

ASSIGNMENT

NAME: Vignesh kumar.B

REGISTER NO: 23BCA0075

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/BR1S9MyyLG.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:

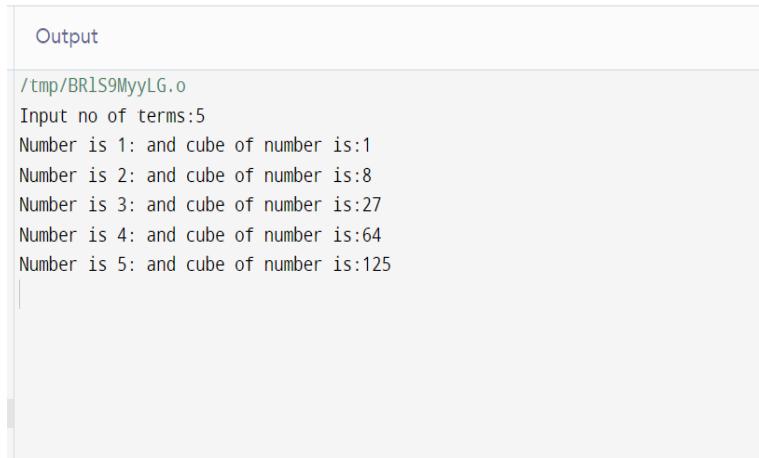
```
#include <stdio.h>

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
```

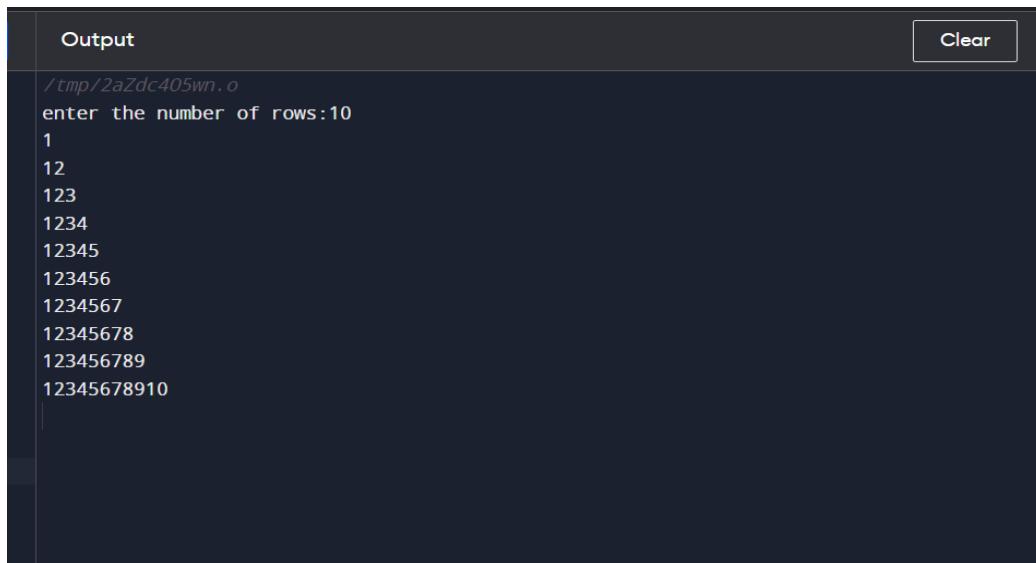
Q6. Write a C program to display the pattern like a right angle triangle with a number.

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:



```
/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/2ePmwxuH1q.o Enter the number of rows : 10 1 22 333 4444 55555 666666 7777777 88888888 999999999 101010101010101010	

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

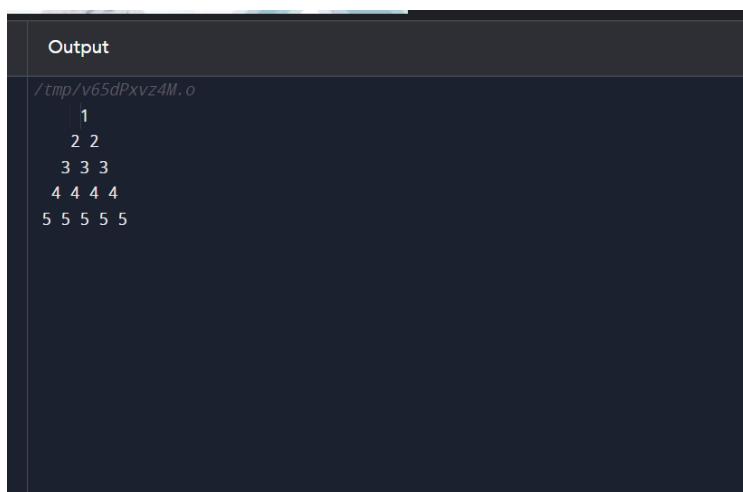
Q9. Write a C program to make such a pattern like a pyramid with a number that repeats in the same row.

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
```