studioName

headquartered

yrFounded

Type

Publisher

1 Publishes N

Video Games

gameName

releaseYear

genre

series

platform(s)

esrbRating

1

Develops For

N

reviewedBy

N

Released On

studioName

headquartered

yrFounded

Type

Developer

1

Critic

1

M

Platforms

platformName

developer

generation

releaseDate

Name **gameName** Score
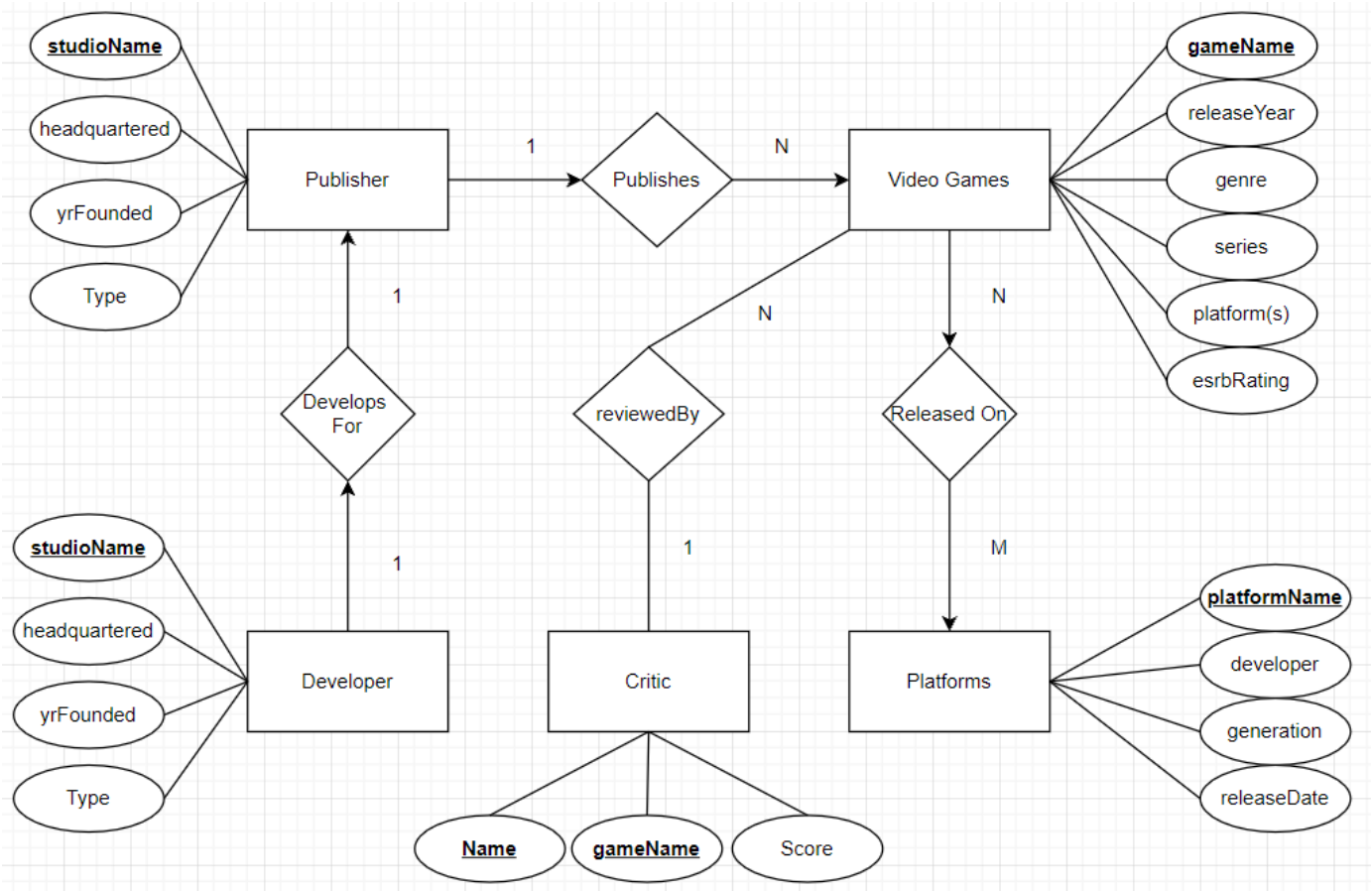
- Developer (**devStudioName**, headquartered, yrFounded, Type)
- Publisher (**pubStudioName**, headquartered, yrFounded, Type)
- VideoGames (**gameName**, releaseYear, genre, series, platform(s), esrbRating)
- Platforms (**platformName**, developer, generation, releaseDate)
- Critic (**Name, gameName**, score)
- DevelopsFor (**devStudioName**, **pubStudioName**)
- Publishes (**pubStudioName, gameName**)
- ReleasedOn (**gameName, platformName**)

Question 1.1: One must involve a two-way or three-way join with a where clause that limits the results to 20 of fewer tuples.

Query: Find the name of all video games released in 1999 that received a score of 97 or higher.

Select v.gameName, C.score, V.releaseYear
From videoGames V, critic C
where V.releaseYear = 1999 and C.score >= 97 and V.gameName = C.gameName;

```
mysql> Select v.gameName, C.score, V.releaseYear
    -> From videoGames V, critic C
    -> where V.releaseYear = 1999 and C.score >= 97 and V.gameName = C.gameName;
+------------+-------+------------+
| gameName   | score | releaseYear |
+------------+-------+------------+
| game_19070 |    99 |       1999 |
| game_14303 |   100 |       1999 |
| game_17899 |    99 |       1999 |
| game_12044 |    97 |       1999 |
| game_9076  |    98 |       1999 |
| game_4061  |    98 |       1999 |
| game_17285 |    98 |       1999 |
| game_441   |   100 |       1999 |
| game_722   |    98 |       1999 |
| game_14350 |   101 |       1999 |
| game_16119 |    99 |       1999 |
| game_15723 |    97 |       1999 |
| game_18850 |    98 |       1999 |
| game_21408 |   100 |       1999 |
| game_19310 |    98 |       1999 |
+------------+-------+------------+
15 rows in set (0.01 sec)
```

Question 1.2: One must be an aggregate using a group by clause.

Query: Find the average score by genre of all games released in 1999.

Select v.genre, AVG(c.score)
From videoGames V, critic C
Where V.releaseYear = 1999 and V.gameName = C.gameName
Group by v.genre;

```
mysql> Select v.genre, AVG(c.score)
    -> From videoGames V, critic C
    -> where V.releaseYear = 1999 and V.gameName = C.gameName
    -> group by v.genre;
+----------------------+--------------+
| genre                | AVG(c.score) |
+----------------------+--------------+
|  MOBA                |      46.1489 |
|  RPG                 |      46.6538 |
|  Simulation and Sports |    52.1176 |
|  Sandbox             |      49.0000 |
|  Strategy            |      48.7273 |
|  Shooter             |      48.5500 |
|  Action-Adventure    |      53.3243 |
|  Survival and Horror |      46.2439 |
|  Puzzlers and Party  |      50.0938 |
|  Platformer          |      46.7838 |
+----------------------+--------------+
10 rows in set (0.03 sec)
```

Question 1.3: One must be an aggregate using a group by clause and a having clause.

Query: Find the average score by genre of all games released in 1999 where each genre contains at least 30 games.

Select v.genre, AVG(c.score)
From videoGames V, critic C
where V.releaseYear = 1999 and V.gameName = C.gameName
group by v.genre
having count(*) >= 40;

```
mysql> Select v.genre, AVG(c.score)
    -> From videoGames V, critic C
    -> where V.releaseYear = 1999 and V.gameName = C.gameName
    -> group by v.genre
    -> having count(*) >= 40;
+---------------------+--------------+
| genre               | AVG(c.score) |
+---------------------+--------------+
|  MOBA               |      46.1489 |
|  Shooter            |      48.5500 |
|  Survival and Horror|      46.2439 |
+---------------------+--------------+
3 rows in set (0.03 sec)
```

Question 2: Write three data-modification commands on your PDA database. One should be a simple insert, one a simple update, and one an update that updates several tuples at once.

Update 1:

insert into videoGames values ('game_26001', 1999, 'RPG', 45 ,'Playstation 5', 'Everyone');

```
mysql> insert into videoGames values ('game_26001', 1999, 'RPG', 45 ,'Playstation 5', 'Everyone');
Query OK, 1 row affected (0.00 sec)
```

Table before updates 2 and 3:

```
mysql> select * from developer limit 9;
+-----------------------+--------------+-----------+------------+
| devStudioName         | headquartered | yrFounded | type       |
+-----------------------+--------------+-----------+------------+
| 2K Games              | USA          |      2005 | Subsidiary |
| 343 Industries        | USA          |      2009 | Division   |
| Activision            | USA          |      1979 | Subsidiary |
| Arkane Studios        | France       |      1999 | Subsidiary |
| Bandai Namco          | France       |      1955 | Subsidiary |
| Bethesda Game Studios | Japan        |      2001 | Division   |
| BioWare               | USA          |      1995 | Subsidiary |
| Blizzard Entertainment| Canada       |      1991 | Subsidiary |
| Bungie                | USA          |      1991 | Public     |
+-----------------------+--------------+-----------+------------+
9 rows in set (0.00 sec)
```

Update 2:

update developer
set yrFounded = yrFounded - 1
where headquartered = 'Japan';

```
mysql> update developer
    -> set yrFounded = yrFounded - 1
    -> where headquartered = 'Japan';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from developer limit 9;
+-----------------------+---------------+-----------+------------+
| devStudioName         | headquartered | yrFounded | type       |
+-----------------------+---------------+-----------+------------+
| 2K Games              | United States |      2005 | Subsidiary |
| 343 Industries        | United States |      2009 | Division   |
| Activision            | United States |      1979 | Subsidiary |
| Arkane Studios        | France        |      1999 | Subsidiary |
| Bandai Namco          | France        |      1955 | Subsidiary |
| Bethesda Game Studios | Japan         |      2000 | Division   |
| BioWare               | United States |      1995 | Subsidiary |
| Blizzard Entertainment| Canada        |      1991 | Subsidiary |
| Bungie                | United States |      1991 | Public     |
+-----------------------+---------------+-----------+------------+
9 rows in set (0.00 sec)
```

Update 3:

update developer
set headquartered = 'United States'
where headquartered = 'USA';

```
mysql> update developer
    -> set headquartered = 'United States'
    -> where headquartered = 'USA';
Query OK, 6 rows affected (0.00 sec)
Rows matched: 6  Changed: 6  Warnings: 0

mysql> select * from developer limit 9;
+-----------------------+---------------+-----------+------------+
| devStudioName         | headquartered | yrFounded | type       |
+-----------------------+---------------+-----------+------------+
| 2K Games              | United States |      2005 | Subsidiary |
| 343 Industries        | United States |      2009 | Division   |
| Activision            | United States |      1979 | Subsidiary |
| Arkane Studios        | France        |      1999 | Subsidiary |
| Bandai Namco          | France        |      1955 | Subsidiary |
| Bethesda Game Studios | Japan         |      2001 | Division   |
| BioWare               | United States |      1995 | Subsidiary |
| Blizzard Entertainment| Canada        |      1991 | Subsidiary |
| Bungie                | United States |      1991 | Public     |
+-----------------------+---------------+-----------+------------+
9 rows in set (0.00 sec)
```