Exercises Control Structures

Exercise 1

Create two variables with two integer numbers. Print out which one is the highest and lowest value. *(eg. "Highest value is (…)"." Lowest value is (…)").*

```php
$x = 16;
$y = 15;

if ($x > $y) {
    $lowest = $y;
    $highest = $x;
    echo "Highest value is " . $highest;
    echo "Lowest value is ". $lowest;
} elseif ($y > $x) {
    $lowest = $x;
    $highest = $y;
    echo "Highest value is " . $highest;
    echo "Lowest value is ". $lowest;
}
```

Exercise 2

Create a variable with a value in-between number 1 till 4 (Reject any other value). Based on the value, print out "Spades", "Hearts", "Diamonds" and "Clubs".

```php
$x = 1;

switch ($x) {
    case 1:
        echo "Spades";
        break;
    case 2:
        echo "Hearts";
        break;
    case 3:
        echo "Diamonds";
        break;
    case 4:
        echo "Clubs";
        break;
    default:
        echo "Sorry, value is not acceptable!";
        break;
}
```

Exercise 3

The American grading system works with the letter A, B, C, D and F **whereas C or higher means that you've passed the subject.** Create a variable that shows the amount of points a student scored, and based on that number, output the letter that a student got.
Also, show if the student passed the exam or not.

- A = 90-100 points;
- B = 80-89 points;
- C = 70-79 points;
- D = 60-69 points;
- F = Fewer than 60 points.

```php
$x = 88;

if ($x >= 90 && $x <= 100) {
    echo "You received an A! You passed the exam!";
} elseif ($x >= 80 && $x <= 89) {
    echo "You received an B! You passed the exam!";
} elseif ($x >= 70 && $x <= 79) {
    echo "You received an C! You passed the exam!";
} elseif ($x >= 60 && $x <= 69) {
    echo "You received an D! You passed the exam!";
} else {
    echo "Sorry, you need to resit the exam!";
}
```

Exercise 4

A car manufacturer is replacing its machines. The machines will only be replaced if one or more of the following conditions is met:

- The machine has more than 10.000 working hours;
- The machine older than 7 years;
- The machine has more than 25 failures per year.

```php
$machineHours = 8000;
$machineYears = 5;
$machineFailures = 26;

if ($machineHours >= 10000 || $machineYears > 7 || $
    machineFailures >= 25) {
    echo "Machine needs to be replaced!";
} else {
    echo "Machine is in perfect condition!";
}
```

Exercise 5

Create a variable with a year. Create a program that shows if the year is a **leap year**. (A year is a leap year is you can divide is by 400 or by 4).

```php
$year = 2000;

if ($year % 400 == 0 || $year & 4 == 0) {
    echo $year . " is a leap year";
} else {
    echo $year . " is not a leap year";
}
```

Exercise 6

Write a program that displays the multiplication table of a given integer. Create a variable of the beginning and ending of the loop.

```php
$x = 1;
$y = 10;

while ($x <= $y) {
    $multiplication = $x * $y;
    echo $x . " * by " . $y . " is " . $multiplication . "<br>";
    $x++;

}
```

Exercise 7

Write a program to get the Fibonacci series from 0 to 50.

```php
$num1 = 0;
$num2 = 1;
$counter = 0;

while ($counter <= 9) {
    echo ' ' . $num1;
    $num3 = $num2 + $num1;
    $num1 = $num2;
    $num2 = $num3;
    $counter++;
}
```