics	users
1	The Legend of Zelda: Ocarina of Time	1	23-Nov-98	99	9.1	1	Action Adventure,Fantasy	1 Player	22	5749
2	Tony Hawk's Pro Skater 2	2	20-Sep-00	98	7.4	2	Sports,Alternative,Skateboarding	2 Player	19	647
3	Grand Theft Auto IV	3	29-Apr-08	98	7.6	3	Action Adventure,Modern,Modern,Open-World	1 Player	64	3806
4	SoulCalibur	4	8-Sep-99	98	8.5	4	Action,Fighting,3D	2 Player	24	324
5	Grand Theft Auto IV	5	29-Apr-08	98	7.9	3	Action Adventure,Modern,Modern,Open-World	1 Player	86	3364
6	Super Mario Galaxy	6	12-Nov-07	97	9	1	Action,Platformer,Platformer,3D,3D	No Online Multiplayer	73	3059
7	Super Mario Galaxy 2	6	23-May-10	97	9.1	5	Action,Platformer,Platformer,3D,3D	No Online Multiplayer	87	2521
8	Red Dead Redemption 2	7	26-Oct-18	97	7.8	6	Action Adventure,Open-World	Up to 32	33	3186
9	Grand Theft Auto V	7	18-Nov-14	97	7.8	3	Action Adventure,Modern,Open-World	Up to 30	14	1285
10	Grand Theft Auto V	3	17-Sep-13	97	8.3	3	Modern,Action Adventure,Modern,Open-World	Up to 16	50	4568
11	Grand Theft Auto V	5	17-Sep-13	97	8.3	3	Modern,Action Adventure,Modern,Open-World	Up to 16	58	3905
12	Tony Hawk's Pro Skater 2	4	6-Nov-00	97	6.2	7	Sports,Alternative,Skateboarding	No info	18	88
13	The Legend of Zelda: Breath of the ...	8	3-Mar-17	97	8.6	1	Action Adventure,Open-World	No Online Multiplayer	109	15873
14	Tony Hawk's Pro Skater 3	9	28-Oct-01	97	7.6	2	Sports,Alternative,Skateboarding	2 Player	34	406
15	Perfect Dark	1	22-May-00	97	8.9	8	Action,Shooter,First-Person,Sci-Fi	No info	30	420
16	Red Dead Redemption 2	10	26-Oct-18	97	8.4	6	Action Adventure,Open-World	Up to 32	99	14315
17	Grand Theft Auto V	10	18-Nov-14	97	8.4	3	Action Adventure,Modern,Open-World	Up to 30	66	5899
18	Metroid Prime	11	17-Nov-02	97	9.2	9	Action,Shooter,First-Person,Sci-Fi	1 Player	70	1113
19	Grand Theft Auto III	9	22-Oct-01	97	8.4	10	Action Adventure,Modern	1 Player	56	881
20	Super Mario Odyssey	8	27-Oct-17	97	8.9	1	Action,Platformer,3D	No Online Multiplayer	113	5546
21	Halo: Combat Evolved	12	14-Nov-01	97	8.5	11	Action,Shooter,First-Person,Sci-Fi	4 Player	68	2052
22	NFL 2K1	4	7-Sep-00	97	6.4	12	Sports,Traditional,Football,Sim	No info	22	67
23	Half-Life 2	13	16-Nov-04	96	9.1	13	Action,Shooter,Shooter,First-Person,Sci-Fi,Sci...	No Online Multiplayer	81	10773
24	Grand Theft Auto V	3	13-Apr-15	96	7.8	3	Modern,Action Adventure,Open-World	Up to 32	57	6661
25	The Legend of Zelda: Breath of the ...	14	3-Mar-17	96	8.2	1	Fantasy,Fantasy,Action Adventure,Open-World	No Online Multiplayer	13	2245
26	BioShock	5	21-Aug-07	96	8.9	14	Action,Shooter,Shooter,First-Person,Sci-Fi,Sci...	No Online Multiplayer	88	2572
27	GoldenEye 007	1	25-Aug-97	96	9	8	Action,Shooter,First-Person,Modern	4 Player	21	668
28	Uncharted 2: Among Thieves	3	13-Oct-09	96	8.8	15	Action Adventure,Modern,Modern,Linear	No Online Multiplayer	105	6716
29	Resident Evil 4	11	11-Jan-05	96	9.2	16	Action Adventure,Horror	1 Player	82	1596
30	The Orange Box	5	10-Oct-07	96	8.8	13	Action,Miscellaneous,Shooter,Compilation,Firs...	Up to 16	54	879
31	The Orange Box	13	10-Oct-07	96	9.2	13	Action,Miscellaneous,Shooter,Compilation,Firs...	Up to 32	34	1804
32	Batman: Arkham City	3	18-Oct-11	96	8.8	17	Action Adventure,Fantasy,Fantasy,Open-World	No Online Multiplayer	42	2773
33	Tekken 3	2	29-Apr-98	96	9.1	4	Action,Fighting,3D	2 Player	15	660
34	Mass Effect 2	5	26-Jan-10	96	8.9	18	Role-Playing,Action RPG,Action RPG	No Online Multiplayer	98	3503
35	The Legend of Zelda: Twilight Princess	11	11-Dec-06	96	8.9	1	Action Adventure,Fantasy	1 Player	16	823
36	The Elder Scrolls V: Skyrim	5	11-Nov-11	96	8.6	19	Role-Playing,First-Person,First-Person,Wester...	No Online Multiplayer	89	3954
37	Half-Life	13	19-Nov-98	96	9	13	Action,Shooter,Shooter,First-Person,Sci-Fi,Sci...	Online Multiplayer	24	4321
38	Resident Evil 4	9	25-Oct-05	96	9	16	Action Adventure,Horror	1 Player	38	1628
39	The Legend of Zelda: The Wind Waker	11	24-Mar-03	96	9	1	Action Adventure,Fantasy	1 Player	80	1370
40	Gran Turismo	2	30-Apr-98	96	8.7	20	Driving,Racing,GT / Street	2 Player	16	269
41	BioShock	13	21-Aug-07	96	8.6	14	Action,Shooter,Shooter,First-Person,Sci-Fi,Sci...	No Online Multiplayer	44	4814
42	Metal Gear Solid 2: Sons of Liberty	9	12-Nov-01	96	8.8	21	Action Adventure,Modern	1 Player	42	1545
43	Grand Theft Auto Double Pack	12	31-Oct-03	96	8	3	Miscellaneous,Compilation	1 Player	33	91
44	Baldur's Gate II: Shadows of Amn	13	24-Sep-00	95	9.1	18	Role-Playing,PC-style RPG,PC-style RPG,West...	Up to 6	30	1433
45	Grand Theft Auto: San Andreas	9	26-Oct-04	95	9.1	3	Action Adventure,Modern	2 Player	80	2444
46	Grand Theft Auto: Vice City	9	27-Oct-02	95	8.8	3	Action Adventure,Modern	1 Player	62	1092
47	LittleBigPlanet	3	27-Oct-08	95	6.8	22	Action,Platformer,Platformer,3D,2D,3D	Up to 4	85	5533
48	The Legend of Zelda Collector's Edition	11	17-Nov-03	95	9	1	Action Adventure,Fantasy	1 Player	8	194
49	Red Dead Redemption	3	18-May-10	95	8.9	23	Action,Shooter,Third-Person,Historic,Action A...	Up to 16	73	3371
50	Gran Turismo 3: A-Spec	9	9-Jul-01	95	8.4	20	Driving,Racing,GT / Street	2 Player	54	386
51	Halo 2	12	9-Nov-04	95	8.4	11	Action,Shooter,First-Person,Sci-Fi	16 Player	91	1656
52	The Legend of Zelda: A Link to the Past	15	3-Dec-02	95	9	16	Action Adventure,Fantasy	No info	30	524
53	The Legend of Zelda: Majora's Mask	1	25-Oct-00	95	9.2	1	Action Adventure,Fantasy	1 Player	27	1198
54	The Last of Us	3	14-Jun-13	95	9.2	15	Modern,Adventure,General,Action Adventure...	Up to 8	98	11982
55	The Legend of Zelda: Twilight Princess	6	19-Nov-06	95	8.9	1	Action Adventure,Fantasy,General,Fantasy,O...	No Online Multiplayer	73	2060
56	Madden NFL 2003	9	12-Aug-02	95	7.5	24	Sports,Traditional,Football,Sim	2 Player	25	66

Tabla "critics_data".

```
43 •    SELECT * from platforms;
44 •    SELECT * from developers;
45 •    SELECT * from critics_data;
46
```

Result Grid | Filter Rows:

developer_id	developer
1	Nintendo
2	NeversoftEntertainment
3	RockstarNorth
4	Namco
5	1EADTokyo
6	RockstarGames
7	Treyarch
8	RareLtd.
9	RetroStudios
10	DMADesign
11	BungieSoftware
12	VisualConcepts
13	ValveSoftware
14	IrrationalGames,2KMarin
15	NaughtyDog
16	Capcom
17	RocksteadyStudios
18	BioWare
19	BethesdaGameStudios
20	PolyphonyDigital
21	KCEJ
22	SCE/WWS,MediaMolecule
23	RockstarSanDiego
24	EASports
25	VicariousVisions
26	Atlus
27	KojimaProductions,Mob...
28	2DBoy
29	IrrationalGames
30	SquareSoft
31	InfinityWard
32	SCESantaMonica
33	GREZZO
34	MattMakesGamesInc.
35	DigitalExtremes,2KMarin
36	EATiburon
37	EpicGames
38	BethesdaSoftworks
39	MPSLabs
40	idSoftware
41	BungieSoftware,Bungie
42	TeamNinja
43	Smilebit
44	LucasArts
45	UbisoftMontreal
46	CriterionGames
47	BlizzardEntertainment
48	Aspect
49	KojimaProductions
50	FiraxisGames
51	SegaAM2
52	CDProjektRedStudio
53	GameArts
54	Relic
55	UbisoftShanghai
56	RockstarLeeds

Tabla "developers".

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Tabla "platforms".

Para la base de datos en MongoDB, no se acortaron los datos y se subió toda la tabla en una sola.

Base de datos en MongoDB.

4. Consultas.

1. Top 20 de juegos mejor calificados según la crítica junto con su calificación.
   SQL:
   SELECT name, ROUND(avg(score),2) AS avg_score FROM critics_data GROUP BY name ORDER BY avg_score desc LIMIT 20;

```
[{$project: {
 name: 1,
 score: 1,
 _id: 0
}}, {$group: {
 _id: '$name',
 avg_score: {
  $avg: '$score'
 }
}}, {$sort: {
 avg_score: -1
}}, {$limit: 20}]
```

name	avg_score
The Legend of Zelda: Ocarina of Time	99.00
Grand Theft Auto IV	98.00
SoulCalibur	98.00
Super Mario Galaxy	97.00
Super Mario Galaxy 2	97.00
Perfect Dark	97.00
Metroid Prime	97.00
Super Mario Odyssey	97.00
Halo: Combat Evolved	97.00
NFL 2K1	97.00
Grand Theft Auto V	96.80
The Legend of Zelda: Breath of the ...	96.50
Half-Life	96.00
The Orange Box	96.00
Gran Turismo	96.00
Tekken 3	96.00
The Legend of Zelda: The Wind Waker	96.00
GoldenEye 007	96.00
Uncharted 2: Among Thieves	96.00
Resident Evil 4	96.00

	_id String	avg_score Double
1	"The Legend of Zelda: Ocarina o	99
2	"Metroid Prime"	97
3	"Super Mario Galaxy 2"	97
4	"Super Mario Odyssey"	97
5	"NFL 2K1"	97
6	"Super Mario Galaxy"	97
7	"Grand Theft Auto V"	96.8
8	"The Legend of Zelda: Breath of	96.5
9	"Tekken 3"	96
10	"Metal Gear Solid 2: Sons of Li	96
11	"Grand Theft Auto Double Pack"	96
12	"The Legend of Zelda: The Wind	96
13	"Uncharted 2: Among Thieves"	96
14	"Gran Turismo"	96
15	"Red Dead Redemption 2"	95.66666666666667
16	"The Legend of Zelda: Twilight	95.5
17	"BioShock"	95.33333333333333
18	"Grand Theft Auto IV"	95.33333333333333
19	"The Last of Us"	95
20	"Baldur's Gate II: Shadows of A	95

2. Top 20 de juegos mejor calificados según los usuarios con su calificación.

SQL:

SELECT name, ROUND(avg(user_score),2) AS avg_user_score FROM critics_data GROUP BY name ORDER BY avg_user_score desc LIMIT 20;

MongoDB:

[{$project: {

 name: 1,

 user_score: 1,

 _id: 0

}}, {$match: {

 user_score: {

  $exists: true

 }

}}, {$group: {

 _id: '$name',

 avg_score: {

```
    $avg: '$user_score'

  }

}}, {$sort: {

 avg_score: -1

}}, {$limit: 20}]
```

name	avg_user_score
▶ The Witcher 3: Wild Hunt	9.27
Portal	9.2
The Legend of Zelda: Majora's Mask	9.2
The Last of Us Remastered	9.2
Planescape: Torment	9.2
Castlevania: Symphony of the Night	9.2
Warcraft III: Reign of Chaos	9.2
Xenoblade Chronicles	9.2
Metroid Prime	9.2
Deus Ex	9.2
Metal Gear Solid	9.2
The Witcher 3: Wild Hunt - Blood a...	9.2
Super Mario 64	9.2
The Last of Us	9.2
Tekken 3	9.1
Super Mario Galaxy 2	9.1
Paper Mario	9.1
Vagrant Story	9.1
Grim Fandango	9.1
Resident Evil 4	9.1

	_id String	avg_score Double
1	"GrimGrimoire"	9.8
2	"Metal Torrent"	9.7
3	"Ghost Trick: Phantom Detective	9.7
4	"Diaries of a Spaceport Janitor	9.7
5	"Z.H.P. Unlosing Ranger vs Dark	9.7
6	"Tengami"	9.7
7	"Crystar"	9.6
8	"Part Time UFO"	9.6
9	"The Witcher 3: Wild Hunt"	9.266666666666666
10	"Super Mario 64"	9.2
11	"Warcraft III: The Frozen Thron	9.2
12	"The Legend of Zelda: Majora's	9.2
13	"Suikoden II"	9.2
14	"Portal"	9.2
15	"Metroid Prime"	9.2
16	"Ghost of Tsushima"	9.2
17	"The Witcher 3: Wild Hunt - Blo	9.2
18	"Xenoblade Chronicles"	9.2
19	"Deus Ex"	9.2
20	"God Hand"	9.2

3. Juegos que tienen una calificación de 90 o mayor (criticas).

   SQL:

   SELECT name FROM critics_data WHERE score >= 95 group by name;

   MongoDB:

   ```
   [{$project: {
    name: 1,
    score: 1,
    _id: 0
   }}, {$group: {
    _id: '$name',
    avg_score: {
     $avg: '$score'
    }
   }}, {$match: {
    avg_score: {
     $gte: 95
    }
   }}]
   ```

name
The Legend of Zelda: Ocarina of Time
Tony Hawk's Pro Skater 2
Grand Theft Auto IV
SoulCalibur
Super Mario Galaxy
Super Mario Galaxy 2
Red Dead Redemption 2
Grand Theft Auto V
The Legend of Zelda: Breath of the Wild
Tony Hawk's Pro Skater 3
Perfect Dark
Metroid Prime
Grand Theft Auto III
Super Mario Odyssey
Halo: Combat Evolved
NFL 2K1
Half-Life 2
BioShock
GoldenEye 007
Uncharted 2: Among Thieves
Resident Evil 4
The Orange Box
Batman: Arkham City
Tekken 3
Mass Effect 2
The Legend of Zelda: Twilight Princess
The Elder Scrolls V: Skyrim
Half-Life
The Legend of Zelda: The Wind Waker
Gran Turismo
Metal Gear Solid 2: Sons of Liberty
Grand Theft Auto Double Pack
Baldur's Gate II: Shadows of Amn
Grand Theft Auto: San Andreas
Grand Theft Auto: Vice City
LittleBigPlanet
The Legend of Zelda Collector's Edition
Red Dead Redemption
Gran Turismo 3: A-Spec
Halo 2

	_id String	avg_score Double
1	"The Legend of Zelda: The Wind	96
2	"Red Dead Redemption"	95
3	"Grand Theft Auto IV"	95.33333333333333
4	"Super Mario Galaxy"	97
5	"Metal Gear Solid 2: Sons of Li	96
6	"Red Dead Redemption 2"	95.66666666666667
7	"Super Mario Odyssey"	97
8	"Gran Turismo"	96
9	"Grand Theft Auto V"	96.8
10	"NFL 2K1"	97
11	"The Last of Us"	95
12	"Uncharted 2: Among Thieves"	96
13	"The Legend of Zelda: Breath of	96.5
14	"Portal 2"	95
15	"Metroid Prime"	97
16	"The Legend of Zelda: Twilight	95.5
17	"Super Mario Galaxy 2"	97
18	"The Legend of Zelda: A Link to	95
19	"The Legend of Zelda Collector'	95
20	"The Legend of Zelda: Majora's	95

4. Juegos que tienen una calificación de 9 o mayor (usuarios).

SQL:

SELECT name FROM critics_data WHERE user_score >= 9 group by name;

MongoDB:

[{$project: {

 name: 1,

 user_score: 1,

 _id: 0

}}, {$match: {

 user_score: {

  $exists: true

 }

```
}}, {$group: {
 _id: '$name',
 avg_score: {
  $avg: '$user_score'
 }
}}, {$match: {
 avg_score: {
  $gte: 9
 }
}}]
```

name
▶ The Legend of Zelda: Ocarina of Time
Super Mario Galaxy
Super Mario Galaxy 2
Metroid Prime
Half-Life 2
GoldenEye 007
Resident Evil 4
The Orange Box
Tekken 3
Half-Life
The Legend of Zelda: The Wind Waker
Baldur's Gate II: Shadows of Amn
Grand Theft Auto: San Andreas
The Legend of Zelda Collector's Edition
The Legend of Zelda: A Link to the Past
The Legend of Zelda: Majora's Mask
The Last of Us
The Last of Us Remastered
Portal 2
Red Dead Redemption
Final Fantasy IX
God of War
The Legend of Zelda: Ocarina of Tim...
Metal Gear Solid
Grim Fandango
Tom Clancy's Splinter Cell Chaos The...

	_id String	avg_score Double
1	"GrimGrimoire"	9.8
2	"Metal Torrent"	9.7
3	"Tengami"	9.7
4	"Diaries of a Spaceport Janitor	9.7
5	"Ghost Trick: Phantom Detective	9.7
6	"Z.H.P. Unlosing Ranger vs Dark	9.7
7	"Crystar"	9.6
8	"Part Time UFO"	9.6
9	"The Witcher 3: Wild Hunt"	9.266666666666666
10	"Ghost of Tsushima"	9.2
11	"Deus Ex"	9.2
12	"Metroid Prime"	9.2
13	"Xenoblade Chronicles"	9.2
14	"Suikoden II"	9.2
15	"The Legend of Zelda: Majora's	9.2
16	"Portal"	9.2
17	"Warcraft III: The Frozen Thron	9.2
18	"The Witcher 3: Wild Hunt - Blo	9.2
19	"Warcraft III: Reign of Chaos"	9.2
20	"Super Mario 64"	9.2

5. Top 20 de juegos que tienen mayor cantidad de críticas con su suma.

SQL:

SELECT name, sum(critics) AS total_critics FROM critics_data GROUP BY name ORDER BY total_critics desc LIMIT 20;

MongoDB:

[{$project: {

 name: 1,

 critics: 1,

 _id: 0

}}, {$match: {

 critics: {

  $exists: true

 }

}}, {$group: {

 _id: '$name',

```
total_critics: {

 $sum: '$critics'

 }

}}, {$sort: {

 total_critics: -1

}}, {$limit: 20}]
```

name	total_critics
▶ Grand Theft Auto V	245
Mass Effect 2	215
God of War	193
Fallout 3	189
The Elder Scrolls IV: Oblivion	189
Grand Theft Auto: San Andreas	185
BioShock	183
Batman: Arkham Asylum	177
Shadow of the Colossus	177
Red Dead Redemption 2	176
Portal 2	172
Red Dead Redemption	169
Call of Duty: Modern Warfare 2	167
Grand Theft Auto: Chinatown ...	162
Street Fighter IV	161 161
Batman: Arkham City	156
Call of Duty 4: Modern Warfare	154
Assassin's Creed II	152
Grand Theft Auto IV	150
The Elder Scrolls V: Skyrim	137

	_id String	total_critics Int32
1	"Spider-Man 2"	252
2	"Grand Theft Auto V"	245
3	"Resident Evil 5"	237
4	"L.A. Noire"	237
5	"Marvel: Ultimate Alliance"	230
6	"Madden NFL 07"	226
7	"X-Men: The Official Game"	224
8	"DOOM"	222
9	"Ghostbusters: The Video Game"	221
10	"Resident Evil: Revelations"	220
11	"Final Fantasy XIII"	220
12	"Mass Effect 2"	215
13	"Call of Duty: Black Ops"	214
14	"Tomb Raider: Legend"	211
15	"Prey"	208
16	"Peter Jackson's King Kong: The	208
17	"Call of Duty: Modern Warfare 2	207
18	"Tiger Woods PGA Tour 07"	204
19	"Destroy All Humans!"	204
20	"Gun"	202

6. Cantidad de juegos dependiendo del género que son.

SQL:

SELECT genre, count(*) AS numero_juegos_genero from critics_data GROUP BY genre ORDER BY numero_juegos_genero desc;

MongoDB:

[{$group: {

_id: '$genre',

genre: {

 $sum: 1

}

}}, {$sort: {

genre: -1

}}]

genre	numero_juegos_genero
Sports,Traditional,Football,Sim	24
Action,Shooter,Shooter,First-Person,Sci-Fi,Sci-...	24
Action,Platformer,2D	20
Action Adventure,Fantasy	18
Action,Platformer,3D	17
Sports,Alternative,Skateboarding	12
Action Adventure,Modern	12
Role-Playing,Console-style RPG	12
Action,Platformer,Platformer,2D,2D	11
Role-Playing,Action RPG	10
Action,Fighting,3D	9
Action,Shooter,First-Person,Sci-Fi	9
Role-Playing,First-Person,First-Person,Western...	9
Action,Shooter,Shooter,First-Person,Modern,M...	9
Action,Miscellaneous,Rhythm,Music,Music	9
Action Adventure,Modern,Modern,Open-World	8
Role-Playing,Action RPG,Action RPG	7
Action RPG,Role-Playing,Action RPG	7
Action Adventure,Horror	6
Driving,Racing,GT / Street	6
Action,Fighting,Fighting,3D,2D,3D	6
Action Adventure,Fantasy,Fantasy,Open-World	5
Role-Playing,Japanese-Style	5
Sports,Alternative,Snowboarding	5
Sports,Traditional,Team,Soccer,Sim,Sim	5
Action Adventure,Fantasy,General,Fantasy	5
Action Adventure,Open-World	4
Role-Playing,PC-style RPG,PC-style RPG,Weste...	4

	_id String	genre int32
1	"Action,Platformer,2D"	529
2	"Role-Playing,Action RPG"	392
3	"Action Adventure,General"	352
4	"Action,General"	352
5	"Adventure,General"	293
6	"Action,Platformer,3D"	290
7	"Action,General,General"	285
8	"Action,Shooter,Shooter,First-P	220
9	"Action,Platformer,Platformer,2	215
10	"Miscellaneous,Compilation"	205
11	"Role-Playing,Action RPG,Action	199
12	"Action,Shooter,First-Person,Ar	187
13	"Action Adventure,Open-World"	170
14	"Action Adventure,Survival"	167
15	"Action,Beat-'Em-Up"	166
16	"Action Adventure,Fantasy"	158
17	"Action Adventure,Fantasy,Gener	158
18	"Action,Fighting,3D"	149
19	"Adventure,3D,First-Person"	147
20	"Action,Platformer,Platformer,3	141

7. Cantidad de usuarios que criticaron un juego según su género.

SQL:

SELECT genre, sum(users) AS total_users FROM critics_data GROUP BY genre ORDER BY total_users desc;

MongoDB:

[{$project: {

 genre: 1,

 users: 1,

 _id: 0

}}, {$match: {

 users: {

 $exists: true

 }

}}, {$group: {

 _id: '$genre',

```
total_users: {

 $sum: '$users'

}

}}, {$sort: {

total_users: -1

}}]
```

genre	total_users
General,Action Adventure,Survival	146262
Action,Shooter,Shooter,First-Person,Sci-Fi,Sci-...	69201
Action RPG,Role-Playing,Action RPG	44500
Action Adventure,Open-World	36920
Role-Playing,First-Person,First-Person,Western...	30341
Action Adventure,Linear	17228
Action Adventure,Fantasy	16812
Role-Playing,Action RPG,Action RPG	16648
Action Adventure,Modern,Modern,Open-World	14814
Action Adventure,General,Modern	14563
Action,Shooter,Shooter,First-Person,Modern,M...	14251
Modern,Action Adventure,Modern,Open-World	14056
Action,Platformer,3D	13852
General,Modern,Action Adventure,Linear	12333
Modern,Adventure,General,Action Adventure,...	11982
General,Fantasy,MOBA,Strategy,Real-Time,MO...	11474
Action Adventure,Modern,Modern,Linear	11327
Action Adventure,Modern	10583
Fantasy,Role-Playing,Action Adventure,Genera...	10394
Role-Playing,Action RPG	9942
Action Adventure,Modern,Open-World	9704
Action Adventure,Modern,General,Modern	9332
Role-Playing,Console-style RPG	9310
Role-Playing,Japanese-Style	8989
Action Adventure,Fantasy,Fantasy,Open-World	8733
Action,Shooter,Shooter,Third-Person,Sci-Fi,Sci-...	8254
Action,Platformer,2D	7724
Role-Playing,PC-style RPG,PC-style RPG,Weste...	7180

	_id String	total_users Int32
1	"General,Action Adventure,Survi	146568
2	"Action,Shooter,Shooter,First-P	135983
3	"Action Adventure,Open-World"	93291
4	"Role-Playing,Action RPG"	91013
5	"Action,Shooter,Shooter,First-P	85815
6	"Role-Playing,Action RPG,Action	80570
7	"Action,Shooter,First-Person,Ar	72337
8	"Action RPG,Role-Playing,Action	63377
9	"Action Adventure,General"	57699
10	"Action,Shooter,First-Person,Ta	42287
11	"Action,Platformer,2D"	40763
12	"Role-Playing,First-Person,Firs	36207
13	"Strategy,Real-Time,General"	34828
14	"Action,General"	34638
15	"Action,Platformer,3D"	31556
16	"Action Adventure,Survival"	30591
17	"Action Adventure,Historic,Hist	30065
18	"Action Adventure,Modern,Modern	29749
19	"Role-Playing,Western-Style"	27843
20	"Action,Platformer,Platformer,2	25901

8. Calificación (critica) promedio de todos los juegos.

SQL:

SELECT ROUND(AVG(score),2) AS avg_critics FROM critics_data;

MongoDB:

```
[{$project: {
 _id: 0,
 score: 1
}}, {$group: {
 _id: null,
 avg_score: {
  $avg: '$score'
 }
}}]
```

	avg_critics
▶	92.14

	avg_score Double
1	70.38664734730287

9. Juegos que están arriba del promedio de la calificación de crítica.

SQL:

SELECT name FROM critics_data WHERE score >= (SELECT ROUND(AVG(score),2) AS promedio_critica FROM critics_data) GROUP BY name;

MongoDB:

[{$group: {

_id: '$name',

avg_score: {

$avg: '$score'

}

}}, {$sort: {

avg_score: -1

}}, {$match: {

avg_score: {

$gte: 70.38664734730287

}

}}]

	name
▶	The Legend of Zelda: Ocarina of Time
	Tony Hawk's Pro Skater 2
	Grand Theft Auto IV
	SoulCalibur
	Super Mario Galaxy
	Super Mario Galaxy 2
	Red Dead Redemption 2
	Grand Theft Auto V
	The Legend of Zelda: Breath of the Wild
	Tony Hawk's Pro Skater 3
	Perfect Dark
	Metroid Prime
	Grand Theft Auto III
	Super Mario Odyssey
	Halo: Combat Evolved
	NFL 2K1
	Half-Life 2
	BioShock
	GoldenEye 007
	Uncharted 2: Among Thieves
	Resident Evil 4
	The Orange Box
	Batman: Arkham City
	Tekken 3
	Mass Effect 2
	The Legend of Zelda: Twilight Princess
	The Elder Scrolls V: Skyrim
	Half-Life
	The Legend of Zelda: The Wind Waker
	Gran Turismo

	_id String	avg_score Double
1	"The Legend of Zelda: Ocarina o	99
2	"Super Mario Galaxy 2"	97
3	"NFL 2K1"	97
4	"Super Mario Galaxy"	97
5	"Metroid Prime"	97
6	"Super Mario Odyssey"	97
7	"Grand Theft Auto V"	96.8
8	"The Legend of Zelda: Breath of	96.5
9	"Tekken 3"	96
10	"Grand Theft Auto Double Pack"	96
11	"Metal Gear Solid 2: Sons of Li	96
12	"The Legend of Zelda: The Wind	96
13	"Gran Turismo"	96
14	"Uncharted 2: Among Thieves"	96
15	"Red Dead Redemption 2"	95.66666666666667
16	"The Legend of Zelda: Twilight	95.5
17	"Grand Theft Auto IV"	95.33333333333333
18	"BioShock"	95.33333333333333
19	"Persona 5 Royal"	95
20	"Portal 2"	95

10. Cantidad de juegos que están arriba del promedio de la calificacion de la critica según su género.

SQL:

SELECT genre, count(*) AS numero_juegos_genero FROM critics_data WHERE score >= (SELECT ROUND(AVG(score),2) AS promedio_critica FROM critics_data)

GROUP BY genre ORDER BY numero_juegos_genero desc;

MongoDB:

```
[{$project: {
 genre: 1,
 score: 1,
 _id: 0
}}, {$match: {
 score: {
  $gte: 70.38664734730287
 }
}}, {$group: {
 _id: '$genre',
 number_games: {
  $sum: 1
 }
}}, {$sort: {
 number_games: -1
}}]
```

genre	numero_juegos_genero
Action,Shooter,Shooter,First-Person,Sci-Fi,Sci-...	14
Action Adventure,Fantasy	11
Action Adventure,Modern	10
Sports,Traditional,Football,Sim	7
Sports,Alternative,Skateboarding	6
Action Adventure,Modern,Modern,Open-World	6
Role-Playing,Action RPG,Action RPG	6
Role-Playing,First-Person,First-Person,Western...	6
Action,Fighting,3D	5
Action,Shooter,First-Person,Sci-Fi	5
Action,Platformer,2D	5
Action Adventure,Open-World	4
Action,Shooter,Shooter,First-Person,Modern,M...	4
Role-Playing,Console-style RPG	4
Driving,Racing,GT / Street	4
Modern,Action Adventure,Modern,Open-World	3
Action,Platformer,3D	3
Role-Playing,Japanese-Style	3
Action,Fighting,Fighting,3D,2D,3D	3
Action,Platformer,Platformer,3D,3D	2
Action Adventure,Modern,Open-World	2
Action Adventure,Fantasy,General,Fantasy,Op...	2
Action Adventure,Horror	2
Action,Miscellaneous,Shooter,Compilation,First-...	2
Action Adventure,Fantasy,Fantasy,Open-World	2
Action,Shooter,Shooter,Third-Person,Sci-Fi,Sci-...	2
Driving,Racing,Arcade	2
Action,Fighting,2D	2
Action,Platformer,Platformer,2D,2D	2
Sports,Alternative,Snowboarding	2
Sports,Traditional,Soccer,Sim	2
Sports,Traditional,Basketball,Sim	2

	_id String	number_games Int32
1	"Action,Platformer,2D"	350
2	"Role-Playing,Action RPG"	246
3	"Action Adventure,General"	230
4	"Adventure,General"	181
5	"Action,General"	154
6	"Miscellaneous,Compilation"	154
7	"Action,Platformer,Platformer,2	154
8	"Action,Shooter,Shooter,First-P	144
9	"Action,Platformer,3D"	127
10	"Action,Shooter,First-Person,Ar	127
11	"Role-Playing,Action RPG,Action	115
12	"Action Adventure,Open-World"	114
13	"Action,Miscellaneous,Rhythm,Mu	91
14	"Role-Playing,Console-style RPG	90
15	"Role-Playing,Japanese-Style"	85
16	"Action,Fighting,2D"	84
17	"Sports,Traditional,Team,Soccer	80
18	"Adventure,Point-and-Click"	77
19	"Action Adventure,Survival"	76
20	"Action,Fighting,3D"	70

11. Top 20 con el nombre de juego y desarrollador.

SQL:

SELECT name, developer, ROUND(AVG(score),2) AS avg_score FROM critics_data j

INNER JOIN developers d

ON j.developer_id = d.developer_id

GROUP BY name ORDER BY avg_score desc LIMIT 20;

MongoDB:

[{$sort: {

score: -1

}}, {$limit: 20}, {$project: {

_id: 0,

name: 1,

developer: 1

}}]

name	developer	avg_score
The Legend of Zelda: Ocarina of Time	Nintendo	99.00
SoulCalibur	Namco	98.00
Grand Theft Auto IV	RockstarNorth	98.00
Super Mario Galaxy	Nintendo	97.00
Super Mario Odyssey	Nintendo	97.00
NFL 2K1	VisualConcepts	97.00
Metroid Prime	RetroStudios	97.00
Super Mario Galaxy 2	1EADTokyo	97.00
Perfect Dark	RareLtd.	97.00
Halo: Combat Evolved	BungieSoftware	97.00
Grand Theft Auto V	RockstarNorth	96.80
The Legend of Zelda: Breath of the ...	Nintendo	96.50
Resident Evil 4	Capcom	96.00
The Legend of Zelda: The Wind Waker	Nintendo	96.00
The Orange Box	ValveSoftware	96.00
Half-Life	ValveSoftware	96.00
GoldenEye 007	RareLtd.	96.00
Grand Theft Auto Double Pack	RockstarNorth	96.00
Tekken 3	Namco	96.00
Uncharted 2: Among Thieves	NaughtyDog	96.00

	name String	score Int32	developer String
1	"The Legend of Zelda: Ocarina o	99	"Nintendo"
2	"Grand Theft Auto IV"	98	"RockstarNorth"
3	"Tony Hawk's Pro Skater 2"	98	"NeversoftEntertainment"
4	"SoulCalibur"	98	"Namco"
5	"Grand Theft Auto IV"	98	"RockstarNorth"
6	"Grand Theft Auto V"	97	"RockstarNorth"
7	"Grand Theft Auto V"	97	"RockstarNorth"
8	"Grand Theft Auto III"	97	"DMADesign"
9	"Grand Theft Auto V"	97	"RockstarNorth"
10	"Super Mario Odyssey"	97	"Nintendo"
11	"Grand Theft Auto V"	97	"RockstarNorth"
12	"Red Dead Redemption 2"	97	"RockstarGames"
13	"Red Dead Redemption 2"	97	"RockstarGames"
14	"Metroid Prime"	97	"RetroStudios"
15	"Tony Hawk's Pro Skater 2"	97	"Treyarch"
16	"Super Mario Galaxy"	97	"Nintendo"
17	"The Legend of Zelda: Breath of	97	"Nintendo"
18	"Tony Hawk's Pro Skater 3"	97	"NeversoftEntertainment"
19	"Super Mario Galaxy 2"	97	"NintendoEADTokyo"
20	"Perfect Dark"	97	"RareLtd."

12. Top 20 de los desarrolladores con más juegos en la lista.

SQL:
SELECT developer, count(*) AS juegos_developer FROM critics_data j
INNER JOIN developers d
ON j.developer_id = d.developer_id
GROUP BY developer ORDER BY juegos_developer desc LIMIT 20;

MongoDB:

[{$group: {

_id: '$developer',

 num_games: {

  $sum: 1

 }

}}, {$sort: {

 num_games: -1

}}, {$limit: 20}]

developer	juegos_developer
Nintendo	29
Capcom	18
EASports	17
RockstarNorth	14
VisualConcepts	14
ValveSoftware	14
BioWare	12
BlizzardEntertainment	11
NeversoftEntertainment	10
HarmonixMusicSystems	10
UbisoftMontreal	9
NaughtyDog	8
RareLtd.	7
EATiburon	7
Namco	6
CDProjektRedStudio	6
InfinityWard	6
RocksteadyStudios	6
BethesdaGameStudios	6
KCET	6

	_id String	num_games Int32
1	"Capcom"	298
2	"TelltaleGames"	236
3	"EASports"	195
4	"Konami"	176
5	"EACanada"	172
6	"UbisoftMontreal"	146
7	"Nintendo"	142
8	"Ubisoft"	136
9	"SquareEnix"	107
10	"ElectronicArts"	101
11	"Codemasters"	100
12	"EATiburon"	100
13	"OmegaForce"	94
14	"VisualConcepts"	87
15	"Traveller'sTales"	82
16	"VicariousVisions"	74
17	"Sega"	72
18	"Namco"	67
19	"FromSoftware"	65
20	"Midway"	65

13. Cantidad de juegos en la lista según su consola.

SQL:

SELECT platform, count(*) AS juegos_consola FROM critics_data j

INNER JOIN platforms p

ON j.platform_id = p.platform_id

GROUP BY platform ORDER BY juegos_consola desc;

MongoDB:

[{$group: {

_id: '$platform',

num_games: {

 $sum: 1

}

}}, {$sort: {

num_games: -1

}}]

platform	juegos_consola
PC	113
PlayStation2	56
Xbox360	51
PlayStation3	47
PlayStation4	30
Xbox	30
PlayStation	25
GameCube	25
XboxOne	20
Switch	19
Nintendo64	15
Dreamcast	15
Wii	14
GameBoyA...	14
WiiU	7
DS	7
3DS	6
PlayStation...	2
PSP	2

	_id String	num_games Int32
1	"PC"	4592
2	"PlayStation4"	1928
3	"Xbox360"	1666
4	"PlayStation2"	1418
5	"PlayStation3"	1269
6	"Switch"	1122
7	"XboxOne"	1118
8	"Xbox"	793
9	"DS"	730
10	"Wii"	664
11	"PSP"	513
12	"GameCube"	452
13	"GameBoyAdvance"	444
14	"3DS"	400
15	"PlayStationVita"	257
16	"PlayStation"	188
17	"WiiU"	186
18	"Dreamcast"	125
19	"Nintendo64"	70
20	"Stadia"	4

14. Los 20 desarrolladores con mayor cantidad de criticas por los usuarios.

SQL:

SELECT developer, sum(users) AS total_criticas FROM critics_data j

INNER JOIN developers d

ON j.developer_id = d.developer_id

GROUP BY developer ORDER BY total_criticas desc LIMIT 20;

MongoDB:

[{$sort: {

 users: -1

}}, {$limit: 20}, {$project: {

 _id: 0,

 developer: 1,

 users: 1

}}]

developer	total_criticas
NaughtyDog	197638
Nintendo	57884
ValveSoftware	55590
CDProjektRedStudio	44517
RockstarNorth	39134
BioWare	26909
BethesdaGameStudios	25343
BlizzardEntertainment	23474
SCESantaMonica	22496
RockstarGames	21047
FromSoftware	16094
IrrationalGames	12837
InfinityWard	12188
RocksteadyStudios	12061
Capcom	10225
Atlus	9010
EpicGames	8783
UbisoftMontreal	8401
IrrationalGames,2KM...	7386
KojimaProductions,M...	6756

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	developer String	users Int32
1	"NaughtyDog"	146262
2	"BlizzardEntertainment"	30532
3	"CDProjektRedStudio"	17537
4	"SuckerPunch"	17420
5	"KojimaProductions"	16949
6	"SCESantaMonica"	16298
7	"Nintendo"	15873
8	"CDProjektRedStudio"	15749
9	"NaughtyDog"	14563
10	"RockstarGames"	14315
11	"NaughtyDog"	12333
12	"NaughtyDog"	11982
13	"ValveSoftware"	11474
14	"BethesdaGameStudios"	11301
15	"ValveSoftware"	10773
16	"FromSoftware"	10394
17	"ValveSoftware"	10108
18	"BlizzardEntertainment"	9774
19	"Guerrilla"	9400
20	"InfinityWard"	9134

15. Numero de criticas de usuarios por consola.

SQL:

SELECT platform, sum(users) AS total_criticas FROM critics_data j

INNER JOIN platforms p

ON j.platform_id = p.platform_id

GROUP BY platform ORDER BY total_criticas desc;

MongoDB:

```
[{$project: {
 platform: 1,
 users: 1,
 _id: 0
}}, {$group: {
 _id: '$platform',
 total_users: {
  $sum: '$users'
 }
}}, {$sort: {
 total_users: -1
}}]
```

platform	total_criticas
PlayStation4	270945
PC	228388
PlayStation3	82444
Xbox360	68249
Switch	37360
PlayStation2	25476
XboxOne	19440
Wii	15799
Nintendo64	11471
PlayStation	10992
WiiU	9732
GameCube	9002
Xbox	6481
3DS	6332
GameBoyA...	2958
DS	2803
PlayStation...	1852
Dreamcast	1059
PSP	1018

	_id String	total_users Int32
1	"PC"	1217253
2	"PlayStation4"	762422
3	"PlayStation3"	243150
4	"Xbox360"	235943
5	"XboxOne"	149161
6	"Switch"	118772
7	"PlayStation2"	84161
8	"3DS"	45975
9	"Wii"	40576
10	"WiiU"	37559
11	"DS"	30413
12	"PlayStationVita"	22755
13	"GameCube"	21249
14	"PlayStation"	21143
15	"PSP"	19787
16	"Xbox"	19284
17	"Nintendo64"	15032
18	"GameBoyAdvance"	12599
19	"Dreamcast"	3412
20	"Stadia"	41

16. Cantidad de criticas de usuarios por compañía.

SQL:

SELECT company, sum(users) AS total_criticas FROM critics_data j

INNER JOIN platforms p

ON j.platform_id = p.platform_id

GROUP BY company ORDER BY total_criticas desc;

MongoDB: [{$lookup: {

 from: 'platforms',

 localField: 'platform',

 foreignField: 'platform',

 as: 'consolesandcompanies'

}}, {$addFields: {

 consolesandcompanies_object: {

  $arrayElemAt: [

   '$consolesandcompanies',

   0

  ]

 }

}}, {$addFields: {

 company: '$consolesandcompanies_object.company'

}}, {$match: {

 company: {

  $exists: true

 }

}}, {$group: {

 _id: '$company',

 total_users: {

```
   $sum: '$users'

  }

}}, {$sort: {

 total_users: -1

}}]
```

	company	total_criticas
▶	Sony	392727
	Desktop	228388
	Nintendo	95457
	Microsoft	94170
	SEGA	1059

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	_id String	total_users Int32
1	"Desktop"	1217294
2	"Sony"	1153418
3	"Microsoft"	404388
4	"Nintendo"	322175
5	"SEGA"	3412

5. Conclusiones.

- Estos datos, ya con su debido análisis, puede predecir si un juego de distinto desarrollador o compañía puede crear un buen videojuego según la crítica o los jugadores (usuarios).
- Estos datos también pueden demostrar qué consola tiene el mejor catálogo de videojuegos.
- El uso de SQL resulta ser más intuitivo, sistematizado y sencillo, pero el uso de MySQL Workbench resulta ser menos eficiente al momento de exportar gran cantidad de datos. Se espera en un futuro hacer estas mismas consultas en otro ambiente como SQL Server sin necesidad de recortar los datos.
- El uso de MongoDB, al contrario de MySQL Workbench, resulta ser más efectivo cuando se necesita exportar gran cantidad de datos. Su mayor defecto es que resulta ser más complicado el usar datos de los mismos documentos para hacer comparaciones en las búsquedas. Un problema que tuve fue que no pude usar un número extraído de una vista (un promedio) para usarlo como un filtro, llegando a funcionar cuando pongo el número, más no el nombre de la constante.

6. Glosario.

Critics_data:

- **Id (int):** Número de identificación del juego. Es la llave primaria.
- **Name (varchar):** Nombre del juego.
- **Platform (tinyint):** Identificador de la consola el juego.
- **R-date (varchar):** Fecha de lanzamiento del juego.
- **Score (tinyint):** Calificación del juego por la critica.
- **User_score (float):** Calificación del juego por los usuarios.
- **Developer (tinyint):** Identificador del desarrollador.
- **Genre (varchar):** Genero del juego.
- **Players (varchar):** Número de jugadores, o si el juego contiene o no multiplayer en línea.
- **Critics (tinyint):** Número de criticas que se le hicieron al juego.
- **Users (int):** Número de usuarios que criticaron el juego.

Developers:

- **Id (int):** Número de identificador del desarrollador. Es la llave primaria y llave externa de la tabla critics_data.
- **Developer (varchar):** Nombre del desarrollador.

Platform:

- **Id (int):** Número de identificación de la consola. Es la llave primaria y llave externa de la tabla critics_data.
- **Platform (varchar):** Nombre de la consola.