For Loop Practice Programs

Display the sum of the series [9 + 99 + 999 + 9999 ...]

```
Input the number or terms :5
9    99    999    9999    99999
The sum of the series = 111105
```

Display the sum of the series [9 + 99 + 999 + 9999 ...]

```c
#include <stdio.h>

void main()
{
    int n, i, t = 9;

    int sum = 0;

    printf("Input the number or terms :");
    scanf("%d", &n);

    for (i = 1; i <= n; i++)
    {
        sum += t;
        printf("%d    ", t);
        t = t * 10 + 9;
    }

    printf("\nThe sum of the series = %d \n", sum);
}
```

Write a program in C to display the cube of the number up to an integer.

```
Input number of terms : 5
Number is : 1 and cube of the 1 is :1
Number is : 2 and cube of the 2 is :8
Number is : 3 and cube of the 3 is :27
Number is : 4 and cube of the 4 is :64
Number is : 5 and cube of the 5 is :125
```

Write a program in C to display the cube of the number up to an integer.

```c
#include <stdio.h>
void main() {
    int i, ctr;
    printf("Input number of terms : ");
    scanf("%d", &ctr);
    for (i = 1; i <= ctr; i++) {
        printf("Number is : %d and cube of the %d is :%d \n", i, i, (i * i * i));
    }
}
```

Read 10 numbers and find their sum and average

```
Input the 10 numbers :
Number-1 :1
Number-2 :2
Number-3 :3
Number-4 :4
Number-5 :5
Number-6 :5
Number-7 :6
Number-8 :6
Number-9 :4
Number-10 :4
The sum of 10 no is : 40
The Average is : 4.000000
```

Read 10 numbers and find their sum and average

```c
#include <stdio.h>
void main() {
    int i, n, sum = 0;
    float avg;

    printf("Input the 10 numbers : \n");

    for (i = 1; i <= 10; i++) {
        printf("Number-%d :", i);

        scanf("%d", &n);
        sum += n;
    }

    avg = sum / 10.0;

    printf("The sum of 10 no is : %d\nThe Average is : %f\n", sum, avg);

}
```

Calculate n terms of even natural number and their sum


```
Input number of terms : 5

The even numbers are :2 4 6 8 10
The Sum of even Natural Number upto 5 terms : 30



...Program finished with exit code 0
Press ENTER to exit console.
```

Calculate n terms of even natural number and their sum

```c
#include <stdio.h>
void main()
{
    int i, n, sum = 0;

    printf("Input number of terms : ");
    scanf("%d", &n);

    printf("\nThe even numbers are :");

    for(i = 1; i <= n; i++)
    {
        printf("%d ", 2 * i);
        sum += 2 * i;
    }

    printf("\nThe Sum of even Natural Number upto %d terms : %d \n", n, sum);
}
```

Calculate n terms of odd natural number and their sum

```
Input number of terms : 5

The odd numbers are :1 3 5 7 9
The Sum of odd Natural Number upto 5 terms : 25
```

Calculate n terms of odd natural number and their sum

```c
#include <stdio.h>
void main()
{
    int i, n, sum = 0;

    printf("Input number of terms : ");
    scanf("%d", &n);

    printf("\nThe odd numbers are :");

    for(i = 1; i <= n; i++)
    {
        printf("%d ", 2 * i-1);
        sum += 2 * i-1;
    }

    printf("\nThe Sum of odd Natural Number upto %d terms : %d \n", n, sum);
}
```

Display the pattern like right angle using an asterisk

```
*
**
***
****
```

Display the pattern like right angle using an asterisk

```c
#include <stdio.h>   // Include the standard input/output header file.

void main() {
    int i, j, rows;   // Declare variables 'i' and 'j' for loop counters, 'rows' for user input.

    printf("Input number of rows : ");   // Print a message to prompt user input.
    scanf("%d", &rows);   // Read the value of 'rows' from the user.

    for (i = 1; i <= rows; i++) {   // Start a loop to generate rows of asterisks.
        for (j = 1; j <= i; j++)   // Nested loop to print asterisks based on the current row.
            printf("*");   // Print an asterisk.

        printf("\n");   // Move to the next line for the next row.
    }
}
```

Display the pattern like right angle triangle using a number

```
1
12
123
1234
```

Display the pattern like right angle triangle using a number

```c
#include <stdio.h>   // Include the standard input/output header file.

void main() {
    int i, j, rows;   // Declare variables 'i' and 'j' for loop counters, 'rows' for user input.

    printf("Input number of rows : ");   // Print a message to prompt user input.
    scanf("%d", &rows);   // Read the value of 'rows' from the user.

    for (i = 1; i <= rows; i++) {   // Start a loop to generate rows.
        for (j = 1; j <= i; j++)   // Nested loop to print numbers based on the current row.
            printf("%d", j);   // Print the value of 'j'.

        printf("\n");   // Move to the next line for the next row.
    }
}
```

Display the pattern like right angle triangle which repeat a number in a row

```
1
22
333
4444
```

Display the pattern like right angle triangle which repeat a number in a row

```c
#include <stdio.h>   // Include the standard input/output header file.

void main() {
    int i, j, rows;   // Declare variables 'i' and 'j' for loop counters, 'rows' for user input.

    printf("Input number of rows : ");   // Print a message to prompt user input.
    scanf("%d", &rows);   // Read the value of 'rows' from the user.

    for (i = 1; i <= rows; i++) {   // Start a loop to generate rows.
        for (j = 1; j <= i; j++)   // Nested loop to print numbers based on the current row.
            printf("%d", i);   // Print the value of 'i'.

        printf("\n");   // Move to the next line for the next row.
    }
}
```

Display the pattern like right angle triangle with number increased by 1

```
1
2 3
4 5 6
7 8 9 10
```

Display the pattern like right angle triangle with number increased by 1

```c
#include <stdio.h>  // Include the standard input/output header file.


void main() {
    int i, j, rows, k = 1;  // Declare variables 'i' and 'j' for loop counters, 'rows' for user input, 'k' for incren


    printf("Input number of rows : ");  // Print a message to prompt user input.
    scanf("%d", &rows);  // Read the value of 'rows' from the user.


    for (i = 1; i <= rows; i++) {  // Start a loop to generate rows.
        for (j = 1; j <= i; j++)  // Nested loop to print numbers based on the current row.
            printf("%d ", k++);  // Print the value of 'k' and increment it.


        printf("\n");  // Move to the next line for the next row.
    }
}
```

Calculate the harmonic series and their sum

```
Input the number of terms : 5

1/1 + 1/2 + 1/3 + 1/4 + 1/5
Sum of Series upto 5 terms : 2.283334
```

Calculate the harmonic series and their sum

```c
#include <stdio.h>   // Include the standard input/output header file.
void main()
{
    int i, n;        // Declare variables to store input and loop control.
    float s = 0.0; // Initialize 's' to 0.0 to accumulate the sum.
    // Prompt the user to input the number of terms.
    printf("Input the number of terms : ");
    scanf("%d", &n);   // Read the value of 'n' from the user.
    printf("\n\n");   // Print extra new lines for formatting.
    for (i = 1; i <= n; i++)
    {
        if (i < n)
        {
            printf("1/%d + ", i);       // Print the term with a plus sign.
            s += 1 / (float)i;          // Calculate and add the term to the sum.
        }
        if (i == n)
        {
            printf("1/%d ", i);         // Print the last term without a plus sign.
            s += 1 / (float)i;          // Calculate and add the term to the sum.
        }
    }
    printf("\nSum of Series upto %d terms : %f \n", n, s);
}
```