

COMP421 Project 3: Application

March 15, 2023

Group 229 (Harrison, Rita)

Section 2: Relational Schema (modified)

Teams (country, association, URL, group)

Association NOT NULL

URL NOT NULL

group NOT NULL

Players (country, shirt_num, pname, position, DOB)

Country foreign key referencing **Teams**

pname NOT NULL

DOB NOT NULL

position NOT NULL

Coaches (country, cname, DOB, role)

Country foreign key referencing **Teams**

DOB NOT NULL

role NOT NULL

Referees (rname, year_of_experience, country)

year_of_experience NOT NULL

country NOT NULL

Stadiums(sname, location, capacity)

location NOT NULL

capacity NOT NULL

Games(id, date, time, length, round, stadium, playing_country, opposing_country)

date NOT NULL

time NOT NULL

length NOT NULL

round NOT NULL

stadium NOT NULL foreign key referencing **stadiums**(name)

playing_country NOT NULL foreign key referencing **Teams**(country)

opposing_country NOT NULL foreign key referencing **Teams**(country)

Goals(id, occurrence, minute, penalty, shirt_num, country)

Id foreign key referencing **Games**

minute NOT NULL

penalty NOT NULL

shirt_num, country NOT NULL foreign key referencing **Players**(shirt_num, country)

Refs_game (rname, id, role)

rname foreign key referencing **Referees**

id foreign key referencing **Games**

role NOT NULL

Performs(country, shirt_num, etime, ltime, position, Rcard, Ycard)

country foreign key referencing **Teams**

Shirt_num referencing **players**

id foreign key referencing **Games**

etime NOT NULL

Ltime

position NOT NULL

Rcard NOT NULL

Ycard NOT NULL

Customers(email, password)

password NOT NULL

Billing_Addresses(aid, address, address2, city, province, country, postal_code, phone, name)

address NOT NULL

address2 NOT NULL

City NOT NULL

Province NOT NULL

Country NOT NULL

postal_code NOT NULL

phone NOT NULL

name NOT NULL

Email NOT NULL

Credit_cards(c_num, c_type, cvv, expiration_dm, aid, cardholder_name)

C_type NOT NULL

CVV NOT NULL

expiration_dm NOT NULL

aid NOT NULL foreign key referencing **Billing_Addresses**

Cardholder_name Not NULL

Tickets(tid, section, row, seat, listed_price, gid)

section NOT NULL

row NOT NULL

seat NOT NULL

listed_price NOT NULL

gid foreign key referencing **Games**

Sold_tickets(tid, sold_price)

sold_price NOT NULL

Purchases(tid, c_num, email, transaction_id, transaction_date, transaction_time)

tid foreign key referencing **Sold_tickets**

c_num foreign key referencing **Credit_cards**

email foreign key referencing **Customers**

transaction_id NOT NULL

transaction_date NOT NULL

transaction_time NOT NULL

Section 3: Application Interaction

(a) (10 points)

i. Run a query in the database that shows match information about ALL matches, including the participating countries if already known.

```
db2 => select * from games;
```

ID	DATE	TIME	LENGTH	ROUND	STADIUM	PLAYING_COUNTRY	OPPOSING_COUNTRY
1	05/11/2022	03:06:00	01:46:00		1 Molson Stadium	Mexico	Japan
2	02/16/2023	07:46:00	01:41:00		2 McConnell Arena	Tunisia	Mexico
3	09/07/2022	16:16:00	01:56:00		3 Rutherford Park	Japan	United States
4	09/23/2022	02:54:00	01:52:00		4 Forbes Field	France	Iran
5	09/28/2022	14:57:00	01:45:00		5 Tomlinson Fieldhouse	Mexico	Portugal
6	11/09/2022	15:02:00	01:57:00		6 Lower Field	Ecuador	Brazil
7	12/07/2022	19:23:00	01:38:00		1 Leacock 132	Poland	Portugal
8	07/09/2022	12:11:00	01:49:00		2 Mont Royal	Japan	South Korea
9	04/17/2022	13:19:00	01:58:00		3 Bell Centre	France	Poland
10	10/29/2022	11:12:00	01:43:00		4 Molson Stadium	Netherlands	France
11	04/27/2022	04:54:00	01:39:00		5 McConnell Arena	Poland	Brazil
12	03/22/2022	22:41:00	01:41:00		6 Rutherford Park	Iran	Croatia
13	08/28/2022	03:36:00	01:57:00		7 Forbes Field	Brazil	Poland
14	07/08/2022	04:59:00	01:49:00		8 Tomlinson Fieldhouse	Portugal	Costa Rica
15	05/31/2022	04:08:00	01:52:00		1 Lower Field	Brazil	Japan
16	06/01/2022	07:01:00	01:44:00		2 Leacock 132	Brazil	Poland
17	06/01/2022	21:43:00	01:42:00		3 Mont Royal	Poland	England
18	11/02/2022	22:32:00	01:44:00		4 Bell Centre	Iran	Poland
19	04/25/2022	19:09:00	01:37:00		5 Molson Stadium	United States	Brazil
20	02/16/2022	04:34:00	01:47:00		6 McConnell Arena	Portugal	Poland
21	10/27/2022	05:04:00	01:51:00		1 Rutherford Park	Portugal	United States
22	03/14/2022	13:54:00	01:35:00		2 Forbes Field	Poland	Brazil
23	01/01/2023	20:41:00	01:37:00		3 Tomlinson Fieldhouse	Poland	England
24	01/30/2022	19:32:00	01:36:00		4 Lower Field	Croatia	Belgium
25	07/02/2022	08:31:00	01:53:00		5 Leacock 132	Portugal	Costa Rica
26	07/07/2022	07:40:00	01:55:00		6 Mont Royal	United States	Portugal
27	12/23/2022	14:33:00	01:58:00		1 Bell Centre	Japan	France
28	05/28/2022	22:36:00	01:52:00		2 Molson Stadium	Poland	Brazil
29	08/27/2022	23:43:00	01:43:00		3 McConnell Arena	Spain	Canada
30	04/28/2022	05:43:00	01:43:00		4 Rutherford Park	Portugal	Canada
31	05/21/2022	15:05:00	01:56:00		5 Forbes Field	Brazil	Wales
32	01/18/2023	21:39:00	01:41:00		6 Tomlinson Fieldhouse	Mexico	United States

32 record(s) selected.

ii. Start the application, choose the first item of the main menu and enter a country for which there are at least 2 matches in the result of the previous query. iii. Go back to the previous menu.

```

Soccer Main Menu:
-----
1.List information of matches of a country
2.Insert initial Player information for a match
3.for you to design
4.Exit the application
-----
Enter your choice:
1
Enter country:
Mexico
Mexico Japan 2022-05-11 group-round 2 2 2
Tunisia Mexico 2023-02-16 round-of-16 2 1 3
Mexico Portugal 2022-09-20 finals 0 1 2
Mexico United States 2023-01-18 finals 1 0 0
Enter [A] to find matches of another country, [P] to go to the previous menu
P
Soccer Main Menu:
-----
1.List information of matches of a country
2.Insert initial Player information for a match
3.for you to design
4.Exit the application
-----
Enter your choice:
|

```

(b) (40 points)

- i. Run a query in the database that shows information about ALL matches that take place within 3 days of the date the query is posed including any matches that might not yet the countries determined.

```

db2 => SELECT id, playing_country, opposing_country, date, round FROM Games WHERE timestamp(date,time) > current_timestamp INTERSECT SELECT id, playing_country,
opposing_country, date, round FROM Games WHERE timestamp(date,time) < current_timestamp+3 DAYS;

```

ID	PLAYING_COUNTRY	OPPOSING_COUNTRY	DATE	ROUND
4	France	Iran	03/15/2023	4
5	Mexico	Portugal	03/15/2023	5
6	Ecuador	Brazil	03/16/2023	6
7	Poland	Portugal	03/16/2023	1
8	Japan	South Korea	03/17/2023	2

```

5 record(s) selected.
db2 =>

```

ii. Then run a query in the database that shows for one of the matches M in the previous query and one of the countries C of this match all the players of this country that play in the match. The result should be empty.

```
db2 => SELECT * FROM Performs WHERE id = 5 AND country = 'Portugal';
```

COUNTRY	SHIRT_NUM	ID	ETIME	LTIME	POSITION	RCARD	YCARD
0 record(s) selected.							

iii. Run another query that shows all the players of the team of country C. For better visibility, it should have around 5 players.

```
db2 => SELECT * FROM Players WHERE country = 'Portugal';
```

COUNTRY	SHIRT_NUM	PNAME	POSITION	DOB
Portugal	30	OZ Frank	Center Back	01/19/1999
Portugal	68	Oralee McElree	Left Fullback	12/10/1980
Portugal	74	Test Test	Center Midfielder	10/04/1990
Portugal	1564	Merola Mayes	Attacking Midfielder	02/26/1978
Portugal	80370	Torin Lissandre	Center Forward	08/27/1994
Portugal	81494	Brooks Ankers	Center Back	01/22/1996
6 record(s) selected.				

```
db2 =>
```

iv. In the application, choose the second item of the main menu.
see below

v. Enter the same match id M and country C that you used for the second of the above database queries.
see below

vi. Show the result as indicated in the task.

```
Soccer Main Menu:
-----
1.List information of matches of a country
2.Insert initial Player information for a match
3.option3
4.Exit the application
-----
Enter your choice:
2
4  France  Iran    2023-03-15  finals
5  Mexico  Portugal 2023-03-15  finals
6  Ecuador Brazil   2023-03-16  finals
7  Poland  Portugal 2023-03-16  group-round
Enter the match id:
5
Enter country:
Portugal
The following players are already entered for match 5
Possible palyers from 'Portugal'not yet selected
1. OZ Frank          30 Center Back
2. Oralee McElree    68 Left Fullback
3. Test Test        74 Center Midfielder
4. Merola Mayes      1564 Attacking Midfielder
5. Torin Lissandre   80370 Center Forward
6. Brooks Ankers     81494 Center Back
Enter number of the player you want to insert, [P] to go to the previous menu
```

vii. In your application program select one of the available players and show the result.

```
Enter your choice:
4  France  Iran    2023-03-15  finals
5  Mexico  Portugal 2023-03-15  finals
6  Ecuador Brazil   2023-03-16  finals
7  Poland  Portugal 2023-03-16  group-round
Enter the match id:
5
Enter country:
Portugal
The following players are already entered for match 5
OZ Frank          30 test position1  from minute 0  to minute NULL yellow: 0 red: 0
Possible palyers from 'Portugal'not yet selected
1. Oralee McElree    68 Left Fullback
2. Test Test        74 Center Midfielder
3. Merola Mayes      1564 Attacking Midfielder
4. Torin Lissandre   80370 Center Forward
5. Brooks Ankers     81494 Center Back
Enter number of the player you want to insert, [P] to go to the previous menu
P
please enter play position for your chosen player number: 2
test position2
INSERT INTO Performs(country, shirt_num, id, etime,position, Rcard,Ycard) VALUES ('Portugal',74,5,'00:00:00','test position2', 0, 0)
4  France  Iran    2023-03-15  finals
5  Mexico  Portugal 2023-03-15  finals
6  Ecuador Brazil   2023-03-16  finals
7  Poland  Portugal 2023-03-16  group-round
Enter the match id:
5
Enter country:
Portugal
The following players are already entered for match 5
OZ Frank          30 test position1  from minute 0  to minute NULL yellow: 0 red: 0
Test Test        74 test position2  from minute 0  to minute NULL yellow: 0 red: 0
Possible palyers from 'Portugal'not yet selected
1. Oralee McElree    68 Left Fullback
2. Merola Mayes      1564 Attacking Midfielder
3. Torin Lissandre   80370 Center Forward
4. Brooks Ankers     81494 Center Back
Enter number of the player you want to insert, [P] to go to the previous menu
P
```

viii. In your program **set the maximum number of players** of a team for a match to two or three (just for testing) and show an example execution where you reach this limit. Your program should not allow further inserts.

```
Enter the match id:
5
Enter country:
Portugal
The following players are already entered for match 5
0Z Frank          30  test position1  from minute 0   to minute NULL yellow: 0 red: 0
Test Test        74  test position2  from minute 0   to minute NULL yellow: 0 red: 0
Possible palyers from 'Portugal'not yet selected
1. OraLee McElree      68  Left Fullback
2. Merola Mayes        1564  Attacking Midfielder
3. Torin Lissandre     80370  Center Forward
4. Brooks Ankers       81494  Center Back
Enter number of the player you want to insert, [P] to go to the previous menu
P
please enter play position for your chosen player number: 4
test position3
INSERT INTO Performs(country, shirt_num, id, etime,position, Rcard,Ycard) VALUES ('Portugal',81494,5,'00:00:00','test position3', 0, 0)
4  France  Iran    2023-03-15    finals
5  Mexico  Portugal  2023-03-15    finals
6  Ecuador Brazil  2023-03-16    finals
7  Poland  Portugal  2023-03-16    group-round
Enter the match id:
5
Enter country:
Portugal
The following players are already entered for match 5
0Z Frank          30  test position1  from minute 0   to minute NULL yellow: 0 red: 0
Test Test        74  test position2  from minute 0   to minute NULL yellow: 0 red: 0
Brooks Ankers     81494  test position3  from minute 0   to minute NULL yellow: 0 red: 0
You already exceeded 3-player insertion limit
Soccer Main Menu:
-----
1.List information of matches of a country
2.Insert initial Player information for a match
3.option3
4.Exit the application
-----
Enter your choice:
1
```

ix. Go back to the main menu and from there exit the application.


```

4  France Iran      2023-03-15  finals
5  Mexico Portugal  2023-03-15  finals
6  Ecuador Brazil   2023-03-16   finals
7  Poland Portugal  2023-03-16   group-round
Enter the match id:
5
Enter country:
Portugal
The following players are already entered for match 5
02 Frank                      30  test position1  from minute 0  to minute NULL yellow: 0 red: 0
Test Test                     74  test position2  from minute 0  to minute NULL yellow: 0 red: 0
Brooks Ankers                 81494 test position3  from minute 0  to minute NULL yellow: 0 red: 0
You already exceeded 3-player insertion limit
Soccer Main Menu:
-----
1.List information of matches of a country
2.Insert initial Player information for a match
3.option3
4.Exit the application
-----
Enter your choice:
4
You've successfully exited the application.

Process finished with exit code 0

```

x. Run a query in the database that shows for M and country C the players that play in M .

```

db2 => SELECT * FROM Performs WHERE id = 5 AND country = 'Portugal';

```

COUNTRY	SHIRT_NUM	ID	ETIME	LTIME	POSITION	RCARD	YCARD
Portugal	30		5 00:00:00 -		test position1	0	0
Portugal	74		5 00:00:00 -		test position2	0	0
Portugal	81494		5 00:00:00 -		test position3	0	0

```

3 record(s) selected.
db2 =>

```

(c) (30 points)

We designed a menu item which allows the user to assign a referee to a specific game by updating the Refs_game table. First, the program presents the user with a list of available referees, and prompts the user to select one. If the user chooses a referee that is not in the list, or if the referee is from one of the countries playing in the match, the program returns to the main menu. Otherwise, the user chooses this referee’s role in the game and the Refs_game table is updated, if possible.

i. Before running the program, this is the content of the Refs_game table, which identifies which referees are assigned to each game.

RNAME	ID	ROLE
Malia Karpf	1	main referee
Clarey Nelm	2	main referee
Harli MacSkeagan	2	assistant referee
Forester Masdon	2	assistant referee
Ebba Whichelow	2	assistant referee
Harli MacSkeagan	3	main referee
Staci Chaplin	3	assistant referee
Terza Nafziger	5	main referee
Hobie Briggdale	5	assistant referee
Ebba Whichelow	6	main referee
Elana Dimock	8	main referee
Myrtia Pelman	8	assistant referee
Georgeta Morch	8	assistant referee
Clarey Nelm	8	assistant referee
Terza Nafziger	9	main referee
Cherie Shawyers	9	assistant referee
Cherie Shawyers	10	main referee
Malia Karpf	11	main referee
Malena Stare	12	main referee
Georgeta Morch	13	main referee
Zaccaria Davidsohn	14	main referee
Harli MacSkeagan	14	assistant referee
Brittany Radwell	15	main referee
Garv Pybus	16	main referee
Lionel Coslett	16	assistant referee
Brittany Radwell	17	main referee
Malena Stare	17	assistant referee
Garv Pybus	18	main referee
Elana Dimock	19	main referee
Malena Stare	20	main referee
Hobie Briggdale	21	main referee
Cherie Shawyers	23	main referee
Clarey Nelm	24	main referee
Forester Masdon	24	assistant referee
Karna Dienes	24	assistant referee
Zaccaria Davidsohn	25	main referee
Karna Dienes	25	assistant referee
Myrtia Pelman	26	main referee
Shandra Rivallant	27	main referee
Elana Dimock	27	assistant referee
Kirsteni Wilshaw	27	main referee
Staci Chaplin	27	assistant referee
Lionel Coslett	29	main referee
Staci Chaplin	32	main referee
Kirsteni Wilshaw	32	assistant referee

45 record(s) selected.

ii. If we run the program and select option 3, we see a list of games that have not started yet. We can then select a specific game.

Soccer Main Menu:

-
- 1.List information of matches of a country
 - 2.Insert initial Player information for a match
 - 3.Add referee to match
 - 4.Exit the application
-

Enter your choice:

3

- | | | | | |
|----|-------------|-------------|------------|---------------|
| 5 | Mexico | Portugal | 2023-03-15 | finals |
| 6 | Ecuador | Brazil | 2023-03-16 | finals |
| 7 | Poland | Portugal | 2023-03-16 | group-round |
| 8 | Japan | South Korea | 2023-03-17 | round-of-16 |
| 9 | France | Poland | 2023-03-18 | quarterfinals |
| 10 | Netherlands | France | 2023-03-19 | finals |

Enter the match id:

9

List of all referees

iii. The program displays a list of all referees and prompts the user to select one.

```
List of all referees
Clarey NeIm Brazil (1 years of experience)
Staci Chaplin Uruguay (2 years of experience)
Harli MacSkeagan Portugal (3 years of experience)
Brittany Radwell Spain (4 years of experience)
Cherie Shawyers Croatia (12 years of experience)
Malia Karpf Australia (6 years of experience)
Zaccaria Davidsohn Saudi Arabia (7 years of experience)
Forester Masdon Tunisia (8 years of experience)
Garv Pybus Poland (9 years of experience)
Elana Dimock France (10 years of experience)
Terza Nafziger Brazil (11 years of experience)
Lionel Coslett Mexico (23 years of experience)
Myrtia Pelman Portugal (13 years of experience)
Georgeta Morch Mexico (14 years of experience)
Karna Dienes Portugal (15 years of experience)
Hobie Briggdale Canada (12 years of experience)
Ebba Whichelow France (17 years of experience)
Shandra Rivallant Spain (18 years of experience)
Kirsteni Wilshaw Poland (19 years of experience)
Malena Stare Portugal (20 years of experience)
Which referee do you want to select? Type P to go to the previous menu
|
```

iv. If we choose a referee from one of the playing countries (in this case France or Poland) or a person that is not a referee, an error message appears, and the program sends us to the main menu.

Which referee do you want to select? Type P to go to the previous menu

Elana Dimock

Selected Elana Dimock

Error: Referee Elana Dimock is from France, which is playing in the match.

Soccer Main Menu:

- 1.List information of matches of a country
- 2.Insert initial Player information for a match
- 3.Add referee to match
- 4.Exit the application

Enter your choice:

|

Which referee do you want to select? Type P to go to the previous menu

Christine Sinclair

Selected Christine Sinclair

Error: No referee found with name Christine Sinclair

Soccer Main Menu:

- 1.List information of matches of a country
- 2.Insert initial Player information for a match
- 3.Add referee to match
- 4.Exit the application

Enter your choice:

|

v. Otherwise, once a referee is selected, the user can now choose their role in the game. After that, the program attempts to update the Referee_game table with an INSERT statement. If this referee is already assigned to the selected game, an error message is raised.

Which referee do you want to select? Type P to go to the previous menu

Staci Chaplin

Selected Staci Chaplin

Which role should referee Staci Chaplin have in this game?

main referee

Code: -803 sqlState: 23505

com.ibm.db2.jcc.am.SqlIntegrityConstraintViolationException: DB2 SQL Error: SQLCODE=-803, SQLSTATE=23505, SQLERRMC=1;CS4216229.REFS_GAME, DRIVER=4.27.25

Error: Referee Staci Chaplin was already assigned to game 6

vi. If the referee is not part of this game, they are successfully added. The program closes the database connection and quits.

```
Which referee do you want to select? Type P to go to the previous menu
```

```
Staci Chaplin
```

```
Selected Staci Chaplin|
```

```
Which role should referee Staci Chaplin have in this game?
```

```
assistant referee
```

```
Referee Staci Chaplin was successfully assigned to game 9
```

```
Process finished with exit code 0
```

vii. After running the program, we see that the referee “Staci Chaplin” was successfully assigned to game 9.

```
[db2 => SELECT * FROM Refs_game
```

RNAME	ID	ROLE
Malia Karpf	1	main referee
Clarey Nelm	2	main referee
Harli MacSkeagan	2	assistant referee
Forester Masdon	2	assistant referee
Ebba Whichelow	2	assistant referee
Harli MacSkeagan	3	main referee
Staci Chaplin	3	assistant referee
Terza Nafziger	5	main referee
Hobie Briggdale	5	assistant referee
Ebba Whichelow	6	main referee
Elana Dimock	8	main referee
Myrtia Pelman	8	assistant referee
Georgeta Morch	8	assistant referee
Clarey Nelm	8	assistant referee
Terza Nafziger	9	main referee
Cherie Shawyers	9	assistant referee
Cherie Shawyers	10	main referee
Malia Karpf	11	main referee
Malena Stare	12	main referee
Georgeta Morch	13	main referee
Zaccaria Davidsohn	14	main referee
Harli MacSkeagan	14	assistant referee
Brittany Radwell	15	main referee
Garv Pybus	16	main referee
Lionel Coslett	16	assistant referee
Brittany Radwell	17	main referee
Malena Stare	17	assistant referee
Garv Pybus	18	main referee
Elana Dimock	19	main referee
Malena Stare	20	main referee
Hobie Briggdale	21	main referee
Cherie Shawyers	23	main referee
Clarey Nelm	24	main referee
Forester Masdon	24	assistant referee
Karna Dienes	24	assistant referee
Zaccaria Davidsohn	25	main referee
Karna Dienes	25	assistant referee
Myrtia Pelman	26	main referee
Shandra Rivallant	27	main referee
Elana Dimock	27	assistant referee
Kirsteni Wilshaw	27	main referee
Staci Chaplin	27	assistant referee
Lionel Coslett	29	main referee
Staci Chaplin	32	main referee
Kirsteni Wilshaw	32	assistant referee
Staci Chaplin	9	assistant referee

```
46 record(s) selected.
```

```
db2 =>
```

Section 4: Indexing

```
CREATE INDEX new_index ON Players(country);
```

```
[db2 => CREATE INDEX new_index ON Players(country);  
DB20000I The SQL command completed successfully.
```

We chose to index the “Players” table by country. This would increase the speed of SELECT operations involving players, which are commonly queried when processing World Cup data (for example, in queries involving goals scored, or the number of players per game). Other tables, such as coaches and referees, are queried less often. The Players table also contains many more entries than most other tables, so an index would increase the speed of queries by a larger factor. Finally, the content of the Players table (the list of all players) is known before the World Cup starts, as opposed to other tables such as Goals which are updated as the tournament progresses. While indexes increase the speed of selection, they make insertion and deletion slower as both the index and the table need to be updated. Since the Players table stays consistent throughout the whole tournament, this is not a problem for the Players index.

Section 5: Data Analytics

Query: EXPORT TO num_goals.csv OF DEL MODIFIED BY NOCHARDEL SELECT country, COUNT(*) AS number_of_goals FROM Goals JOIN Games ON Goals.id = Games.id WHERE round = 1 GROUP BY country ORDER BY number_of_goals DESC LIMIT 5;

```
db2 => SELECT country, COUNT(*) AS number_of_goals FROM Goals JOIN Games ON Goals.id = Games.id WHERE round = 1 GROUP BY country ORDER BY number_of_goals DESC LIMIT 5;
```

COUNTRY	NUMBER_OF_GOALS
Japan	6
Poland	4
Portugal	3
Mexico	2
Brazil	1

5 record(s) selected.

```
db2 => EXPORT TO num_goals.csv OF DEL MODIFIED BY NOCHARDEL SELECT country, COUNT(*) AS number_of_goals FROM Goals JOIN Games ON Goals.id = Games.id WHERE round = 1 GROUP BY country ORDER BY number_of_goals DESC LIMIT 5;  
SQL3104N The Export utility is beginning to export data to file  
"num_goals.csv".
```

```
SQL3105N The Export utility has finished exporting "5" rows.
```

Number of rows exported: 5

```
db2 =>
```

Note: The round is stored as a number in the database. We used a function to designate round 1 as the group round for Part 3. This part uses the original numerical designation.

