Daily Recipe Final Report

CS157A Introduction to Database Management Systems

San Jose State University

Team 5

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Table of Contents

1. Project Requirements

Functional Requirements

Login in / Sign Up:

- Users will be required to sign up for their own accounts to get access to the website if they didn't make those yet.
- Users will be able to login to their own account to visit the website.

View Profile:

- Users will be able to view their profile that includes the user's own recipes, favorite recipes, and subscribed users.

Edit Profile:

- Users will be able to edit their profile, such as editing the password and other information.

Create Recipe:

- User can create a new recipe with a list of ingredients, time of preparation, photos, personal comments about your new recipe, process of preparation,
- User can create their own recipe with the elements they want to add, but the most important will be the name of the recipe, the ingredients, and process of preparation

View Recipe:

- Users will be able to see the recipes posted by other users. In other words, the user will be able to access the Recipe Forum, where other user's recipes are posted and ordered by date of creation.

Search for Recipes:

- Users will be able to search for a recipe using the title as a criterion. The search functionality will provide the users with a shortcut to find their targeted recipes if posted before by the users.

Delete Recipes:

- Users will be able to delete their own recipes that they already posted.

Subscribe / Unsubscribe:

- Users will be able to subscribe another user who uploaded their favorite recipe, so they can follow up on his/her newest updated recipe. Also, an unsubscribe option is provided for users to unfollow whom they are no more interested in.

Rate Recipes:

- Users will be able to rate recipes from 1 to 5.
- Users will be able to see the average of all ratings when they view recipes.

Report an inaccurate recipe:

- Users will be able to report inappropriate recipes that have cross contamination or that are harmful for human consumption. We need to make humans aware of what they are eating because there are many animals, plants, and other ingredients that are not suitable for intake.
- If some users keep reporting without proper reasons, users would be warned and cannot use the site for a certain period of time.

Bookmark Recipe:

- Users will be able to add the recipes they liked to a bookmark list.
- Users will be able to have a list of bookmarked recipes, so they can just look at their list quickly.

View My Favorite Recipes:

- Users will be able to access the recipes that they added in their bookmark list through their profile page.
- Users will be able to delete a recipe from their bookmark list.

2. Project Design

Entity Relationship Diagram
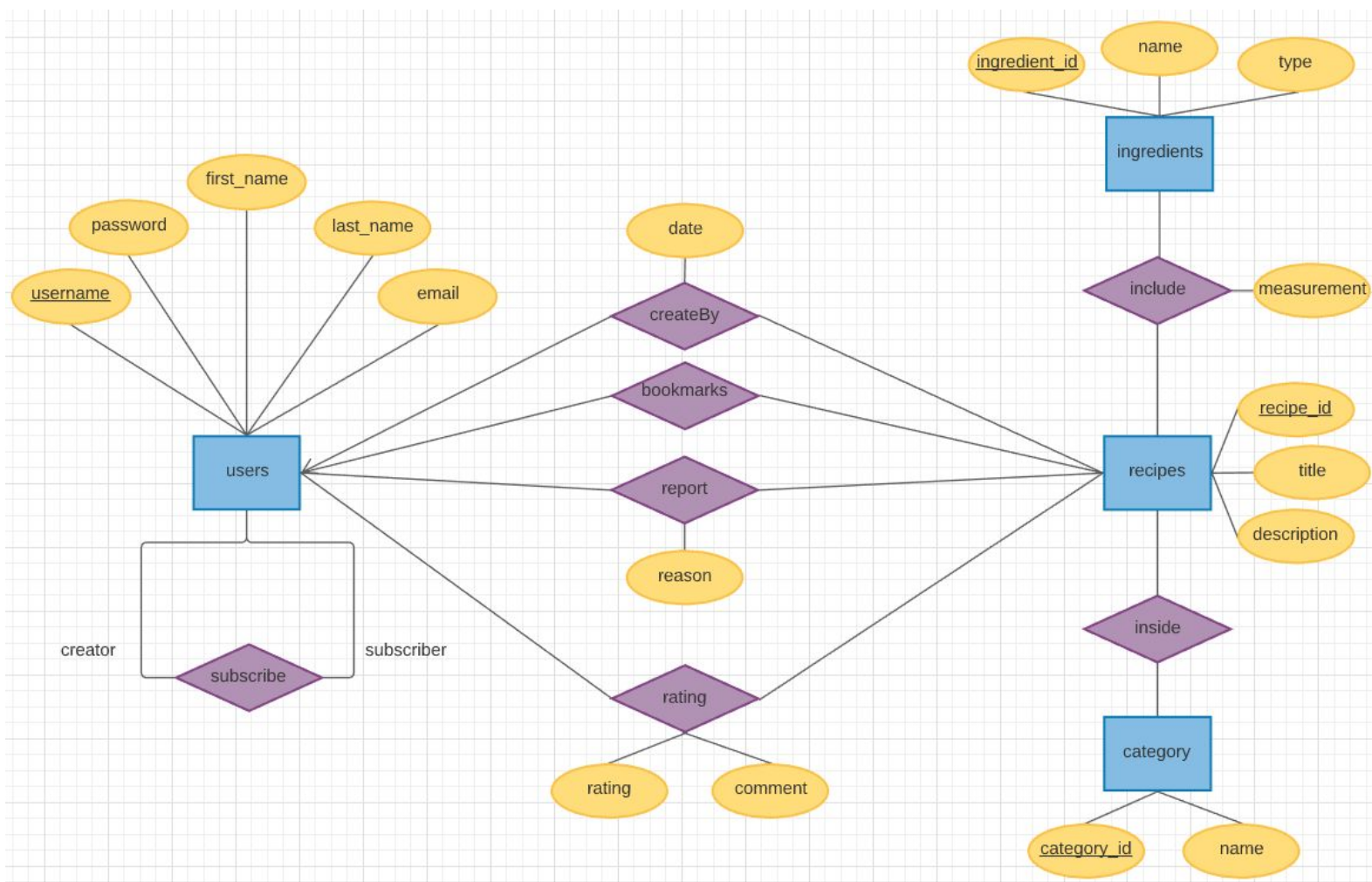
Relational Schemas

- ## Entity-set schemas

users(<u>username</u>, password, last_name, first_name, email)

- User table contains every user login information.

recipes(recipe_id, title, description)

- Recipes table contains every recipe information created by the user.

recipe_id	title	description
1	GRILLED BASIL CHICKEN	After washing basil and tomatoes, blot them dr...
6	MOROCCAN CHICKEN	Wash hands with soap and water. In large skille...
7	FRESH SALAD	Salad recipes are my favorite way to showcase ...
8	SUPER SLAM eggs	Home style
9	Breakfast Burrito	Traditional pupusas from Mexico
10	Hotpot. Hotpot	Good vibes all around.
11	Beef Tacos	Home made
12	Shrimp Vermicelli and Garlic	Traditional pupusas from China
13	Chinese Noodles	Best traditional Chinese foods
14	Broccoli Salad	You won't miss the bacon in this lightened-up ta...
15	PUPUSAS	Traditional pupusas from EL Salvador
16	Cheesy Ground Beef Tacos	Good vibes all around.
17	Cheesy Ground Beef Tacos	Good vibes all around.
18	Greek Feta Dip	Need some gluten-free appetizers this holiday s...
19	Pizza	Home made style
NULL	NULL	NULL

ingredients(ingredient_id, name, type)

- Ingredients table contains every ingredient that a recipe includes.

category(category_id, name)

-   Category table contains types where a recipe belongs to.

- **Relationship-set schema**

subscribe(creator_username, subscriber_username)

- Subscribe table contains user's favorite recipe uploader which is a user as well. Self-relationship with users table.

createdby(<u>username</u>, <u>recipe_id</u>, date)

- Createdby table contains a relationship between users table and recipes table that shows who is the creator of the recipe.

bookmarks(<u>username</u>, <u>recipe_id</u>)

- Bookmarks table contains a user's favorite recipes. It shows the relationship between users table and recipes table.

report(<u>username</u>, <u>recipe_id</u>, reason)

- Report table contains reported recipes and the reason why those are reported. It is the relational table between users table and recipes table.

SCHEMAS

Filter objects

- cs157a
- **recipe**
- sakila
- soyeon_wang
- sys

Administration   Schemas

Information

Table: bookmarks

Columns:

<u>username</u>   varchar(30) PK

<u>recipe_id</u>   int PK

---

1 ●   SELECT * FROM recipe.report;

username	recipe_id	reason
bbbbbbbb	2	inappropriate ingredient included
bbbbbbbb	5	empty
gggggggg	2	inappropriate ingredient included
gggggggg	5	empty
izeduvek	1	inappropriate word included
jjjjjjjj	1	inappropriate word included
llllllll	1	inappropriate word included
mmmmmmmm	1	inappropriate word included
mmmmmmmm	5	empty
okuvadav	1	inappropriate word included
okuvadav	5	empty
qqqqqqqqq	2	inappropriate ingredient included
qqqqqqqqq	5	empty
udufifas	1	inappropriate word included
udufifas	2	inappropriate ingredient included
NULL	NULL	NULL

include(<u>recipe_id</u>, <u>ingredient_id</u>, measurement)

- Include table contains all ingredients that are needed for each recipe. It is the relational table between recipes table and ingredient table.

rating(<u>username</u>, <u>recipe_id</u>, rating, comment)

- Rating table contains all rating scores from users for recipes. It is the relational table between recipes table and users table.

inside(recipe_id, category_id)

- Inside table contains all the recipe's categories. It shows where a recipe should be in. It is the relational table between recipes table and category table.

-

3. Project Implementation

0. How to Install the Project

1) Install Tomcat and MySQL workbench in your local computer
2) Create a database schema called 'cs157a' and root = 'root' and password = 'root, and import mySQl database files.

,
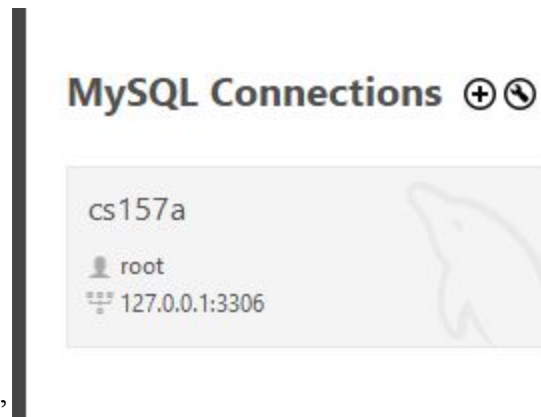
3) Open Eclipse and create a new Dynamic Web Project, for example, called 'demo' and hit finish.
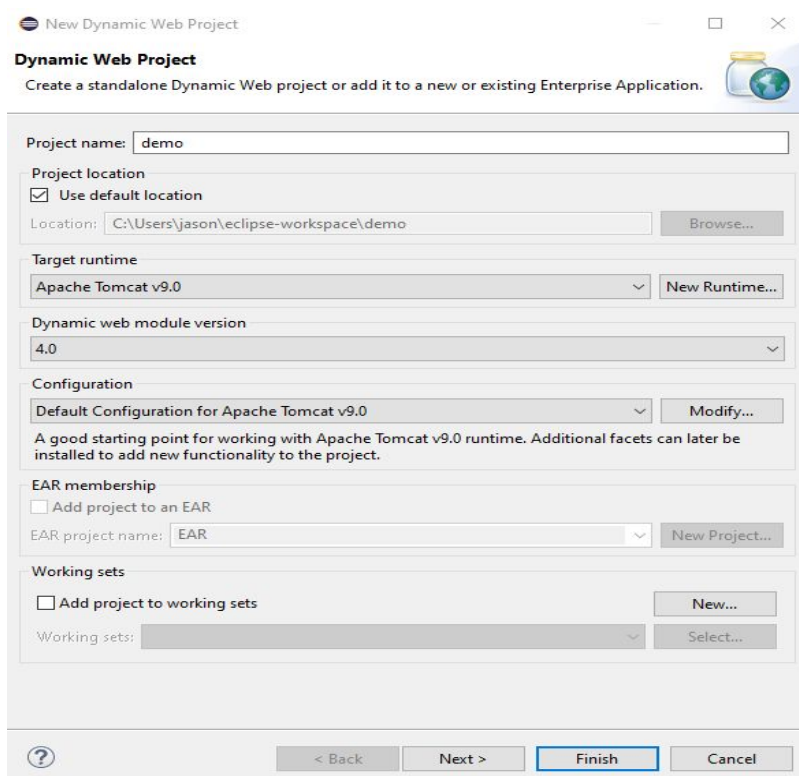
4) Import the General File system of project folder location to 'demo'
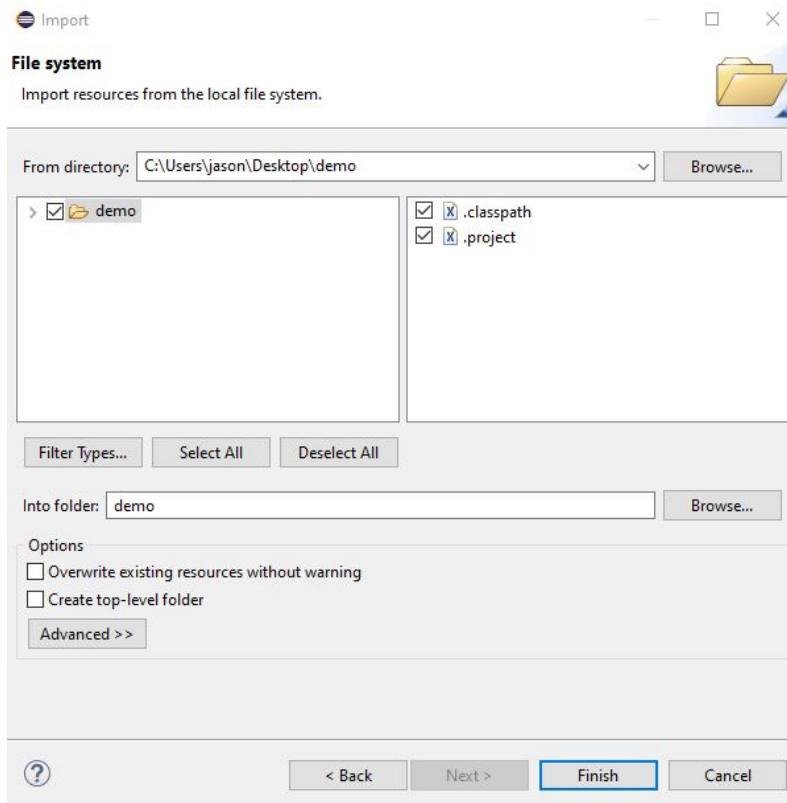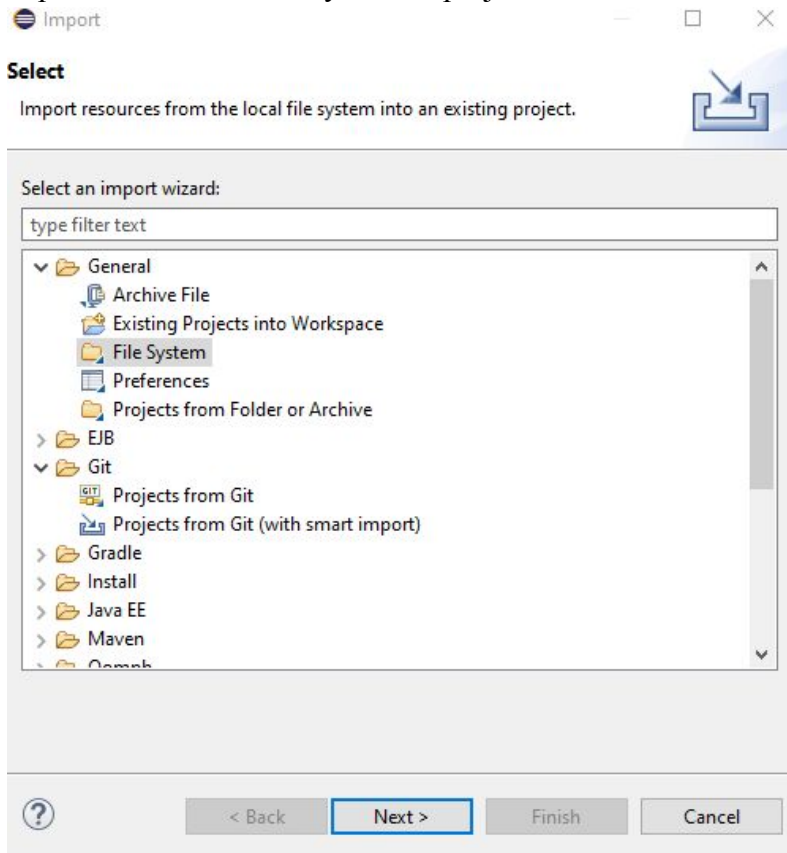
5) add the resources that are configured on the Tomcat server
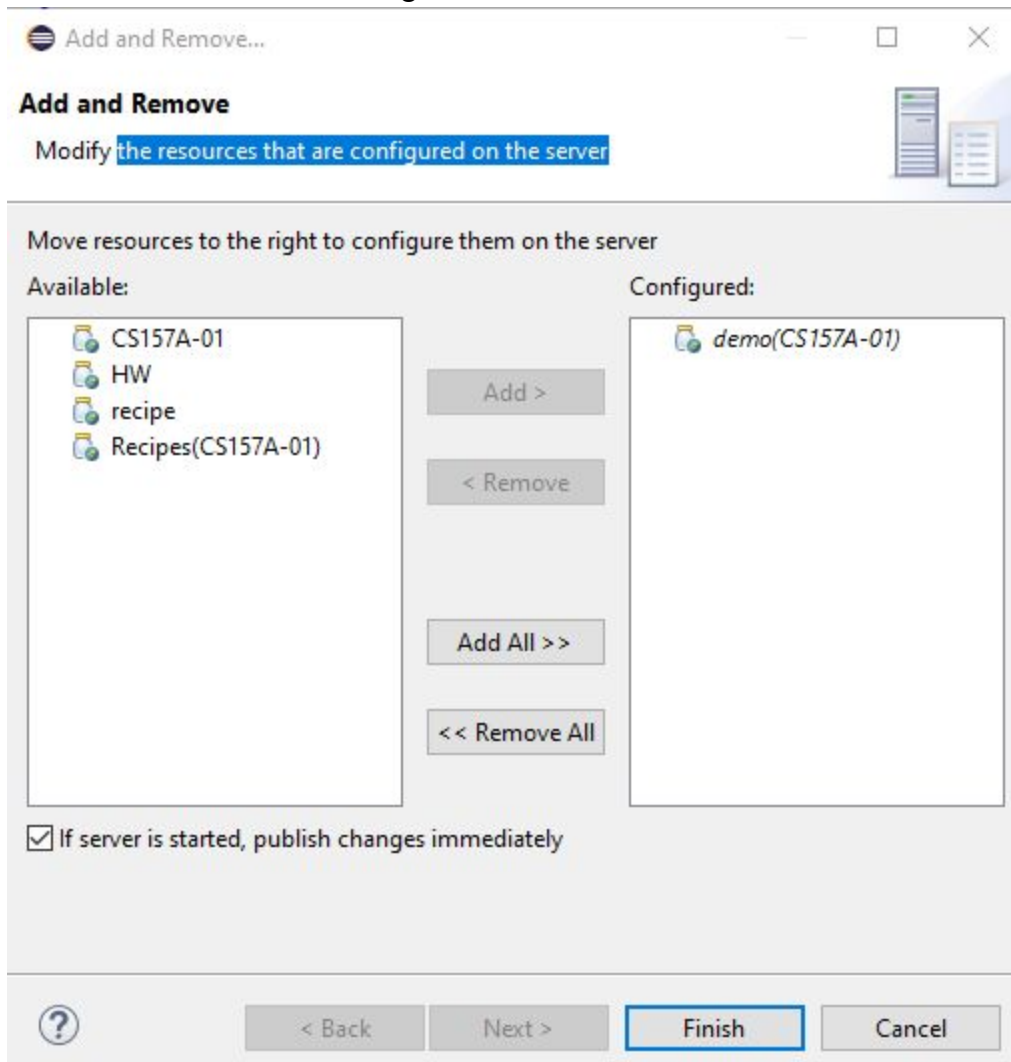
6) Start your Tomcat server
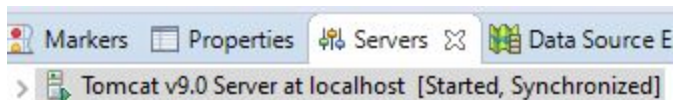
7) run the login.html file using tomcat
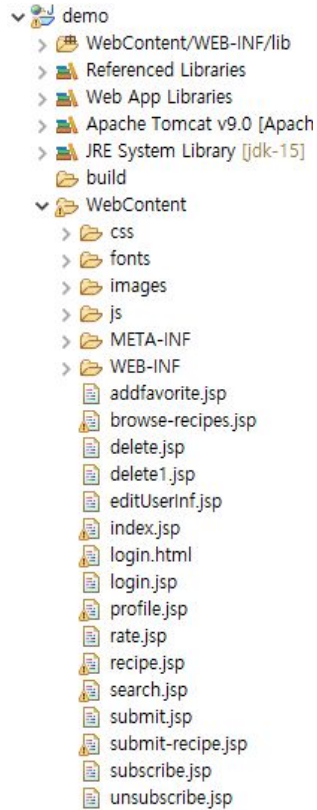
8) Then you are successfully running the project
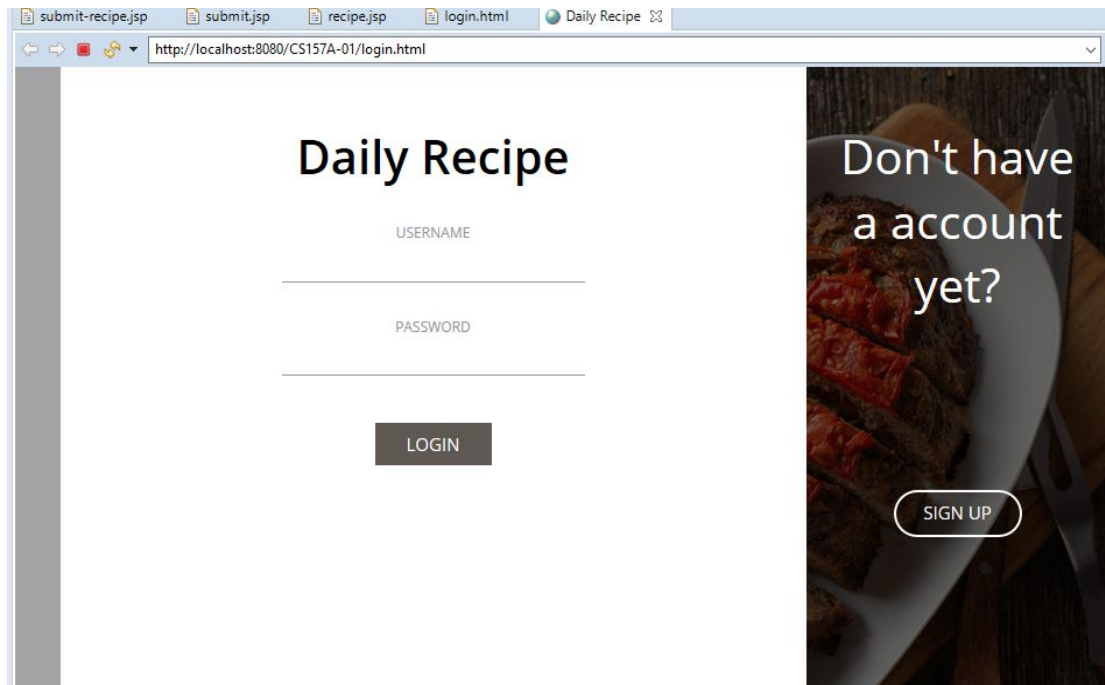
1. Login in / Sign up

Our project starts with the "Log in" page. If users already have their own accounts, they can enter their username and password. Program would check whether this information exists in the "users" table in our database or not using the queries below.

Selection

```
if(username != ""){
        ResultSet rs = st.executeQuery("SELECT * FROM users WHERE username ='"+username+"'");
        if(rs.next()){
                if(!rs.getString(2).equals(password)){
                        String redirectURL = "http://localhost:8080/CS157A-01/login.html";
                        response.sendRedirect(redirectURL);
                        }
                }
        else{
                String redirectURL = "http://localhost:8080/CS157A-01/login.html";
                        response.sendRedirect(redirectURL);
                }
}//not empty if
```

Also, for users who do not have their own account yet, there is the "Sign up" page. Users can enter their information such as username, password, first name, last name, and email address to make their own account. We used Insertion for this feature.

Insertion

```
"INSERT INTO users(username,password,last_name,first_name,email)values('"+username1+"',
'"+password1+"','"+lastname+"','"+firstname+"','"+email+"')"
```

2. View Profile

In the "View Profile" page, there are four tables.

a) User's information
- Edit Information
b) User's recipes
- Delete Recipe
c) User's favorite recipes (bookmark)
- Remove the recipe from a favorite menu list.
d) User's favorite chef (subscribe)
- Unsubscribe the chef

king's information

username	My password	Last Name	First Name	Email	Edit
king	111	guo	jiaxiang	jasonkwok228@gmail.com	
king ⌄					edit

Click on the user's information to edit

king's Menu

Title	Chef	Date	Deletion
SUPER SLAM eggs	king	2020-11-22	delete
Hotpot. Hotpot	king	2020-11-22	delete
Beef Tacos	king	2020-11-22	delete
Shrimp Vermicelli and Garlic	king	2020-11-22	delete
Chinese Noodles	king	2020-11-22	delete
Broccoli Salad	king	2020-11-22	delete
PUPUSAS	king	2020-11-22	delete
Cheesy Ground Beef Tacos	king	2020-11-22	delete
Cheesy Ground Beef Tacos	king	2020-11-22	delete
Pizza	king	2020-11-22	delete

Favorite Menu

Title	Chef	Date	Deletion
Nice salad	111	2020-11-27	remove

Favorite Chef

Title	Chef	Date	Unsubscribe
Mango pudding	dd	2020-11-27	unsubscribe
test2	dd	2020-11-27	unsubscribe
test3	dd	2020-11-27	unsubscribe
test4	dd	2020-11-27	unsubscribe
sweet chicken	dd	2020-11-27	unsubscribe

3. Edit Profile

When users want to modify their information such as password, name, and email address, they can edit from the "View Profile" page. Their information will be updated when they enter the information and click the button edit.

Home   Recipes   Submit Recipe   mikeWu

Daily Recipes

mikeWu's information

username	My password	Last Name	First Name	Email	Edit
mikeWu	cs	Wu	Mike	Mike.wu@sjsu.edu	
mikeWu ∨					edit

Click on the user's information to edit

Updating

```
String sql = "UPDATE users SET  password =  '"+password+"', last_name= '" + lName +"', first_name = '" + FName
+"', email = '"+ email +"'WHERE username = '" +username+ "'" ;
```

4. Create Recipe

To create recipes, users should click on "Submit Recipe", and it will open this form.

Users can enter the title, 1 to 3 categories, ingredients, and description. Our program will automatically save Creator with the current user's username. When users click the "submit" button, the new recipe would be created as users fill it out.

Insertion

```
String sql ="INSERT INTO recipes(title,description)values('"+title+"','"+description+"')";
String sql1 ="SELECT MAX(recipe_id) FROM recipes";
String sql3 ="Select * from ingredients where '"+name+"' IN (Select name From ingredients)";
String sql4 ="INSERT INTO ingredients(name)values('"+name+"')";
String sql5 ="Select ingredient_id from ingredients where name = '"+name+"'";

String sql2 ="INSERT INTO inside(category_id,recipe_id)values("+cate+","+re_id+")";

String ing1_1 ="Select * from ingredients where '"+name1+"' IN (Select name From ingredients)";
String ing1_2 ="INSERT INTO ingredients(name)values('"+name1+"')";
String ing1_3 ="Select ingredient_id from ingredients where name = '"+name1+"'";

String ing1_4 ="INSERT INTO include(recipe_id,ingredient_id,measurement)values("+re_id+","+in_id1+",'"+measurement1+"')";

String sql7 ="INSERT INTO createdby(username,recipe_id,date)values('"+username+"',"+re_id+",CURDATE())";
```

5. View Recipe

Users can view all existing recipes on the "Home" page.

Title	Chef	Date
Homemade Hot Chocolate	tecun	2020-11-29
Hotpot. Hotpot	okuvadav	2020-10-30
Beef Tacos	bbbbbbbb	2020-10-30
Shrimp Vermicelli and Garlic	udufifas	2020-10-30
Chinese Noodles	bbbbbbbb	2020-10-30
Pizza	IIIIIIII	2020-10-30
SLAM eggs	bbbbbbbb	2020-10-28
Breakfast Burrito	IIIIIIII	2020-10-28
Cheesy Ground Beef Tacos	gggggggg	2020-10-25
Cheesy Ground Beef Tacos	izeduvek	2020-10-25
Greek Feta Dip	mmmmmmmm	2020-10-25
Broccoli Salad	izeduvek	2020-10-17

To view a particular recipe, users can click the name of the recipe and a new page will open.

Selection

```
String sql ="SELECT recipes.recipe_id,recipes.title,createdby.username,createdby.date FROM recipes,
createdby where recipes.recipe_id = createdby.recipe_id Order by createdby.date DESC";
```

The page below is the view after users click the name of the recipe.

Chef Menu

Title	Chef	Add to favorite?	Subscribe the Chef?	Report
Cup noodles	111	Add	Subscribe	report

Category
Dinner
easy to make

Ingredient	Measurement
water	500m
salt	1mg
noodles	1 pack

Description
Good to eat!

Rating
This recipe has No rating yet, be the first one to make a comment.

User	Comment

Selection

```
:"SELECT recipes.title,createdby.username FROM recipes,createdby where recipes.recipe_id= '"+id+"' and createdby.recipe_id= '"+id+"'";
="SELECT ingredients.name,include.measurement FROM include,ingredients where ingredients.ingredient_id = include.ingredient_id and include.recipe_id= '"+id+"'";
="SELECT description FROM recipes where recipe_id= '"+id+"'";
="SELECT AVG(rating) FROM rating where recipe_id= '"+id+"'";
="SELECT username,comment FROM rating where recipe_id= '"+id+"'";
="SELECT name FROM category,inside where inside.recipe_id= '"+id+"' and inside.category_id = category.category_id";
```

6. Search for Recipes

When users click "Recipes" and "Browse Recipe" button, it will open the page below.

Users can select a category and key ingredients to search. Then, when users click the green button named "Search for Recipes", it will show the recipes with the selected category and key ingredients.

Selection

```
"SELECT recipes.recipe_id,recipes.title,createdby.username,createdby.date FROM recipes,createdby
where recipes.recipe_id = createdby.recipe_id Order by createdby.date DESC";
```

7. Delete Recipes

To delete the Recipe, there is a "delete" button for each recipe on the profile.

soyeonw's Menu

Title	Chef	Date	Deletion
Toast	soyeonw	2020-12-01	delete

When users press the button, the recipe would be deleted from all the schemas that included this using deletion queries below.

Deletion

```
String sql = "DELETE FROM include WHERE recipe_id = '"+id+"'";
        st.executeUpdate(sql);
        sql = "DELETE FROM inside WHERE recipe_id = '"+id+"'";
        st.executeUpdate(sql);
        sql =  "DELETE FROM createdby WHERE recipe_id = '"+id+"'";
        st.executeUpdate(sql);
        sql =  "DELETE FROM bookmarks WHERE recipe_id = '"+id+"'";
        st.executeUpdate(sql);
        sql =  "DELETE FROM report WHERE recipe_id = '"+id+"'";
        st.executeUpdate(sql);
        sql =  "DELETE FROM rating WHERE recipe_id = '"+id+"'";
        st.executeUpdate(sql);
        sql =  "DELETE FROM recipes WHERE recipe_id = '"+id+"'";
        st.executeUpdate(sql);
```

8. Subscribe / Unsubscribe

- Subscribe: Users can subscribe when they click the "Subscribe" button on the specific recipe page.

Chef Menu

Title	Chef	Add to favorite?	Subscribe the Chef?	Report
Cup noodles	111	Add	Subscribe	report

Insertion

```
= st1.executeQuery("Select * from subscribe where creator_username = '"+username+"' and subscriber_username = '"+username1+"'");
"Insert into subscribe(creator_username,subscriber_username) value('"+username+"','"+username1+"')";
```

- Unsubscribe: Users can unsubscribe the particular chef from the "View Profile" page. By pressing the "Unsubscribe" button, that chef will be removed from the Favorite Chef list.

Favorite Chef

Title	Chef	Date	Unsubscribe
VEGGIE SALAD	ggggggg	2020-10-15	unsubscribe
Cheesy Ground Beef Tacos	ggggggg	2020-10-25	unsubscribe
Broccoli Salad	izeduvek	2020-10-17	unsubscribe
Cheesy Ground Beef Tacos	izeduvek	2020-10-25	unsubscribe
PUPUSAS	IIIIIIII	2020-10-17	unsubscribe
Breakfast Burrito	IIIIIIII	2020-10-28	unsubscribe
Pizza	IIIIIIII	2020-10-30	unsubscribe

Deletion

```
String sql = "DELETE FROM subscribe WHERE creator_username = '"+username+"' and subscriber_username = '"+username1+"'";
```

9. Rate Recipes

To rate a recipe, users can find the option at the bottom of each recipe. Users can rate from 1 to 5. As users rate the recipes, the rating shown on the recipe page will be updated.

Rate this recipe

Recipe Code
50

Rater
king

Rating
1

Comment

Rate and Comment

Insertion & Updating

```
sql ="INSERT INTO rating(username,recipe_id,rating,comment)values('"+username+"',"+id+","+rate+",'"+comment+"')";
sql1 ="UPDATE rating SET rating = "+rate+", comment = '"+comment+"' Where username = '"+username+"' and recipe_id = "+id+"";
```

10. Report an inaccurate recipe

To report a recipe, users can find the option on each recipe page. next to the subscribe button. Click there and write the reason why it is necessary to report the recipe.

Chef Menu

Title	Chef	Add to favorite?	Subscribe the Chef?	Report
Cup noodles	111	Add	Subscribe	report

Insertion

```
String sql = "Insert Into report (username,recipe_id) value('"+username+"',"+id+")";
```

11. Bookmark Recipe

To Bookmark a recipe, users can click the blue button "add" under the question "Add to favorite?"

Chef Menu

Title	Chef	Add to favorite?	Subscribe the Chef?	Report
Cup noodles	111	Add	Subscribe	report

Insertion

```
String sql = "Insert into bookmarks(username,recipe_id) value('"+username+"','"+id+"')";
```

12. View My Favorite Recipes

To view favorite recipes, users should click their username and "view profile" at the top right-hand corner of the site. Then, there will be the section for the bookmarked recipes.

Favorite Menu

Title	Chef	Date	Deletion
Hotpot. Hotpot	okuvadav	2020-10-30	remove
Pizza	||||||	2020-10-30	remove
Homemade Hot Chocolate	tecun	2020-11-29	remove

In this table, users can delete a recipe from their bookmark list by pressing the "remove" button.

Deletion

```
String sql = "DELETE FROM bookmarks WHERE recipe_id = '"+id+"' and username = '"+username+"'" ;
```

4. Lesson Learned

Jiaxiang Guo

- At the end of the semester, I have learned about creating a 3-Tier Architecture project using MySQL Workbench and Tomcat Server. In this project, I have experienced thousands of bugs and difficulty of implementation but I still worked through them by doing research online and learning from other people's mistakes. I have used Selection, Insertion, Deletion, and Updating SQL query to finish this project. Also, creating the User interface is one of the difficult points while I do this project. This project gave me a full-stack development experience for the first time in my life. I think this is a very good project that I can put in my resume for future job interviews.

Soyeon Wang

- In this lecture, I have learned the fundamental concept of Database Management System, and how to build 3-Tier Architecture using MySQL and Tomcat Server. I could apply what I learned on this project. There were a lot of difficulties in implementing what we proposed because I was not familiar with using html. Through researching and learning, I could do step by step gradually. I have used ERD and SQL queries for this project, and what I learned in the class was useful. There was a lot to learn on this project, and it was a novel experience to do this team project.

Gricelda Tecun

- I learned how to connect MYSQL Workbench and Tomcat with eclipse to implement 3-Tier Architecture. I have learned that to connect to MYSQL we need to start the server and have the root and password to have access to the database. I have learned that to delete a tuple from a table must not have any dependencies on other tables because other tables are using its primary key. I had a great team and together we learned how to implement 3-Tier Architecture. I am so glad that we end the semester with this amazing web application which I can add to the resumen. It was a challenge and fun to learn the functionality and design of CSS. Also, editing was one of the most difficult user interfaces.