PHP Assignment 1

```php
<?php
// Basic arithmetic operations
function add($a, $b) {

    return $a + $b;

}


function subtract($a, $b) {

    return $a - $b;

}


function multiply($a, $b) {

    return $a * $b;

}


function divide($a, $b) {
    if ($b == 0) {

        return "Error: Division by zero";

    }
    return $a / $b;

}


function exponent($a, $b) {

    return pow($a, $b);

}
```

```php
// Percentage calculation
function calculate_percentage($a, $b) {
    return ($a / $b) * 100;
}


// Square root calculation
function square_root($a) {
    return sqrt($a);
}


// Logarithm calculation
function logarithm($a, $b = 10) {
    return log($a, $b);
}


// Calculator form
if ($_SERVER["REQUEST_METHOD"] == "POST") {
    $num1 = $_POST["num1"];
    $num2 = $_POST["num2"];
    $operation = $_POST["operation"];

    switch ($operation) {
        case "add":
            $result = add($num1, $num2);
```

```php
            break;
        case "subtract":
            $result = subtract($num1, $num2);
            break;
        case "multiply":
            $result = multiply($num1, $num2);
            break;
        case "divide":
            $result = divide($num1, $num2);
            break;
        case "exponent":
            $result = exponent($num1, $num2);
            break;
        case "percentage":
            $result = calculate_percentage($num1, $num2);
            break;
        case "square_root":
            $result = square_root($num1);
            break;
        case "logarithm":
            $result = logarithm($num1);
            break;
        default:
            $result = "Invalid operation selected.";
    }
```

```php
}
?>
```

```html
<!DOCTYPE html>
<html>
<head>
  <title>Calculator</title>
</head>
<body>
  <h1>Calculator</h1>
  <form method="post" action="<?php echo htmlspecialchars($_SERVER["PHP_SELF"]);?>">
    Number 1: <input type="number" name="num1"><br>
    Number 2: <input type="number" name="num2"><br>
    Operation:
    <select name="operation">
      <option value="add">Addition</option>
      <option value="subtract">Subtraction</option>
      <option value="multiply">Multiplication</option>
      <option value="divide">Division</option>
      <option value="exponent">Exponentiation</option>
      <option value="percentage">Percentage</option>
      <option value="square_root">Square Root</option>
      <option value="logarithm">Logarithm</option>
    </select><br>
    <input type="submit" name="submit" value="Calculate">
```

```
    </form>


    <?php
    if (isset($result)) {
        echo "Result: " . $result;
    }
    ?>
</body>
</html>
```