

March 2021

Web Application Programming (CS472)

Online Dictionary Project

The purpose of this project is to review and integrate all of the tools and techniques you have learned in this course. In this project, you will create a website that uses all of the following technologies: HTML, CSS, JavaScript, Module Pattern, jQuery, AJAX, SQL, and JSON.

Your goal is to create a simple website that functions as an Online English Dictionary. The Dictionary is stored on the web server as a SQL table with three fields: word, word type, and definition. Your website is created using the following files:

dict.html displays the webpage containing the User Interface

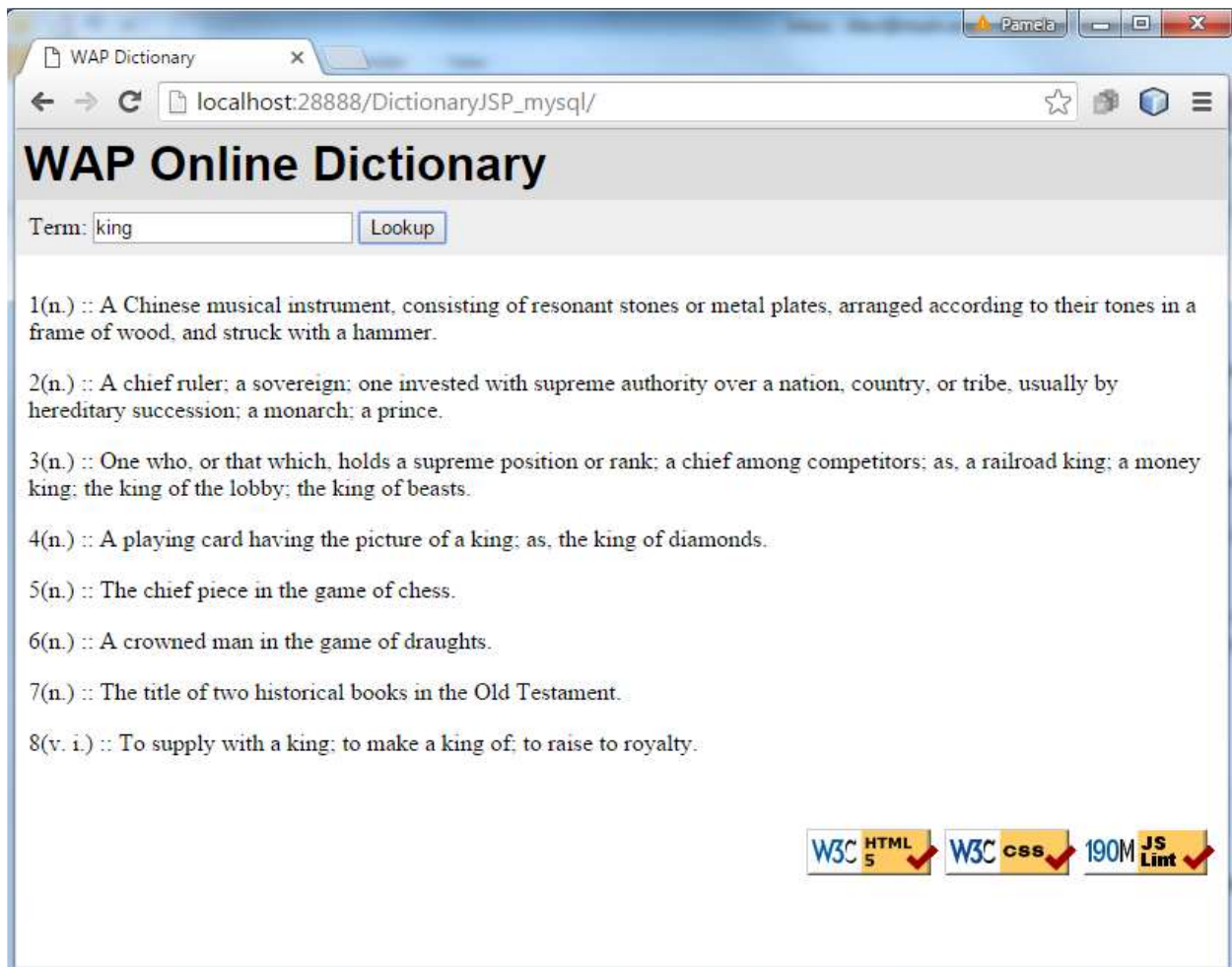
dict.css styling for dict.html

dict.js JavaScript event handlers for dict.html (using Module Pattern)

jQuery.js Standard jQuery library

dictServlet.java handles the Ajax request

DbConnection.java Uses JDBC to connect to a MySQL database containing the online dictionary.



The main webpage (User Interface) has a text field for the User to enter a word and a Lookup Button to request the definition of the word. When the User clicks the Lookup Button, a JavaScript event handler is invoked that contains a jQuery Ajax call. The Ajax call picks up the word from the text field and sends it to the servlet. Then the servlet uses the SQL Dictionary to find the definition(s) of the word, and then converts the definition(s) into JSON format and transmits it back to the JavaScript in dict.js, where jQuery is used to display the definition(s) on the website. If there are multiple definitions, then all should be displayed. The above picture is a simple example of a display. You can style it to make it more visually appealing.

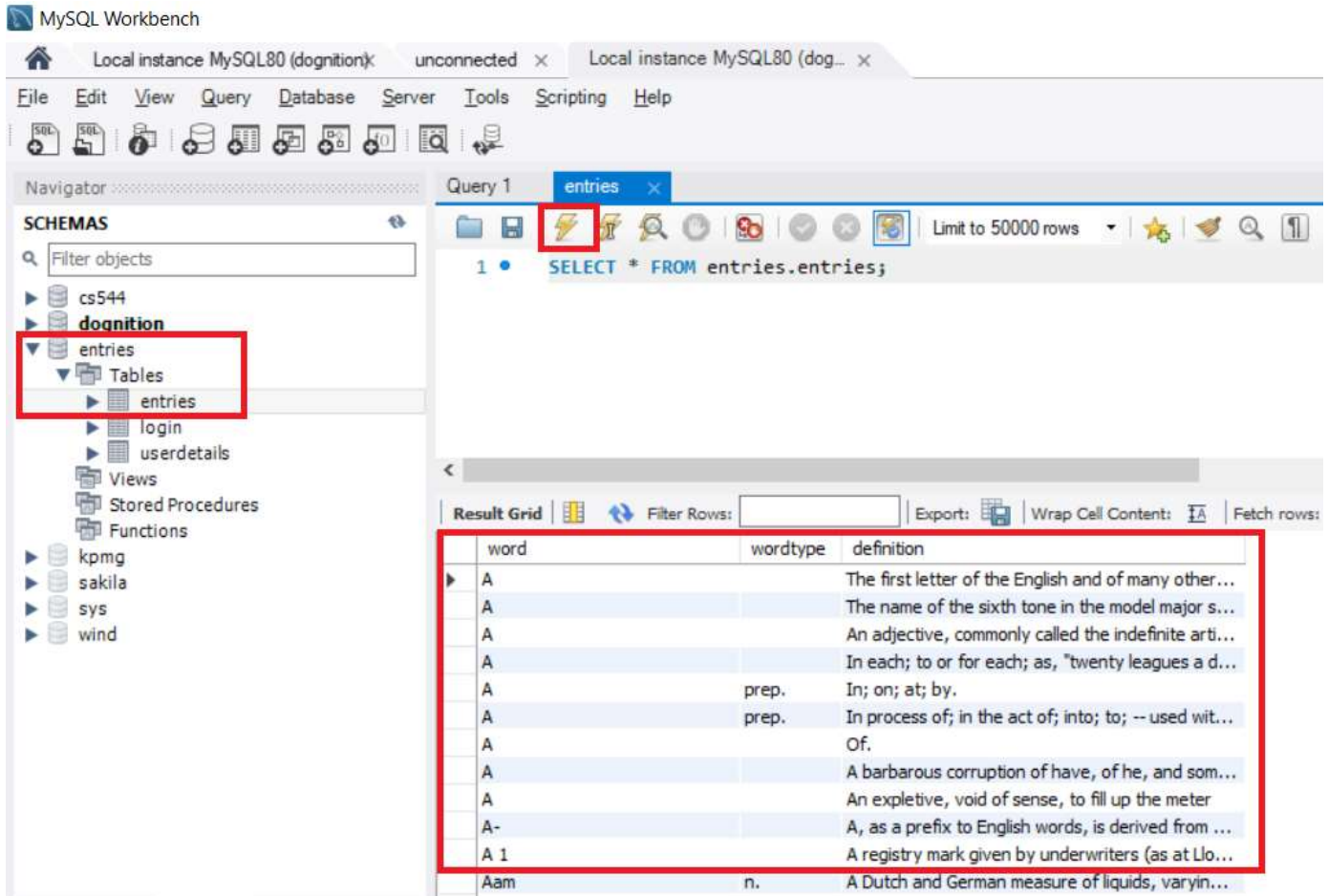
MySQL Dictionary

The file [englishdictionary.sql](#) contains a full English Dictionary, and can be downloaded from the course website. You will need a database on your machine that can host a large set of records. You can download MySQL from <http://dev.mysql.com/downloads/mysql/>

- Use the MySQL Installer 8.0.23 for Windows
- If XAMPP or WAMP is installed on your computer, uninstall them before installing MySQL
- The following settings should work for the MySQL installation
 - root password: root //or your choice
 - add yourself as user
 - username: [your name]
 - host <All Hosts(> //this is default
 - role: DB Admin //this is default
 - authentication: MySQL //this is default
 - password: [mysql] //or your choice
 - then do Execute on the config steps

MySQL Workbench

- Open [englishdictionary.sql](#) file, copy all, paste it on MySQL Workbench and run it.
- It will create entries database and entries(word, wordtype, definition) table.
- Now you should be able to find the entries tables and view the data similar to the following screenshot



You will also need to add the library for the MySQL driver to your eclipse project. You can find a [mysql-connector-java.jar](#) file from File tag on [Teams](#).

Your servlet will connect to the database using the DbConnection.java class that you will write. You can use the same JDBC techniques that are covered in the FPP course. Please check MySQL and Servlet example from File tag on [Teams](#) if you are unsure about this.

JSON

jQuery has the convenient `JSON.parse` method to handle the JSON string returned from the Ajax call. The JSON required is simple enough that you can do all the encoding directly in Java. Or, you could use a Java JSON library. One simple such library is `JSON.simple`.

If you want to use this library:

- Download, e.g., <https://code.google.com/archive/p/json-simple/downloads>
- Save the jar somewhere convenient, e.g. your WEB-INF lib folder