Software Development Week 4

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1 Task 1 - For Loops

1.1 For Loop

```php
<?php
  for ($i = 1; $i >= 10; $i++) {
    echo "$i <br>"
  }
?>
```

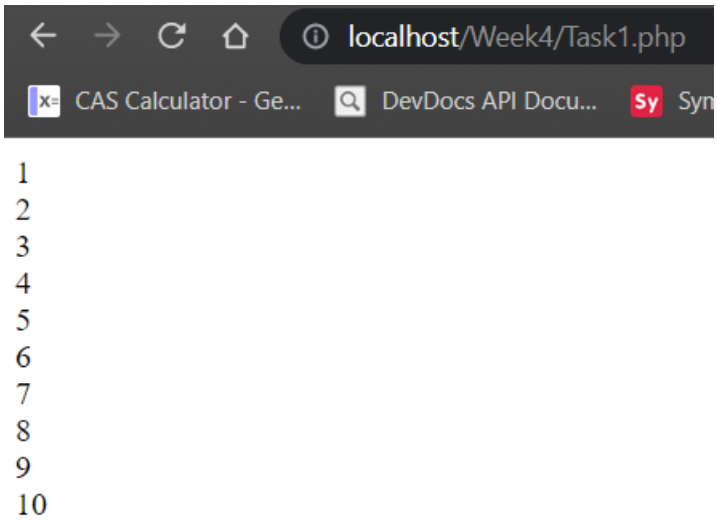

Figure 1: The output of the code shown above

1.2 BMI Calculator

```php
<?php
  function calc_bmi(float $height, float $weight): float {
    return round($weight / ($height * $height), 1);
  }

  function classify_bmi(float $bmi): string {
    if ($bmi < 18.5) {return "Underweight";}
    if ($bmi > 30) {return "Obese";}
    if ($bmi < 24.9) {return "Normal Weight";}
    return "Overweight";
  }

  function return_bmi_result(string $name, float $height, float
  ↪  $weight): string {
    $bmi = calc_bmi($height, $weight);
    return "$person weighs $weight and is $height metres tall.
    ↪  $person's BMI is $bmi, which classifies them as " .
    ↪  classify_bmi_result($bmi);
  }
  $people = [["Foo", 1.692, 65.7], ["Bar", 1.784, 72.9], ["Baz",
  ↪  1.72, 47]];
  for ($i = 0; $i < 3; $i++) {
    $person = $people[$i];
    $name = $person[0];
    $height = $person[1];
    $weight = $person[2];
    echo return_bmi_result($name, $height, $weight) . "<br>";
  }
?>
```

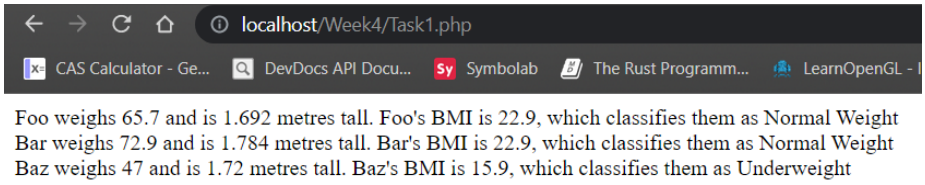

Figure 2: The output of the code shown above

2 Task 2 - Arrays

2.1 Difference between an associative and indexed array

The difference between an associative and indexed array is that an indexed array has numerical keys whereas an associative array can have keys of any type and is closer to a collection of key-value pairs

2.2 Different Arrays

1. Array types:
   (a) Array B is an indexed array
   (b) Array A is an associative array
2. The keys for Array A are `Red`, `White`, `Green` and `Blue`
3. The values of Array B are `22.7`, `28.5` and `22.1`

2.3 Two Arrays For Loop

```php
<?php
  $arrayA = array();
  $arrayB = array();

  $arrayA["Red"] = "#FF0000";
  $arrayA["White"] = "#FFFFFF";
  $arrayA["Green"] = "#008000";
  $arrayA["Blue"] = "#0000FF";

  $arrayB[0] = 22.7;
  $arrayB[1] = 28.5;
  $arrayB[2] = 22.1;

  echo "arrayA" . "<br>";
  foreach($arrayA as $color) {
    echo $color . "<br>";
  }

  echo "arrayB" . "<br>";
  for($i = 0; $i < count($arrayB); $i++) {
    echo $arrayB[$i] . "<br>";
  }
?>
```

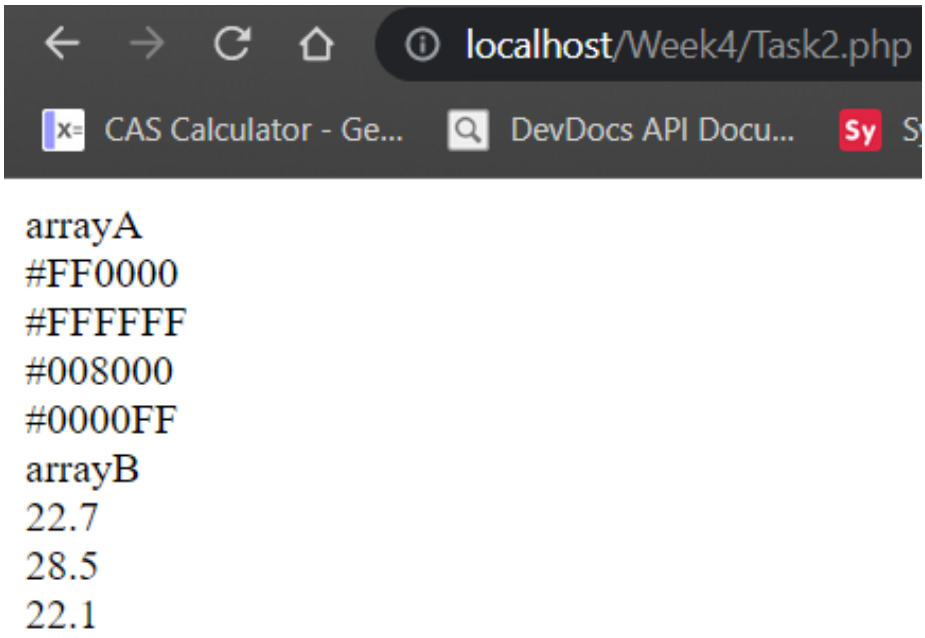

Figure 3: The output of the code shown above