Database design

CSE3207 Project #1

Assignment Date : April 14th, 2020
Due Date : May 8th, 2020

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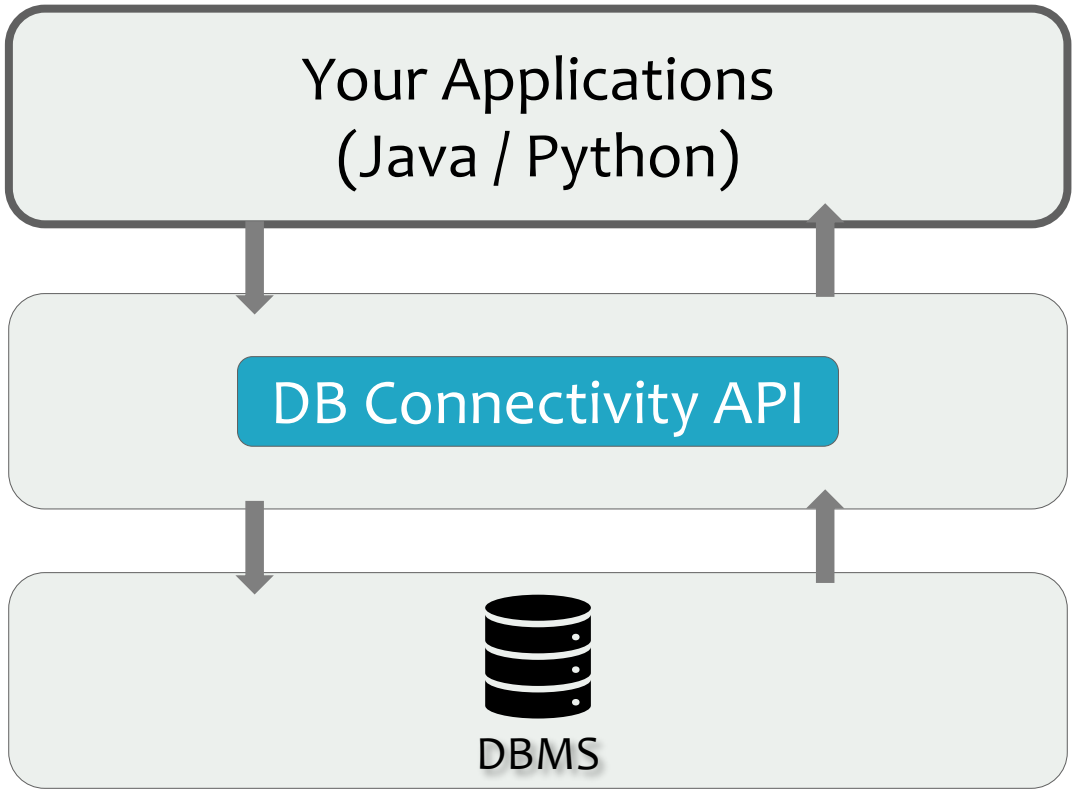
Project Description

- You'll make a code on JAVA/Python to control the DBMS



Project Description

- Translate given statements into SQLs and process the query using your application
  - Create tables
  - Initial data input
  - Insert additional data
  - Select statements
  - Update statements
  - Delete statements

  (See project specification)

Project Description

- You need to design database for Movie
- You need to design 13 Table in DB

director (directorID, directorName, dateOfBirth, dateOfDeath)
actor (actorID, actorName, dateOfBirth, dateOfDeath, gender)
movie (movieID, movieName, releaseYear, releaseMonth, releaseDate, publisherName, avgRate)
award (awardID, awardName)
genre (genreName)
movieGenre (movieID, genreName)
movieObtain (movieID, awardID, year)
actorObtain (actorID, awardID, year)
directorObtain (directorID, awardID, year)
casting (movieID, actorID, role)
make (movieID, directorID)
customerRate (customerID, movieID, rate)
customer (customerID, customerName, dateOfBirth, gender)

Project Description

- Initial data

Movie						
Name	**Director**	**Actor**	**Role**	**Genre**	**Publisher**	**Release date**
Edward Scissorhands	Tim Burton	Johnny Depp	Main actor	Fantasy, Romance	20th Century Fox Presents	1991.06.29
		Winona Ryder	Main actor			
Alice In Wonderland	Tim Burton	Johnny Depp	Main actor	Fantasy, Adventure, Family	Korea Sony Pictures	2010.03.04
		Anne Hathaway	Main actor			
The Social Network	David Fincher	Jesse Eisenberg	Main actor	Drama	Korea Sony Pictures	2010.11.18
		Andrew Garfield	Supporting Actor			
The Dark Knight	Christopher Nolan	Christian Bale	Main actor	Action, Drama, Mystery, Thriller	Warner Brothers Korea	2008.08.06
		Heath Ledger	Main actor			
Dunkirk	Christopher Nolan	Fionn Whitehead	Main actor	Action, Drama, Thriller, War	Warner Brothers Korea	2017.07.13
		Tom Hardy	Main actor			

Director		
Name	**Date of birth**	**Date of death**
Tim Burton	1958.8.25	
David Fincher	1962.8.28	
Christopher Nolan	1970.7.30	

Actor			
Name	**Date of birth**	**Date of death**	**Gender**
Johnny Depp	1963.6.9		Male
Winona Ryder	1971.10.29		Female
Anne Hathaway	1982.11.12		Female
Christian Bale	1974.1.30		Male
Heath Ledger	1979.4.4	2008.1.22	Male
Jesse Eisenberg	1983.10.5		Male
Andrew Garfield	1983.8.20		Male
Fionn Whitehead	1997.7.18		Male
Tom Hardy	1977.9.15		Male

Customer		
Name	**Date of birth**	**Gender**
Bob	1997.11.14	Male
John	1978.01.23	Male
Jack	1980.05.04	Male
Jill	1981.04.17	Female
Bell	1990.05.14	Female

Project Description

- Queries

1. Create the tables and insert the proper data based on the provided data. You should make the movie, actor, director, and customer tables first and insert data into other related tables.
2. Insert the proper data from the following statements.
    2.1. Winona Ryder won the “Best supporting actor” award in 1994
    2.2. Andrew Garfield won the “Best supporting actor” award in 2011
    2.3. Jesse Eisenberg won the “Best main actor” award in 2011
    2.4. Johnny Depp won the “Best villain actor” award in 2011
    2.5. Edward Scissorhands won the “Best fantasy movie” award in 1991
    2.7. The Dark Knight won the “Best picture” award in 2009
    2.6. Alice In Wonderland won the “Best fantasy movie” award in 2011
    2.8. David Fincher won the “Best director” award in 2011
3. Insert data to the proper tables based on the following statements and update avgRate if necessary.
    3.1 Bob rates 5 to “The Dark Knight”.
    3.2 Bell rates 5 to the movies whose director is “Tim Burton”.
    3.3 Jill rates 4 to the movies whose main actor is female.
    3.4 Jack rates 4 to the fantasy movies.
    3.5 John rates 5 to the movies whose director won the “Best director” award
4. Select the names of the movies whose actor are dead.
5. Select the names of the directors who cast the same actor more than once.
6. Select the names of the movies and the genres, where movies have the common genre.
7. Delete the movies whose director or actor did not get any award and delete data from related tables.
8. Delete all customers and delete data from related tables.
9. Delete all data and tables.

Project Description

- Output example 1.

```
연결 성공
Table created!
Initial data inserted!

Statement : Winona Ryder won the “Best supporting actor” award in 1994
Translated SQL : SELECT actorID FROM actor WHERE actorName='Winona Ryder'
Translated SQL : INSERT IGNORE INTO award (awardName) VALUES ('Best supporting actor')
Translated SQL : SELECT awardID FROM award WHERE awardName='Best supporting actor'
Translated SQL : INSERT INTO actorObtain  VALUES (2, 1, 1994)
-----< award >-----
                    awardID                 awardName
                          1      Best supporting actor
-----< actorObtain >-----
                    actorID                   awardID                      year
                          2                         1                      1994

Statement : Andrew Garfield won the “Best supporting actor” award in 2011
Translated SQL : SELECT actorID FROM actor WHERE actorName='Andrew Garfield'
Translated SQL : INSERT IGNORE INTO award (awardName) VALUES ('Best supporting actor')
Translated SQL : SELECT awardID FROM award WHERE awardName='Best supporting actor'
Translated SQL : INSERT INTO actorObtain  VALUES (7, 1, 2011)
-----< award >-----
                    awardID                 awardName
                          1      Best supporting actor
-----< actorObtain >-----
                    actorID                   awardID                      year
                          2                         1                      1994
                          7                         1                      2011
```

Before run your application, assume that the database is empty

You should show the result for translated insert/deletes/updates queries and all the updated tables for each statement

Project Description

- Output example 2

```
Statement: Winona Ryder won the “Best supporting actor” award in 1994
Translated SQL: INSERT into award values('1', 'Best supporting actor')
Updated Tables
award table
+-----------------------------
|awardID        |awardName
|1              |Best supporting actor

Translated SQL: INSERT into actorObtain values('2', '1', 1994)
Updated Tables
actorObtain table
+-----------------------------------
|actorID        |awardID        |year
|2              |1              |1994
```

Project Description

- **Rules in project**

  (if you don't follow this, you can have penalty)

  1. Programming Languages: JAVA
  2. DBMS: PostgreSQL (mandatory)
  3. You should use DB connector by JDBC
  4. **DBMS setting**
     - Database name: **project_movie**
     - Root id: **postgres** // Password: **cse3207**
     - Port: **5432**
     - Tables are should be named as project specification
     - Database should be installed at localhost
  5. Recommend full variable name

     not recommended: name, pw, htn

     recommend: username, db_password, hostNumber

Environment setting

- **Grading environment** (I'll run & check your code on following environment)
  - OS: **Linux Ubuntu**
  - Java version: OpenJDK 11 / Python version: Python 3.7
  - PostgreSQL: 12.2
  - PostgreSQL JDBC: 4.2 Driver (42.2.12)

  - **주의사항: 리눅스에서는 영어 대소문자 구문을 하기 때문에, 대소문자를 구분하지 않을 경우 오류가 일어납니다.**

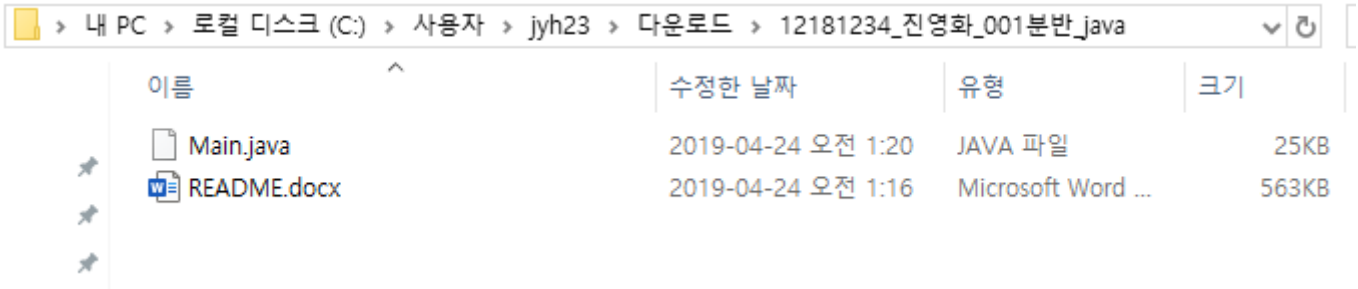
Submission

- To the I-Class website
- Upload a file containing the followings:
  - All the source files and execution file
  - **README.doc explaining**:
    - What you've implemented and what you've NOT
    - Brief explanation of your implementation
      (Do not try to make it look fancy, Less than 1 page)
    - How to compile and run
    - Display result for all queries
    - Talk about your experience of doing this project
    - Contact information (just in case)

Submission

- **Your submitted file must have only:**
  - java source code (you should submit only one source code file)
  - README.doc

  Example :



DO NOT include other module except main.java(main.py)

Submission Form: **Number_Name_Division_Language.zip**

Environment setting

1. Install postgreSQL

   (https://www.postgresql.org/download/)
2. Set DBMS
3. Install JDBC (in Java)

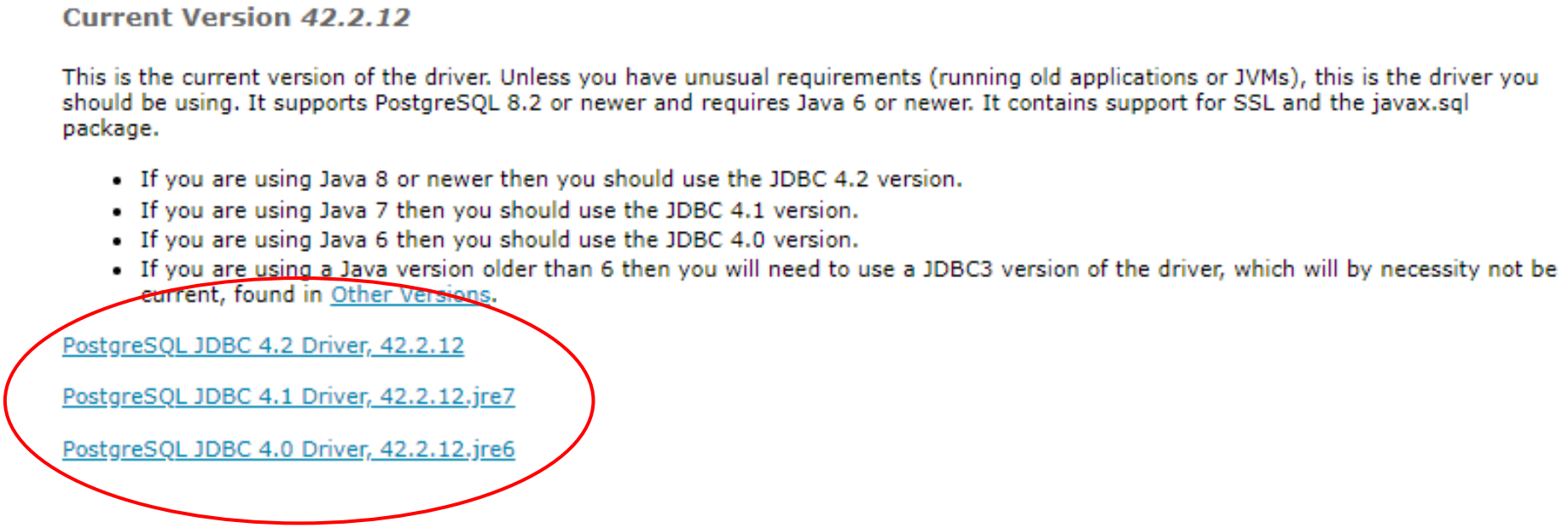
   (https://jdbc.postgresql.org/download.html)
4. Set JDBC (in Java)
5. Check DB connection on IDLE (Eclipse or IntelliJ etc…)

Environment setting

- **DBMS setting** (You **must** follow below setting)
  - Database name: **project_movie**
  - Root id: **postgres**
  - Password: **cse3207**
  - Port: **5432**
  - Host: **localhost (127.0.0.1)**

Install JDBC (Java)

1. Go to https://jdbc.postgresql.org/download.html
2. Download and file



Current Version *42.2.12*

This is the current version of the driver. Unless you have unusual requirements (running old applications or JVMs), this is the driver you should be using. It supports PostgreSQL 8.2 or newer and requires Java 6 or newer. It contains support for SSL and the javax.sql package.

- If you are using Java 8 or newer then you should use the JDBC 4.2 version.
- If you are using Java 7 then you should use the JDBC 4.1 version.
- If you are using Java 6 then you should use the JDBC 4.0 version.
- If you are using a Java version older than 6 then you will need to use a JDBC3 version of the driver, which will by necessity not be current, found in Other Versions.

PostgreSQL JDBC 4.2 Driver, 42.2.12

PostgreSQL JDBC 4.1 Driver, 42.2.12.jre7

PostgreSQL JDBC 4.0 Driver, 42.2.12.jre6

Install JDBC (Java)

3. Prepare '**postgresql-42.2.12.jar**' file
4. Add library in JAVA idle

In eclipse, Properties – Java Build Path – Libraries – Add External JARs

In IntelliJ, Project Structure – Libraries – click '+' button – Java – find jar file

5. test DB connection in Java Idle

Install JDBC (Java)

Test code

```
import java.sql.*;
public class Main {
        public static void main(String[] args) throws Exception {

                try {
                        Class.forName("org.postgresql.Driver");
                } catch (ClassNotFoundException e) {
                        System.out.println("Where is your PostgreSQL JDBC Driver? Include in your library path!");
                        e.printStackTrace();
                        return;
                } /// 이 부분에서 에러가 난다면, jdbc driver(.jar file)를 제대로 ide에 추가하도록 하세요

                Connection connection = null;
                try {
                        connection = DriverManager.getConnection("jdbc:postgresql://127.0.0.1:5432/", "postgres", "cse3207");
                } catch (SQLException e) {
                        System.out.println("Connection Failed! Check output console");
                        e.printStackTrace();
                        return;
                } /// 이 부분에서 에러가 난다면, connection 변수에 비밀번호, 데이터베이스 명, user 명 등을 확인주세요
                /// 이후의 문제는 콘솔에 출력된 에러를 구글에 검색해보세요...
                System.out.println(connection);
                System.out.println("You made it, take control your database now!");
                ////////// 여기에 코드 작성 //////////
                connection.close();
        }
}
```

Environment setting

Recommended: Google may know everything, ask to google plz…!

Should you have any problem in progress, feel free to contact me ☺

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