DB Application Programming

- Term Project -

A Useful Skill: *'hidden field'*

- The <form> tag can be placed within the <table> tag

- The *type="hidden"* in the <input> tag allows you to assign a value to a variable without displaying it on a webpage

```html
<table border="1">
    <thead>
        <th>id</th>
        <th>password</th>
        <th></th>
    </thead>

    <tbody>
        {% for user in users %}
        <tr>
            <td>{{ user[0] }}</td>
            <td>{{ user[1] }}</td>
            <td>
                <form action="/print_user" method="post">
                    <input type="hidden" name="id" value={{ user[0] }}>
                    <input type="submit" name="send" value="print">
                </form>
            </td>
        </tr>
        {% endfor %}
    </tbody>
</table>
```

```python
@app.route('/print_user', methods=['post'])
def print_user():
    id = request.form["id"]
    return id
```

127.0.0.1:5000/print_user

127.0.0.1:5000/print_user

admin

127.0.0.1:5000/print_table

| id	password	
admin	0000	print

A Useful Skill: *'redirect, url_for'*

- 'redirect(url_for(*func*))' can be used instead of 'render_template'

```python
from flask import Flask, redirect, url_for, request

app = Flask(__name__)


@app.route('/')
def main():
    return redirect(url_for( endpoint: 'register', id=123))
    # return render_template("main.html")

1 usage
@app.route( rule: '/register', methods=['get', 'post'])
def register():
    return request.args["id"]+"register"


if __name__ == '__main__':
    app.run()
```

127.0.0.1:5000/register?id=123

123register
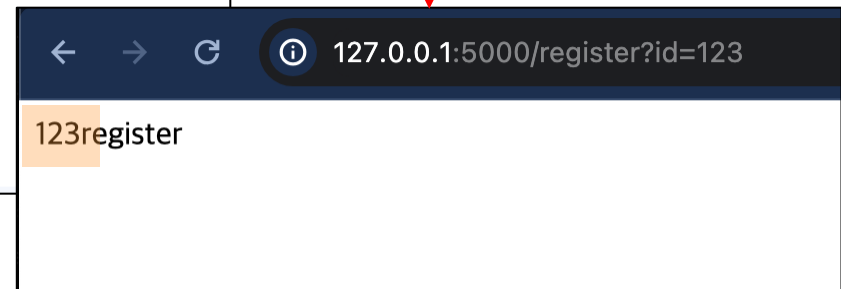
DB Application Programming

- Our goal is to create a movie review site
- By default, it uses the **"term.sql"** file
  - Tables can be added or modified to implement additional functionality
  - If you modify *"term.sql"*, write the changes to the report

ID: lisa

Movies

| latest | genre | ratings |

title	ratings	director	genre	release date
The Truman Show	4.3	Peter Weir	comedy	1998-10-24
Toy Story	4.5	John Lasseter	comedy	1995-12-23
The Shawshank Redemption	4.5	Frank Darabont	drama	1995-01-28
Nuovo Cinema Paradiso	None	Giuseppe Tornatore	drama	1988-09-29
Star Wars	5.0	George Lucas	fantasy	1977-05-25
12 Angry Men	4.5	Sidney Lumet	drama	1957-04-01

Reviews

| latest | title | followers |

ratings	user	title	review	time
4	lisa	The Truman Show	The film is an amazing combination of existentialism, surrealism, and symbolism.	2024-04-15 22:33
4	andy	The Truman Show	Incredibly surreal	2024-04-15 22:33
4	admin	Toy Story	Plastic Fantastic.	2024-04-15 22:23
5	andy	Toy Story	It really is that good. It's taken me 27 years to realise.	2024-04-15 22:20
5	andy	Star Wars	The Force will be with you, always.	2024-04-15 22:02
5	admin	The Truman Show	Good Afternoon, Good Evening, and Goodnight.	2024-04-14 16:33
4	andy	12 Angry Men	So Simple, So Brilliant	2024-04-08 00:32
4	admin	The Shawshank Redemption	An incredible movie. One that lives with you.	2024-03-16 21:31
5	admin	12 Angry Men	What a Character-Study is Meant to Be.	2024-03-11 12:33
5	andy	The Shawshank Redemption	the best movie in history and the best ending in any entertainment business	2024-01-15 17:33
5	admin	Star Wars	In A Galaxy Far Away................A Franchise Was Born	2023-11-03 15:29

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Table Description(term.sql)

```sql
create table users(
  id varchar(15) not null primary key,
  password varchar(20) not null,
  role varchar(10) not null check (role in ('admin', 'user'))
);
insert into users values('admin', '0000', 'admin');
insert into users values('admin2', '0000', 'admin');
insert into users values('andy', '0000', 'user');
insert into users values('lisa', '1234', 'user');
```

- **users**
  - id : user's id
  - password : user's password

```sql
create DOMAIN domain_email AS text
    CHECK (VALUE~'^\w+@[a-zA-Z_]+?[\.[a-zA-Z]+$');
create table user_info(
  id varchar(15) not null primary key,
  name varchar(15),
  email domain_email,
  reg_date date not null,
  foreign key(id) references users(id)
);
insert into user_info values('admin', 'admin', 'admin@korea.ac.kr', now());
insert into user_info values('admin2', 'admin2', 'admin2@korea.ac.kr', now
());
insert into user_info values('andy', null, null, now());
insert into user_info values('lisa', null, null, now());
```

- **user_info**
  - id : user's id (same as users)
  - name : user's name
  - Email
  - reg_date : registration time
    - → use '*now()*' function

```sql
create table mal_user(
  id varchar(15) not null primary key,
  mal_time timestamp,
  foreign key(id) references users(id));
```

- **mal_user (malicious user)**
  - id : malicious user's id
  - mal_time : time when this user was registered as a malicious user

Table Description(term.sql)

```
create table ties(
  id varchar(15) not null,
  opid varchar(15) not null,
  tie varchar(8) not null check (tie in ('follow', 'mute')),
  primary key(id, opid),
  foreign key(id) references users(id),
  foreign key(opid) references users(id));
insert into ties values ('andy', 'lisa', 'follow');
insert into ties values ('lisa', 'andy', 'follow');
```

- **ties**
  - id : user's id
  - opid : opposite user's id
  - tie : relationship of two users
    (only *follow* and *mute*)

```
create table movies(
  id varchar(15) not null primary key,
  title varchar(30) not null,
  director varchar(30) not null,
  genre varchar(20) not null check (genre in ('action', 'comedy', 'drama', 'f
antasy', 'horror', 'mystery', 'romance', 'thriller', 'western')),
  rel_date date not null);
insert into movies values  ('1', 'The Shawshank Redemption', 'Frank Darabon
t', 'drama', '1995-01-28'),
  ('2', '12 Angry Men', 'Sidney Lumet', 'drama', '1957-04-01'),
  ('3', 'Star Wars', 'George Lucas', 'fantasy', '1977-05-25'),
  ('4', 'Toy Story', 'John Lasseter', 'comedy', '1995-12-23'),
  ('5', 'The Truman Show', 'Peter Weir', 'comedy', '1998-10-24'),
  ('6', 'Nuovo Cinema Paradiso', 'Giuseppe Tornatore', 'drama', '1988-09-2
9');
```

- **movies**
  - id : movie's id
  - title : movie's title
  - director : movie's director name
  - genre : movie's genre
    → Only for the listed genre
  - rel_date : movie's released date

Table Description(term.sql)

```sql
create table reviews(
  mid varchar(15) not null,
  uid varchar(15) not null,
  ratings smallint not null check (ratings between 0 and 5),
  review text not null,
  rev_time timestamp not null,
  primary key(mid, uid),
  foreign key(mid) references movies(id),
  foreign key(uid) references users(id));
insert into reviews values  ('1', 'admin', 4, 'An incredible movie. One that
lives with you.', now()-interval'30day 1 hour 2 minute'),
  ('1', 'andy', 5, 'the best movie in history and the best ending in any ente
rtainment business', now()-interval'3 month 5 hour'),
  ('2', 'admin', 5, 'What a Character-Study is Meant to Be.', now()-interva
l'34 day 34 hour'),
  ('2', 'andy', 4, 'So Simple, So Brilliant', now()-interval'190hour 1 minut
e'),
  ('3', 'admin', 5, 'In A Galaxy Far Away...............A Franchise Was Bor
n', now()-interval'3943hour 4 minute'),
  ('3', 'andy', 5, 'The Force will be with you, always.', now()-interval'31 m
inute'),
  ('4', 'admin', 4, 'Plastic Fantastic.', now()-interval'10 minute'),
  ('4', 'andy', 5, 'It really is that good. It''s taken me 27 years to realis
e.', now()-interval'13 minute'),
  ('5', 'admin', 5, 'Good Afternoon, Good Evening, and Goodnight.', now()-int
erval'30 hour'),
  ('5', 'andy', 4, 'Incredibly surreal', now()),
  ('5', 'lisa', 4, 'The film is an amazing combination of existentialism, sur
realism, and symbolism.', now());
```

- **reviews**
  - mid : movie's id
  - uid : user's id
  - ratings : user's rating for the movie
  - review : user's comment
  - rev_time : review's registered time

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Basic Functions

- In term project, there is no design score, scoring only for the functions of site

- The webpage images in this file are all examples, so you don't need to create exactly same design if you've implemented the feature correctly

- For convenience, some example tuples were inserted into each table

Basic Functions – login page

- The first time you visit a webpage, the first thing you'll see is a page where you can sign in or register

- If you click **sign up**, register as a new user if there is no error
  - The id and password must be at least 1 character long
  - If there are any other errors, the message describing the error is shown.
  - The administrator should be able to log in as (admin, 0000)

- If you click **sign in**, login is successful if (id, password) is in the users table
  - Otherwise, the message describing the error is shown.

DB Term Project: Movie Reviews

ID:

Password:

sign in | sign up

ID:

Password:

sign in | sign up

가입되어 있지 않은 회원입니다. 가입부터 해주세요.

ID:

Password:

sign in | sign up

이미 가입되어 있는 id입니다.

Basic Functions – main page

- If the login is successful, load the **main** page
- Main page includes **"movies list"** and **"reviews list",** and user's id

Movies

| latest | genre | ratings |

title	ratings	director	genre	release date
The Truman Show	4.3	Peter Weir	comedy	1998-10-24
Toy Story	4.5	John Lasseter	comedy	1995-12-23
The Shawshank Redemption	4.5	Frank Darabont	drama	1995-01-28
Nuovo Cinema Paradiso	None	Giuseppe Tornatore	drama	1988-09-29
Star Wars	5.0	George Lucas	fantasy	1977-05-25
12 Angry Men	4.5	Sidney Lumet	drama	1957-04-01

ID: lisa

Reviews

| latest | title | followers |

ratings	user	title	review	time
4	lisa	The Truman Show	The film is an amazing combination of existentialism, surrealism, and symbolism.	2024-04-15 11:10
4	andy	The Truman Show	Incredibly surreal	2024-04-15 11:10
4	admin	Toy Story	Plastic Fantastic.	2024-04-15 11:00
5	andy	Toy Story	It really is that good. It's taken me 27 years to realise.	2024-04-15 10:57
5	andy	Star Wars	The Force will be with you, always.	2024-04-15 10:39
5	admin	The Truman Show	Good Afternoon, Good Evening, and Goodnight.	2024-04-14 05:10
4	andy	12 Angry Men	So Simple, So Brilliant	2024-04-07 13:09
4	admin	The Shawshank Redemption	An incredible movie. One that lives with you.	2024-03-16 10:08
5	admin	12 Angry Men	What a Character-Study is Meant to Be.	2024-03-11 01:10
5	andy	The Shawshank Redemption	the best movie in history and the best ending in any entertainment business	2024-01-15 06:10
5	admin	Star Wars	In A Galaxy Far Away................A Franchise Was Born	2023-11-03 04:06

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Basic Functions – main page

- Each *Movies* and *Reviews* have three function buttons (e.g., latest)

- Initially, both lists are sorted by *"latest"*

- If the button is clicked, the page should be reloaded with the list sorted by the rule you clicked on. The *latest* sorts the list by the release date, and the *genre* sorts the list by the genre.

Movies

latest	genre	ratings			
title		**ratings**	**director**	**genre**	**release date**
The Truman Show		4.3	Peter Weir	comedy	1998-10-24
Toy Story		4.5	John Lasseter	comedy	1995-12-23
The Shawshank Redemption		4.5	Frank Darabont	drama	1995-01-28
Nuovo Cinema Paradiso		None	Giuseppe Tornatore	drama	1988-09-29
Star Wars		5.0	George Lucas	fantasy	1977-05-25
12 Angry Men		4.5	Sidney Lumet	drama	1957-04-01

Movies

latest	genre	ratings			
title		**ratings**	**director**	**genre**	**release date**
The Truman Show		4.3	Peter Weir	comedy	1998-10-24
Toy Story		4.5	John Lasseter	comedy	1995-12-23
12 Angry Men		4.5	Sidney Lumet	drama	1957-04-01
Nuovo Cinema Paradiso		None	Giuseppe Tornatore	drama	1988-09-29
The Shawshank Redemption		4.5	Frank Darabont	drama	1995-01-28
Star Wars		5.0	George Lucas	fantasy	1977-05-25

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Basic Functions – main page

- For the *followers* button, sort the list by "the number of each user's followers"

  - Implementing this function might be challenging. *Alternatively, you can show only the reviews from users you follow.*

- Do not show the reviews from users whom you have muted.

- When showing average "ratings" to one decimal place, using the *'trunc'* command in psql might be helpful.

Reviews

`latest` `title` `followers`

ratings	user	title	review	time
4	lisa	The Truman Show	The film is an amazing combination of existentialism, surrealism, and symbolism.	2024-04-15 11:10
4	andy	The Truman Show	Incredibly surreal	2024-04-15 11:10
4	admin	Toy Story	Plastic Fantastic.	2024-04-15 11:00
5	andy	Toy Story	It really is that good. It's taken me 27 years to realise.	2024-04-15 10:57
5	andy	Star Wars	The Force will be with you, always.	2024-04-15 10:39
5	admin	The Truman Show	Good Afternoon, Good Evening, and Goodnight.	2024-04-14 05:10
4	andy	12 Angry Men	So Simple, So Brilliant	2024-04-07 13:09
4	admin	The Shawshank Redemption	An incredible movie. One that lives with you.	2024-03-16 10:08
5	admin	12 Angry Men	What a Character-Study is Meant to Be.	2024-03-11 01:10
5	andy	The Shawshank Redemption	the best movie in history and the best ending in any entertainment business	2024-01-15 06:10
5	admin	Star Wars	In A Galaxy Far Away................A Franchise Was Born	2023-11-03 04:06

Basic Functions – Movie info

- If *user's name* or *movie's title* is clicked, load "user info" or "movie info" page
- Each page has a *Main Page* button, which moves to the main page when clicked

Basic Functions – Movie info

- On the "movie info" page, *average rating* and *reviews* of the movie are shown.

- For the *reviews*, the reviews from muted users should not be shown.

The Truman Show

director	genre	release date
Peter Weir	comedy	1998-10-24

[Reviews]

Average Rating: 4.3

ratings	user	review	time
5	admin	Good Afternoon, Good Evening, and Goodnight.	2024-04-14 05:10
4	andy	Incredibly surreal	2024-04-15 11:10
4	lisa	The film is an amazing combination of existentialism, surrealism, and symbolism.	2024-04-15 11:10

My Review: 5 ▽

submit

Basic Functions – Movie info

- If you submit a review of a movie that you've already reviewed, update your existing review with the new review

Basic Functions – User info

- On the "user info" page, the user's reviews are shown.

- Users can follow/mute another user by clicking the *follow/mute* button
  - If you click a mute button of the user whom you are following, they will be removed from your following list and added to your mute list
  - For the admin's page, there is no follow/mute button. All users are not allowed to follow/block the admin.

- This page shows the followers, i.e., users who are following the user of the info page.

The Truman Show

director	genre	release date
Peter Weir	comedy	1998-10-24

[Reviews]

Average Rating:

ratings	user
5	admin
4	andy
4	lisa

My Review: [5 ∨]

[submit]

Reviews

[latest] [title] [followers]

ratings	user	title
4	lisa	The Truman Show
4	andy	The Truman Show
4	admin	Toy Story
5	andy	Toy Story
5	andy	Star Wars
5	admin	The Truman Show
4	andy	12 Angry Men
4	admin	The Shawshank Redemption
5	admin	12 Angry Men
5	andy	The Shawshank Redemption
5	admin	Star Wars

andy

[follow] [mute]

[Reviews]

ratings	movies	review	time
4	The Truman Show	Incredibly surreal	2024-04-15 11:10
5	Toy Story	It really is that good. It's taken me 27 years to realise.	2024-04-15 10:57
5	Star Wars	The Force will be with you, always.	2024-04-15 10:39
4	12 Angry Men	So Simple, So Brilliant	2024-04-07 13:09
5	The Shawshank Redemption	the best movie in history and the best ending in any entertainment business	2024-01-15 06:10

[Followers]

lisa
namil

Basic Functions – User info

- When you open a user's page about yourself, instead of a follow/mute button, it shows a list of users you have followed/muted

Basic Functions – User info

- For admin, instead of followed/muted lists, the form for adding movie data is shown.
- The *<select></select> tag* would be useful to implement *Genre* selection.

Additional Functions

- Implement at least two additional functions except the aforementioned basic functions

    - The more unique the feature, the better.

    - ex) review deletion, follow request-allow, or else…

- There are no bonus points for implementing more than two functions

- By default, use the *"term.sql"* file

    - Tables can be added or modified to implement additional functionality

    - If you modify *"term.sql"*, write the changes to the report

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Report Requirements

- Image of schema diagram

  - Include all tables, including any that were added or modified

- Include a description of the file as a whole (for all functions)

  - your implemented functions, SQL queries, html files

- Write in Korean or English, which you prefer

- Save as **PDF file**

File Requirements

- Include all the files needed to run

- **The score will be 0 if the submitted code is not executable**

- Must Include SQL file if you modified it

- Term projects are worth 30 points
  - Implementation of basic functionality (10 points)
  - Your own additional functions (10 points)
  - Reports (10 points)

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Homework

- Complete term project
- Submit your project file on blackboard
  - 10:29:59, May 16th, 2024
  - **Only studentNumber_name.zip files** are accepted
  - **No late submission**