

Batch B

Group2

Experiment 8(c)

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To display the number of visitors visiting the web page.

Overview:

To display the transpose of a matrix, multiplication of two matrices and addition of two matrices.

Goas

1. Calculate the transpose of a matrix by changing a_{ij} with a_{ji}
2. Add two matrices
3. Multiply two matrices by using for loops

Arrays in PHP

The `array()` function help to create an array in php.

Syntax:

```
$var = array(val1, val2, ...)
```

Array_fill() method

The array_fill() method is used to create an array of n x m with a given values

Example : `$matrix = array_fill(0, $n, array_fill(0, $m, 0));`

The above will create a matrix with all values 0.

Github link

:

<https://github.com/mehdi1514/phpProject/blob/master/proj1.php>

PHP Code:

```
<?php
echo "Transpose of a matrix<br/><br/>";
$original_matrix = array(
    array(1, 2, 3),
    array(4, 5, 6),
    array(7, 8, 9)
);

$m = count($original_matrix); //rows
$n = count($original_matrix[0]); //columns

$transpose_matrix = array_fill(0, $n, array_fill(0, $m, 0));

for($i = 0; $i < $n; $i++){
    for($j = 0; $j < $m; $j++){
        $transpose_matrix[$i][$j] = $original_matrix[$j][$i];
    }
}

print("Original: <br>");
for($i = 0; $i < $n; $i++){
```

```

    for($j = 0; $j < $m; $j++){
        print($original_matrix[$i][$j] . " ");
    }
    print("<br>");
}

```

```

print("Transpose: <br>");
for($i = 0; $i < $n; $i++){
    for($j = 0; $j < $m; $j++){
        print($tranpose_matrix[$i][$j] . " ");
    }
    print("<br>");
}

```

```

echo "<br>Addition of two matrices<br>";

```

```

echo "<br>The First matrix is given below:-."<br>";
$a=array(array());// First two dimensional array declaration
$b=array(array());//Second two dimensional array declaration
$c=array(array());//Third two dimensional array declaration
$rows=4;
$cols=4;
$m=1;
$n=1;
for($i=0;$i<$rows;$i=$i+1)
{
    for($j=0;$j<$cols;$j=$j+1)
    {
        $a[$i][$j]=$m;
        echo $a[$i][$j]. " ";
        $m=$m+1;
    }
    echo "<br>";
}
echo "The second matrix is given below:-<br>";
for($i=0;$i<$rows;$i=$i+1)
{
    for($j=0;$j<$cols;$j=$j+1)
    {
        $b[$i][$j]=$n;
        echo $b[$i][$j]. " ";
        $n=$n*1;
    }
}

```

```

    echo "<br>";
}
echo "The Final matrix is given below:-"."<br>";
for($i=0;$i<$rows;$i=$i+1)
{
    for($j=0;$j<$cols;$j=$j+1)
    {
        $c[$i][$j]=$a[$i][$j]+$b[$i][$j];
        echo $c[$i][$j]." ";
    }
    echo "<br>";
}

echo "<br/>Multiplication of two matrices<br/><br/>";
$a = array(array(1,2,3),array(4,5,6),array(7,8,9));
$b = array(array(7,8,9),array(4,5,6),array(1,2,3));
$m=count($a);
$n=count($a[2]);
$p=count($b);
$q=count($b[2]);
echo "the first matrix :"."<br/>";
for ($row = 0; $row < $m; $row++) {
    for ($col = 0; $col < $n; $col++)
        echo " ".$a[$row][$col];
    echo "<br/>";
}
echo "the second matrix :"."<br/>";
for ($row = 0; $row < $p; $row++) {
    for ($col = 0; $col < $q; $col++)
        echo " ".$b[$row][$col];
    echo "<br/>";
}
echo " The multiplication of matrices: <br/>";
$result=array();
for ($i=0; $i < $m; $i++) {
    for($j=0; $j < $q; $j++){
        $result[$i][$j] = 0;
        for($k=0; $k < $n; $k++)
            $result[$i][$j] += $a[$i][$k] * $b[$k][$j];
    }
}
for ($row = 0; $row < $m; $row++) {
    for ($col = 0; $col < $q; $col++){

```

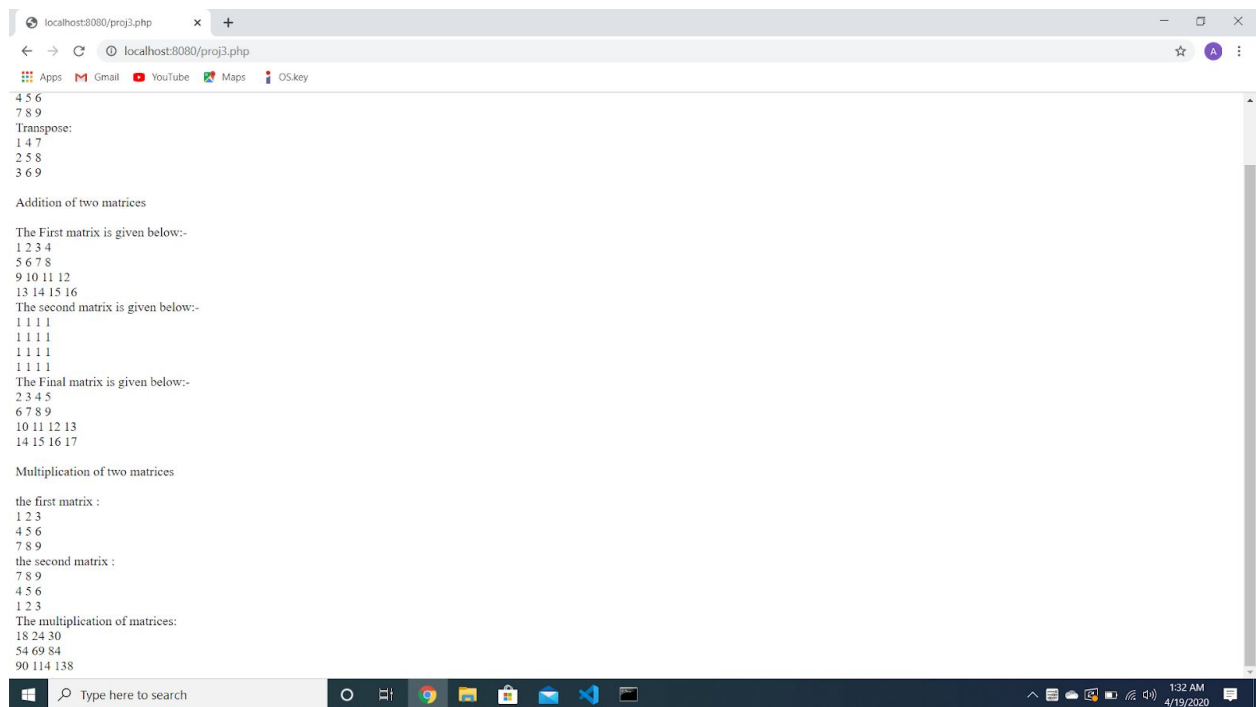
```

        echo " ".$result[$row][$col];
    }
    echo "<br/>";
}
?>

```

Screenshots

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The screenshot shows a web browser window with the address bar displaying 'localhost:8080/proj3.php'. The page content is as follows:

```
Transpose of a matrix  
  
Original:  
1 2 3  
4 5 6  
7 8 9  
Transpose:  
1 4 7  
2 5 8  
3 6 9  
  
Addition of two matrices  
  
The First matrix is given below:-  
1 2 3 4  
5 6 7 8  
9 10 11 12  
13 14 15 16  
The second matrix is given below:-  
1 1 1 1  
1 1 1 1  
1 1 1 1  
1 1 1 1  
The Final matrix is given below:-  
2 3 4 5  
6 7 8 9  
10 11 12 13  
14 15 16 17  
  
Multiplication of two matrices  
  
the first matrix :  
1 2 3  
4 5 6  
7 8 9  
the second matrix :  
7 8 9  
4 5 6  
1 2 3
```

The browser's taskbar at the bottom shows the Windows logo, a search bar with the text 'Type here to search', and several application icons including Chrome, File Explorer, and VS Code. The system tray on the right indicates the time is 1:32 AM on 4/19/2020.

Conclusion

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Thus from this experiment we executed the php file handling operations to achieve the aim of displaying the transpose of a matrix, addition of two matrices and multiplication of two matrices.