Catch A Fish – Extra

I separate 7 steps for all scripts.

A screenshot of a computer program

Description automatically generated

**Step 0: HTML file only**

<!DOCTYPE html>

<html>

<head>

  <title>Fish catch database - Recapping JavaScript</title>

  <meta charset="utf-8" />

  <!-- merely adding the Materialize or Bootsrap CSS gives more modern looks -->

  <link rel="stylesheet" href="https://stackpath.bootstrapcdn.com/bootstrap/4.1.1/css/bootstrap.min.css" integrity="sha384-WskhaSGFgHYWDcbwN70/dfYBj47jz9qbsMId/iRN3ewGhXQFZCSftd1LZCfmhktB" crossorigin="anonymous">

</head>

<body>

  <h1>Example</h1>

  <p>Fish info: First version with three separate arrays.

        (Second version could be with Fish objects)</p>

  <hr /> <!-- --------------------------------------------------- -->

  <p>

    <span>Enter the species of the fish:</span>

    <input type="text" id="txtSpecies" />

    <br />

    <span>Enter its length:</span>

    <input type="text" id="txtLength" />

    <span>cm</span>

    <br />

    <span>Enter its weight:</span>

    <input type="text" id="txtWeight" />

    <span>kg</span>

    <br />

    <button onclick="addFish();">

         Add fish and clear the input fields</button>

  </p>

  <p id="pOutput1"></p>

  <hr /> <!-- --------------------------------------------------- -->

  <p>

    <button onclick="listAllCatch();">List all the catch</button>

  </p>

  <p id="pOutput2"></p>

  <hr /> <!-- --------------------------------------------------- -->

  <p>

    <button onclick="showAverageWeight();">Show average weight

    </button>

  </p>

  <p id="pOutput3"></p>

  <hr /> <!-- --------------------------------------------------- -->

  <p>

    <span>Enter the species of the fish to look for (e.g. Perch or

      Salmon)</span>

    <input type="text" id="txtSpeciesSearched" />

    <button onclick="findFish();">Find all this kind of fish</button>

  </p>

  <p id="pOutput4"></p>

  <hr /> <!-- --------------------------------------------------- -->

  <p>

      <button onclick="maxWeightFreshmanWay();">

          Heaviest fish freshman way</button>

      <button onclick="maxWeightUsingIndex();">

          Heaviest fish more professional way, using index</button>

  </p>

  <p>(1 lbs is 0.454 kg)</p>

  <p id="pOutput5"></p>

  <hr /> <!-- --------------------------------------------------- -->

  <script src="fish\_code.js"></script>

</body>

</html>

Step 1: Adding the Fish into the list

var speciesArray = ["Pike","Salmon","Salmon","Trout"];

var lengths = [40, 71, 76, 22];

var weights = [4.925, 3.675, 5.400, 1.510];

// ----------------------------------------------------------------------------

function addFish() {

  // Read input

  var species = document.getElementById("txtSpecies").value;

  var length = parseInt(document.getElementById("txtLength").value);

  var weight = parseFloat(document.getElementById("txtWeight").value);

  if (species !== "" && !isNaN(length) && !isNaN(weight)){

    // Add fish to arrays

    speciesArray.push(species);

    lengths.push(length);

    weights.push(weight);

    // Clear input fields

    document.getElementById("txtSpecies").value = "";

    document.getElementById("txtLength").value = "";

    document.getElementById("txtWeight").value = "";

    // Output success message

    document.getElementById("pOutput1").innerHTML = "Fish added successfully.";

  } else{

      alert("Invalid input.");

  }

}

Step 2: List the list of fish

function listAllCatch() {

  var outputText = "<strong>All Catches:</strong><br>";

  for (var i = 0; i < speciesArray.length; i++) {

    outputText += speciesArray[i] + ": " + lengths[i] + "cm, " + weights[i] + "kg<br>";

  }

  document.getElementById("pOutput2").innerHTML = outputText;

}

Step 3: Show the Average Weight of fish list

function showAverageWeight() {

  var totalWeight = 0;

  for (var i = 0; i < weights.length; i++) {

    totalWeight += weights[i];

  }

  var averageWeight = totalWeight / weights.length;

  document.getElementById("pOutput3").innerHTML = "<strong>Average Weight:</strong> " + averageWeight.toFixed(2) + "kg";

}

Step 4: Find the fish

function findFish() {

  var speciesSearched = document.getElementById("txtSpeciesSearched").value;

  var foundFish = [];

  for (var i = 0; i < speciesArray.length; i++) {

    if (speciesArray[i].toLowerCase() === speciesSearched.toLowerCase()) {

      foundFish.push({ species: speciesArray[i], length: lengths[i], weight: weights[i] });

    }

  }

  var outputText = "";

  if (foundFish.length > 0) {

    outputText += "<strong>Found " + foundFish.length + " " + speciesSearched + "(s):</strong><br>";

    for (var j = 0; j < foundFish.length; j++) {

      outputText += foundFish[j].species + ": " + foundFish[j].length + "cm, " + foundFish[j].weight + "kg<br>";

    }

  } else {

    outputText = speciesSearched + " not found!";

  }

  document.getElementById("pOutput4").innerHTML = outputText;

}

Step 5: Find the max weight of fish by weight.

function maxWeightFreshmanWay() {

  var maxWeight = 0;

  for (var i = 0; i < weights.length; i++) {

    if (weights[i] > maxWeight) {

      maxWeight = weights[i];

    }

  }

  var ListMax = [];

  for (var i = 0; i < weights.length; i++) {

    if (weights[i] === maxWeight) {

      ListMax.push({species: speciesArray[i], length: lengths[i], weight: weights[i] });

    }

  }

  var outputText = "";

      outputText += "<strong>Heaviest fish (Freshman Way):</strong><br>";

    for (var j = 0; j < ListMax.length; j++) {

      outputText += j+1 + ") " + ListMax[j].species + ": " + ListMax[j].length + "cm, " + ListMax[j].weight + "kg" + " <=> " + convertKgToLbs(ListMax[j].weight).toFixed(2) + "lbs<br>";

    }

  document.getElementById("pOutput5").innerHTML = outputText;

}

function convertKgToLbs(kilograms) {

  // 1 kg = 2.20462 lbs

  return kilograms \* 2.20462;

}

Step 6: find the maxweight of fish by Index.

function maxWeightUsingIndex() {

  var maxWeightIndex = 0;

  for (var i = 1; i < weights.length; i++) {

    if (weights[i] > weights[maxWeightIndex]) {

      maxWeightIndex = i;

    }

  }

  var ListMax = [];

  for (var i = 0; i < weights.length; i++) {

    if (weights[i] === weights[maxWeightIndex]) {

      ListMax.push({species: speciesArray[i], length: lengths[i], weight: weights[i] });

    }

  }

  var outputText = "";

      outputText += "<strong>Heaviest Fish (Index): </strong><br>";

    for (var j = 0; j < ListMax.length; j++) {

      outputText += j+1 + ") " + ListMax[j].species + ": " + ListMax[j].length + "cm, " + ListMax[j].weight + "kg" + " <=> " + convertKgToLbs(ListMax[j].weight).toFixed(2) + "lbs<br>";

    }

  document.getElementById("pOutput5").innerHTML = outputText;

}