

# ASSIGNMENT

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**SUBJECT: C programming**

**Q1. Write a C program to display n terms of natural numbers and their sum.**

**PROGRAM:**

```
#include <stdio.h>

int main()
{
    int n,sum,i=1;
    printf("enter the n terms:");
    scanf("%d",&n);
    printf("The n natural numbers are:\n");
    while(i<=n)
    {
        printf("%d\n",i);
        sum+=i;
        i++;
    }
    printf("The sum of n terms of natural numbers is %d",sum);
```

```
}
```

**OUTPUT:**

```
Output
/tmp/V49ARJtMGf.o
enter the n terms:5
The n natural numbers are:
1
2
3
4
5
The sum of n terms of natural numbers is 15
```

**Q2. Write a program in C to input 5 numbers from the keyboard and find their sum and average.**

**PROGRAM:**

```
#include <stdio.h>

int main()
{
    int i,num,sum = 0;
    float avg;
    printf("Input 5 numbers:\n");
    for (i = 0; i < 5; i++)
    {
        printf("Enter number:");
```

```
scanf("%d", &num);

sum += num;

}

avg=sum/5;

printf("The sum of the 5 numbers is:%d\n",sum);

printf("The average of the 5 numbers is:%f",avg);

}
```

### OUTPUT:

```
Output
/tmp/BR1S9MyLG.o
Input 5 numbers
Enter number:4
Enter number:5
Enter number:6
Enter number:7
Enter number:8
The sum of the 5 numbers is:30
The average of the 5 numbers is:6.000000
```

**Q3. Write a C program to display the cube of the given number up to an integer.**

### PROGRAM:

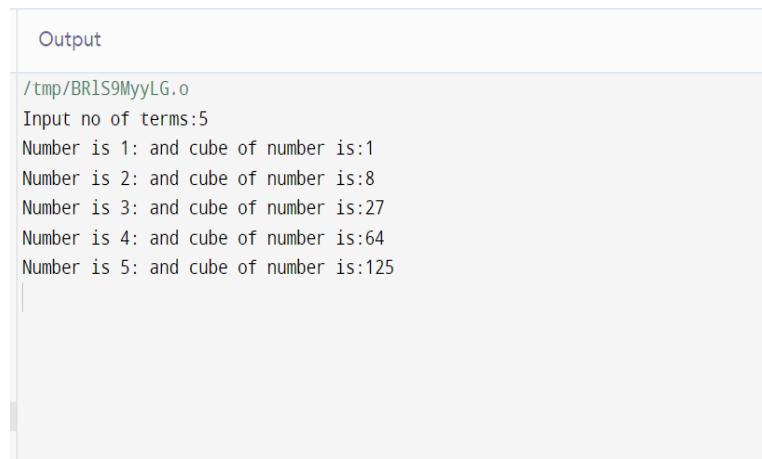
```
#include <stdio.h>

int main()

{
```

```
int n,i,cube;
printf("Input no of terms:");
scanf("%d",&n);
for(i=1;i<=n;i++)
{
    cube=i*i*i;
    printf("Number is %d: and cube of number is:%d\n",i,cube);
}
}
```

#### OUTPUT:



```
Output
/tmp/BR1S9MyyLG.o
Input no of terms:5
Number is 1: and cube of number is:1
Number is 2: and cube of number is:8
Number is 3: and cube of number is:27
Number is 4: and cube of number is:64
Number is 5: and cube of number is:125
```

**Q4. Write a C program to display the multiplication table of a given integer.**

#### PROGRAM:

```
#include <stdio.h>

int main()
```

```
{  
    int num,n,i;  
    printf("enter the number for which multiplication has to be done:");  
    scanf("%d",&num);  
    printf("Input the number of terms:");  
    scanf("%d",&n);  
    for(i=0;i<=n;i++)  
    {  
        printf("%d x %d = %d\n",num,i,num*i);  
    }  
}
```

**OUTPUT:**

#### Output

```
/tmp/uAgYt3tCHB.o  
enter the number for which multiplication has to be done:6  
Input the number of terms:10  
6 x 0 = 0  
6 x 1 = 6  
6 x 2 = 12  
6 x 3 = 18  
6 x 4 = 24  
6 x 5 = 30  
6 x 6 = 36  
6 x 7 = 42  
6 x 8 = 48  
6 x 9 = 54  
6 x 10 = 60
```

**Q5. Write a C program that displays the sum of n odd natural numbers.**

**PROGRAM:**

```
#include <stdio.h>

int main()
{
    int n,i=1,sum=0;
    printf("Input number of terms:");
    scanf("%d",&n);
    printf("The odd natural numbers are:\n");
    while(i<n)
    {
        printf("%d\n",(2*i)-1);
        sum+=(2*i)-1;
        i++;
    }
    printf("The sum of odd natural numbers is:%d",sum);
}
```

**OUTPUT:**

## Output

```
/tmp/KGzFPaf6v9.o
Input number of terms:5
The odd natural numbers are:
1
3
5
7
The sum of odd natural numbers is:16
```

**Q6. Write a C program to display the pattern like a right angle triangle with a number.**

**PROGRAM:**

```
#include <stdio.h>
```

```
int main() {
```

```
    int i,b,j;
```

```
    printf("enter the number of rows:");
```

```
    scanf("%d",&b);
```

```
    for(i=1;i<=b;i++)
```

```
    {
```

```
        for(j=1;j<=i;j++)
```

```
        {
```

```
            printf("%d",j);
```

```
        }
```

```
        printf("\n");
```

```
    }
```

```
}
```

## OUTPUT:

```
Output Clear  
/tmp/2aZdc405wn.o  
enter the number of rows:10  
1  
12  
123  
1234  
12345  
123456  
1234567  
12345678  
123456789  
12345678910
```

**Q7. Write a program in C to make such a pattern like a right angle triangle with a number which repeats a number in a row.**

## PROGRAM:

```
#include <stdio.h>  
  
int main()  
{  
    int i,j,r;
```



```
printf("Enter the number of rows : ");  
scanf("%d",&r);  
for(i=1;i<=r;i++)  
{  
    for(j=1;j<=i;j++){  
        printf("%d",i);}  
    printf("\n");  
}  
}
```

## OUTPUT:

Output

Clear

```
/tmp/2ePmwxuHlq.o  
Enter the number of rows : 10  
1  
22  
333  
4444  
55555  
666666  
7777777  
88888888  
999999999  
10101010101010101010
```

**Q8. Write a C program to make such a pattern like a right angle triangle with the number increased by 1.**

**PROGRAM:**

```
#include <stdio.h>

int main()
{
    int i,j,r,a=1;
    printf("enter the number of rows : ");
    scanf("%d",&r);
    for(i=1;i<=r;i++)
    {
        for(j=1;j<=i;j++){
            printf("%d\t",a++);}
        printf("\n");
    }
}
```

**OUTPUT:**

```
Output
/tmp/2ePmwxuH1q.o
enter the number of rows : 10
1
2 3
4 5 6
7 8 9 10
11 12 13 14 15
16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31 32 33 34 35 36
37 38 39 40 41 42 43 44 45
46 47 48 49 50 51 52 53 54 55
```

**Q9. Write a C program to make such a pattern like a pyramid with a number that repeats in the same row.**

**PROGRAM:**

```
#include <stdio.h>

int main()
{
    int row,column,a=5,middle;
    for(row=1; row<= 5; row++)
```

```
{
    for(column=1; column<=a; column++)
    {
        printf(" ");
    }
    for(middle=1; middle<=row; middle++)
    {
        printf("%d",row);
        printf(" ");
    }
    printf("\n");

    a=a-1;
}

}
```

## OUTPUT:

```
Output
/tmp/v65dPxvz4M.o
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

**Q10. Write a C program to print Floyd's Triangle.**

**PROGRAM:**

```
#include <stdio.h>

int main()
{
    int i,j,r,a=1;
    printf("enter the number of rows : ");
    scanf("%d",&r);
    for(i=1;i<=r;i++)
    {
        for(j=1;j<=i;j++){
            printf("%d\t",a++);}
        printf("\n");
    }
}
```

**OUTPUT:**

Output

Clear

/tmp/2ePmwxuHlq.o

enter the number of rows : 5

1

2 3

4 5 6

7 8 9 10

11 12 13 14 15