Lab 2

1. Write a program to calculate and print the factorial of a number using a for loop.
The factorial of a number is the product of all integers up to and including that number, so the factorial of 4 is 4*3*2*1= 24.

Code:
```php
<?php
        echo "Factorial of 5";
        echo "</br>";
        $facto=1;
        for($i=1;$i<6;$i++){
                $facto  = $facto * $i;
        }
        echo $facto;
?>
```
Output:

```php
<?php
    echo "Factorial of 5";
    echo "</br>";
    $facto=1;
    for($i=1;$i<6;$i++){
        $facto  = $facto * $i;
    }
    echo $facto;
?>
```

Factorial of 5
120

2. Create a PHP script which display the capital and country name from the below array $ceu. Sort the list by the name of the capital.

$ceu = array("Italy"=>"Rome", "Luxembourg"=>"Luxembourg", "Belgium"=> "Brussels", "Denmark"=>"Copenhagen", "Finland"=>"Helsinki", "France" => "Paris", "Slovakia"=>"Bratislava", "Slovenia"=>"Ljubljana", "Germany" => "Berlin", "Greece" =>"Athens", "Ireland"=>"Dublin", "Netherlands"=>"Amsterdam", "Portugal"=>"Lisbon", "Spain"=>"Madrid", "Sweden"=>"Stockholm", "United Kingdom"=>"London", "Cyprus"=>"Nicosia", "Lithuania"=>"Vilnius", "Czech Republic"=>"Prague", "Estonia"=>"Tallin", "Hungary"=>"Budapest", "Latvia"=>"Riga", "Malta"=>"Valetta", "Austria" => "Vienna", "Poland"=>"Warsaw") ;

Sample Output:

The capital of Netherlands is Amsterdam

The capital of Greece is Athens

The capital of Germany is Berlin

Code:

```php
<?php
$ceu = array( "Italy"=>"Rome", "Luxembourg"=>"Luxembourg", "Belgium"=>
"Brussels", "Denmark"=>"Copenhagen", "Finland"=>"Helsinki", "France" => "Paris",
"Slovakia"=>"Bratislava", "Slovenia"=>"Ljubljana", "Germany" => "Berlin", "Greece"
=>"Athens", "Ireland"=>"Dublin", "Netherlands"=>"Amsterdam",
"Portugal"=>"Lisbon", "Spain"=>"Madrid", "Sweden"=>"Stockholm", "United
Kingdom"=>"London", "Cyprus"=>"Nicosia", "Lithuania"=>"Vilnius", "Czech
Republic"=>"Prague", "Estonia"=>"Tallin", "Hungary"=>"Budapest",
"Latvia"=>"Riga", "Malta"=>"Valetta", "Austria" => "Vienna", "Poland"=>"Warsaw") ;

asort($ceu);
foreach($ceu as $x => $x_value) {
   echo "The Capital of " . $x . " is " . $x_value;
   echo "<br>";
 }
?>
```

Output:

The Capital of Netherlands is Amsterdam
The Capital of Greece is Athens
The Capital of Germany is Berlin
The Capital of Slovakia is Bratislava
The Capital of Belgium is Brussels
The Capital of Hungary is Budapest
The Capital of Denmark is Copenhagen
The Capital of Ireland is Dublin
The Capital of Finland is Helsinki
The Capital of Portugal is Lisbon
The Capital of Slovenia is Ljubljana
The Capital of United Kingdom is London
The Capital of Luxembourg is Luxembourg
The Capital of Spain is Madrid
The Capital of Cyprus is Nicosia
The Capital of France is Paris
The Capital of Czech Republic is Prague
The Capital of Latvia is Riga
The Capital of Italy is Rome
The Capital of Sweden is Stockholm
The Capital of Estonia is Tallin
The Capital of Malta is Valetta
The Capital of Austria is Vienna
The Capital of Lithuania is Vilnius

3. Write a PHP script to calculate and display average temperature, five lowest and highest temperatures.

Recorded temperatures: 78, 60, 62, 68, 81, 68, 73, 85, 66, 64, 76, 63, 75, 76, 73, 68, 62, 73, 72, 65, 74, 62, 62, 65, 64, 68, 73, 75, 79, 73

Sample Output:

Average Temperature is : 69.77

List of five lowest temperatures : 60, 62, 63, 63, 64

List of five highest temperatures : 76, 78, 79, 81, 85

Code:

```php
<?php
  $a = array(78, 60, 62, 68, 81, 68, 73, 85, 66, 64, 76, 63, 75, 76,
  73, 68, 62, 73, 72, 65, 74, 62, 62, 65, 64, 68, 73, 75, 79, 73);
  echo "Average = " . array_sum($a)/count($a) . "\n";
   sort($a);
   echo "<br>";
   echo "List of five lowest temperatures : ";
  $a = array_unique($a);
  sort($a);
  for($i=0;$i<5;$i++){
     echo $a[$i]." " ;
  }
  echo "<br>";

  rsort($a);
  echo "List of five highest temperatures : ";
  for($i=0;$i<5;$i++){
     echo $a[$i]." " ;
  }
?>
```

Output:

Average = 70.1
List of five lowest temperatures : 60 62 63 64 65
List of five highest temperatures : 85 81 79 78 76

4. Create a simple 'birthday countdown' script, the script will count the number of days between current day and your birth day.

Code:

```php
<?php

$birthdate = strtotime("12-09-2001");
$today =  strtotime(date('Y-m-d H:i:s'));

$fixedBirthdate = date_create(date("Y", $today) . "-" . date("m", $birthdate) . "-" . date("d", $birthdate));


$diff = date_diff(date_create(date("d-m-Y", $today)), $fixedBirthdate);
echo $diff->format("%a days");
?>
```

Output:

127 days

5. Write a script for your pair of arrays to find their union (all the elements), intersection (elements in both, not just one), or difference (in one but not both).

Code:

```php
<?php
  $arr1 = array('J','U','Z','A','R');
  $arr2 = array('A','N','T','R','I');

  $union = array_unique(array_merge($arr1,$arr2));
  echo "UNION : ";
  foreach($union as $i){
    echo $i, " ";
  }

  $intersect = array_intersect($arr1,$arr2);
  echo "<br>","INTERSECTION : ";
  foreach($intersect as $i){
    echo $i, " ";
  }

  $difference = array_diff($arr1,$arr2);
  echo "<br>","ARRAY1 - ARRAY2 :  ";
  foreach($difference as $i){
    echo $i, " ";
  }

  $difference = array_diff($arr2,$arr1);
  echo "<br>","ARRAY2 - ARRAY1 :  ";
  foreach($difference as $i){
    echo $i, " ";
  }

?>
```

Output:

```
UNION : J U Z A R N T I
INTERSECTION : A R
ARRAY1 - ARRAY2 : J U Z
ARRAY2 - ARRAY1 : N T I
```

6. Write a PHP function that checks whether a passed string is a palindrome or not?
A palindrome is word, phrase, or sequence that reads the same backward as forward, e.g., madam or nurses run.

Code:
```php
<?php
  $str="a b c b a";


  function isPalindrome($str) {
    if(!strcasecmp($str,strrev($str))){
      return true;
    }
    return false;
  }

  if(isPalindrome($str)){
    echo $str,' is a palindrome string';
  }
  else{
    echo $str,' is not a palindrome string';
  }

?>
```
Output:

a b c b a is a palindrome string