Introduction to Web Development: JavaScript

Class 4: Exercises

1. Be able to build strings using a variety of methods with a focus on using template literals.

    a. Define less than ten JavaScript variables in a variety of different datatypes. Be sure to use meaningful names with each of these variables. Format the names using camel case.

    ```
    // EXAMPLE: (make up your own, this is an example)
    const autoMake = 'Ford';
    const autoModel = 'F150';
    const autoBrand = 'Lightning';
    const autoYear = 2023;
    const powerSystem = 'Electric';
    const ownerFullName = 'Danny Williams';
    const ownerAddress = '1234 Water Way';
    ```

    b. Output the variables to the console as a string and to a web page as a block of html. (see examples from the lectures).

2. Write some code demonstrating the following with arrays and their related methods
    a. Create two numeric arrays.
    b. Create an array of words
    c. Create a mixed array
    d. check the length of an array
    e. determine if an object is an array
    f. get the values from an array for a given position in the array.
    g. overwrite a value in the array at a specific position.
    h. find the position (or index) of a value in an array
    i. add to the end of an array
    j. add to the front of an array
    k. take off from the end of an array
    l. take off from the front of an array
    m. take out from the middle of an array
    n. reverse an array
    o. sort a character based array
    p. sort a numeric array

3. Build an Object Literal, **of your own design**, with several attributes (fields), an array, an embedded object (sub-object), and a relevant function for the object.

   EXAMPLE: (please design and create your own.)

   a. Create a basic object:

   ```
   const person = {
     first: 'bob',
     last: 'bobson',
     birthyear: '1987'
   };
   ```

   b. Add a sub-object:

   ```
   const person = {
     first: 'bob',
     last: 'bobson',
     birthyear: '1987',
     address: {
       street: '123 Water St.',
       city: 'St. Johns',
       province: 'NL',
       postal: 'A1F6J7',
       country: 'CANADA'
     }
   };
   ```

   c. Add an array:

   ```
   const person = {
     first: 'bob',
     last: 'bobson',
     birthyear: '1987',
     address: {
       street: '123 Water St.',
       city: 'St. Johns',
       province: 'NL',
       postal: 'A1F6J7',
       country: 'CANADA'
     },
     hobbies: ['music', 'fishing', 'shed life', 'quad']
   };
   ```

   d. Add a function:

   ```
   const person = {
     first: 'bob',
     last: 'bobson',
     birthyear: '1987',
     address: {
       street: '123 Water St.',
       city: 'St. Johns',
       province: 'NL',
       postal: 'A1F6J7',
       country: 'CANADA'
     },
     hobbies: ['music', 'fishing', 'shed life', 'quad'],
     getAge: function(){
       const today = new Date();
       return today.getFullYear() - this.birthyear;
     }
   };
   ```