Catch A Fish – Extra

I separate 7 steps for all scripts.

```
∨ 📁 Catch-a-Fish_demoAndTask                    ●
  ∨ 📁 Catch-a-Fish                              ●
    ∨ 📁 Step_0_Only_HTML  ✓
        JS fish_code.js
        🔲 HtmlPage.html
    ∨ 📁 Step_1_Add_Fish                         ●
        🔲 AddFish.html                          U
        JS fish_code.js                          U
    ∨ 📁 Step2_List_Fish                         ●
        JS fish_code.js                          U
        🔲 ListFish.html                         U
    ∨ 📁 Step3_AverageWeight                      ●
        JS fish_code.js                          U
        🔲 ShowAverageWeight.html                U
    ∨ 📁 Step4_FindFish                           ●
        🔲 FindFish.html                         U
        JS fish_code.js                          U
    ∨ 📁 Step5_MaxWeightFresh                     ●
        JS fish_code.js                          U
        🔲 MaxWeightFresh.html                   U
    ∨ 📁 Step6_MaxWeightIndex                     ●
        JS fish_code.js                          U
        🔲 MaxWeightIndex.html                   U
```

Step 0: HTML file only

```html
<!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"
```
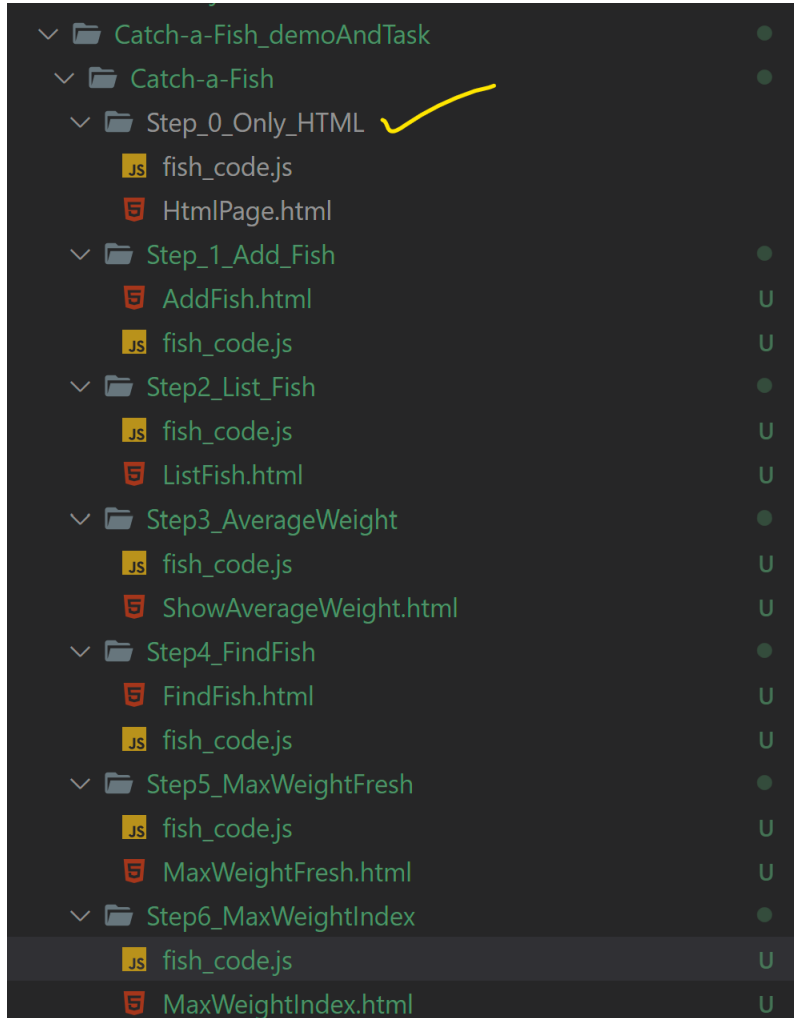
```html
integrity="sha384-
WskhaSGFgHYWDcbwN70/dfYBj47jz9qbsMId/iRN3ewGhXQFZCSftd1LZCfmhktB"
crossorigin="anonymous">
</head>
<body>
  <h1>Example</h1>
  <p>Fish info: First version with three separate arrays.
        (Second version could be with Fish objects)</p>
  <hr /> <!-- ------------------------------------------------ -->

  <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 /> <!-- ------------------------------------------------ -->
```

```html
<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

```javascript
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;
}
```