Assignment: User Guide

Implementation

Login and Database Creation

1. Navigate to the _____ directory.
2. To enter the MySQL Command-Line Client, at the "$ " prompt, enter:
   mysql -u me -p
   Then, at the "Enter password: " prompt, enter:
   myUserPassword
3. To create the relevant database, at the "mysql>" prompt, enter:
   CREATE DATABASE assignment_20169321;
4. To use the aforementioned database, enter:
   USE assignment_20169321

Table Creation and Value Insertion

1. To create the relevant tables, enter:
   SOURCE assignment_tables.sql
2. To show the relevant tables, enter:
   SHOW TABLES;
   The output should be as follows:

```
+--------------------------------+
| Tables_in_assignment_20169321  |
+--------------------------------+
| athletes                       |
| countries                      |
| events                         |
| results                        |
| sports                         |
+--------------------------------+
5 rows in set (0.00 sec)
```

3. To show the description of the athletes table, enter:
   DESC athletes;
   The output should be as follows:

```
+---------------+-------------+------+-----+---------+-------+
| Field         | Type        | Null | Key | Default | Extra |
+---------------+-------------+------+-----+---------+-------+
| athlete_pk    | char(6)     | NO   | PRI | NULL    |       |
| country_fk    | char(3)     | YES  | MUL | NULL    |       |
| family_name   | varchar(36) | NO   |     | NULL    |       |
| given_name    | varchar(36) | NO   |     | NULL    |       |
| gender        | char(1)     | NO   |     | NULL    |       |
| dob           | date        | NO   |     | NULL    |       |
| height        | int(3)      | NO   |     | NULL    |       |
| athlete_weight| int(3)      | NO   |     | NULL    |       |
+---------------+-------------+------+-----+---------+-------+
8 rows in set (0.01 sec)
```

4. To show the description of the countries table, enter:
   DESC countries;
   The output should be as follows:

```
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| country_pk   | char(3)     | NO   | PRI | NULL    |       |
| country_name | varchar(36) | NO   | UNI | NULL    |       |
+--------------+-------------+------+-----+---------+-------+
```

5. To show the description of the events table, enter:
   DESC events;
   The output should be as follows:

```
+----------------+-------------+------+-----+---------+-------+
| Field          | Type        | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+-------+
| event_pk       | char(6)     | NO   | PRI | NULL    |       |
| sport_fk       | char(6)     | YES  | MUL | NULL    |       |
| gender         | char(1)     | YES  |     | NULL    |       |
| event_name     | varchar(36) | NO   | UNI | NULL    |       |
| event_datetime | datetime    | NO   |     | NULL    |       |
| venue          | varchar(36) | NO   |     | NULL    |       |
+----------------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

6. To show the description of the results table, enter:
   DESC results;
   The output should be as follows:

```
+------------+---------+------+-----+---------+-------+
| Field      | Type    | Null | Key | Default | Extra |
+------------+---------+------+-----+---------+-------+
| athlete_fk | char(6) | NO   | PRI | NULL    |       |
| event_fk   | char(6) | NO   | PRI | NULL    |       |
| position   | int(1)  | NO   |     | NULL    |       |
| medal      | char(1) | YES  |     | NULL    |       |
+------------+---------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

7. To show the description of the sports table, enter:
   DESC sports;
   The output should be as follows:

```
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| sport_pk   | char(6)     | NO   | PRI | NULL    |       |
| sport_name | varchar(36) | NO   | UNI | NULL    |       |
+------------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```

8. To insert the relevant entities into the relevant tables, enter:
   SOURCE assignment_values.sql

9. To show the entities of the athletes table, enter:
   SELECT * FROM athletes;
   The output should be as follows:

```
+-----------+------------+-------------+------------+--------+------------+--------+----------------+
| athlete_pk | country_fk | family_name | given_name | gender | dob        | height | athlete_weight |
+-----------+------------+-------------+------------+--------+------------+--------+----------------+
| 029145    | SWE        | AALTONEN    | Paavo      | M      | 1983-12-04 | 180    |             75 |
| 115612    | ZAM        | CHINYEMBA   | Patrick    | M      | 2001-07-28 | 172    |             61 |
| 182321    | SWE        | AARBERG     | Jan-Erik   | M      | 1985-07-09 | 182    |             78 |
| 193021    | USA        | ABBOTT      | Jeremy     | M      | 1991-03-23 | 173    |             72 |
| 193131    | USA        | AALTEN      | Cornelia   | W      | 1999-12-28 | 172    |             48 |
| 193432    | USA        | GRANT       | Rhyan      | M      | 1991-08-01 | 173    |             72 |
| 193821    | JPN        | AOKI        | Kushina    | W      | 1998-06-06 | 173    |             48 |
| 281921    | ZAM        | MAPFUMO     | Lucy       | W      | 2000-04-06 | 170    |             47 |
| 283191    | AUS        | SCOTT       | Lachlan    | M      | 1992-08-21 | 177    |             75 |
| 381022    | AUS        | WINWOOD     | Alex       | M      | 1997-02-02 | 174    |             60 |
| 383131    | AUS        | BEHICH      | Aziz       | M      | 1990-12-16 | 170    |             63 |
| 389121    | USA        | RYAN        | Mat        | M      | 1992-08-04 | 184    |             82 |
| 390112    | USA        | DUKE        | James      | M      | 1992-08-21 | 174    |             74 |
| 398012    | AUS        | WRIGHT      | Bailey     | M      | 1992-08-15 | 186    |             84 |
| 481640    | USA        | MALTO       | Stephanie  | W      | 1997-03-03 | 171    |             47 |
| 489231    | AUS        | CHRIS       | David      | M      | 1990-01-11 | 171    |             73 |
| 547232    | USA        | BOYLE       | Martin     | M      | 1993-04-23 | 191    |             75 |
| 582322    | AUS        | KARACIC     | Fran       | M      | 1996-05-12 | 181    |             75 |
| 839111    | AUS        | MCGOWAN     | Ryan       | M      | 1989-08-15 | 191    |             75 |
| 839198    | USA        | ELDER       | Steve      | M      | 1995-01-01 | 180    |             67 |
+-----------+------------+-------------+------------+--------+------------+--------+----------------+
20 rows in set (0.00 sec)
```

10. To show the entities of the countries table, enter:
    SELECT * FROM countries;
    The output should be as follows:

```
+------------+---------------+
| country_pk | country_name  |
+------------+---------------+
| AUS        | Australia     |
| JPN        | Japan         |
| SWE        | Sweden        |
| USA        | United States |
| ZAM        | Zambia        |
+------------+---------------+
5 rows in set (0.00 sec)
```

11. To show the entities of the events table, enter:
    SELECT * FROM events;
    The output should be as follows:

```
+----------+----------+--------+----------------------------+---------------------+-----------------------+
| event_pk | sport_fk | gender | event_name                 | event_datetime      | venue                 |
+----------+----------+--------+----------------------------+---------------------+-----------------------+
| 274100   | 328931   | W      | Women's 100m Butterfly Final | 2021-07-27 11:30:00 | Tokyo Aquatics Centre |
| 318402   | 673480   | M      | Men's Skeet Second Round   | 2021-07-27 15:45:00 | Asaka Shooting Range  |
| 371121   | 938031   | M      | Winwood vs Chinyemba       | 2021-07-28 18:00:00 | Kokugikan Arena       |
| 936103   | 673480   | M      | Men's Skeet Final Round    | 2021-07-28 15:45:00 | Asaka Shooting Range  |
| 937802   | 482301   | M      | Men's Final: Australia vs USA | 2021-07-26 10:00:00 | Miyagi Stadium        |
+----------+----------+--------+----------------------------+---------------------+-----------------------+
5 rows in set (0.00 sec)
```

12. To show the entities of the results table, enter:
    SELECT * FROM results;
    The output should be as follows:

```
+----------+------------+----------+-------+
| event_fk | athlete_fk | position | medal |
+----------+------------+----------+-------+
|  274100  |  193131    |        1 | G     |
|  274100  |  193821    |        3 | B     |
|  274100  |  281921    |        2 | S     |
|  274100  |  481640    |        4 | NULL  |
|  318402  |  029145    |        1 | NULL  |
|  318402  |  182321    |        2 | NULL  |
|  318402  |  193021    |        3 | NULL  |
|  318402  |  283191    |        4 | NULL  |
|  318402  |  390112    |        5 | NULL  |
|  318402  |  489231    |        6 | NULL  |
|  371121  |  115612    |        1 | G     |
|  371121  |  381022    |        2 | NULL  |
|  936103  |  029145    |        1 | G     |
|  936103  |  182321    |        2 | S     |
|  936103  |  193021    |        3 | B     |
|  937802  |  193021    |        2 | S     |
|  937802  |  383131    |        1 | G     |
|  937802  |  389121    |        2 | S     |
|  937802  |  398012    |        1 | G     |
|  937802  |  547232    |        2 | S     |
|  937802  |  582322    |        1 | G     |
|  937802  |  839111    |        1 | G     |
|  937802  |  839198    |        2 | S     |
+----------+------------+----------+-------+
23 rows in set (0.00 sec)
```

13. To show the entities of the sports table, enter:
    SELECT * FROM sports;
    The output should be as follows:

```
+----------+----------------+
| sport_pk | sport_name     |
+----------+----------------+
|  482301  | 3x3 Basketball |
|  938031  | Boxing         |
|  673480  | Shooting       |
|  328931  | Swimming       |
+----------+----------------+
4 rows in set (0.00 sec)
```

Usage

Queries

To show the results of the relevant queries, enter:
SOURCE assignment_queries.sql
The output should be as follows:

1. Show the number of athletes representing each country.

```
+---------+-------+
| country | count |
+---------+-------+
| AUS     |     7 |
| JPN     |     1 |
| SWE     |     2 |
| USA     |     8 |
| ZAM     |     2 |
+---------+-------+
5 rows in set (0.00 sec)
```

2. Show all participating countries ordered by name.

```
+----------------------+
| country_listing      |
+----------------------+
| Zambia (ZAM)         |
| United States (USA)  |
| Sweden (SWE)         |
| Japan (JPN)          |
| Australia (AUS)      |
+----------------------+
5 rows in set (0.00 sec)
```

3. Show the age of the average American athlete.

```
+-------------+
| average_age |
+-------------+
|          27 |
+-------------+
1 row in set (0.00 sec)
```

4. Show the names and nationalities of all gold medalists

```
+-------------------------+
| gold_medalists          |
+-------------------------+
| AALTEN, Cornelia (USA)  |
| CHINYEMBA, Patrick (ZAM)|
| AALTONEN, Paavo (SWE)   |
| BEHICH, Aziz (AUS)      |
| WRIGHT, Bailey (AUS)    |
| KARACIC, Fran (AUS)     |
| MCGOWAN, Ryan (AUS)     |
+-------------------------+
7 rows in set (0.01 sec)
```

5. Show the height of the average athlete.

```
+------------+
| avg_height |
+------------+
|        177 |
+------------+
1 row in set (0.00 sec)
```

6. Show the names and nationalities of all athletes shorter than the average athlete.

```
+---------------------------+
| athletes                  |
+---------------------------+
| CHINYEMBA, Patrick (ZAM)  |
| ABBOTT, Jeremy (USA)      |
| AALTEN, Cornelia (USA)    |
| GRANT, Rhyan (USA)        |
| AOKI, Kushina (JPN)       |
| MAPFUMO, Lucy (ZAM)       |
| SCOTT, Lachlan (AUS)      |
| WINWOOD, Alex (AUS)       |
| BEHICH, Aziz (AUS)        |
| DUKE, James (USA)         |
| MALTO, Stephanie (USA)    |
| CHRIS, David (AUS)        |
+---------------------------+
12 rows in set (0.00 sec)
```
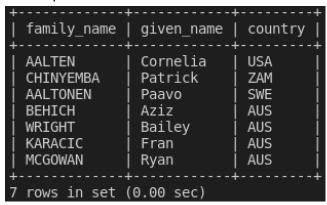
Advanced Features

1. To recreate the recreate the relevant tables, enter:
   SOURCE assignment_tables.sql
2. To create the relevant stored procedures, enter:
   SOURCE assignment_procedures.sql
3. To insert the relevant entities into the relevant tables, using the relevant stored procedures, enter:
   SOURCE assignment_values2.sql
4. To show the entities of each of the tables, enter the commands outlined in steps 9-13 of *Implementation > Table Creation and Value Insertion*.
5. To implement the relevant views, enter:
   SOURCE assignment_views.sql

6. To show the entities of the representatives view, enter:
   SELECT * FROM representatives;
   The output should be as follows:

```
+----------+-----------------+
| country  | representatives |
+----------+-----------------+
| AUS      |               7 |
| JPN      |               1 |
| SWE      |               2 |
| USA      |               8 |
| ZAM      |               2 |
+----------+-----------------+
5 rows in set (0.00 sec)
```

7. To show the entities of the winners view, enter:
   SELECT * FROM winners;
   The output should be as follows:

```
+-------------+------------+---------+
| family_name | given_name | country |
+-------------+------------+---------+
| AALTEN      | Cornelia   | USA     |
| CHINYEMBA   | Patrick    | ZAM     |
| AALTONEN    | Paavo      | SWE     |
| BEHICH      | Aziz       | AUS     |
| WRIGHT      | Bailey     | AUS     |
| KARACIC     | Fran       | AUS     |
| MCGOWAN     | Ryan       | AUS     |
+-------------+------------+---------+
7 rows in set (0.00 sec)
```

Python Integration

1. To exit the MySQL Command-Line Client, enter:
   exit
2. To run the relevant python3 file, at the "$ " prompt, enter:
   python3 assignment.py
   Then, at the "Enter username: " prompt, enter:
   me
   Lastly, at the "Enter password: " prompt, enter:
   myUserPassword
   The output should be as follows:

```
Q1. Show the number of athletes rep
country: AUS, count: 7
country: JPN, count: 1
country: SWE, count: 2
country: USA, count: 8
country: ZAM, count: 2
Q2. Show all participating countrie
country: Zambia (ZAM)
country: United States (USA)
country: Sweden (SWE)
country: Japan (JPN)
country: Australia (AUS)
Q3. Show the age of the average Ame
age: 27
Show the names and nationalities of
athlete: AALTEN, Cornelia (USA)
athlete: CHINYEMBA, Patrick (ZAM)
athlete: AALTONEN, Paavo (SWE)
athlete: BEHICH, Aziz (AUS)
athlete: WRIGHT, Bailey (AUS)
athlete: KARACIC, Fran (AUS)
athlete: MCGOWAN, Ryan (AUS)
5. Show the height of the average a
height: 177
Q6. Show the names and nationalitie
athlete: CHINYEMBA, Patrick (ZAM)
athlete: ABBOTT, Jeremy (USA)
athlete: AALTEN, Cornelia (USA)
athlete: GRANT, Rhyan (USA)
athlete: AOKI, Kushina (JPN)
athlete: MAPFUMO, Lucy (ZAM)
athlete: SCOTT, Lachlan (AUS)
athlete: WINWOOD, Alex (AUS)
athlete: BEHICH, Aziz (AUS)
athlete: DUKE, James (USA)
athlete: MALTO, Stephanie (USA)
athlete: CHRIS, David (AUS)
MySQL connection is closed now
```