Lab-5

https://study.com/academy/lesson/do-while-loop-definition-example-results.html

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1. Write and execute a C program to read a number using keyboard , find the factorial of a number using for loop and display the result..

```c
#include <stdio.h>
int main()
{
int n, i;
long fact = 1;
printf("Enter an integer: ");
scanf("%d", &n);
if (n < 0)
    printf("Factorial of a negative number doesn't exist.");
else
    {
        for (i = 1; i <= n; ++i)
        {
        fact *= fact*i;
        }
        printf("Factorial of %d = %llu", n, fact);
        }
        return 0;
    }
```

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2. Write and execute a C program to read numbers using keyboard , find the sum of odd numbers and even numbers in first n natural numbers using a for loop.

```c
#include<stdio.h>

int main()
{
  int i, number, Even_Sum = 0, Odd_Sum = 0;

  printf("\n Please Enter the Maximum Limit Value : ");
  scanf("%d", &number);

  for(i = 1; i <= number; i++)
  {
      if ( i%2 == 0 )
      {
      Even_Sum = Even_Sum + i;
      }
      else
      {
            Odd_Sum = Odd_Sum + i;
      }
  }
 printf("\n The Sum of Even Numbers upto %d  = %d", number, Even_Sum);
 printf("\n The Sum of Odd Numbers upto %d  = %d", number, Odd_Sum);

  return 0;
}
```

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3. **Write and execute a C program to read a number using keyboard, check whether a given number is palindrome or not using a while loop and display the result.**

```c
#include <stdio.h>
int main()
{
    int num, reverse_num=0, remainder,temp;
    printf("Enter an integer: ");
    scanf("%d", &num);


    temp=num;
    while(temp!=0)
    {
        remainder=temp%10;
        reverse_num=reverse_num*10+remainder;
        temp/=10;
    }


    if(reverse_num==num)
        printf("%d is a palindrome number",num);
    else
        printf("%d is not a palindrome number",num);
    return 0;
}
```

4. Write and execute a C program to read two numbers using keyboard, find GCD and LCM of two numbers using a do-while loop and display the result

```
#include <stdio.h>
void main()
{
    int num1, num2, gcd, lcm, remainder, numerator, denominator;
    printf("Enter two numbers\n");
    scanf("%d %d", &num1, &num2);
    if (num1 > num2)
    {
        numerator = num1;
        denominator = num2;
    }
    else
    {
        numerator = num2;
        denominator = num1;
    }
    remainder = numerator % denominator;
    while (remainder != 0)
    {
        numerator   = denominator;
        denominator = remainder;
        remainder   = numerator % denominator;
    }
    gcd = denominator;
    lcm = num1 * num2 / gcd;
    printf("GCD of %d and %d = %d\n", num1, num2, gcd);
    printf("LCM of %d and %d = %d\n", num1, num2, lcm);
}
```

5. Write and execute a C program to read two numbers using keyboard , find the prime numbers within a given range using for loop and print the prime numbers within a given rang

```c
#include<stdio.h>
int main()
{
   int i, prime,upper,lower, n;
   printf(" ENTER THE LOWER LIMIT : ");
   scanf("%d", &lower);
   printf("\n ENTER THE UPPER LIMIT : ");
   scanf("%d", &upper);
   printf("\n PRIME NUMBERS LIST IS : ");
   for(n=lower+1; n<upper; n++)
       {
       prime = 1;
       for(i=2; i<n/2; i++)
       {
          if(n%i == 0)
            {
                prime = 0;
                 break;
            }
       }
       if(prime)
          printf("\t%d", n);
       }
}
```