

프로젝트 4: DBMS 프로그램 개발

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1. 컴파일 및 실행방법

: mariadb-java-client-2.5.2.jar와 dbapp.java 가 있는 경로에서 아래 명령어 실행

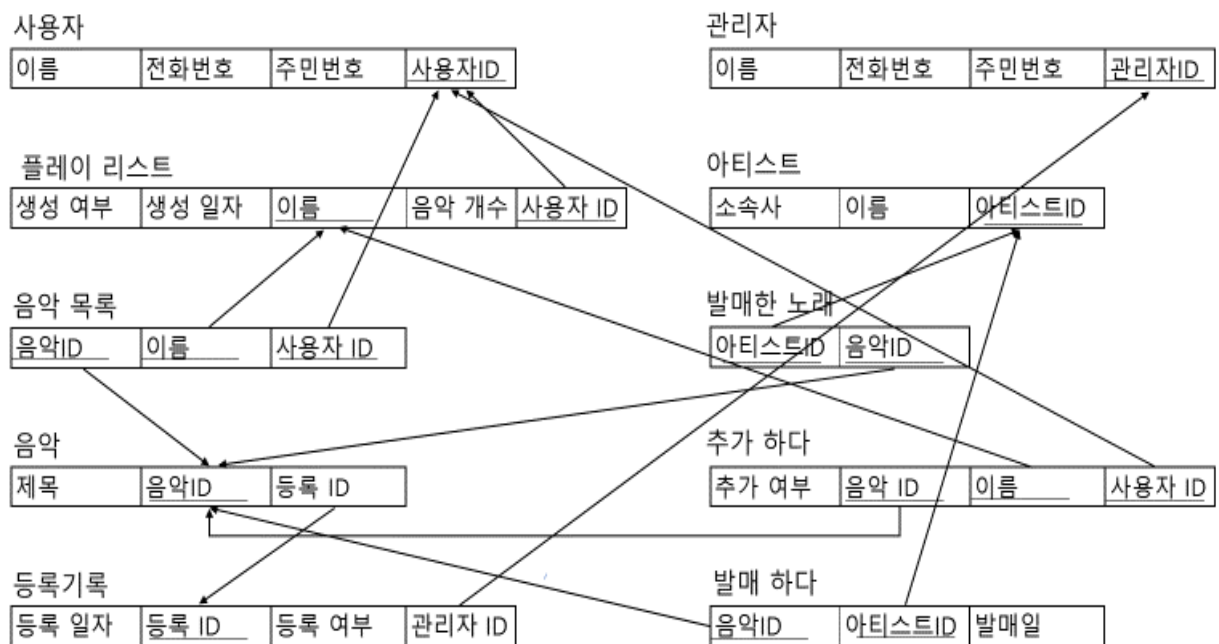
```
>javac -classpath mariadb-java-client-2.5.2.jar; dbapp.java
>java -cp mariadb-java-client-2.5.2.jar; dbapp
```

: 실행 후 차례대로 정보 입력

접속 정보: [port] [ID] [PW]

2. Table Schema 실제 구현 및 변경사항

: 제출 했던 Relation model과 비교하여 설명



- 사용자(user): name, phone, rrn, uid
- 관리자(manager): name, phone, rrn, mid
- 플레이리스트: date, pname, uid, count
 - delete 할 때 '생성여부' 확인은 속성이 아닌 select query 이용으로 변경
- 아티스트(artist): agency, name, aid
- 음악목록(musiclist): muid, pname, uid
 - '추가하다'는 '음악목록' 테이블에서 select query 로 확인 가능하여 '추가하다' 테이블 삭제
- 발매하다(released): aid, muid, date
 - '발매한 노래'는 '발매하다' 테이블에서 select query 로 확인 가능하여 '발매한 노래' 테이블 삭제
- 음악(music): title, muid, mid, date
 - '등록기록'의 등록 일자 속성을 '음악' 테이블에 추가
 - 등록 ID 대신 매니저 ID(mid)로 어떤 매니저가 등록을 했는지 확인 가능
 - '등록 여부'는 음악의 mid 가 default 인지 아닌지로 확인 가능하여 '등록기록' 테이블 삭제

3. 고정 데이터

music.manager: 2 행 (중) (대략적) >> 다음 << !

mid	rrn	name	phone
22	22222222222222	bogum	01000000000
111	11111111111111	chanwi	01012345678

music.artist: 4 행 (중) (대략적) >> 다음 <<

aid	rrn	agency	name
24	24242424242424	sms	msg
55	55555555555555	roen	iu
365	00000000000000	sm	taeyeon
1,004	33333333333333	sm	gyuhyun

music.user: 3 행 (중) (대략적) >> 다음 <<

uid	rrn	name	phone
1	11111111111111	chanwi	01012345678
2	22222222222222	bogum	01000000000
3	33333333333333	seungki	01087654321

music.released: 9 행 (중) (대략적)

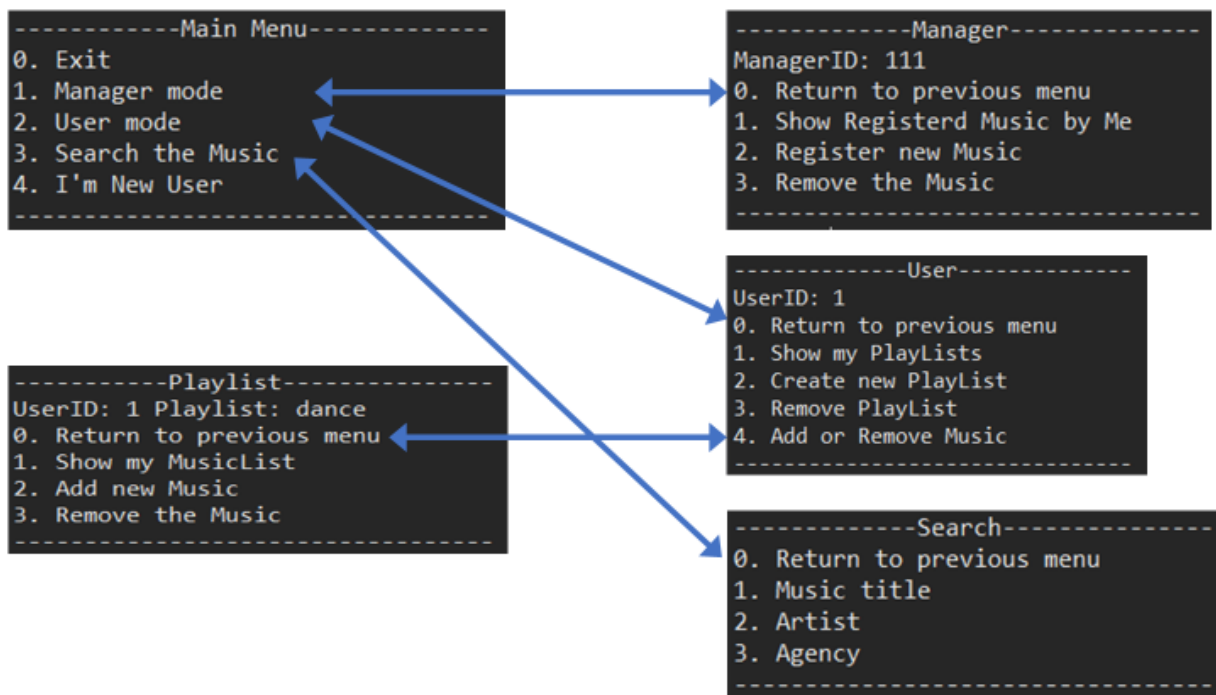
aid	muid	date
365	10	2019-12-04
365	23	2019-12-04
55	33	2019-12-04
55	99	2019-12-04
55	444	2019-12-04
1,004	444	2019-12-04
55	666	2019-12-04
24	777	2019-12-04
1,004	987	2019-12-04

music.music: 8 행 (중) (대략적) >> 다음 <<

muid	mid	date	title
10	00000000111	2019-12-04	happy
23	00000000022	2019-12-04	you and i
33	00000000022	2019-12-04	hungry
99	(NULL)	(NULL)	im so tired
444	00000000022	2019-12-04	hello
666	00000000111	2019-12-04	byehello
777	00000000111	2019-12-04	lucky
987	(NULL)	(NULL)	helloworld

- User table의 경우 이후 기능에 의해 추가될 수 있음(삭제는 안됨)
- music table의 경우 mid 값이 이후 기능에 의해 변경될 수 있음
- 나머지 table의 경우(musiclist, playlist) 값이 기능에 의해 자동적으로 변함

4. 코드 구조



5. 코드 설명 및 SQL 문

- SQL 문의 ?는 적절한 변수이며, 보고서의 간결화를 위해 어떤 값인지는 생략

0. Main Menu

```
-----Main Menu-----
0. Exit
1. Manager mode
2. User mode
3. Search the Music
4. I'm New User
-----
```

1. 매니저 모드: DB 저장된 매니저가 아니면 접근 불가

```
pst = con.prepareStatement("select mid from manager where mid=?");
```

```

-----Manager-----
ManagerID: 111
0. Return to previous menu
1. Show Registered Music by Me
2. Register new Music
3. Remove the Music
-----

```

1-1. 등록된 음악: 접속한 매니저가 등록한 음악들만 보여줌

```
pst = con.prepareStatement("SELECT muid, title FROM music WHERE mid=?");
```

1-2. 음악 등록: 발매 되었지만 아직 등록되지 않은 음악 목록을 보여줌 / 원하는 음악이 등록 가능한지 확인 / 음악 등록

```
rs = st.executeQuery("SELECT muid, title FROM music WHERE mid is null");
```

```
pst = con.prepareStatement("select muid from music where mid is null and muid=?");
```

```
pst = con.prepareStatement("update music set mid=?,date=now() where muid=?");
```

1-3. 음악 삭제: 접속한 매니저가 등록한 음악들 중에서만 삭제 가능 / 등록 기록 삭제 / 플레 이리스트에 담겼는지 확인 / 담겨 있다면 미리 count--/ 원하는 음악 삭제하

```
pst = con.prepareStatement("select mid from music where mid=? and muid=?");
```

```
pst = con.prepareStatement("update music set mid=default,date=default where muid=?");
```

```
rs = st.executeQuery("select pname, uid from musiclist where muid="+m);
```

```
pst=con.prepareStatement("update playlist set count=count-1 where pname=? and uid=?");
```

```
pst = con.prepareStatement("delete from musiclist where muid=?");
```

2. 사용자 모드: DB 저장된 사용자가 아니면 접근 불가

```
pst = con.prepareStatement("select uid from user where uid in (?)");
```

```

-----User-----
UserID: 1
0. Return to previous menu
1. Show my PlayLists
2. Create new PlayList
3. Remove PlayList
4. Add or Remove Music
-----

```

2-1. 플레이리스트 보기: 접속한 사용자가 만든 플레이리스트 보여줌

```
pst = con.prepareStatement("select pname,count from playlist where uid=?");
```

2-2. 플레이리스트 추가: 새로운 플레이리스트 만들기

```
pst = con.prepareStatement("insert into playlist(uid, pname, date) values (?,?,now())");
```

2-3. 플레이리스트 삭제: 삭제 가능한지 확인 / 안의 노래 목록까지 전부 삭제

```
pst = con.prepareStatement("select pname from playlist where uid=? and pname=?");
```

```
pst = con.prepareStatement("delete from playlist where uid=? and pname=?");
```

2-4. 하나의 플레이리스트 선택해서 행동: 플레이리스트 존재 확인

```
pst = con.prepareStatement("select pname from playlist where uid=? and pname=?");
```

```
-----Playlist-----
UserID: 1 Playlist: dance
0. Return to previous menu
1. Show my MusicList
2. Add new Music
3. Remove the Music
-----
```

2-4-1. 음악목록 보기: 현재 플레이리스트의 음악 목록을 보여줌

```
pst = con.prepareStatement("select music.muid, title from music, musiclist "
+ "where uid=? and pname=? and music.muid=musiclist.muid");
```

2-4-2. 음악 추가: 현재 등록된 모든 음악을 보여줌 / 원하는 음악 등록 / 해당 플레이리스트 count(음악목록 개수)++

```
rs = st.executeQuery("select muid, title from music where mid is not null");
```

```
pst = con.prepareStatement("insert into musiclist(uid, pname, muid) values (?,?,?)");
```

```
pst = con.prepareStatement("update playlist set count=count+1 where uid=? and pname=?");
```

2-4-3. 음악 삭제: 삭제 가능 여부 확인 / 원하는 음악 삭제 / 해당 플레이리스트 count—

```
pst = con.prepareStatement("select muid from musiclist where uid=? and pname=? and muid=?");
```

```
pst = con.prepareStatement("delete from musiclist where uid=? and pname=? and muid=?");
```

```
pst = con.prepareStatement("update playlist set count=count-1 where uid=? and pname=?");
```

3. 음악 찾기: 매니저에 의해 등록된 음악 한에서 검색 가능

```
-----Search-----
0. Return to previous menu
1. Music title
2. Artist
3. Agency
-----
```

3-1. 음악 타이틀로 찾기: 등록된 음악 중 타이틀에 입력 값이 들어간 음악 보여줌

```
pst = con.prepareStatement("SELECT title, name, agency " + "FROM music,artist,released "
    + "WHERE title like ? AND artist.aid=released.aid AND music.muid=released.muid and mid is not null");
```

3-2. 아티스트로 찾기: 등록된 음악 중 이름에 입력 값이 들어간 가수의 모든 음악 보여줌

```
pst = con.prepareStatement("SELECT name, title, agency " + "FROM music,artist,released "
    + "WHERE name like ? AND artist.aid=released.aid AND music.muid=released.muid and mid is not null");
```

3-3. 소속사로 찾기: 등록된 음악 중 입력 값이 들어간 소속사의 가수의 모든 음악 보여줌

```
pst = con.prepareStatement("SELECT agency, name, title " + "FROM music,artist,released "
    + "WHERE agency like ? AND artist.aid=released.aid AND music.muid=released.muid and mid is not null");
```

4. 회원 가입: 이미 있는 ID를 원하거나 / 등록된 사용자의 경우 생성 불가 / 완료 후 사용자 목록 보여줌

```
pst = con.prepareStatement("select uid from user where uid=?");
```

```
pst = con.prepareStatement("insert into user(uid, name, rrn, phone) values (?, ?, ?, ?)");
```

```
rs = st.executeQuery("select uid, name, rrn from user");
```

6. 실행 결과

<manager>

```
-----Manager-----
ManagerID: 111
0. Return to previous menu
1. Show Registerd Music by Me
2. Register new Music
3. Remove the Music
-----
Input: 2

-----
MusicID      Title
-----
99           im so tired
987          helloworld
>>Input MusicID to Register: 99

-----Manager-----
ManagerID: 111
0. Return to previous menu
1. Show Registerd Music by Me
2. Register new Music
3. Remove the Music
-----
Input: 1

-----
MusicID      Title
-----
10           happy
99           im so tired
666          byehello
777          lucky
```

```
-----Manager-----
ManagerID: 111
0. Return to previous menu
1. Show Registerd Music by Me
2. Register new Music
3. Remove the Music
-----
Input: 3
>>Input MusicID to Remove: 99

-----Manager-----
ManagerID: 111
0. Return to previous menu
1. Show Registerd Music by Me
2. Register new Music
3. Remove the Music
-----
Input: 1

-----
MusicID      Title
-----
10           happy
666          byehello
777          lucky
```

```
-----Main Menu-----
0. Exit
1. Manager mode
2. User mode
3. Search the Music
4. I'm New User
-----
Input: 1
Input Your Manager ID: 0
You're not Manager!
```

This Music doesn't be registered by you!

All Music are Registered!

This Music is Already Registered or Not released!

<user>

```
-----Main Menu-----
0. Exit
1. Manager mode
2. User mode
3. Search the Music
4. I'm New User
-----
Input: 2
Input Your User ID: 0
You're not User!
```

```
-----User-----
UserID: 1
0. Return to previous menu
1. Show my PlayLists
2. Create new Playlist
3. Remove Playlist
4. Add or Remove Music
-----
Input: 2
>>Input Playlist Name to Create: pop

-----User-----
UserID: 1
0. Return to previous menu
1. Show my PlayLists
2. Create new Playlist
3. Remove Playlist
4. Add or Remove Music
-----
Input: 1

-----
Playlist Name    The num of Music
-----
dance            4
hiphop           3
pop              0
```

You don't have Playlist!

```
-----User-----
UserID: 1
0. Return to previous menu
1. Show my PlayLists
2. Create new Playlist
3. Remove Playlist
4. Add or Remove Music
-----
Input: 3
>>Input Playlist Name to Remove: hiphop

-----User-----
UserID: 1
0. Return to previous menu
1. Show my PlayLists
2. Create new Playlist
3. Remove Playlist
4. Add or Remove Music
-----
Input: 1

-----
Playlist Name    The num of Music
-----
dance            4
pop              0
```


<search>

```
-----Main Menu-----
0. Exit
1. Manager mode
2. User mode
3. Search the Music
4. I'm New User
-----
Input: 3

-----Search-----
0. Return to previous menu
1. Music title
2. Artist
3. Agency
-----
Input: 1
>>Music title to Find: hello

-----
Title      Artist      Agency
-----
hello      iu             roen
byehello   iu             roen
hello      gyuhyun        sm
```

Not Found!

```
-----Search-----
0. Return to previous menu
1. Music title
2. Artist
3. Agency
-----
Input: 2
>>Artist to Find: gy

-----
Artist      Agency      title
-----
gyuhyun     sm          hello
```

```
-----Search-----
0. Return to previous menu
1. Music title
2. Artist
3. Agency
-----
Input: 3
>>Agency to Find: sm

-----
Agency      Name      Title
-----
sms          msg       lucky
sm           taeyeon   happy
sm           taeyeon   you and i
sm           gyuhyun   hello
```

<newUser>

```
-----Main Menu-----
0. Exit
1. Manager mode
2. User mode
3. Search the Music
4. I'm New User
-----
Input: 4

>>Input New User ID: 1
Already exists this User ID!

-----Main Menu-----
0. Exit
1. Manager mode
2. User mode
3. Search the Music
4. I'm New User
-----
Input: 4

>>Input New User ID: 5
>>Input your name: chanwi
>>Input your rrn: 111111111111
>>Input your phone: 01098765432
Already exists this User or Invalid Input!
```

```
-----Main Menu-----
0. Exit
1. Manager mode
2. User mode
3. Search the Music
4. I'm New User
-----
Input: 4

>>Input New User ID: 5
>>Input your name: guest
>>Input your rrn: 555555555555
>>Input your phone: 01098765432

-----
UserID      rrn          Name
-----
1           111111111111  chanwi
2           222222222222  bogum
3           333333333333  seungki
5           555555555555  guest
```


<playlist>

```
-----User-----
UserID: 1
0. Return to previous menu
1. Show my PlayLists
2. Create new Playlist
3. Remove Playlist
4. Add or Remove Music
-----
Input: 4
>>Input Playlist Name for this action: dance
-----
-----Playlist-----
UserID: 1 Playlist: dance
0. Return to previous menu
1. Show my MusicList
2. Add new Music
3. Remove the Music
-----
Input: 1
-----


| MusicID | Title  |
|---------|--------|
| 10      | happy  |
| 33      | hungry |
| 444     | hello  |
| 777     | lucky  |


```

```
-----Playlist-----
UserID: 1 Playlist: dance
0. Return to previous menu
1. Show my MusicList
2. Add new Music
3. Remove the Music
-----
Input: 2
-----


| MusicID | Title     |
|---------|-----------|
| 10      | happy     |
| 23      | you and i |
| 33      | hungry    |
| 444     | hello     |
| 666     | byehello  |
| 777     | lucky     |


>>Input MusicID to Add: 666
-----
-----Playlist-----
UserID: 1 Playlist: dance
0. Return to previous menu
1. Show my MusicList
2. Add new Music
3. Remove the Music
-----
Input: 1
-----


| MusicID | Title    |
|---------|----------|
| 10      | happy    |
| 33      | hungry   |
| 444     | hello    |
| 666     | byehello |
| 777     | lucky    |


```

```
-----Playlist-----
UserID: 1 Playlist: dance
0. Return to previous menu
1. Show my MusicList
2. Add new Music
3. Remove the Music
-----
Input: 3
>>Input MusicID to Remove: 666
-----
-----Playlist-----
UserID: 1 Playlist: dance
0. Return to previous menu
1. Show my MusicList
2. Add new Music
3. Remove the Music
-----
Input: 1
-----


| MusicID | Title  |
|---------|--------|
| 10      | happy  |
| 33      | hungry |
| 444     | hello  |
| 777     | lucky  |


```

```
-----User-----
UserID: 1
0. Return to previous menu
1. Show my PlayLists
2. Create new Playlist
3. Remove Playlist
4. Add or Remove Music
-----
Input: 4
>>Input Playlist Name for this action: hiphop
You don't have this Playlist!
```

This Playlist dosen't have the Music!

This Music Already owned This Playlist or Not Registered!

You don't have Already this Music!