Task 1 - Spy

```php
<?php

   $firstName = $_GET['fname'];
   $lastName = $_GET['sname'];

   if (empty($firstName) || empty($lastName)) {
      echo "Please enter both your first and last name";
      return;
   }

   $firstNameUpper = ucfirst($firstName);
   $lastNameUpper = ucfirst($lastName);

   echo "<p>";
   echo "<h1> The story of {$firstNameUpper} {$lastNameUpper}.</h1>";
   echo "The story began with . . .";
   echo "</p>";
   echo "<p>";
   echo "Your name is {$lastNameUpper}, {$firstNameUpper} {$lastNameUpper}.";
   echo "</p>";
   echo "<p>";
   echo "The story ended with . . .";
   echo "<i>{$lastNameUpper} died!</i>";
   echo "</p>"
?>
```

The story of James Bond.

The story began with . . .

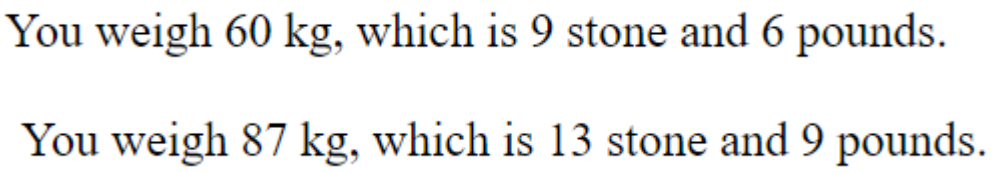
Your name is Bond, James Bond.

The story ended with . . .*Bond died!*

Task 2 - Weight and Height Conversion

Weight.php

```php
<?php

$weightKG = $_GET['weight_kg'];

if (!is_numeric($weightKG)) {
   echo "Please enter a number representing your weight in KG";
   return;
}

$poundRatio = 2.20462262;
$weightInPounds = floor($weightKG * $poundRatio);
$weightInStones = floor($weightInPounds / 14);
$poundsRemaining = $weightInPounds%14;

echo "<p>";
echo "You weigh {$weightKG} kg, which is {$weightInStones} stone and
{$poundsRemaining} pounds.";
echo "</p>";

?>
```



Height.php

```php
<?php

   $feet = $_GET['feet'];
   $inches = $_GET['inches'];

   if (!is_numeric($feet)) {
      echo "Please enter a number representing your height in feet";
      return;
   }
   if (!is_numeric($inches)) {
      echo "Please enter a number representing the inches of your height";
      return;
   }

   if ($inches < 0 || $inches > 11) {
      echo "Invalid entry - Inches range from 0 to 11";
      return;
   }

   $metricConversionRatio = 2.54;
   $totalCentimeters = round(($feet * 12 * $metricConversionRatio) + ($inches
* $metricConversionRatio));


   $meters = floor(($totalCentimeters/100));
   $centimeters = $totalCentimeters%100;
?>



<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <meta http-equiv="X-UA-Compatible" content="ie=edge">
   <style>
      table
      {
         margin-left : auto;
         margin-right : auto;
         border : solid 1px black;
         border-collapse: collapse;
      }

      caption
      {
```

```
         text-align : center;
         color : white;
         background-color : black;
      }

      th
      {
         color : white;
         background-color : black;
      }

      th, td
      {
         border : solid 1px black;
         text-align : center;
      }
   </style>
   <title></title>
</head>
   <body>

<?php
    echo "<table>";
    echo "<tr>";
    echo "<th>Imperial</th>";
    echo "<td>{$feet}</td>";
    echo "<td>feet/foot</td>";
    echo "<td>{$inches}</td>";
    echo "<td>inch(es)</td>";
    echo "</tr>";
    echo "<tr>";
    echo "<th>Metric</th>";
    echo "<td>{$meters}</td>";
    echo "<td>metre(s)</td>";
    echo "<td>{$centimeters}</td>";
    echo "<td>centimetre(s)</td>";
    echo "</tr>";
    echo "</table>";

?>
   </body>
</html>
```

Imperial	9	feet/foot	11	inch(es)
Metric	3	metre(s)	2	centimetre(s)

Imperial	5	feet/foot	11	inch(es)
Metric	1	metre(s)	80	centimetre(s)

Imperial	0	feet/foot	1	inch(es)
Metric	0	metre(s)	3	centimetre(s)

Task 3 - Exam Results System

```php
<?php


  $examResult = $_GET['exam'];
  $contResult = $_GET['cont'];
  $projResult = $_GET['proj'];


  if (!is_numeric($examResult)) {
    echo "Please enter a number representing your Exam Result";
    return;
  }


  if (!is_numeric($contResult)) {
    echo "Please enter a number representing your Continous Assessment Result";
    return;
  }
  if (!is_numeric($projResult)) {
    echo "Please enter a number for your Project Result";
    return;
  }



  if ($examResult < 0 || $contResult < 0 || $projResult < 0 || $examResult > 100 || $contResult > 100 || $projResult
> 100) {
    echo "Please enter a valid percentage score for the results";
    return;
  }


?>


<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <meta http-equiv="X-UA-Compatible" content="ie=edge">
  <style>
      table
      {
          /* margin-left : auto;
          margin-right : auto; */
          border : solid 1px black;
```

```
        border-collapse: collapse;
     }

     caption
     {
        text-align : center;
        color : white;
        background-color : black;
     }

     th, td
     {
        border : solid 1px black;
     }
   </style>
  <title>Exam Results</title>
</head>
<body>



<?php

  $examFlag = "";
  $contFlag = "";
  $projFlag = "";
  $passMark = "";
  $failMark = "";
  $contRedo = "";
  $projRedo = "";

  if ($examResult >= 40 && $contResult >= 40 && $projResult >= 40) {
    $passMark = "x";
  }
  if ($examResult >= 40) {
    $passFlag = "Y";
  } else {
    $passFlag = "N";
    $failMark = "x";
  }
  if ($contResult >= 40) {
    $contFlag = "Y";
  } else {
```

```
    $contFlag = "N";
    $contRedo = "x";
  }
  if ($projResult >= 40) {
    $projFlag = "Y";
  } else {
    $projFlag = "N";
    $projRedo = "x";
  }
  echo "<table>";
  echo "<tr>";
  echo "<th>Exams >= 40%</th>";
  echo "<td>{$passFlag}</td>";
  echo "</tr>";
  echo "<tr>";
  echo "<th>Cont. ass. >= 40%</th>";
  echo "<td>{$contFlag}</td>";
  echo "</tr>";
  echo "<tr>";
  echo "<th>Project >= 40%</th>";
  echo "<td>{$projFlag}</td>";
  echo "</tr>";
  echo "<tr>";
  echo "<th>Pass</th>";
  echo "<td>{$passMark}</td>";
  echo "</tr>";
  echo "<tr>";
  echo "<th>Resubmit cont. ass.</th>";
  echo "<td>{$contRedo}</td>";
  echo "</tr>";
  echo "<tr>";
  echo "<th>Re-do project</th>";
  echo "<td>{$projRedo}</td>";
  echo "</tr>";
  echo "<tr>";
  echo "<th>Fail</th>";
  echo "<td>{$failMark}</td>";
  echo "</tr>";
  echo "</table>";
?>
</body>
</html>
```

Exams >= 40%	Y
Cont. ass. >= 40%	Y
Project >= 40%	Y
Pass	x
Resubmit cont. ass.	
Re-do project	
Fail	

Exams >= 40%	N
Cont. ass. >= 40%	Y
Project >= 40%	Y
Pass	
Resubmit cont. ass.	
Re-do project	
Fail	x

Exams >= 40%	N
Cont. ass. >= 40%	Y
Project >= 40%	N
Pass	
Resubmit cont. ass.	
Re-do project	x
Fail	x

Exams >= 40%	Y
Cont. ass. >= 40%	N
Project >= 40%	N
Pass	
Resubmit cont. ass.	x
Re-do project	x
Fail	

Task 4 - Yes, we have no bananas

```php
<?php

   $fruitType = $_GET['fruit'];
   $weight = $_GET['weight'];

   if (!is_numeric($weight)) {
      echo "Please enter a number a valid number for the weight";
      return;
   }

   $fruit_prices = array('Apples' => 1.59, 'Pears' => 2.34, 'Kumquats' =>
4.05, 'Jujubes' => 2.34);

   $price = 0;
   if ($fruitType == 'Apples') {
      $price = $fruit_prices['Apples'];
   } else if ($fruitType == 'Pears') {
      $price = $fruit_prices['Pears'];
   } else if ($fruitType == 'Kumquats') {
      $price = $fruit_prices['Kumquats'];
   } else if ($fruitType == 'Jujubes') {
      $price = $fruit_prices['Jujubes'];
   }
   $totalPrice = $price * $weight;
   echo "{$weight}kg of {$fruitType} costs {$weight} x {$price}, which is
{$totalPrice}."

?>
```

1kg of Apples costs 1 x 1.59, which is 1.59.

2kg of Pears costs 2 x 2.34, which is 4.68.

22kg of Kumquats costs 22 x 4.05, which is 89.1.

67kg of Jujubes costs 67 x 2.34, which is 156.78.

Task 5 - The Pants Pizza Parlour

```
$size = $_GET['size'];
$crust = $_GET['crust'];



if(isset($_GET['toppings'])){
   $toppingsChecked = $_GET['toppings'];
   $toppingsSelected = true;
}else{
   $toppingsChecked = "";
   $toppingsSelected = false;
}

$deliveryChecked = false;
if (isset($_GET['delivery'])) {
   $deliveryChecked = true;
} else {
   $deliveryChecked = false;
}



$totalPizzaCost = 0;

if ($size == "small") {
   $totalPizzaCost = 8;
} else if ($size == "medium") {
   $totalPizzaCost = 12;
} else if ($size == "large") {
   $totalPizzaCost = 16;
}



if ($crust == "deep") {
   $totalPizzaCost += 2;
}

$toppingsString = "";
if ($toppingsSelected) {
   for($loopCounter=0; $loopCounter < count($toppingsChecked); $loopCounter++){
      if ($toppingsChecked[$loopCounter] == "mushrooms") {
         $totalPizzaCost += .5;
```

```
        $toppingsString .= "Mushrooms ";
      } else if ($toppingsChecked[$loopCounter] == "olives") {
        $totalPizzaCost += .5;
        $toppingsString .= "Olives ";
      } else if ($toppingsChecked[$loopCounter] == "nail") {
        $totalPizzaCost += 1;
        $toppingsString .= "Nail (eeuuurrrgh) ";
      } else if ($toppingsChecked[$loopCounter] == "beef") {
        $totalPizzaCost += 1.5;
        $toppingsString .= "Spicy Beef";
      }
     }
}

$deliveryInstructions = "No Delivery";



if ($deliveryChecked) {
   $deliveryInstructions = "To be delivered";
   $totalPizzaCost += 3;
}



echo "Thank you for your order";
echo "<br>";
echo "You ordered a {$crust} {$size} pizza with $loopCounter toppings [$toppingsString] ({$deliveryInstructions})";
echo "<br>";
echo "The total cost of the pizza is {$totalPizzaCost} eurines";
echo "<br>";
```

Thank you for your order
You ordered a deep large pizza with 4 toppings [Mushrooms Olives Nail (eeuuurrrgh) Spicy Beef] (To be delivered)
The total cost of the pizza is 24.5 eurines

Thank you for your order
You ordered a thin small pizza with 1 toppings [Spicy Beef] (No Delivery)
The total cost of the pizza is 9.5 eurines

Task 6 - For Practice

```
echo "Ten Numbers: ";
for ($loopA = 0; $loopA <= 9; $loopA++) {
   echo $loopA." ";
}

echo "<br>";
echo "Eleven Numbers: ";
for ($loopB = 0; $loopB <= 10; $loopB++) {
   echo $loopB." ";
}

echo "<br>";
echo "Teenage Years: ";
for ($loopC = 0; $loopC <= 100; $loopC++) {
  if ($loopC > 12 && $loopC < 20) {
    echo $loopC." ";
  }
}

echo "<br>";
echo "Evens: ";
for ($loopD = 1; $loopD <= 21; $loopD++) {
  if ($loopD%2 == 0) {
    echo $loopD." ";
  }
 }

 echo "<br>";
 echo "Descending odds: ";
 for ($loopE = 20; $loopE >= 0; $loopE--) {

   if ($loopE%2 == 1) {
     echo $loopE." ";
   }
  }
```

Ten Numbers: 0 1 2 3 4 5 6 7 8 9
Eleven Numbers: 0 1 2 3 4 5 6 7 8 9 10
Teenage Years: 13 14 15 16 17 18 19
Evens: 2 4 6 8 10 12 14 16 18 20
Descending odds: 19 17 15 13 11 9 7 5 3 1

Task 7 - Slip into something more comfortable?

```php
function validateNumber($number) {
  echo '<br>';
  if (!is_numeric($number)) {
    echo "Please enter a valid number in the range 4-24";
    return false;
 }
 if ($number < 4 || $number > 24) {
   echo "The number you entered ({$number}) is outside of the dress size range (4-24)";
   return false;
 }

 return true;
}

$dressSize = $_GET['size'];

$sizeOK = validateNumber($dressSize);
if ($sizeOK) {
  echo "The dress size {$dressSize} is OK - Thank you!";
}
```

Enter 99

The number you entered (99) is outside of the dress size range (4-24)

Enter cc

Please enter a valid number in the range 4-24

Enter 9

The dress size 9 is OK - Thank you!

Task 8 - Funny Farm

```php
if(isset($_GET['animals'])){
  $animalsChecked = $_GET['animals'];
  $animalsSelected = true;
}else{
  $animalsChecked = "";
  $animalsSelected = false;
}

function oldMacLine() {
  echo "Old Macdonald had a farm ee-eye, ee-eye-oh.";
  echo "<br>";
}
function singTheSongWith($animal, $sound) {

  $singular = "a";
  if ($sound == "oink") {
    $singular = "an";
  }
  oldMacLine();
  echo "And on that from he had a {$animal} ee-eye, ee-eye-oh.";
  echo "<br>";
  echo "With {$singular} {$sound}, {$sound} here and {$singular} {$sound}, {$sound} there.";
  echo "<br>";
  echo "Here {$singular} {$sound}, there {$singular} {$sound}, everywhere {$singular} {$sound} {$sound}.";
  echo "<br>";
}

function singTheRepeatPart($sound) {
  $singular = "a";
  if ($sound == "oink") {
    $singular = "an";
  }
  echo "With {$singular} {$sound}, {$sound} here and {$singular} {$sound}, {$sound} there.";
  echo "<br>";
  echo "Here {$singular} {$sound}, there {$singular} {$sound}, everywhere {$singular} {$sound} {$sound}.";
  echo "<br>";
}

$animal_sounds = array('duck' => 'quack', 'cow' => 'moo', 'dog' => 'ruff', 'pig' => 'oink', 'badger' => 'growl');
```

```
$animalsString = "";
$soundArray = array();
if ($animalsSelected) {
   for($loopCounter=0; $loopCounter < count($animalsChecked); $loopCounter++){
      if ($animalsChecked[$loopCounter] == "duck") {
        $animalsString .= 'duck,';
        array_push($soundArray,$animal_sounds['duck']);
      } else if ($animalsChecked[$loopCounter] == "cow") {
        $animalsString .= 'cow,';
        array_push($soundArray,$animal_sounds['cow']);
      } else if ($animalsChecked[$loopCounter] == "dog") {
          $animalsString .= 'dog,';
          array_push($soundArray,$animal_sounds['dog']);
      } else if ($animalsChecked[$loopCounter] == "pig") {
          $animalsString .= 'pig,';
          array_push($soundArray,$animal_sounds['pig']);
      } else if ($animalsChecked[$loopCounter] == "badger") {
          $animalsString .= 'badger';
          array_push($soundArray,$animal_sounds['badger']);

     }
  }
} else {
  echo "Please enter some animals - I want to sing the song!!!";
  return;
}

$trimmedAnimalsString = rtrim($animalsString,',');
$animalArray = explode(',',$trimmedAnimalsString);


for ($outerLoop = 0; $outerLoop < count($animalArray); $outerLoop++) {
  echo "<br>";
  singTheSongWith($animalArray[$outerLoop], $soundArray[$outerLoop]);
  if ($outerLoop > 0) {
    for ($innerLoop = $outerLoop-1; $innerLoop >= 0; $innerLoop--) {
      singTheRepeatPart($soundArray[$innerLoop]);
    }
  }
  oldMacLine();
}
```

Badger

Old Macdonald had a farm ee-eye, ee-eye-oh.
And on that from he had a badger ee-eye, ee-eye-oh.
With a growl, growl here and a growl, growl there.
Here a growl, there a growl, everywhere a growl growl.
Old Macdonald had a farm ee-eye, ee-eye-oh.

Dog & Pig

Old Macdonald had a farm ee-eye, ee-eye-oh.
And on that from he had a dog ee-eye, ee-eye-oh.
With a ruff, ruff here and a ruff, ruff there.
Here a ruff, there a ruff, everywhere a ruff ruff.
Old Macdonald had a farm ee-eye, ee-eye-oh.

Old Macdonald had a farm ee-eye, ee-eye-oh.
And on that from he had a pig ee-eye, ee-eye-oh.
With an oink, oink here and an oink, oink there.
Here an oink, there an oink, everywhere an oink oink.
With a ruff, ruff here and a ruff, ruff there.
Here a ruff, there a ruff, everywhere a ruff ruff.
Old Macdonald had a farm ee-eye, ee-eye-oh.

All

Old Macdonald had a farm ee-eye, ee-eye-oh.
And on that from he had a duck ee-eye, ee-eye-oh.
With a quack, quack here and a quack, quack there.
Here a quack, there a quack, everywhere a quack quack.
Old Macdonald had a farm ee-eye, ee-eye-oh.

Old Macdonald had a farm ee-eye, ee-eye-oh.
And on that from he had a cow ee-eye, ee-eye-oh.
With a moo, moo here and a moo, moo there.
Here a moo, there a moo, everywhere a moo moo.
With a quack, quack here and a quack, quack there.
Here a quack, there a quack, everywhere a quack quack.
Old Macdonald had a farm ee-eye, ee-eye-oh.

Old Macdonald had a farm ee-eye, ee-eye-oh.
And on that from he had a dog ee-eye, ee-eye-oh.
With a ruff, ruff here and a ruff, ruff there.
Here a ruff, there a ruff, everywhere a ruff ruff.
With a moo, moo here and a moo, moo there.
Here a moo, there a moo, everywhere a moo moo.
With a quack, quack here and a quack, quack there.
Here a quack, there a quack, everywhere a quack quack.
Old Macdonald had a farm ee-eye, ee-eye-oh.

Old Macdonald had a farm ee-eye, ee-eye-oh.
And on that from he had a pig ee-eye, ee-eye-oh.
With an oink, oink here and an oink, oink there.
Here an oink, there an oink, everywhere an oink oink.
With a ruff, ruff here and a ruff, ruff there.
Here a ruff, there a ruff, everywhere a ruff ruff.
With a moo, moo here and a moo, moo there.
Here a moo, there a moo, everywhere a moo moo.
With a quack, quack here and a quack, quack there.
Here a quack, there a quack, everywhere a quack quack.
Old Macdonald had a farm ee-eye, ee-eye-oh.

Old Macdonald had a farm ee-eye, ee-eye-oh.
And on that from he had a badger ee-eye, ee-eye-oh.
With a growl, growl here and a growl, growl there.
Here a growl, there a growl, everywhere a growl growl.
With an oink, oink here and an oink, oink there.
Here an oink, there an oink, everywhere an oink oink.
With a ruff, ruff here and a ruff, ruff there.
Here a ruff, there a ruff, everywhere a ruff ruff.
With a moo, moo here and a moo, moo there.
Here a moo, there a moo, everywhere a moo moo.
With a quack, quack here and a quack, quack there.
Here a quack, there a quack, everywhere a quack quack.
Old Macdonald had a farm ee-eye, ee-eye-oh.

Task 9 - Don't foul your own nest

```php
<?php
echo "<body>";

echo " "." "." "." "." "." "."Square";
echo "<br>";
echo "<br>";

for ($loopA=1; $loopA<=5; $loopA++) {
   for ($loopB=1; $loopB<=5; $loopB++) {
      echo $loopB." ";
   }
   echo "<br>";
}

echo "<br>";
echo " "." "." "." "." "." "."Triangle 1";
echo "<br>";
echo "<br>";
for ($loopA=1; $loopA<=5; $loopA++) {
   for ($loopB=1; $loopB<=$loopA; $loopB++) {
      echo $loopB." ";
   }
   echo "<br>";
}

echo "<br>";
echo " "." "." "." "." "." ".'Triangle 2';
echo "<br>";
echo "<br>";
for ($loopA=1; $loopA<=5; $loopA++) {
   for ($loopB=$loopA; $loopB<=5; $loopB++) {
      echo $loopB." ";
   }
   echo "<br>";
}

echo "</body>";
?>
```

Square

1 2 3 4 5
1 2 3 4 5
1 2 3 4 5
1 2 3 4 5
1 2 3 4 5

Triangle 1

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

Triangle 2

1 2 3 4 5
2 3 4 5
3 4 5
4 5
5

Task 10 - A Library of Functions

Array_tester.php

```php
<?php
require_once('array_library.php');
sayHello();



echo "<br>";
echo "get_distinct()";

$array1 = array(2,3,1,2,1,4);
$newDistinctArray = get_distinct($array1);
print_r($array1);
echo "<br>";
print_r($newDistinctArray);
echo "<br>";

echo "<br>";

echo "get_flipped()";
echo "<br>";

$associateArray = array("a" => "x", "c" => "y", "b" => "z", "d" => "y");
$flippedAssociateArray = get_flip($associateArray);

print_r($associateArray);
echo "<br>";
print_r($flippedAssociateArray);

echo "<br>";
echo "<br>";
echo "get_frequencies()";
echo "<br>";

$freqArray = get_frequencies($associateArray);
print_r($associateArray);
echo "<br>";
print_r($freqArray);

?>
```

Array_library.php

```php
<?php

function sayHello() {

   echo "<br>";
   echo "Hello to you!!";
   echo "<br>";
}

// Takes in an array and returns a unique version by removing the duplicates
function get_distinct($a) {
   $distinct_array = array();

   for ($outerLoopCounter = 0; $outerLoopCounter<count($a); $outerLoopCounter++) {

      $inArray = false;
      for ($innerLoopCounter=0; $innerLoopCounter<count($distinct_array); $innerLoopCounter++) {
         if ($a[$outerLoopCounter] == $distinct_array[$innerLoopCounter]) {
            $inArray = true;
         }
      }
      if (!$inArray) {
         array_push($distinct_array, $a[$outerLoopCounter]);
      }
   }
   return $distinct_array;
}

// Takes in an Associate Array and reverses the Values with the Keys - checking to use only the first
instance of a value as the new key
function get_flip($asscArr) {

  $flippedArray = array();
  foreach($asscArr as $masterKey=>$masterValue) {
    $keyFound = false;
    foreach($flippedArray as $newKey=>$newValue) {
      if ($masterValue == $newKey) {
        $keyFound = true;
      }
    }
    if (!$keyFound) {
```

```
      $flippedArray[$masterValue] = $masterKey;
    }
  }
  return $flippedArray;
}

// Takes in array and returns the frequency count of the values therein
function get_frequencies($a) {
  $frequencyArray = array();
  foreach($a as $masterKey=>$masterValue) {
    $keyFound = false;
    foreach($frequencyArray as $newKey=>$newValue) {
      if ($masterValue == $newKey) {
        $keyFound = true;
        $frequencyArray[$newKey]++;
      }
    }
    if (!$keyFound) {
      $frequencyArray[$masterValue] = 1;
    }
  }
  return $frequencyArray;
}

?>
```

Hello to you!!

get_distinct()
Array ([0] => 2 [1] => 3 [2] => 1 [3] => 2 [4] => 1 [5] => 4)
Array ([0] => 2 [1] => 3 [2] => 1 [3] => 4)

get_flipped()
Array ([a] => x [c] => y [b] => z [d] => y)
Array ([x] => a [y] => c [z] => b)

get_frequencies()
Array ([a] => x [c] => y [b] => z [d] => y)
Array ([x] => 1 [y] => 2 [z] => 1)