CSE 154 Practice Exam 2 from 16au

Name: _______________________________ Quiz Section: _________
TA: _______________________________ Student ID #:__________________

Rules:

You have 110 minutes to complete this exam. You will receive a deduction if you keep working after the instructor calls for papers. This test is open-book, but closed notes. You may not use printed/written notes or practice exams. You may not use any computing devices, including calculators, cell phones, or music players. Unless otherwise indicated, your code will be graded on proper behavior/output, not on style.

Do not abbreviate code, such as writing ditto marks ("") or dot-dot-dot marks (...). **You may not use JavaScript frameworks such as jQuery or Prototype when solving problems**. If you enter the room, you must turn in an exam and will not be permitted to leave without doing so. You must show your Student ID to a TA or instructor for your submitted exam to be accepted.

Good luck!

#	Problem	Points	Score
1	HTML	10	
2	CSS/JS Selectors	5	
3	CSS	12	
4	JavaScript / DOM	20	
5	PHP Webservice	15	
6	JavaScript / AJAX	15	
7	SQL	12	
8	Regex	5	
9	Short Answer	8	

1.) HTML

The following HTML code doesn’t validate. Find and correct the errors:

```
<html>
      <head>
            <title>Best Resume Evar<title>
      </head>
      <body>
            <h1 id="important">Whitaaaab</h1>
            Interests:
            <ul>
                  <li class="interest">an interest.</li>
                  <li class="interest">another interest.</li>
                  yet another interest.
            </ul>

            <div>
                  <img src="impossibly-cute-puppy.jpg" />
                  <p id="important">Isn't this a cute puppy?</p>
            </div>
      </body>
</html>
```

2.) CSS/JS Selectors

Draw lines to match the following CSS selectors with the description of which DOM elements it would select:

div.p	All elements with the class important
div > p	All paragraphs that are a direct child of a div
div p	All paragraphs that are somewhere inside a div
div, p	The element with the id important
#important	All paragraphs and all divs
.important	All divs with the class p

3.) CSS

Given the following HTML, write the CSS selectors and styling to fit the requirements.

```
<!DOCTYPE html>
<html>
<head>
   <title>Recipes R Us</title>
   <link type="text/css" rel="stylesheet" src="problem-2.css" />
</head>
<body>
   <h1>A Collection of the best recipes ever</h1>
   <div id="recipe-list">
       <ul>
           <li>Christmas Cookies</li>
           <li>Lasagna</li>
           <li>Ants on a Log</li>
           <li>Kimchi Burrito</li>
       </ul>
   </div>
   <div id="recipe-area">
       <h2>Christmas Cookies</h2>
       <div id="ingredients">
           <ul>
               <li>flour</li>
               <li>sugar</li>
               <li>magic</li>
           </ul>
       </div>
       <p class="instruction">Combine all the ingredients.</p>
       <p class="instruction">Wish on a shooting star.</p>
       <p class="instruction">Profit.</p>
   </div>
</body>
</html>
```

Styling Requirements:

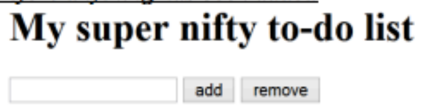
- The background of the entire page should be `#123456`.
- The color of the text for all the headings should be teal.
- Every element with the class instruction should have a border that is 2 pixels, dashed, and red.
- The div with the id recipe-list width should take up 40% of it's parent's width.
- The div with the id recipe-area width should take up 60% of it's parent's width.
- The text in the list inside the div with the id ingredients should have a font preference of `Arial`, `Helvetica`, or any other `sans-serif` font.

4.) JavaScript / DOM
Write **JavaScript code** to add behavior to the following page for keeping track of a to-do-list. The page UI allows the user to type an item into a text box. The user can click the "add" button to add the item to the bottom of the list. Each word in the phrase should be inserted as a `li`, inside a `ul` with the id of list. If the user wishes to remove an item he or she can type the text of the item he or she wishes to remove in the text box and click the "remove" button. This should be case insensitive. For example, if the list only contains "foo" and the user tries to remove "FoO", it should be removed. If the user tries to remove an item that is in the list multiple times only the first occurrence should be removed. The items should have background colors that alternate between white and yellow (first white, then yellow, then white, yellow, etc.). This should still be the case no matter how many items are removed or added and no matter what order these operations are done in. You **may not use the CSS3 nth-child pseudo selector** to do this. The code should work for multiple clicks of the buttons. On each click it should clear any previous information you typed in the input boxes. **Do not use any JavaScript libraries such as jQuery or Prototype**. Here is the relevant HTML code for the page:

```
<h1>My super nifty to-do list</h1>
<ul id="list"></ul>
<div>
     <input type="text" id="item" />
     <button id="add">add</button>
     <button id="remove">remove</button>
</div>
```

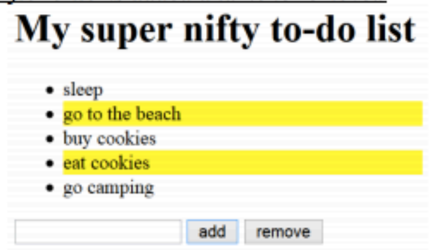
These screenshots show the state after items have been added, and the state after items have been removed.

1. *Before anything has been added*



My super nifty to-do list

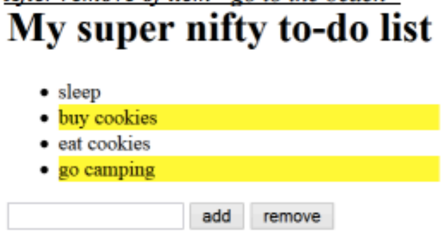
2. *After 5 items added and none removed*



My super nifty to-do list

- sleep
- go to the beach
- buy cookies
- eat cookies
- go camping

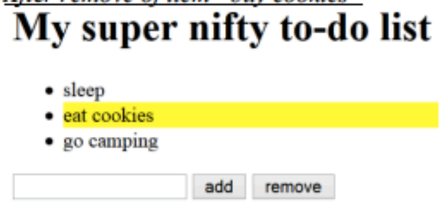
3. *After remove of item "go to the beach"*



My super nifty to-do list

- sleep
- buy cookies
- eat cookies
- go camping

4. *After remove of item "buy cookies"*



My super nifty to-do list

- sleep
- eat cookies
- go camping

5.) PHP Webservice

Write the code for a web service courses.php that outputs JSON data about available courses at a school. This service should take two GET parameters named start and end, and search a data file for all courses that match those start/end times exactly and have open seats available.

Your PHP code will read a data file named courses.txt. Each line in that file matches the following format, with each token of information separated by a single space:

```
code startTime endTime seatsAvailable seatsTotal name
```

All tokens of data except the course name are guaranteed not to contain any spaces in them. You can assume all data in the file is valid, a number when you expect it to be a number and has no blank or malformed lines.
You may find an optional third parameter to the split function useful when writing your solution. If you pass split a number as a third parameter it will cap the number of times it splits to that number. Everything after the number of splits is passed will be placed in the last spot in the array. For example:

`split(":", "h:i:j:k", 3)` would return `{"h", "i", "j:k"}.`

The JSON that is output should contain a number labeled "count". This should represent a count of all courses at the given start and end times. It should also contain a list called "courses" that contains a list for each course exactly matching the start and end times that has open seats. The list for each course should contain the code labeled as "code", the number of seats left (the total seats minus the seats available) labeled as "seats", and the name labeled as "name",

You can assume both parameters will be passed. If no courses match the start/end and have seats you should send back the same data as usual, just leave the course array empty.

An example input file:

```
CSE154 130 230 250 250 Web Programming
CSE143 130 230 700 800 Computer Programming I
ANTH300 130 230 13 14 Anthropology
DANCE250 130 3 40 50 World Dance History
```

Output using the above input file and `courses.php?start=130&end=230`

```
{  "count":3,
   "courses":[ {"code" : "CSE143",
                "seats" : 100,
                "name" : "Computer Programming"
                },
                {"code" : "ANTH300",
                "seats" : 1,
                "name" : "Anthropology"
                }
              ]
}
```

6.) JavaScript / AJAX

Write Javascript code in a file called courses.js that contacts the courses.php code that you wrote for question 5. You can assume courses.php and courses.js will be located in the same directory. Remember, `courses.php` takes start and end times as parameters and outputs data in the form of the data below:

```
{  "count":3,
   "courses":[ {"code" : "CSE143",
                "seats" : 100,
                "name" : "Computer Programming"
                },
                {"code" : "ANTH300",
                "seats" : 1,
                "name" : "Anthropology"
                }
              ]
}
```

Your Javascript code will be attached to the below HTML page:

```
<!DOCTYPE html>
<html>
<head>
      <script type="text/javascript" src="courses.js"></script>
</head>
<body>
      <h1>Search for open courses</h1>
      <label>start time:<input id="start" type="text" /></label>
      <label>end time:<input id="end" type="text" /></label>
      <button id="search">search</button>
      <ul id="results"></ul>
      <p id="count"></p>
</body>
</html>
```

When the `search` button is clicked, clear the previous results on the page and request the `JSON` data for the input times with `AJAX`.

Add each returned course to the list in the following format:

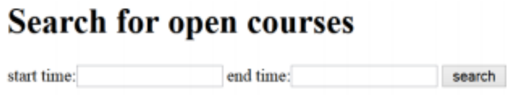
    <name> - <seats> seats

Add the count to the count paragraph in the following format:

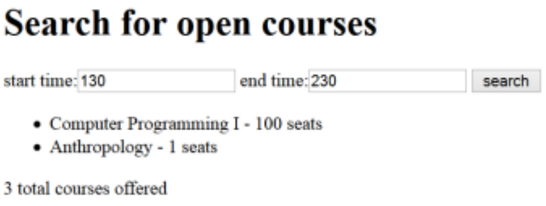
    <count> total courses offered

You may assume that the JSON data is valid and in the format described previously, the data typed into the text boxes is valid, and that the `.php` service is reachable. You do not need to do anything special if there are no matching courses.

You may not use any Javascript libraries such as Prototype and JQuery.



When the page first opens



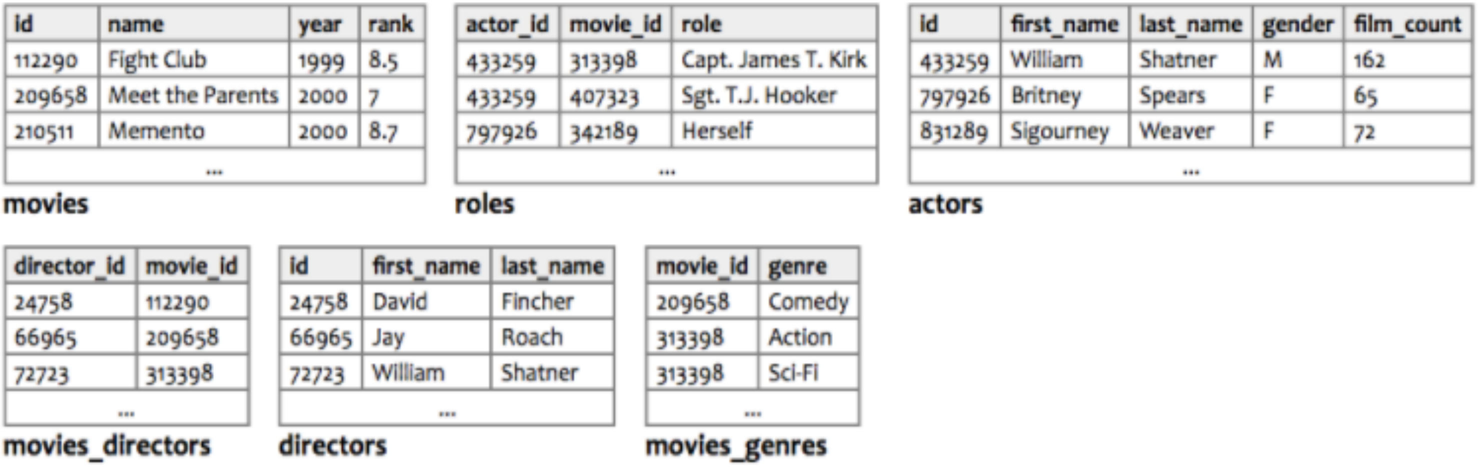
- Computer Programming I - 100 seats
- Anthropology - 1 seats

3 total courses offered

After a search for courses 130-230

7.) SQL

Given the imdb database:



id	name	year	rank
112290	Fight Club	1999	8.5
209658	Meet the Parents	2000	7
210511	Memento	2000	8.7
...			

movies

actor_id	movie_id	role
433259	313398	Capt. James T. Kirk
433259	407323	Sgt. T.J. Hooker
797926	342189	Herself
...		

roles

id	first_name	last_name	gender	film_count
433259	William	Shatner	M	162
797926	Britney	Spears	F	65
831289	Sigourney	Weaver	F	72
...				

actors

director_id	movie_id
24758	112290
66965	209658
72723	313398
...	

movies_directors

id	first_name	last_name
24758	David	Fincher
66965	Jay	Roach
72723	William	Shatner
...		

directors

movie_id	genre
209658	Comedy
313398	Action
313398	Sci-Fi
...	

movies_genres

Query for the first and last names of all the female actors that have been in at least 50 films:

Query all the columns out of the directors table for all directors that have directed a movie with a rank of 8 or higher, order by last name of director in alphabetical order. Return one row per unique director:

8.) Regex

For each regex, circle all the string(s) that match it:

1. `/[A-Za-z]+@[0-9]/`
   - foo+@5
   - foo@123
   - 45foo@321
   - f8@8f
2. `/^F*\.jpg$/`
   - F.jpg
   - ^FFF.jpg$
   - FFF.jpg
   - F\.jpg

9.) Short answer

1. What keeps track of your cookies?

2. What line of code would be used in a php script to redirect to a page foo.php in the same relative directory?

3. Is <span> an inline or block HTML element?

4. Why do we do validation of user input on the server side?

5. How do you get rid of a timer in JavaScript if you have a global variable timerID?

6. What does the tag <br /> do?