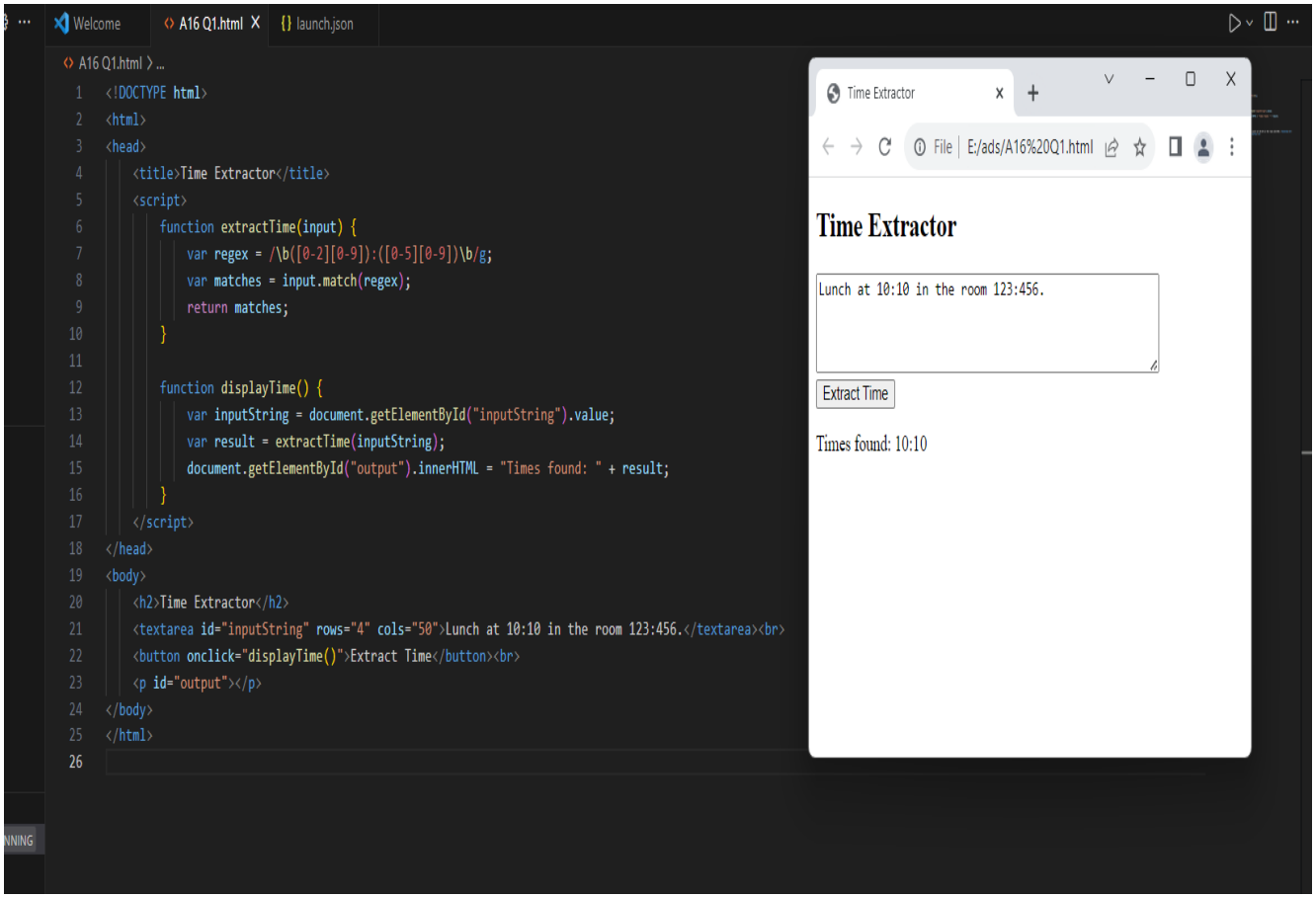
1). The time has a format: hours:minutes. Both hours and minutes have two digits, like 09:00. Make a regex to find time in the string: Lunch at 10:10 in the room 123:456. In this task there's no need to check time correctness yet, so 25:99 can also be a valid result. The regex should not match 333:333.

ANS:



2.) Create a function that finds the word "happiness" in the given string (not case sensitive). If found, return "Hurray!", otherwise
return "There is no happiness.".

ANS:

```
<!DOCTYPE html>

<html>

<head>

  <title>Happiness Finder</title>

  <script>

    function findHappiness(inputString) {

      var regex = /\bhappiness\b/i; // Using a case insensitive regex to match "happiness"
```

```
        if (regex.test(inputString)) {
            return "Hurray!";
        } else {
            return "There is no happiness.";
        }
    }

    function checkForHappiness() {
        var inputString = document.getElementById("inputString").value;
        var result = findHappiness(inputString);
        document.getElementById("output").innerHTML = result;
    }
  </script>
</head>
<body>
  <h2>Happiness Finder</h2>
  <textarea id="inputString" rows="4" cols="50">Finding happiness is a wonderful thing.</textarea><br>
  <button onclick="checkForHappiness()">Check for Happiness</button><br>
  <p id="output"></p>
</body>
</html>
```

Happiness Finder

Finding happiness is a wonderful thing.

Check for Happiness

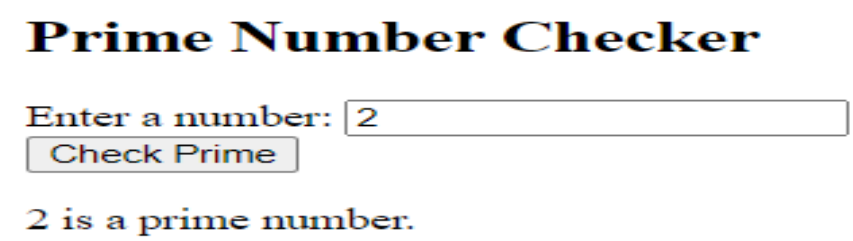
Hurray!

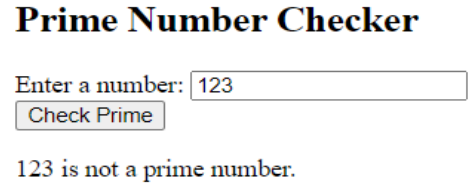
3). Write a regular expression that matches only a prime number. Numbers will be presented as strings.
ANS:

```
<!DOCTYPE html>
<html>
<head>
  <title>Prime Number Checker</title>
  <script>
    function isPrime(num) {
      num = parseInt(num);
      if (num <= 1) {
        return false;
      }
      for (var i = 2; i <= Math.sqrt(num); i++) {
        if (num % i === 0) {
          return false;
        }
      }
      return true;
    }

    function checkForPrime() {
      var inputNumber = document.getElementById("inputNumber").value;
      var result = isPrime(inputNumber);
      if (result) {
        document.getElementById("output").innerHTML = inputNumber + " is a prime number.";
      } else {
        document.getElementById("output").innerHTML = inputNumber + " is not a prime number.";
      }
    }
  </script>
```

```
</head>
<body>
    <h2>Prime Number Checker</h2>
    <label for="inputNumber">Enter a number:</label>
    <input type="text" id="inputNumber"><br>
    <button onclick="checkForPrime()">Check Prime</button><br>
    <p id="output"></p>
</body>
</html>
```

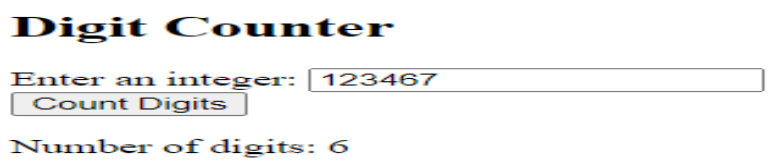




4). Create a function that will return an integer number corresponding to the amount of digits in the given integer num
ANS:

```
<!DOCTYPE html>
<html>
<head>
  <title>Digit Counter</title>
  <script>
    function countDigits(num) {
      // Convert the number to a string and return its length
      return num.toString().length;
    }

    function calculateDigits() {
      var inputNumber = document.getElementById("inputNumber").value;
      var num = parseInt(inputNumber); // Convert input to integer
      var result = countDigits(num);
      document.getElementById("output").innerHTML = "Number of digits: " + result;
    }
  </script>
</head>
<body>
  <h2>Digit Counter</h2>
  <label for="inputNumber">Enter an integer:</label>
  <input type="text" id="inputNumber"><br>
  <button onclick="calculateDigits()">Count Digits</button><br>
  <p id="output"></p>
</body>
</html>
```



5). Create a function that takes in a *number as a string* n and returns the number without trailing and leading zeros.
Trailing Zeros are the zeros *after* a decimal point which *don't affect the value*
Leading Zeros are the zeros *before* a whole number which *don't affect the value*

ANS:

```
<!DOCTYPE html>
<html>
<head>
  <title>Remove Leading and Trailing Zeros</title>
  <script>
    function removeZeros(n) {
      // Convert the string to a number and back to a string
      // This will remove leading and trailing zeros
      return parseFloat(n).toString();
    }

    function processNumber() {
      var inputNumber = document.getElementById("inputNumber").value;
      var result = removeZeros(inputNumber);
      document.getElementById("output").innerHTML = "Result: " + result;
    }
  </script>
</head>
<body>
```

```
    <h2>Remove Leading and Trailing Zeros</h2>
    <label for="inputNumber">Enter a number as a string:</label>
    <input type="text" id="inputNumber"><br>
    <button onclick="processNumber()">Process Number</button><br>
    <p id="output"></p>
</body>
</html>
```