Indian Institute of Information Technology Surat

Lab Report on
Web Engineering (CS 603) Practical

Submitted by

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Lab No: 3

Aim: PHP

Description: Perform all the 7 Tasks:

1. Write the PHP script to display all the details of web server using phpinfo()
2. Write a program to check student grade based on the marks using if-else statements.
   Conditions:
   - If marks are 60% or more, the grade will be First Division.
   - If marks between 45% to 59%, grade will be Second Division.
   - If marks between 33% to 44%, grade will be Third Division.
   - If marks are less than 33%, students will be Fail.
3. Write a program to calculate factorial of a number using a for loop in PHP.
4. Write a PHP program to find the factorial of a number using a recursive function.
5. Write a program to calculate Electricity bill in PHP
   Conditions:
   - For first 50 units – Rs. 3.50/unit
   - For next 100 units – Rs. 4.00/unit
   - For next 100 units – Rs. 5.20/unit
   - For units above 250 – Rs. 6.50/unit
6. Write a program in PHP to remove specific element by value from an array using PHP program.
   Instructions:
   - Take an array with a list of month names.
   - Take a variable with the name of value to be deleted.
   - Implement it using PHP array_search(), array_diff() functions and foreach loop.
7. Write a PHP script to generate a list of the first 20 prime numbers.

Source Code:

Task 1:

```php
<?php
phpinfo();
?>
```

Task 2:

```php
<?php
1 reference
function calculate_grade($marks)
{
    if ($marks >= 60) echo "Grade: First Division";
    elseif ($marks >= 45 && $marks <= 59) echo "Grade: Second Division";
    elseif ($marks >= 33 && $marks <= 44) echo "Grade: Third Division";
    else echo "Grade: Fail";
}
$student_marks = 75;
function calculate_grade(mixed $marks): void
calculate_grade($student_marks);
?>
```

Task 3:

```php
<?php
3 references
function calculate_factorial($number)
{
    $factorial = 1;
    for ($i = 1; $i <= $number; $i++) $factorial *= $i;
    return $factorial;
}
$number = 5;
$result = calculate_factorial($number);
echo "Factorial of $number is: $result";
?>
```

Task 4:

```php
<?php
3 references
function calculate_factorial($number)
{
    if ($number <= 1) return 1;
    else return $number * calculate_factorial($number - 1);
}
$number = 5;
$result = calculate_factorial($number);
echo "Factorial of $number is: $result";
?>
```

Task 5:

```php
<?php
1 reference
function calculate_electricity_bill($units)
{
    $total_bill = 0;
    if ($units <= 50) $total_bill = $units * 3.50;
    elseif ($units <= 150) $total_bill = (50 * 3.50) + (($units - 50) * 4.00);
    elseif ($units <= 250) $total_bill = (50 * 3.50) + (100 * 4.00) + (($units - 150) * 5.20);
    else $total_bill = (50 * 3.50) + (100 * 4.00) + (100 * 5.20) + (($units - 250) * 6.50);
    return $total_bill;
}
$consumed_units = 200;
$bill_amount = calculate_electricity_bill($consumed_units);
echo "Units Consumed: $consumed_units<br>";
echo "Electricity Bill: Rs. $bill_amount";
?>
```

Task 6:

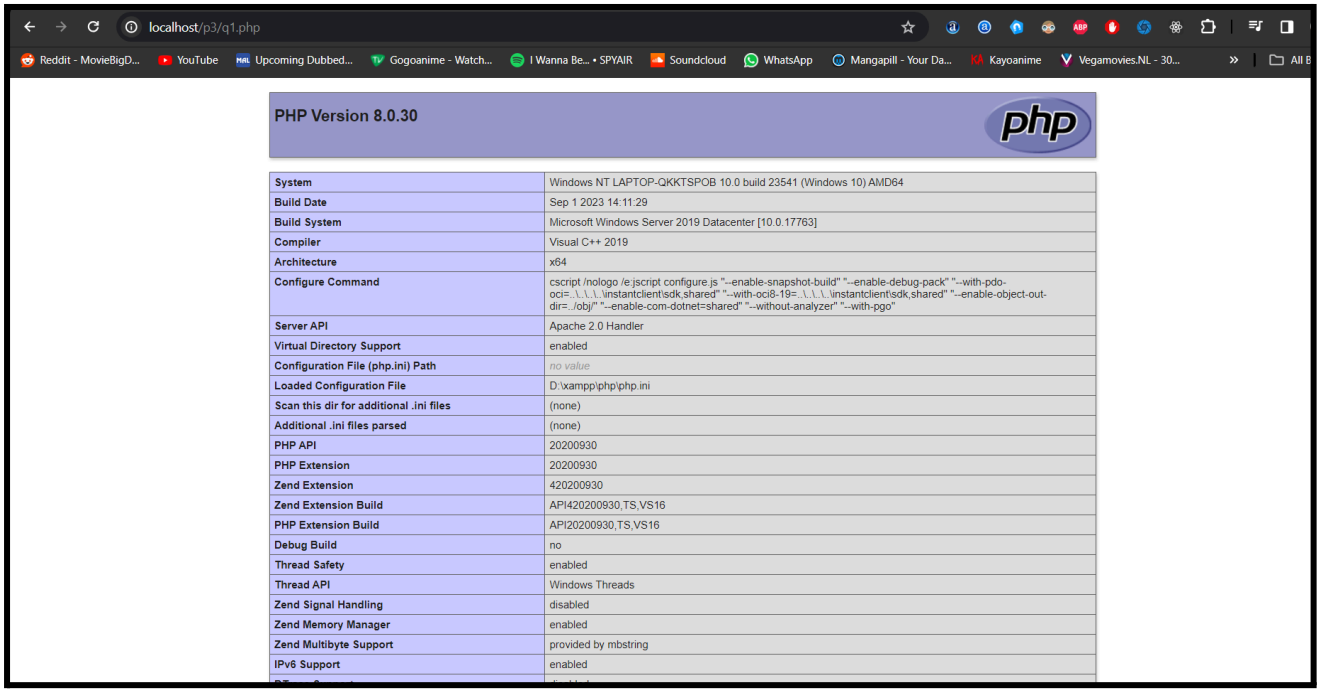
```php
<?php
1 reference
function remove_element_by_value(&$array, $value)
{
    $key = array_search($value, $array);
    if ($key !== false) $array = array_diff($array, array($array[$key]));
}
$months = ["January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", "December"];
$value_to_remove = "March";
echo "Original Array: ";
foreach($months as $month) echo "($month) ";
remove_element_by_value($months, $value_to_remove);
echo "<br>Array after removing '$value_to_remove': ";
foreach($months as $month) echo "($month) ";
?>
```

Task 7:

```php
function is_prime($number)
{
    if ($number < 2) return false;
    for ($i = 2; $i <= sqrt($number); $i++) if ($number % $i == 0) return false;
    return true;
}
$prime_numbers = [];
$count = 0;
$i = 2;
while ($count < 20)
{
    if (is_prime($i))
    {
        $prime_numbers[] = $i;
        $count++;
    }
    $i++;
}
echo "List of the first 20 prime numbers: ";
foreach($prime_numbers as $prime_number) echo "$prime_number ";
// print_r($prime_numbers);
?>
```

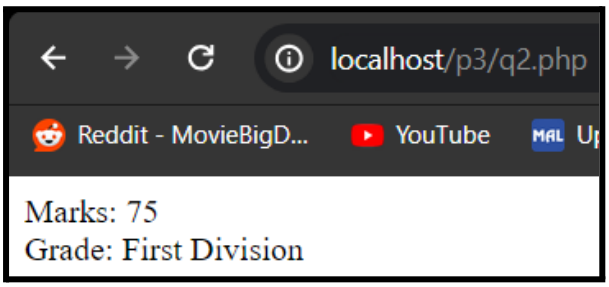
Output:

Task 1:

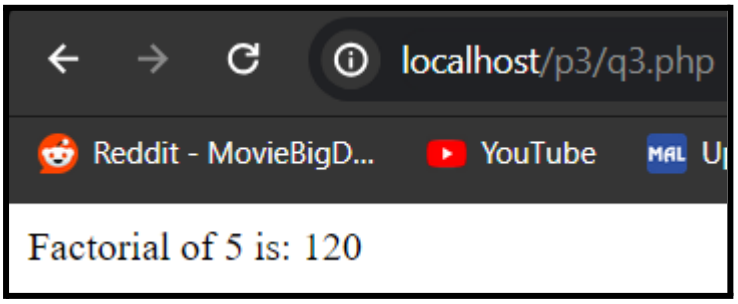


System	Windows NT LAPTOP-QKKTSPOB 10.0 build 23541 (Windows 10) AMD64
Build Date	Sep 1 2023 14:11:29
Build System	Microsoft Windows Server 2019 Datacenter [10.0.17763]
Compiler	Visual C++ 2019
Architecture	x64
Configure Command	cscript /nologo /e:jscript configure.js "--enable-snapshot-build" "--enable-debug-pack" "--with-pdo-oci=..\..\..\instantclient\sdk,shared" "--with-oci8-19=..\..\..\instantclient\sdk,shared" "--enable-object-out-dir=../obj/" "--enable-com-dotnet=shared" "--without-analyzer" "--with-pgo"
Server API	Apache 2.0 Handler
Virtual Directory Support	enabled
Configuration File (php.ini) Path	no value
Loaded Configuration File	D:\xampp\php\php.ini
Scan this dir for additional .ini files	(none)
Additional .ini files parsed	(none)
PHP API	20200930
PHP Extension	20200930
Zend Extension	420200930
Zend Extension Build	API420200930,TS,VS16
PHP Extension Build	API20200930,TS,VS16
Debug Build	no
Thread Safety	enabled
Thread API	Windows Threads
Zend Signal Handling	disabled
Zend Memory Manager	enabled
Zend Multibyte Support	provided by mbstring
IPv6 Support	enabled

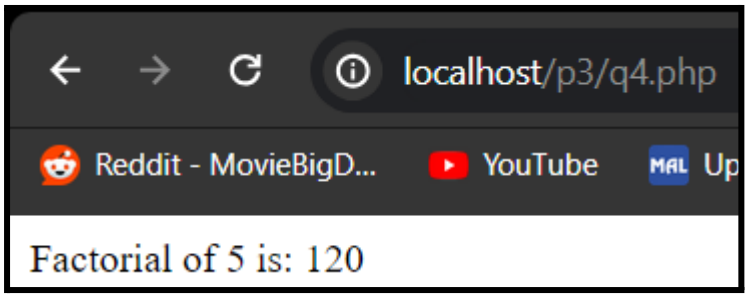
Task 2:



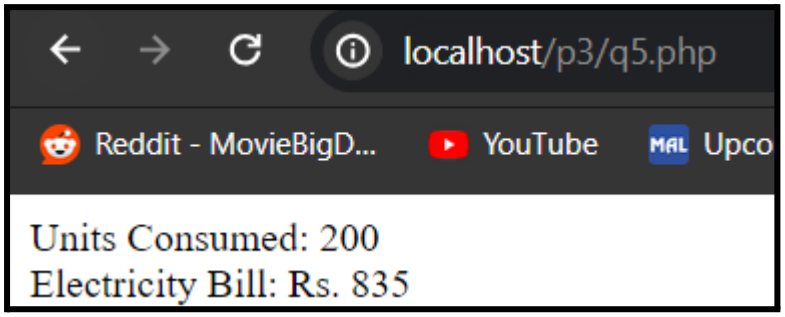
Task 3:



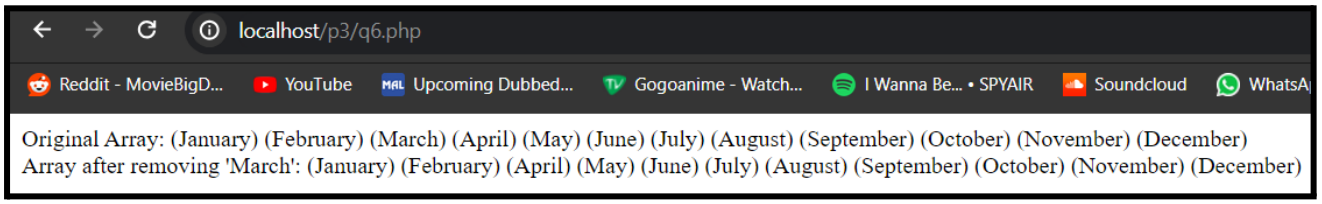
Task 4:



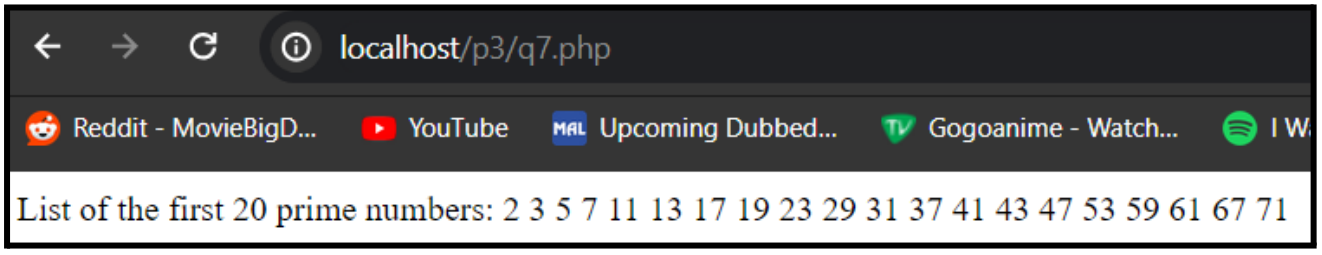
Task 5:



Task 6:



Task 7:



Conclusion:

- PHP enables dynamic web development with embedded code in HTML.
- PHP efficiently calculates factorial recursively, reducing redundancy.
- PHP program computes electricity bills with tiered rates, applying conditional logic for accurate billing.