



Lab 9 - Assignment 4

Due: 11:59 pm, Wednesday, March 28

In this lab, we want to help you practice front-end (HTML/CSS/JavaScript) and back-end (PHP) techniques for web app development. You can download the source files from the Blackboard for Lab 9.

1. Problem 1

In this problem, you will write a small piece of JavaScript such that every image can be hovered on to see a larger thumbnail as needed. (Figure 1)

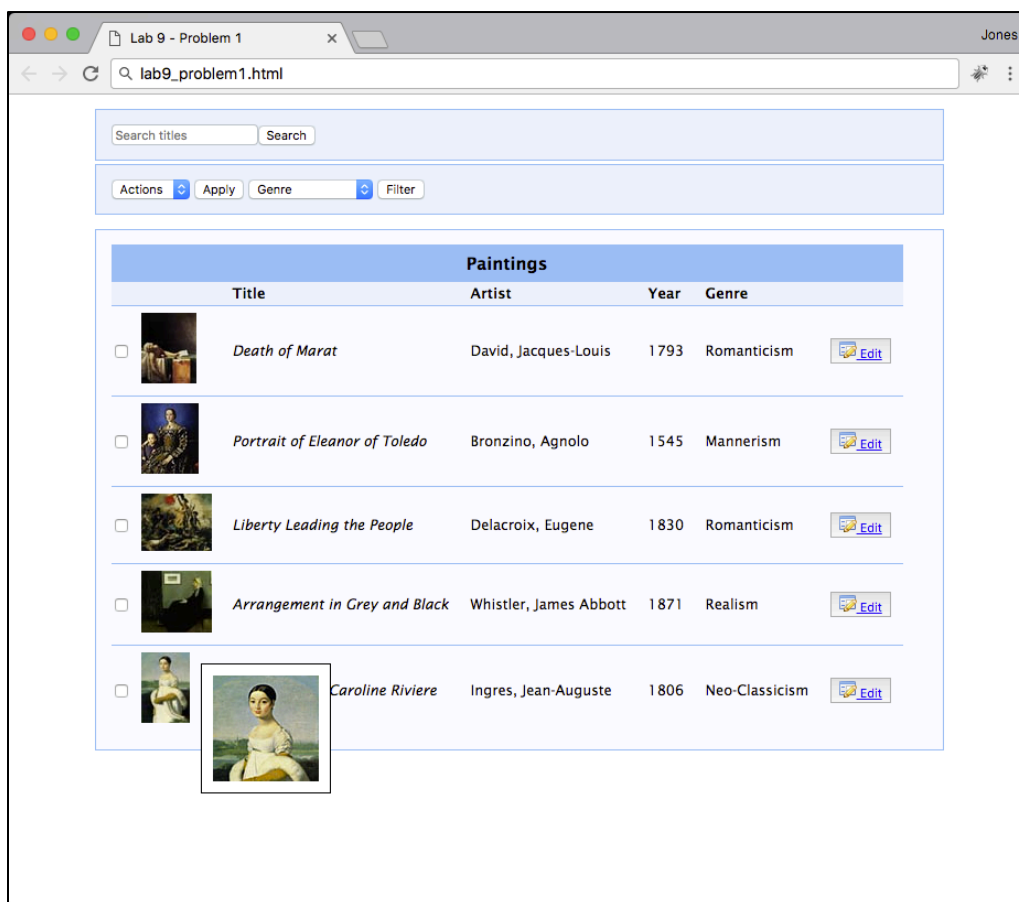


Figure 1: The expected result of problem 1

INSTRUCTIONS

1. Begin by adding a link to a JavaScript file, named “[lab9_problem1.js](#)”, at the `<head>` section of your page.
2. Modify the “[lab9_problem1.html](#)” to add a class for each thumbnail image.
3. In your JavaScript file, write a loop to find all `` tags with the newly defined class (hint: `querySelectorAll()`).
4. For each image, attach a listener on the `mouseover` event to create a new `` with a larger image inside (based on the “`src`” attribute). Add another listener on the `mouseout` event to hide the newly created ``.
5. All required resources are in “[images](#)” folder.

TESTING

1. When you mouse hover an image, a larger quality thumbnail is fetched and seen in a `<div>` over the mouse location.
2. When you move your mouse out the page, the page will return back to the way it was, i.e. the larger quality thumbnail will disappear.

2. Problem 2 (Optional, Extra credit: 30 points)

We have started server-side development with local environment setup and moved on to introduce the server script, i.e. PHP. In this problem, we would like you to practice on PHP programming. Given data in Table 1, please write a PHP program to store and present them as Figure 2.

Table 1: A list of Pokemon (<https://www.pokemon.com/us/pokedex/>)

Field	Value
name	Butterfree
id	12
weight	70.5
abilities	Compound Eyes
img	https://assets.pokemon.com/assets/cms2/img/pokedex/detail/012.png
name	Raticate
id	20
weight	40.8
abilities	Run Away, Guts
img	https://assets.pokemon.com/assets/cms2/img/pokedex/detail/020.png
name	Nidorina
id	30
weight	44.1
abilities	Poison Point, Rivalry
img	https://assets.pokemon.com/assets/cms2/img/pokedex/detail/030.png

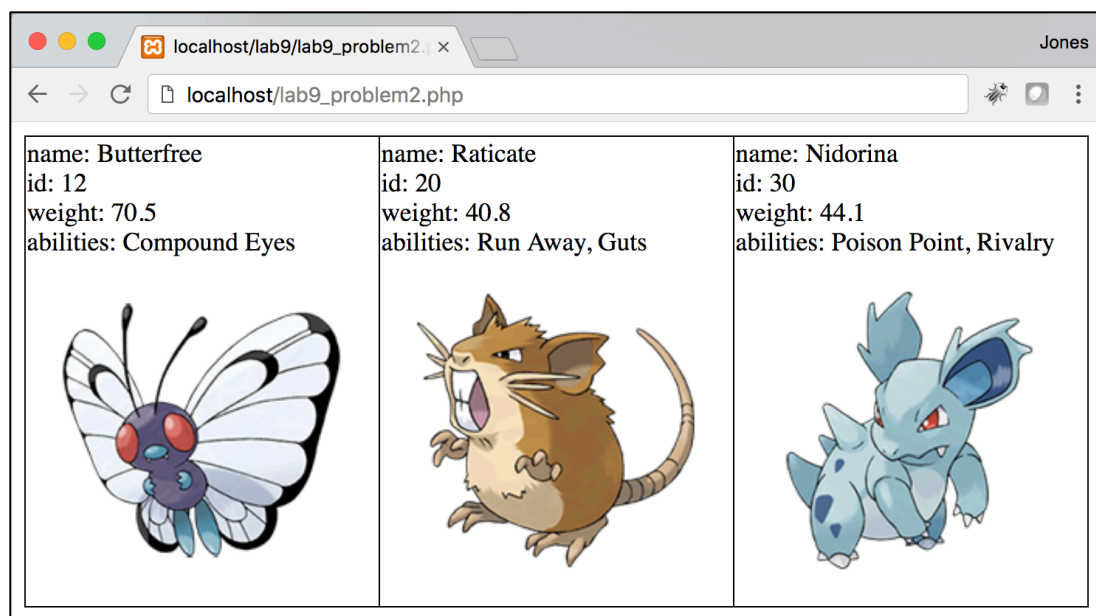


Figure 2: The expected result of problem 2

REQUIREMENTS

1. Store a list of pokemon in Table 1 to a multidimensional array. For the usage of Array in PHP, you can study it at:
<http://php.net/manual/en/language.types.array.php>
2. Each pokemon is an Array of key-value pair of data. (e.g. “name” => “Butterfree”)
3. The “abilities” field of each pokemon is also an Array.
4. Implement a function, named `listAllMembers()`, to print out all pokemon information with `<Table>` related tags.
5. Call the implemented function in the main script (“[lab9_problem2.php](#)”) to print out all pokemon as Figure 2.

Note 1: The multidimensional array is defined outside of the function, but your function needs to use this array to extract data. You need to apply all learned PHP skills to solve this problem.

Note 2: You need to place your PHP file into “htdocs” folder and launch Apache website to see the result.

3. Submission Requirement:

This is an individual assignment. Each student needs to have his/her own submission to the Blackboard. The submission should be a .zip file containing following resources:

1. A document (both of .doc and .pdf formats) that describes:
 - Problem description: a short description of the problem you are solving
 - Analysis and Design:
 - What kinds of HTML/CSS/JavaScript/PHP techniques used in your solution?
 - What are the difficulties you encounter?
 - ...
 - Source code: copy & paste your source code to the report
 - Screenshots of sample runs
2. The folder that contains all source codes, including all HTML/CSS/JavaScript/PHP files, images, etc.