

index.html

```
<!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">
  <title>Matrix Operations</title>
  <link rel="stylesheet" href="./css/bootstrap.min.css">
</head>

<body>
  <div class="container">
    <div class="row">
      <div class="col-sm-12">
        <h1>Matrix Operations</h1>
        <hr>
        <div class="row">
          <div class="col-sm-12 col-md-6 offset-3">
            <a class="btn btn-primary btn-block btn-lg" href="transpose.php">Matrix
Transpose</a>
            <br>
          </div>
          <div class="col-sm-12 col-md-6 offset-3">
            <a class="btn btn-primary btn-block btn-lg" href="multiplication.php">Matrix
Multiplication</a>
            <br>
          </div>
          <div class="col-sm-12 col-md-6 offset-3">
            <a class="btn btn-primary btn-block btn-lg" href="addition.php">Matrix
Addition</a>
            <br>
          </div>
        </div>
      </div>
    </div>
  </div>
  <script src="./js/bootstrap.min.js"></script>
</body>

</html>
```

transpose.php

```
<?php
if ($_POST) {
    $matrix = array(array(), array(), array());
    for ($i = 0; $i < 3; $i++) {
        for ($j = 0; $j < 3; $j++) {
            $matrix[$i][$j] = $_POST["input-$i-$j"];
        }
        $transpose = transpose($matrix);
    }
}

function transpose($array) {
    return array_map(null, ...$array);
}

function printMatrix($matrix) {
    for ($i = 0; $i < 3; $i++) {
        for ($j = 0; $j < 3; $j++) {
            echo "\t" . $matrix[$i][$j];
        }
    }
}
```

```

    }
    echo "\n";
}
}
?>
<!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">
    <title>Matrix Operations</title>
    <link rel="stylesheet" href="./css/bootstrap.min.css">
    <style>
        pre {
            font-size: 1.6rem;
        }

        .form-inline .form-control {
            text-align: right;
            width: inherit !important;
        }
    </style>
</head>

<body>
    <div class="container">
        <div class="row">
            <div class="col-sm-12">
                <h1>Matrix Transpose</h1>
                <hr>
            </div>
            <div class="col-sm-6">
                <p>Enter values for 3 x 3 matrix: </p>
                <form action="" class="form-inline" method="post">
                    <div class="row">
                        <?php
                            for ($i = 0; $i < 3; $i++) {
                                for ($j = 0; $j < 3; $j++) {
                                    echo "
                                        <div class='col-sm-4'>
                                            <input class='form-control' type='number' name='input-
$i-$j' required>

                                        </div>
                                    ";
                                }
                            }
                        ?>
                        <div class="col-sm-12"><br></div>
                        <div class="col-sm-8 offset-2">
                            <button type="submit" class="btn btn-lg btn-block btn-primary"
name="sbumit">Transpose</button>
                        </div>
                    </div>
                </form>
            </div>
            <div class="col-sm-6">
                <p>Transpose matrix: </p>
                <pre><?php printMatrix(@$transpose); ?></pre>
            </div>
        </div>
        <script src="./js/bootstrap.min.js"></script>
    </body>

```

```
</html>
```

multiplication.php

```
<?php
function multiply($matrixA, $matrixB)
{
    $ans = array(array(), array(), array());
    for ($i = 0; $i < 3; $i++) {
        for ($j = 0; $j < 3; $j++) {
            $ans[$i][$j] = 0;
        }
    }
    for ($i = 0; $i < 3; $i++) {
        for ($j = 0; $j < 3; $j++) {
            for ($k = 0; $k < 3; $k++) {
                $ans[$i][$j] += $matrixA[$i][$k] * $matrixB[$k][$j];
            }
        }
    }
    return $ans;
}

function printMatrix($matrix)
{
    for ($i = 0; $i < 3; $i++) {
        for ($j = 0; $j < 3; $j++) {
            echo "\t" . $matrix[$i][$j];
        }
        echo "\n";
    }
}
?>
<!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">
    <title>Matrix Operations</title>
    <link rel="stylesheet" href="./css/bootstrap.min.css">
    <style>
        pre {
            font-size: 1.6rem;
        }

        .form-inline .form-control {
            text-align: right;
            width: inherit !important;
        }
    </style>
</head>

<body>
    <div class="container">
        <div class="row">
            <div class="col-sm-12">
                <h1 class="text-primary">Matrix Multiplication</h1>
                <hr>
            </div>
            <form action="" class="form-inline" method="post">
                <div class="col-sm-6">
                    <p>Enter values for matrix A: </p>
                    <div class="row">
                        <?php
```

```

        for ($i = 0; $i < 3; $i++) {
            for ($j = 0; $j < 3; $j++) {
                echo "
                <div class='col-sm-4'>
                    <input class='form-control' type='number' name='a-$i-$j' required>
                </div>
                ";
            }
        }
    ?>
</div>
</div>
<div class="col-sm-6">
    <p>Enter values for matrix B: </p>
    <div class="row">
        <?php
        for ($i = 0; $i < 3; $i++) {
            for ($j = 0; $j < 3; $j++) {
                echo "
                <div class='col-sm-4'>
                    <input class='form-control' type='number' name='b-$i-$j' required>
                </div>
                ";
            }
        }
    ?>
    </div>
</div>
<div class="col-sm-12"><br></div>
<div class="col-sm-8 offset-2">
    <button type="submit" class="btn btn-lg btn-block btn-primary"
name="submit">Multiply</button>
</div>
</form>
<div class="col-sm-12"><br></div>
<?php
    if ($_POST) {
        $matrixA = array(array(), array(), array());
        $matrixB = array(array(), array(), array());
        for ($i = 0; $i < 3; $i++) {
            for ($j = 0; $j < 3; $j++) {
                $matrixA[$i][$j] = $_POST["a-$i-$j"];
            }
        }
        for ($i = 0; $i < 3; $i++) {
            for ($j = 0; $j < 3; $j++) {
                $matrixB[$i][$j] = $_POST["b-$i-$j"];
            }
        }
        $ans = multiply($matrixA, $matrixB);
        ?>
        <div class="col-sm-8 offset-2 text-center">
            <p>A x B: </p>
            <pre><?php printMatrix(@$ans); ?></pre>
        </div>
        <?php
    }
    ?>
</div>
</div>
<script src="./js/bootstrap.min.js"></script>
</body>
</html>

```

addition.php

```
<?php
function add($matrixA, $matrixB) {
    $ans = array(array(), array(), array());
    for ($i = 0; $i < 3; $i++) {
        for ($j = 0; $j < 3; $j++) {
            $ans[$i][$j] = $matrixA[$i][$j] + $matrixB[$i][$j];
        }
    }
    return $ans;
}

function printMatrix($matrix) {
    for ($i = 0; $i < 3; $i++) {
        for ($j = 0; $j < 3; $j++) {
            echo "\t" . $matrix[$i][$j];
        }
        echo "\n";
    }
}
?>
<!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">
    <title>Matrix Operations</title>
    <link rel="stylesheet" href="./css/bootstrap.min.css">
    <style>
        pre {
            font-size: 1.6rem;
        }

        .form-inline .form-control {
            text-align: right;
            width: inherit !important;
        }
    </style>
</head>

<body>
    <div class="container">
        <div class="row">
            <div class="col-sm-12">
                <h1 class="text-primary">Matrix Addition</h1>
                <hr>
            </div>
            <form action="" class="form-inline" method="post">
                <div class="col-sm-6">
                    <p>Enter values for matrix A: </p>
                    <div class="row">
                        <?php
                        for ($i = 0; $i < 3; $i++) {
                            for ($j = 0; $j < 3; $j++) {
                                echo "
                                <div class='col-sm-4'>
                                    <input class='form-control' type='number' name='a-{$i}-{$j}' required>
                                </div>
                                ";
                            }
                        }
                        ?>
                    </div>
                </div>
            </form>
        </div>
    </div>
</body>
</html>
```

```

</div>
<div class="col-sm-6">
  <p>Enter values for matrix B: </p>
  <div class="row">
    <?php
      for ($i = 0; $i < 3; $i++) {
        for ($j = 0; $j < 3; $j++) {
          echo "
            <div class='col-sm-4'>
              <input class='form-control' type='number' name='b-$i-$j' required>
            </div>
          ";
        }
      }
    <?php
  </div>
</div>
<div class="col-sm-12"><br></div>
<div class="col-sm-8 offset-2">
  <button type="submit" class="btn btn-lg btn-block btn-primary"
name="submit">Add</button>
</div>
</form>
<div class="col-sm-12"><br></div>
<?php
if ($_POST) {
  $matrixA = array(array(), array(), array());
  $matrixB = array(array(), array(), array());
  for ($i = 0; $i < 3; $i++) {
    for ($j = 0; $j < 3; $j++) {
      $matrixA[$i][$j] = $_POST["a-$i-$j"];
    }
  }
  for ($i = 0; $i < 3; $i++) {
    for ($j = 0; $j < 3; $j++) {
      $matrixB[$i][$j] = $_POST["b-$i-$j"];
    }
  }
  $ans = add($matrixA, $matrixB);
  ?>
<div class="col-sm-8 offset-2 text-center">
  <h4>A + B: </h4>
  <pre><?php printMatrix(@$ans); ?></pre>
</div>
<?php
}
?>
</div>
</div>
<script src="./js/bootstrap.min.js"></script>
</body>

</html>

```

Matrix Operations

Matrix Transpose

Matrix Multiplication

Matrix Addition

Matrix Transpose

Enter values for 3 x 3 matrix:

1	2	3
4	5	6
7	8	9

Transpose matrix:

1	4	7
2	5	8
3	6	9

Transpose

Matrix Multiplication

Enter values for matrix A:

15	8	3
5	4	2
1	19	6

Enter values for matrix B:

16	25	8
19	40	9
7	0	2

Multiply

A x B:

413	695	198
170	285	80
419	785	191

Matrix Addition

Enter values for matrix A:

15	8	3
5	4	2
1	19	6

Enter values for matrix B:

16	25	8
19	40	9
7	0	2

Add

A + B:

31	33	11
24	44	11
8	19	8