

# Software Development Week 4

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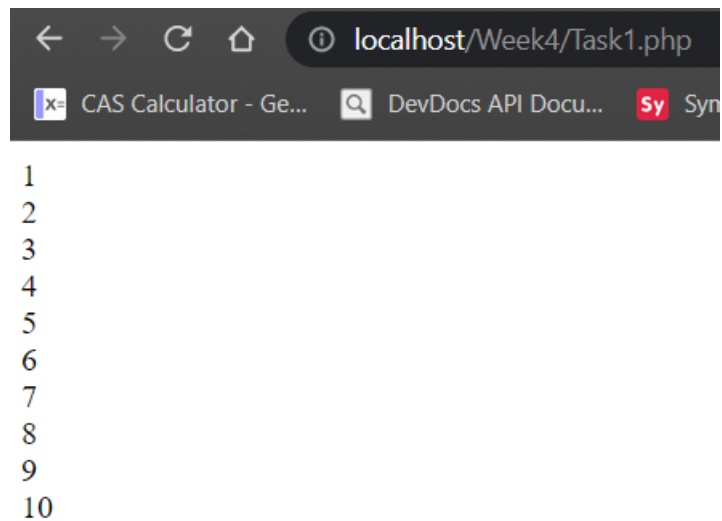
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VSV Id: 107027

## 1 Task 1 - For Loops

### 1.1 For Loop

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



1  
2  
3  
4  
5  
6  
7  
8  
9  
10

Figure 1: The output of the code shown above

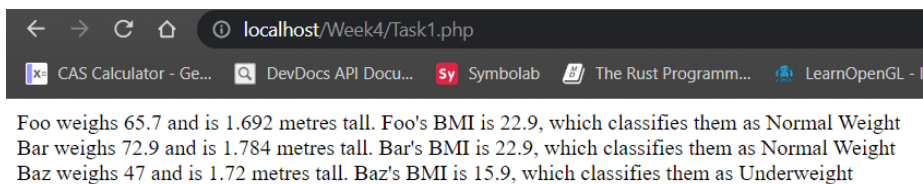
## 1.2 BMI Calculator

```
<?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>";
}
?>
```



localhost/Week4/Task1.php

CAS Calculator - Ge... DevDocs API Docu... Symbolab The Rust Programm... LearnOpenGL - I

Foo weighs 65.7 and is 1.692 metres tall. Foo's BMI is 22.9, which classifies them as Normal Weight  
Bar weighs 72.9 and is 1.784 metres tall. Bar's BMI is 22.9, which classifies them as Normal Weight  
Baz weighs 47 and is 1.72 metres tall. Baz's BMI is 15.9, which classifies them as Underweight

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

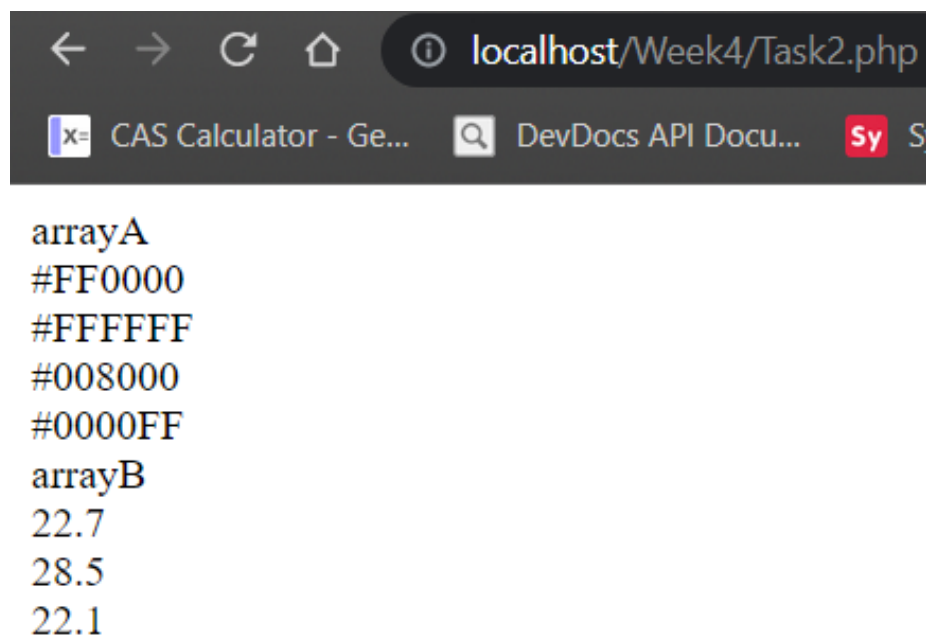
```
<?php
$arrayA = array();
$arrayB = array();

$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>";
}
?>
```



```
arrayA
#FF0000
#FFFFFF
#008000
#0000FF
arrayB
22.7
28.5
22.1
```

Figure 3: The output of the code shown above