TP5-Using loop for

Lab's objectives:

- Using loop for, nested loop
- Using keywords: ***continue;*** and ***break;***

Deadline: 6 days

Problem1: Write a program to compute summation and subtraction of all numbers from 500 to 10. Display output on screen.

Examples:

Output:

The summation: 500 + 499 + 498 + … + 10 = **125205**

The subtraction: -500 - 499 - 498 - … - 10 = **-125205**

Problem2: Write a program to sum all numbers from n to 1000 except the number 100, where n is an integer number input by the user.

Examples:

INPUT:

Enter a number: 5

Output:

The summation from 5 to 1000 except the number 100 is: **500390**

……

INPUT:

Enter a number: 250

Output:

The summation from 250 to 1000 except the number 100 is: **469375**

Problem3: Write a program to display all even numbers between 1 and 50 using a for loop.

Examples:

Output:

The summation of all even numbers between 1 and 50: 2 + 4 + 6 + … 48 = **600**

Problem4: Create a program that calculates and prints the power of 2 for the first 10 natural numbers using a for loop.

Examples:

Output:

The power of 2 for the first 10 natural numbers are:

$2^1 = 2$
$2^2 = 4$
$2^3 = 8$
$2^4 = 16$
$2^5 = 32$
$2^6 = 64$
$2^7 = 128$
$2^8 = 256$
$2^9 = 512$
$2^{10} = 1024$

Problem5: Create a program to ask a user to input a number. The program will tell the user whether it is a prime number or not.

INPUT:

Enter a number: 5

Output:

5 is a prime number because it is only divisible by itself and 1.

……

INPUT:

Enter a number: 12

Output:

12 is not a prime number because it is not only divisible by itself and 1.

Problem6: Create a program to identify and print all prime numbers between n and m using a for loop, where n and m are integer numbers input by the user.

INPUT:

Enter n: 20
Enter m: 50

Output:

All prime numbers between 20 and 50 are: **23,29,31,37,41,43** , **47.**

……

INPUT:

Enter n: 2
Enter m: 100

Output:

All prime numbers between 2 and 100 are: **2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.**