**This is a graded assignment**

**Due Friday March 6, 2015**

For this project you will build a web page whose target audience is children and will contain a simple memory game with the following specifications.

1. The game board will be centered on the screen and consist of 3 layers. The bottom layer will be a picture of an animal that fills the entire size of the game board. The middle layer will consist of 16 tiles in a 4x4 pattern that completely covers the bottom layer. These tiles will be populated with 8 image pairs (ie each image will be displayed twice). The top layer will also consist of 16 tiles in a 4x4 pattern that covers the middle layer. Each tile should exactly cover a tile in the middle row. These tiles will be populated with images that include a letter from A to P and be sequenced alphabetically starting in the upper left hand corner and moving left to right. The board should have a color and/or decorative border on all sides.
2. The area around the game board should be decorated attractively and indicate that this page is a game. There should be a detailed set of instructions explaining how to play the game somewhere in the area. There should also be a button to end the current game and another button to start a new game.
3. The game function.  
   Each turn the user will select two of the tiles from the top layer in an attempt to match images from the middle layer. Whenever a top layer icon is selected the program must hide the top layer tile and display the middle layer tile directly beneath it. After 2 tiles have been exposed the program will check if the two images on the middle layer are the same. If they are the same the 2 middle tiles will be hidden thereby exposing a portion of the image on the bottom layer. If the two images do not match then the selected top layer tiles must be made to cover the middle layer tiles again and the user can then choose two more tiles from the top layer. The user will continue to select tiles until he has matched all the middle layer images and has exposed the entire image on the bottom layer. The user should be able to select a top level tile by either clicking on it with the left mouse button or pressing a key on the keyboard that corresponds to the letter on the top layer tile he wishes to select. If the user presses a key outside the range A to P or clicks with any mouse button other than the left one the program should take no action until a valid selection is made.
4. Other Specifications
   1. All images should be cached to improve performance.
   2. You must use event listeners (not property events) to setup your events
   3. There should only be 1 event handler function for the click and keypress events of the game board. You can use a different event handler function for the “End Now” and “Play Again” buttons
   4. The images in the middle layer should be placed randomly when a new game starts (when the user comes to this page or clicks the play again button)
   5. Each time a game is started a new image should be placed in the bottom layer. You should have at least 5 different images for this purpose.
   6. The “play Again” button should restart a new game
   7. The “End Now” button should terminate the current game and hide the middle and top layers of the board so that the bottom layer image is completely visible.
   8. When the game is restarted the bottom layer image should be rotated to the next image in the list of 5 restarting at the first image on the 6th game. The images in the middle layer should be randomly generated again and all the top layer images should be displayed in order to cover all the middle tiles.
5. When your lab is complete, and you have tested it to make sure it works the way you want it to, prepare it to be handed in in the following manner:

* Place all the required files (HTML, CSS, images, and JavaScript) into a windows compressed folder on your H: drive named 422\_Project1\_yourname\_V1.   
  example: 422\_project1\_mylesBurgess
* Obviously (not always) replace yourname with your actual name. V1 is the version of the file (if you need to resubmit because you forgot a file or made a change you will increase the number after V to indicate that it is a newer version). I will not accept anything that is V4 or larger so get it right in your first 3 attempts (or better yet your first attempt)
* Submit the compressed folder as an attachment via email to [mburgess@dawsoncollege.qc.ca](mailto:mburgess@dawsoncollege.qc.ca) and place “422 Project 1” in the subject line.