

# PHP Assignment on Loops

Submission: GitHub repository with different filenames for all tasks (e.g., task1.php).

Instructions:

1. Each task must be completed in a separate PHP file named according to the task number (e.g., task1.php).
2. Include comments in the code to explain the logic.
3. Ensure that when the file is executed, it displays the correct result.
4. Take a screenshot of the output and include it in your submission.
5. Provide sample inputs and outputs as specified below.

## Task 1: Basic `for` Loop

Problem: Write a PHP script that prints the numbers 1 to 10 using a `for` loop.

Filename: task1.php

Sample Output:

1 2 3 4 5 6 7 8 9 10

## Task 2: Sum of the First 50 Numbers

Problem: Write a PHP script that calculates the sum of the first 50 natural numbers using a `for` loop.

Filename: task2.php

Sample Output:

The sum of the first 50 natural numbers is 1275

### Task 3: Even Numbers Between 1 and 20

Problem: Write a PHP script that prints all even numbers between 1 and 20.

Filename: task3.php

Sample Output:

2 4 6 8 10 12 14 16 18 20

### Task 4: Reverse Countdown

Problem: Write a PHP script that prints numbers from 10 down to 1 using a `while` loop.

Filename: task4.php

Sample Output:

10 9 8 7 6 5 4 3 2 1

### Task 5: Multiplication Table

Problem: Write a PHP script that prints the multiplication table of 5 up to 10 terms.

Filename: task5.php

Sample Output:

5 x 1 = 5

5 x 2 = 10

5 x 3 = 15

5 x 4 = 20

5 x 5 = 25

5 x 6 = 30

$$5 \times 7 = 35$$

$$5 \times 8 = 40$$

$$5 \times 9 = 45$$

$$5 \times 10 = 50$$

#### Task 6: Sum of Digits

Problem: Write a PHP script that calculates the sum of digits of a given number (e.g.,  $1234 = 1+2+3+4 = 10$ ).

Filename: task6.php

Sample Output:

The sum of digits of 1234 is 10

#### Task 7: Factorial Calculation

Problem: Write a PHP script to calculate the factorial of a given number using a `for` loop.

Filename: task7.php

Sample Output:

The factorial of 5 is 120

#### Task 8: Fibonacci Sequence

Problem: Write a PHP script to generate the first 10 terms of the Fibonacci sequence.

Filename: task8.php

Sample Output:

0 1 1 2 3 5 8 13 21 34

Task 9: Prime Numbers Between 1 and 50

Problem: Write a PHP script that prints all prime numbers between 1 and 50.

Filename: task9.php

Sample Output:

2 3 5 7 11 13 17 19 23 29 31 37 41 43 47

Task 10: Find the Largest Number

Problem: Write a PHP script that finds the largest number in an array using a loop.

Filename: task10.php

Sample Output:

Sample Input: [23, 12, 56, 74, 4, 19]

Sample Output: The largest number is 74

Task 11: Count Vowels in a String

Problem: Write a PHP script that counts the number of vowels in a given string.

Filename: task11.php

Sample Output:

Sample Input: Hello World

Sample Output: Number of vowels in 'Hello World' is 3

### Task 12: Reverse a String

Problem: Write a PHP script to reverse a given string without using built-in functions.

Filename: task12.php

Sample Output:

Sample Input: PHP

Sample Output: The reverse of 'PHP' is 'PHP'

### Task 13: Palindrome Check

Problem: Write a PHP script to check whether a given string is a palindrome.

Filename: task13.php

Sample Output:

Sample Input: radar

Sample Output: 'radar' is a palindrome

### Task 14: Sum of Array Elements

Problem: Write a PHP script that calculates the sum of all elements in an array using a loop.

Filename: task14.php

Sample Output:

Sample Input: [4, 8, 12, 16]

Sample Output: The sum of the array elements is 40

### Task 15: Remove Duplicates from an Array

Problem: Write a PHP script to remove duplicate values from an array using loops (no built-in functions).

Filename: task15.php

Sample Output:

Sample Input: [4, 8, 4, 12, 16, 8, 16]

Sample Output: Array after removing duplicates: [4, 8, 12, 16]

### Task 16: Number Pattern

Problem: Write a PHP script that prints the following number pattern using loops:

1

12

123

1234

12345

Filename: task16.php

Sample Output:

Sample Output:

1

12

123

1234

12345

#### Task 17: Sort an Array

Problem: Write a PHP script that sorts an array in ascending order using loops (no built-in functions).

Filename: task17.php

Sample Output:

Sample Input: [29, 10, 14, 37, 13]

Sample Output: Sorted array: [10, 13, 14, 29, 37]

#### Task 18: Armstrong Number

Problem: Write a PHP script to check if a number is an Armstrong number (e.g.,  $153 = 1^3 + 5^3 + 3^3$ ).

Filename: task18.php

Sample Output:

Sample Input: 153

Sample Output: 153 is an Armstrong number

#### Task 19: Find the Second Largest Number

Problem: Write a PHP script to find the second largest number in an array using a loop.

Filename: task19.php

Sample Output:

Sample Input: [23, 12, 56, 74, 4, 19]

Sample Output: The second largest number is 56

### Task 20: Frequency of Elements in an Array

Problem: Write a PHP script to count the frequency of each element in an array using loops.

Filename: task20.php

Sample Output:

Sample Input: [4, 8, 4, 12, 16, 8, 16]

Sample Output:

Element 4 occurs 2 times

Element 8 occurs 2 times

Element 12 occurs 1 time

Element 16 occurs 2 times