Task 1 -   Shortest Poem

(a)

```php
<?php
echo "<p>Adam</p>";
echo "<p>Had'em </p>";
?>
```

Adam

Had'em

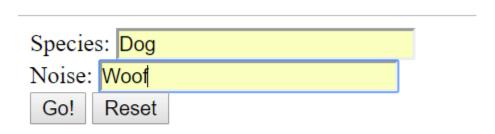(b)

```php
<?php
    echo "<ul><li>Without flowing wine,</li>";
    echo "<br>";
    echo "<li>How to enjoy lovely</li>";
    echo "<br>";
    echo "<li>Cheery blossoms.</li></ul>";
?>
```

- Without flowing wine,

- How to enjoy lovely

- Cheery blossoms.

Task 2 -   Pet

Species: Dog

Noise: Woof

Go! Reset

```php
<?php

$petType = $_GET['species'];
$noiseMade = $_GET['noise'];
echo "<p>Your {$petType} goes {$noiseMade}-{$noiseMade}.</p>";

?>
```

Your Dog goes Woof-Woof.

Task 3 – Bakuchi Game

Bakuchi.php

```php
<?php

  $theStake = $_GET['stake'];

  if (!is_numeric($theStake)) {
    echo "The Stake is not a number";
    echo "<br>";
    return;
  }

  $winnings = 0;
  $roll1 = rand(1, 6);
  $roll2 = rand(1, 6);

  if ($roll1 == $roll2) {
     $winnings = $theStake*4;
  }
  echo "Roll 1 is {$roll1}, Roll 2 is: {$roll2}. Your winnings are
:- {$winnings}";

?>
```

Stake is 5

Roll 1 is 2, Roll 2 is: 5. Your winnings are :- 0

Roll 1 is 5, Roll 2 is: 5. Your winnings are :- 20

Bakuchi1.php

```php
<?php

  $theStake = $_GET['stake'];

  if (!is_numeric($theStake)) {
   echo "The Stake is not a number";
   echo "<br>";
   return;
 }

  $winnings = 0;
  $roll1 = rand(1, 6);
  $roll2 = rand(1, 6);
  $roll3 = rand(1, 6);

  if ($roll1 == $roll2) {
     if ($roll1 == $roll3) {
        $winnings = $theStake*4;
     }
  }
  echo "Roll1 is {$roll1}, Roll2 is: {$roll2}, Roll3 is: {$roll3}.
Your winnings are : {$winnings}";
?>
```

Stake is 18

Roll1 is 4, Roll2 is: 2, Roll3 is: 3. Your winnings are : 0

Roll1 is 1, Roll2 is: 1, Roll3 is: 1. Your winnings are : 72

Bakuchi2.php

```php
<?php

   $theStake = $_GET['stake'];

   if (!is_numeric($theStake)) {
    echo "The Stake is not a number";
    echo "<br>";
    return;
  }

   $winnings = 0;
   $roll1 = rand(1, 6);
   $roll2 = rand(1, 6);
   $roll3 = rand(1, 6);

   if ($roll1 == $roll2 && $roll1 == $roll3) {
      $winnings = $theStake*4;
   }
   echo "Roll1 is {$roll1}, Roll2 is: {$roll2}, Roll3 is: {$roll3}.
Your winnings are : {$winnings}";
?>
```

Stake is 25

Roll1 is 1, Roll2 is: 1, Roll3 is: 2. Your winnings are : 0

Roll1 is 3, Roll2 is: 3, Roll3 is: 3. Your winnings are : 100

Task 4 -   Tax System

```php
<?php

    $numGallons = $_GET['num_of_gallons'];
    if (!is_numeric($numGallons)) {
     echo "The Number of Gallons is not a number";
     echo "<br>";
     return;
  }

    $baseTax = 120;
    $taxQuota = 12000;
    $baseUsageTax = 0;
    $taxRate = 0.05;
    $extraCharge = 60;

    // Check if number of gallons is larger than quota
    if ($numGallons > $taxQuota) {
      $extraTaxBaseQuantity = $numGallons - $taxQuota;   // The
amount that the extra tax is calculated on
      $floorCount = floor($extraTaxBaseQuantity/1000);
    } else if ($numGallons > 0) {
      $extraTaxBaseQuantity = 0;
      $floorCount = 0;
      $taxRate = 0.05;
      $taxQuota = $numGallons;             // Set the tax quota to
numGallons where it falls under the quota
    } else {
      $extraTaxBaseQuantity = 0;
      $floorCount = 0;
      $taxRate = 0;  // Set the base tax rate to zero if the number
of gallons falls under quota
    }
    $totalTaxToPay = ($baseTax + (($taxQuota*$taxRate) + ($floorCount
* $extraCharge)));

    echo "The total tax to pay on {$numGallons} gallons is
{$totalTaxToPay}";

?>
```

The total tax to pay on 0 gallons is 120

The total tax to pay on 1000 gallons is 170

The total tax to pay on 12000 gallons is 720

The total tax to pay on 12001 gallons is 720

The total tax to pay on 12999 gallons is 720

The total tax to pay on 13000 gallons is 780

The total tax to pay on 14000 gallons is 840

Task 5 – Pint Conversion

(a)

```php
<body>

    <table>
        <tr>
            <th colspan="4">A pint of plain is your only man</th>
        </tr>
        <tr>
            <th>Pints</th>
            <th>Quarts</th>
            <th>Fluid ounces</th>
            <th>Gills</th>
        </tr>
        <?php

            // Define the table output variables
            $numberOfPints = $_GET['num_pints'];
            if (!is_numeric($numberOfPints)) {
                echo "The Number of Pints is not a number";
                echo "<br>";
                return;
            }
            $numberOfQuarts = $numberOfPints / 2;
            $numberOfFluidOunces = $numberOfPints * 16;
            $numberOfGills = $numberOfFluidOunces / 4;

            echo "<td>{$numberOfPints}</td>";
            echo "<td>{$numberOfQuarts}</td>";
            echo "<td>{$numberOfFluidOunces}</td>";
            echo "<td>{$numberOfGills}</td>";
        ?>


    </table>
```

A pint of plain is your only man			
Pints	Quarts	Fluid onces	Gills
42	21	672	168

A pint of plain is your only man			
Pints	Quarts	Fluid onces	Gills
3	1.5	48	12

(b)

```php
<body>

    <table>
        <tr>
            <th colspan="2">A pint of</th>
        </tr>
        <tr>
        <tr>
            <th colspan="2">plain is your</th>
        </tr>
        <tr>
        <tr>
            <th colspan="2">only man</th>
        </tr>
        <tr>
            <th>Pints</th>
            <th>Ml</th>
        </tr>
        <?php

            // Define the table output variables
            $numberOfPints = $_GET['num_pints'];
             if (!is_numeric($numberOfPints)) {
                echo "The Number of Pints is not a number";
                echo "<br>";
                return;
             }
            $numberOfPintsRounded = round($numberOfPints,1);
            $milliletresPerPint = 568.26125;
            $numberOfMillimetres =
round(($numberOfPintsRounded*$milliletresPerPint),1);


            echo "<td>{$numberOfPintsRounded}</td>";
            echo "<td>{$numberOfMillimetres}</td>";
        ?>
    </table>
</body>
```

3.27 pints entered

A pint of plain is your only man	
Pints	Ml
3.3	1875.3

3 pints entered

A pint of plain is your only man	
Pints	Ml
3	1704.8

Task 6   -   Coin Conversion

```php
<?php

  //Coins
  $cents = 7;
  $nickels = 3;
  $dimes = 34;
  $quarters = 2;
  $halfDollars = 4;
  $dollars = 9;

  // Notes
  $oneDollarNotes = 3;
  $TwoDollarNotes = 1;
  $fiveDollarNotes = 3;
  $tenDollarNotes = 1;
  $twentyDollarNotes = 3;
  $fiftyDollarNotes = 1;
  $hundredDollarNotes = 2;

  $totalCents = 0;
  $totalCents += ($cents);
  $totalCents += ($nickels*5);
  $totalCents += ($dimes*10);
  $totalCents += ($quarters*25);
  $totalCents += ($halfDollars*50);
  $totalCents += ($dollars*100);
  $totalCents += ($oneDollarNotes*100);
  $totalCents += ($TwoDollarNotes*200);
  $totalCents += ($fiftyDollarNotes*500);
  $totalCents += ($tenDollarNotes*1000);
  $totalCents += ($twentyDollarNotes*2000);
  $totalCents += ($fiftyDollarNotes*5000);
  $totalCents += ($hundredDollarNotes*10000);

  echo "You have {$totalCents} cents.";

?>
```

You have 34512 cents.

Task 7 -   Sorting

```php
<?php

  $num1 = $_GET['num1'];
  $num2 = $_GET['num2'];
  $num3 = $_GET['num3'];

  if (!is_numeric($num1)) {
   echo "The First Number is not a number";
   echo "<br>";
   return;
  }
  if (!is_numeric($num2)) {
    echo "The Second Number is not a number";
    echo "<br>";
    return;
  }
  if (!is_numeric($num3)) {
    echo "The Third Number is not a number";
    echo "<br>";
    return;
  }

  $highestNum = 0;
  $middleNum = 0;
  $lowestNum = 0;

  // Rank with the first number as primary
  if (($num1 >= $num2) && ($num1 >= $num3)) {
    $highestNum = $num1; $middleNum = $num2; $lowestNum = $num3;
    if ($num3 >= $num2) {
      $middleNum = $num3; $lowestNum = $num2;
    }
  }

  // Rank with the second number as primary
  if (($num2 >= $num1) && ($num2 >= $num3)) {
    $highestNum = $num2; $middleNum = $num3; $lowestNum = $num1;
    if ($num1 >= $num3) {
      $middleNum = $num1; $lowestNum = $num3;
    }
  }
```

```php
    }

    // Rank with the third number as primary
    if (($num3 >= $num1) && ($num3 >= $num2)) {
        $highestNum = $num3; $middleNum = $num1; $lowestNum = $num2;
        if ($num2 >= $num1) {
            $middleNum = $num2; $lowestNum = $num1;
        }
    }

    echo "{$highestNum}, {$middleNum}, {$lowestNum}";

?>
```

First number: 5
Second number: 4
Third number: 3
GO!   CLEAR

5, 4, 3

First number: 3
Second number: 5
Third number: 2
GO!   CLEAR

5, 3, 2

First number: 5

Second number: 2

Third number: 5

GO! CLEAR

5, 5, 2

First number: 5

Second number: 5

Third number: 5

GO! CLEAR

5, 5, 5

Task 8   -   Voting System

```php
<body>

<?php

   $ageType = $_GET['age'];
   $residency = $_GET['residency'];
   $nationality = $_GET['nationality'];

   $qualificationString = "";
   $qualificationList = "";

  if ($ageType == "adult" && $residency == "home") {
    $qualificationString = "You are eligible to vote in the
following:";
  }

  if ($nationality == "non_eu") {
    $qualificationList .= "<li>Local Elections</li>";
   }

   if ($nationality == "other_eu") {
    $qualificationList .= "<li>European Elections</li>";
    $qualificationList .= "<li>Local Elections</li>";
   }

   if ($nationality == "british") {
    $qualificationList .= "<li>Dáil Elections</li>";
    $qualificationList .= "<li>European Elections</li>";
    $qualificationList .= "<li>Local Elections</li>";
   }

   if ($nationality == "irish") {
    $qualificationList .= "<li>Referenda</li>";
    $qualificationList .= "<li>Presidential Elections</li>";
    $qualificationList .= "<li>Dáil Elections</li>";
    $qualificationList .= "<li>European Elections</li>";
    $qualificationList .= "<li>Local Elections</li>";
   }

   if ($ageType == "child") {
```

```php
    $qualificationString = "You are ineligible to vote";
    $qualificationList = "";
  }

  if ($residency == "abroad") {
   $qualificationString = "You are ineligible to vote";
   $qualificationList = "";
  }

  echo $qualificationString;
  echo "<br>";
  echo "<ul>";
  echo $qualificationList;
  echo "</ul>";

?>

</body>
```

Selection Irish, adult, living in Ireland

You are eligible to vote in the following:

- Referenda
- Presidential Elections
- Dáil Elections
- European Elections
- Local Elections

Selection British, adult, living in Ireland

You are eligible to vote in the following:

- Dáil Elections
- European Elections
- Local Elections

Selection Other EU, adult, living in Ireland

You are eligible to vote in the following:

- European Elections
- Local Elections

Selection Non EU, adult, living in Ireland

You are eligible to vote in the following:

- Local Elections

Selection Less than 18 years old with any other selection

You are ineligible to vote

Selection Live Not in Ireland with any other selection

You are ineligible to vote

Selection Other EU, adult, living in Ireland

Task 9 -   Does my BMI look big in this?

*** Ambiguity in Category table is addressed using >=.

```php
<?php

$weight = $_GET['weight'];
$height = $_GET['height'];

if (!is_numeric($weight)) {
  echo "The Weight entered is not a number";
  echo "<br>";
  return;
}


if (!is_numeric($height)) {
  echo "The Height entered is not a number";
  echo "<br>";
  return;
}


$idealBMI = 21.75;


$BMICalculation = round(($weight / ($height*$height)),2);


$idealWeight = $idealBMI * ($height * $height);

echo "<br>";
echo "BMI is {$BMICalculation}";
echo "<br>";
echo "Ideal Weight is {$idealWeight}";

// Find the BMI Category - Ambiguity addressed in table with >=
echo "<br>";
if ($BMICalculation < 15) {
  echo "BMI Category is:- Very severely underweight";
} else if ($BMICalculation >= 15 && $BMICalculation < 16) {
  echo "BMI Category is:- Severely underweight";
} else if ($BMICalculation >= 16 && $BMICalculation < 18.5) {
  echo "BMI Category is:- Underweight";
} else if ($BMICalculation >= 18.5 && $BMICalculation < 25) {
```

```php
  echo "BMI Category is:- Normal (healthy weight)";
} else if ($BMICalculation >= 25 && $BMICalculation < 30) {
  echo "BMI Category is:- Overweight";
} else if ($BMICalculation >= 30 && $BMICalculation < 35) {
  echo "BMI Category is:- Obese Class I (Moderately Obese)";
} else if ($BMICalculation >= 35 && $BMICalculation < 40) {
  echo "BMI Category is:- Obese Class II (Severely Obese)";
} else if ($BMICalculation >= 40 && $BMICalculation < 45) {
  echo "BMI Category is:- Obese Class III (Very severely Obese)";
} else if ($BMICalculation >= 45 && $BMICalculation < 50) {
  echo "BMI Category is:- Obese Class IV (Morbidly Obese)";
} else if ($BMICalculation >= 50 && $BMICalculation < 60) {
  echo "BMI Category is:- Obese Class V (Super Obese)";
} else if ($BMICalculation >= 60) {
  echo "BMI Category is:- Obese Class VI (Hyper Obese)";
} else {
  echo "Not Classified";
}


?>
```

Weight (kg): 80
Height (m): 1.8
Submit Clear

BMI is 24.69
Ideal Weight is 70.47
BMI Category is:- Normal (healthy weight)

Weight (kg): 8
Height (m): 1.8
Submit Clear

BMI is 2.47
Ideal Weight is 70.47
BMI Category is:- Very severely underweight

Weight (kg): 888
Height (m): 1.8
Submit | Clear

BMI is 274.07
Ideal Weight is 70.47
BMI Category is:- Obese Class VI (Hyper Obese)

Task 10 -   Stamp Duty

```php
<?php

$house = $_GET['house'];

$buyer = $_GET['buyer'];

$buyerType = $_GET['occupation'];

$propertyPrice = $_GET['price'];

$propertyArea = $_GET['area'];

$stampDutyBand1 = 125000;

$stampDutyBand2 = 875000;

$stampDutyBand3 = 1000000;

$band1Rate = 0.00;

$band2Rate = 0.07;

$band3Rate = 0.09;

$stampDuty = 0.00;

$exemptionGranted = false;


if (!is_numeric($propertyPrice)) {

  echo "The Price Entered is not a number";

  echo "<br>";

  return;

}


if (!is_numeric($propertyArea)) {

  echo "The Area Entered is not a number";

  echo "<br>";

  return;

}



if($house == "new" && $buyer == "first" && $buyerType = "occupation") {

    $exemptionGranted = true;

}


if ($propertyArea < 125) {

  $exemptionGranted = true;

}


if (!$exemptionGranted) {
```

```php
  if ($propertyPrice < $stampDutyBand1) {

    $stampDuty = 0.00;
  } else if ($propertyPrice >= $stampDutyBand1 && $propertyPrice < $stampDutyBand3) {


    $stampDuty = ($propertyPrice-$stampDutyBand1) * $band2Rate;
  } else if ($propertyPrice >= $stampDutyBand3) {


    // Calculate the first rate
    $stampDuty = $stampDutyBand2 * $band2Rate;


    // Calculate the tax on the remainder
    $stampDuty += ($propertyPrice - ($stampDutyBand1 + $stampDutyBand2)) * $band3Rate;
  }
}


echo "<br>";
echo "The Stamp Duty payable is {$stampDuty} eurines.";


?>
```

◉ New house ○ Second-hand
◉ First time buyer ○ Non-first time buyer
◉ Owner occupied ○ Investor
Property price (euros): 750000
Property area (square metres): 1000
GO! CLEAR

The Stamp Duty payable is 0 eurines.

○ New house ● Second-hand
● First time buyer ○ Non-first time buyer
● Owner occupied ○ Investor
Property price (euros): 750000
Property area (square metres): 1000
GO! CLEAR

The Stamp Duty payable is 43750 eurines.

● New house ○ Second-hand
○ First time buyer ● Non-first time buyer
○ Owner occupied ● Investor
Property price (euros): 80000
Property area (square metres): 1000
GO! CLEAR

The Stamp Duty payable is 0 eurines.

● New house ○ Second-hand
○ First time buyer ● Non-first time buyer
○ Owner occupied ● Investor
Property price (euros): 880000
Property area (square metres): 1000
GO! CLEAR

The Stamp Duty payable is 52850 eurines.