Software Tools Lab 2

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Write a PHP program:

1. To find average of N numbers.

```php
<?php
$n = 45;
$sum = 0;
for($x = 1; $x <= $n; $x++) {
	$sum += $x;
}
echo "Average of 45 numbers is ".($sum/$n)."\n";
?>
```

```
❯ php -f q1.php
Average of 45 numbers is 23
```

2. Armstrong Number between 1 to 500

```php
<?php
function armstrong_number($num) {
	$sl = strlen($num);
	$sum = 0;
	$num = (string)$num;
	for ($i = 0; $i < $sl; $i++) {
		$sum = $sum + pow((string)$num{$i},$sl);
	}
	if ((string)$sum == (string)$num) {
		echo $num."\n";
	}
}
echo "Armstrong Numbers among the first 500 numbers"."\n";
for($i = 1; $i <= 500; $i++) {
	armstrong_number($i);
}
?>
```

```
❯ php -f q2.php
Armstrong Numbers among the first 500 numbers
1
2
3
4
5
6
7
8
9
153
370
371
407
```

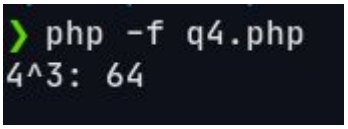
3. To print the Largest and Smallest number

```php
<?php
$a = array(2, 6, 8, 12, 3, -5, 7);
$n = count($a);
sort($a);
echo "Largest Number: ".$a[$n - 1]."\n";
echo "Smallest Number: ".$a[0]."\n";
?>
```

```
❯ php -f q3.php
Largest Number: 12
Smallest Number: -5
```

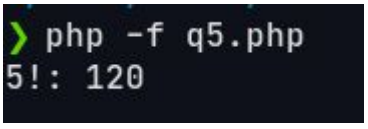
4. To find exponential without using pow() method

```php
<?php
$b = 4;
$e = 3;
$res = 1;
for($i = 1; $i <= $e; $i++) {
      $res *= $b;
}
echo "4^3: ".$res."\n";
?>
```



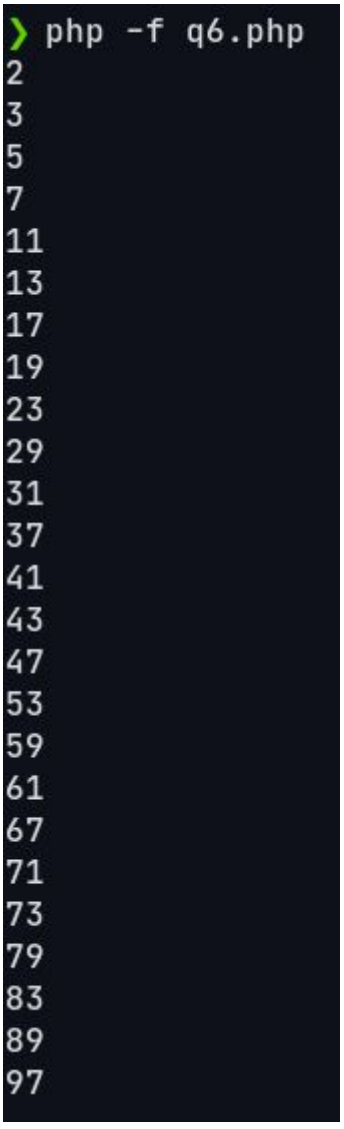
5. To print Factorial of a Number

```php
<?php
$n = 5;
$fact = 1;
for($i = 1; $i <= $n; $i++) {
	$fact *= $i;
}
echo $n."!: ".$fact."\n";
?>
```



6. To find first N Prime Numbers

```php
<?php
function is_prime($num) {
	$j = 0;
	for($i = 1; $i <= $num; $i++) {
		if (!($num % $i)) {
			$j++;
		}
	}
	if ($j <= 2) {
		echo $num."\n";
	}
}
$n = 100;
for($i = 2; $i <= $n; $i++) {
	is_prime($i);
}
?>
```



7. To print the Fibonacci Series

```php
<?php
function fibonacci($num) {
	$a = 1;
	$b = 1;
	$sum = $a + $b;
	for($i = 1; $i <= $num; $i++) {
		echo $a."\n";
		$a = $b;
		$b = $sum;
		$sum = $a + $b;
	}
}
$n = 10;
fibonacci($n);
```

```
?>
```

```
❯ php -f q7.php
1
1
2
3
5
8
13
21
34
55
```

8. To check whether a Number is a Palindrome

```
<?php
function reverse($n) {
	$r = 0;
	while ($n > 0) {
		$r = $r * 10;
		$r = $r + $n % 10;
		$n = (int)($n / 10);
	}
	return $r;
}
function palindrome($num) {
	$res = reverse($num);
	if ($res === $num) {
		echo $num." is a Palindrome.\n";
	} else {
		echo $num." is not a Palindrome.\n";
	}
}
$n1 = 14;
$n2 = 141;
palindrome($n1);
palindrome($n2);
?>
```

```
❯ php -f q8.php
14 is not a Palindrome.
141 is a Palindrome.
```

9. To reverse given number.

```php
<?php
function reverse($n) {
	$r = 0;
	while ($n > 0) {
		$r = $r * 10;
		$r = $r + $n % 10;
		$n = (int)($n / 10);
	}
	return $r;
}
$n = 1478;
echo "Reverse of ".$n." is ".reverse($n)."\n";
?>
```

```
❯ php -f q9.php
Reverse of 1478 is 8741
```

10. To print number triangle

```
     1
    121
   12321
  1234321
 123454321
12345654321
```

```php
<?php
$n = 6;
for($i = 1; $i <= $n; $i++) {
	for($s = 1; $s <= $n - $i; $s++) {
		echo " ";
	}
	for($o = 1; $o <= $i; $o++) {
		echo $o;
	}
	for($r = $i - 1; $r >= 1; $r--) {
```

```
            echo $r;
        }
        echo "\n";
}
?>
```