CSCI 202, Spring 2017, Lab # 4

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Due date: Midnight, Monday, May 8.

Goals: Getting started with Javascript.

Zip your folder: Put all your files (including the supporting files) in a single folder and make a compressed (zip) archive of the folder.

Files to turn in:

- One HTML file: `lab04.html`. It will be modified from the supplied `penguins.html` file.
- One style file, `lab04.css`. It will be modified from the supplied `penguins.css` file.
- One Javascript file, `lab04.js`, entirely of your own creation.
- The `images` folder of supporting images should be included in your turnin folder, so that the page can be used immediately by the grader.

Lab steps:

- Download and unzip the `penguins.zip` file on the archive.
- After unzipping the `penguins.zip` file you will find it contains HTML, CSS, and some supporting images. Play with the web page a bit to get the idea of what is supposed to happen.
- Copy the `penguins.html` file to your own `lab04.html` file.
- Copy the `penguins.css` file to your own `lab04.css` file. Modify your `lab04.html` file so it loads your `lab04.css` script.
- All of the interactivity for the penguins webpage is provided by the pseudo classes `hover` and `active`. You are to replace this with Javascript.
- Delete the selectors in `lab04.css` that use `hover` and `active`.
- Change all of the "class" attributes of the penguins (and yeti) to "id". This will make it easy for your javascript to find them.
- For each of the `penguin` divs (and the yeti) in your `lab04.html` file, add `onmouseover`, `onmouseout` and `onclick` events, and have each one of them call an appropriately named Javascript function, *e.g.* `mouseOver1, mouseOut1, click1, mouseOver2`, *etc.*
- Create a Javascript file `lab04.js`, and make sure you load this script in your `lab04.html` file.

Javascript coding:

- In the Javascript file, create the functions needed by your penguins to change images to the question mark when the mouse enters, back to the default when the mouse leaves, and to the penguin (or yeti) when clicked.
- *Unlike* the original web page, your penguin (or yeti) will remain after clicking.
- In order for your Javascript to remember when a particular penguin has been clicked, you will use boolean variables, `p1Clicked`, `p2Clicked`, *etc.* All of these will be set to `false` at the top of the script. Each of the functions will check this variable first, and not do anything if it has been clicked.

- The *clicked* function will set its variable (`p1Clicked`, `p2Clicked`, *etc.*) to `true`, in addition to changing the image to the penguin (or yeti).
- Remember to set a style element with javascript, you use the following pattern. If the style is set like this:

```
#foo { background-image : url('mypicture.png') }
```

  Then the equivalent Javascript code would look like this:

```
document.getElementById("foo").style.backgroundImage = "url('mypicture.png')";
```

  Observe the use of single and double quotes in the url, and the fact that style names such as `background-image` have to be converted to camel case.
- **Big Hint:** to make this a LOT easier, get it working for ONE penguin first! Once you've got it correct, copying and pasting, and changing the penguin number will make the other penguins (and yeti) a lot easier.

Optional (for advanced students): You can make this assignment a bit shorter by using arrays and function parameters. For example, instead of the eight functions `mouseOver1`, `mouseOver2`, *etc.*, you can write a single function `mouseOver` that takes a single parameter, the number of the penguin.

If you do this, you can also approach the images in two ways. One is to construct the appropriate image name from the number, for example: `"images/mound_" + num + ".png"`. Another, more general way, is to use an array of image names:

```
["images/mound_1.png", "images/mound_2.png", "images/mound_3.png", ...]
```

If you do this, remember that arrays in Javascript are indexed from 0.

Acknowledgements: Supporting files and ideas for this lab came from `https://googlecreativelab.github.io/coder-projects/`