DATABASE MANAGEMENT SYSTEM

[UE19CS301]

5TH SEM, Academic Year 2020-21

ASSIGNMENT – 3

Team 23:

Team Members:

1. Sadhvi Sushravya H S - PES1UG19CS410
2. Sanjana G - PES1UG19CS430
3. Sathvik K - PES1UG19CS435
4. Joshua Dsouza - PES1UG20CS811

Simple queries:

1. Retrieve the names and country of Athletes who won Gold medal.

```
olympic=# select a_name,type,c_name from athlete as aa ,result as rr,country as cc where aa.a_id=rr.a_id and rr.type =
'Gold' and cc.c_id =aa.c_id ;
      a_name       | type |   c_name
-------------------+------+------------
 Neeraj Chopra     | Gold | India
 Hou Zhihui        | Gold | China
 Zavur Vguev       | Gold | Russia
 Busenaz Surmeneli | Gold | Turkey
 Chen Yufei        | Gold | China
 Takuto Otaguro    | Gold | Japan
 Smith             | Gold | Azerbaijan
(7 rows)
```

2. Retrieve the number of distinct sports at the Olympic

```
olympic=# select count(DISTINCT s_name) from event;
 count
-------
     6
(1 row)
```

3. Retrieve the details of the athletes from India

```
olympic=# select *from athlete where c_id='IND';
 a_id |      a_name        | age |    dob     | gender | c_id
------+--------------------+-----+------------+--------+------
 1    | Neeraj Chopra      |  23 | 1997-12-24 | M      | IND
 5    | Mirabai Chanu      |  27 | 1994-08-08 | F      | IND
 8    | Ravi Kumar         |  23 | 1997-12-12 | M      | IND
 12   | Lovlina Borgohain  |  24 | 1997-10-02 | F      | IND
 15   | PV Sindhu          |  26 | 1995-07-05 | F      | IND
 18   | Bajrang Punia      |  27 | 1994-02-26 | M      | IND
(6 rows)
```

4. Retrieve the name, age, gender and country of Athlete who have a score of '87.58' in Men's Javelin Throw

```
olympic=# select a_name,age,gender,c_id from athlete as aa,result as rr where aa.a_id=rr.a_id and rr.score = '87.58';
    a_name     | age | gender | c_id
---------------+-----+--------+------
 Neeraj Chopra |  23 | M      | IND
(1 row)
```

5. Retrieve the max, min and average age of Athletes

```
olympic=# select max(age),min(age),avg(age) from athlete;
 max | min |          avg
-----+-----+----------------------
  38 |  19 | 26.2631578947368421
(1 row)
```

6. Retrieve the total number of medals won by Athletes in particular event

```
olympic=# select e_name,count(e_name) from result group by e_name;
              e_name               | count
-----------------------------------+-------
 Mens Javelin Throw                |     3
 Mens Freestyle 400 Swimming       |     1
 Womens Singles Badminton          |     3
 Mens Freestyle 65kg Wrestling     |     3
 Mens Freestyle 100 Swimming       |     1
 Mens Freestyle 200 Swimming       |     1
 Mens Freestyle 57kg Wrestling     |     3
 Womens Welter Weight(64-69) Boxing|     3
 Womens 49kg Weightlifting         |     3
(9 rows)
```

7. Count the number of Male and Female Athletes

```
olympic=# select gender,count(gender) from athlete group by gender;
 gender | count
--------+-------
 M      |    10
 F      |     9
(2 rows)
```

8. Count the number of Athlete's from a particular country

```
olympic=# select c_id,count(c_id) from athlete group by c_id;
 c_id | count
------+-------
 CZE  |     2
 ROC  |     1
 AZE  |     2
 INA  |     1
 IND  |     6
 USA  |     1
 TUR  |     1
 CHN  |     3
 TPE  |     1
 JPN  |     1
(10 rows)
```

Complex queries:

1. Retrieve the names of male Athletes whose age is greater than average age

```
olympic=# select a_name from athlete where gender='M' and  age > ( select avg(age) from athlete);
      a_name
------------------
 Jakub Vadlejoh
 Vitezslav Vesely
 Thomas Gilman
 Haji Aliyev
 Bajrang Punia
 Smith
(6 rows)
```

2. Retrieve the event date and time when event = 'Swimming'

```
postgres=# \c olympic
You are now connected to database "olympic" as user "postgres".
olympic=# select e_date,e_time from schedule as ss where exists (select e_name from event as ee where
 ss.e_name = e_name and ee.s_name= 'Swimming');
   e_date    |  e_time
-------------+----------
 2021-08-10 | 20:00:00
 2021-08-09 | 20:00:00
 2021-08-05 | 20:00:00
(3 rows)
```

3. Retrieve the name and age of female athletes whose age is less than average age

```
olympic=# select a_name,age from athlete where gender = 'F' and age < ( select avg(age) from athlete);
      a_name       | age
-------------------+-----
 Hou Zhihui        |  24
 Aisah Windy       |  19
 Busenaz Surmeneli |  23
 Lovlina Borgohain |  24
 Chen Yufei        |  23
 PV Sindhu         |  26
(6 rows)
```

4. Retrieve the event name and event date which events doesn't start at '20:00'

```
olympic=# select e_name,e_date from schedule as ss where not exists (select e_name from event as ee wher
e ss.e_name=e_name and e_time='20:00');
              e_name               |   e_date
-----------------------------------+------------
 Womens 49kg Weightlifting         | 2021-07-24
 Womens Singles Badminton          | 2021-08-01
 Womens Welter Weight(64-69) Boxing | 2021-08-04
 Mens Freestyle 65kg Wrestling     | 2021-08-05
 Mens Freestyle 65kg Wrestling     | 2021-08-05
(5 rows)
```

Multiple Users with different access privilege levels for different parts of the database:

```
olympic=# \d
          List of relations
 Schema |   Name   | Type  |  Owner
--------+----------+-------+----------
 public | athlete  | table | postgres
 public | country  | table | postgres
 public | event    | table | postgres
 public | ooc      | table | postgres
 public | result   | table | postgres
 public | schedule | table | postgres
 public | site     | table | postgres
(7 rows)


olympic=# create user admin with password 'admin'createdb;
CREATE ROLE
olympic=# grant insert,delete,select on country,athlete,site,result,schedule,event,ooc to admin;
GRANT
olympic=# create user scheduler with password 'scheduler' createdb;
CREATE ROLE
olympic=# grant insert,delete,select on site,schedule to scheduler;
GRANT
```

```
olympic=# create user audience with password 'audience' createdb;
CREATE ROLE
olympic=# grant select on country,athlete,site,result,schedule,event,ooc to audience;
GRANT
```

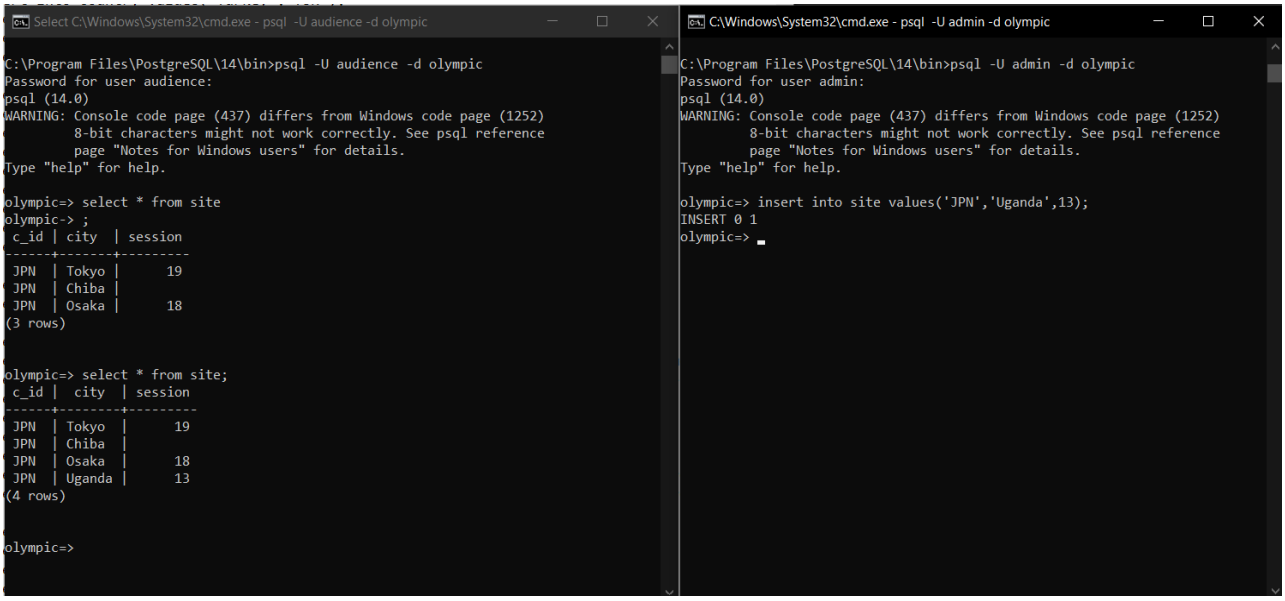
1. Created role for admin who can select, insert, delete on country, athlete, site, result, schedule, event and ooc

```
C:\Program Files\PostgreSQL\14\bin>psql -U admin -d olympic
Password for user admin:
psql (14.0)
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

olympic=> select * from event;
    s_name     |               e_name
---------------+-----------------------------------
 Athletics     | Mens Javelin Throw
 Weightlifting | Womens 49kg Weightlifting
 Wrestling     | Mens Freestyle 57kg Wrestling
 Boxing        | Womens Welter Weight(64-69) Boxing
 Badminton     | Womens Singles Badminton
 Wrestling     | Mens Freestyle 65kg Wrestling
 Swimming      | Mens Freestyle 200 Swimming
 Swimming      | Mens Freestyle 400 Swimming
 Swimming      | Mens Freestyle 100 Swimming
(9 rows)


olympic=> insert into event values('Wrestling','Mens Freestyle 71kg Wrestling');
INSERT 0 1
olympic=> select * from event;
    s_name     |               e_name
---------------+-----------------------------------
 Athletics     | Mens Javelin Throw
 Weightlifting | Womens 49kg Weightlifting
 Wrestling     | Mens Freestyle 57kg Wrestling
 Boxing        | Womens Welter Weight(64-69) Boxing
 Badminton     | Womens Singles Badminton
 Wrestling     | Mens Freestyle 65kg Wrestling
 Swimming      | Mens Freestyle 200 Swimming
 Swimming      | Mens Freestyle 400 Swimming
 Swimming      | Mens Freestyle 100 Swimming
 Wrestling     | Mens Freestyle 71kg Wrestling
(10 rows)
```

2. Created role for scheduler who can insert and delete on site and schedule

```
C:\Program Files\PostgreSQL\14\bin>psql -U scheduler -d olympic
Password for user scheduler:
psql (14.0)
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

olympic=> select * from site;
 c_id | city  | session
------+-------+---------
 JPN  | Tokyo |      19
 JPN  | Chiba |
(2 rows)


olympic=> insert into site values('JPN','Osaka',18);
INSERT 0 1
olympic=> select * from site;
 c_id | city  | session
------+-------+---------
 JPN  | Tokyo |      19
 JPN  | Chiba |
 JPN  | Osaka |      18
(3 rows)


olympic=> select * from athlete;
ERROR:  permission denied for table athlete
olympic=> select * from event;
ERROR:  permission denied for table event
```

3. Created role for audience who can select on country, athlete, site, result, schedule, event and ooc

```
C:\Program Files\PostgreSQL\14\bin>psql -U audience -d olympic
Password for user audience:
psql (14.0)
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

olympic=> select * from event;
    s_name     |               e_name
---------------+-----------------------------------
 Athletics     | Mens Javelin Throw
 Weightlifting | Womens 49kg Weightlifting
 Wrestling     | Mens Freestyle 57kg Wrestling
 Boxing        | Womens Welter Weight(64-69) Boxing
 Badminton     | Womens Singles Badminton
 Wrestling     | Mens Freestyle 65kg Wrestling
 Swimming      | Mens Freestyle 200 Swimming
 Swimming      | Mens Freestyle 400 Swimming
 Swimming      | Mens Freestyle 100 Swimming
 Wrestling     | Mens Freestyle 71kg Wrestling
(10 rows)


olympic=> insert into athlete values(20,'Raj Pandit',24,'1996-11-22','M','IND');
ERROR:  permission denied for table athlete
olympic=> insert into result values(20,'Gold',54,'Mens Freestyle 65kg Wrestling');
ERROR:  permission denied for table result
```

Concurrent Transactions