

Control Statement (for,do,while loop) Problem Solving C Programme

1. Write a program to compute the factorial of a number using while loop.

Input:

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

```
int main()
```

```
{
```

```
int i,fact=1,n;
```

```
printf("n = ");
```

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

```
i =1;
```

```
while (i<=n)
```

```
{
```

```
fact=fact*i;
```

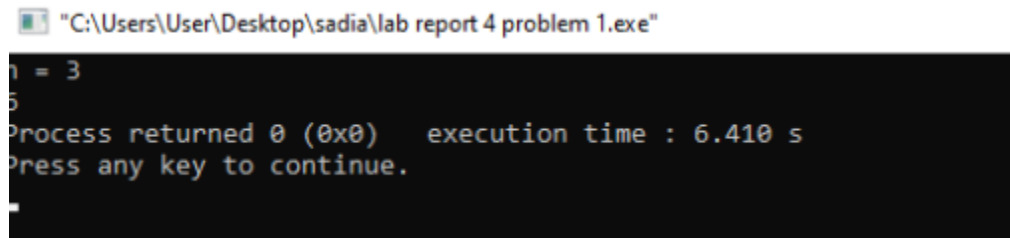
```
i++;
```

```
}
```

```
printf("%d",fact)
```

```
}
```

Output:



```
"C:\Users\User\Desktop\sadia\lab report 4 problem 1.exe"
n = 3
5
Process returned 0 (0x0)   execution time : 6.410 s
Press any key to continue.
_
```

2. Write a C program that will print following series up to Nth terms.

Input:

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

```
int main()
```

```
{
```

```
int N,i;
```

```
printf("input vaule of N :
```

```
");
```

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

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

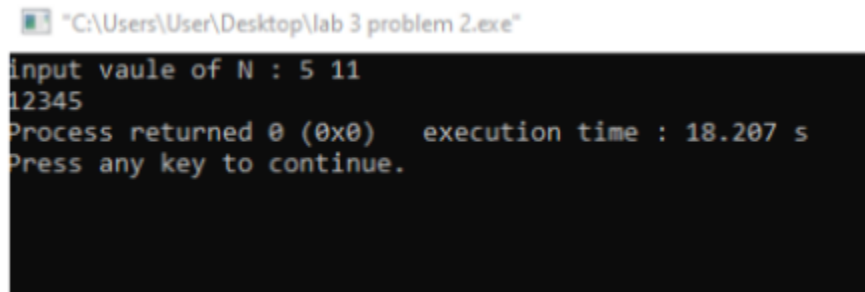
```
{
```

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

```
}
```

```
}
```

Output:



```
"C:\Users\User\Desktop\lab 3 problem 2.exe"  
input vaule of N : 5 11  
12345  
Process returned 0 (0x0) execution time : 18.207 s  
Press any key to continue.
```

3. Write a c program to print an odd series and find sum of the odd series.

Input:

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

```
int main()
```

```
{
```

```
int i,n, sum=0;
```

```
printf("input value of n:");
```

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

```
for(i=1;i<=2*n-1;i=i+2)
```

```
{
```

```
printf("%d\n",i);
```

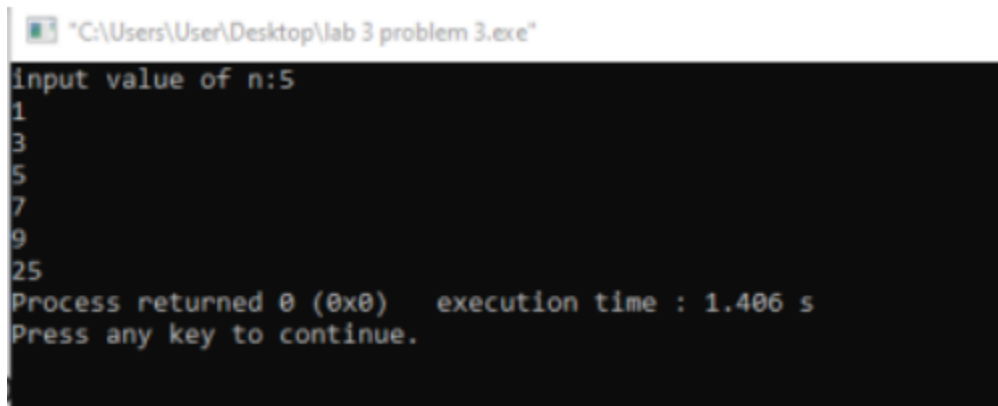
```
sum=sum+i;
```

```
}
```

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

```
}
```

Output:



```
"C:\Users\User\Desktop\lab 3 problem 3.exe"
input value of n:5
1
3
5
7
9
25
Process returned 0 (0x0)   execution time : 1.406 s
Press any key to continue.
```

4. Write a C program that will calculate the result for the first Nth terms of the

following series. [In that series sum, dot sign (.) means multiplication]

$1^2 \cdot 2 + 2^2 \cdot 3 + 3^2 \cdot 4 + 4^2 \cdot 5 + \dots$

Input:

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

```
int main()
```

```
{
```

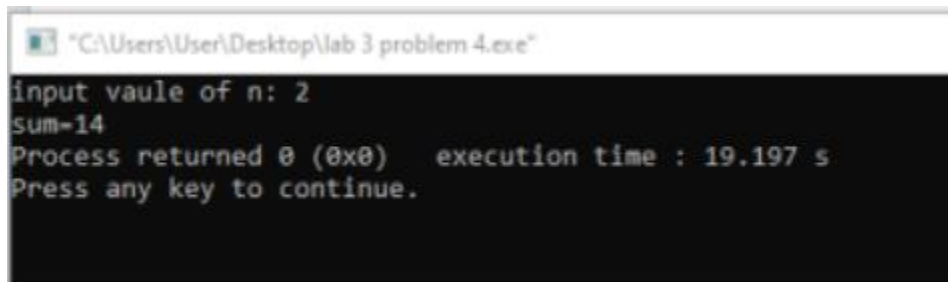
```
int i,t,sum=0,n;
```

```
printf("input vaule of n: ");
```

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

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

Output:



```
"C:\Users\User\Desktop\lab 3 problem 4.exe"  
input vaule of n: 2  
sum=14  
Process returned 0 (0x0) execution time : 19.197 s  
Press any key to continue.
```

5. Write a C programme to show the multiple table.

Input:

```
#include<stdio.h>

int main()
{
    while (1) {
        int num,i;
        printf("Enter any number : ");
        scanf("%d",&num);
        for(i=1;i<=10;i++)
        {
            printf("%d x %d = %d\n",num,i,num*i);
        }

    }

}
```

Output:

"C:\Users\ASUS\Documents\codeblocks\multiplication tab

```
Enter any number : 4
4 x 1 = 4
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4 x 5 = 20
4 x 6 = 24
4 x 7 = 28
4 x 8 = 32
4 x 9 = 36
4 x 10 = 40
Enter any number : 5
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50
Enter any number :
```

6. Write a program to calculate the factorial of the number .

Input:

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

```
int main()
```

```
{
```

```
    int n,i,fact=1;
```

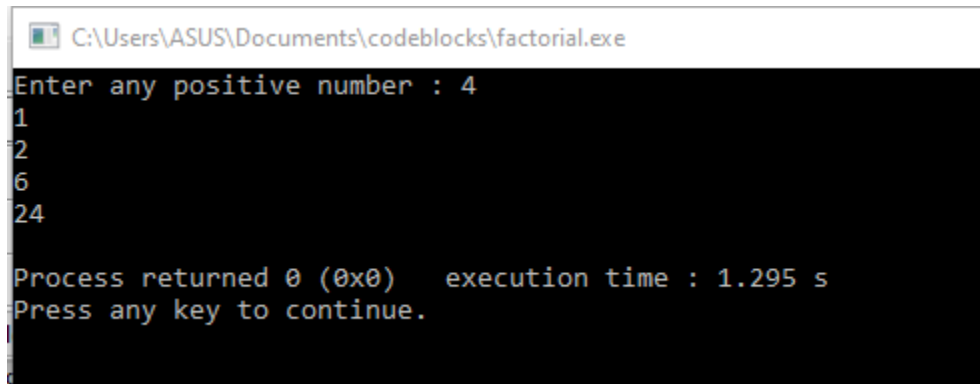
```
    printf("Enter any positive number : ");
```

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

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

```
{  
    fact = fact * i;  
    printf("%d\n",fact);  
  
}
```

Output:



The screenshot shows a Windows command prompt window titled "C:\Users\ASUS\Documents\codeblocks\factorial.exe". The prompt displays the following text: "Enter any positive number : 4". Below this, the numbers "1", "2", "6", and "24" are printed on separate lines, representing the factorial values for inputs 1 through 4. At the bottom, the text "Process returned 0 (0x0) execution time : 1.295 s" and "Press any key to continue." is visible.

7. Write a C programme to show the five star .

Input:

```
#include<stdio.h>  
  
int main()  
{  
    int i,n;  
    printf("n = ");  
    scanf("%d",&n);  
  
    for(i=1;i<=n;i++)
```



```

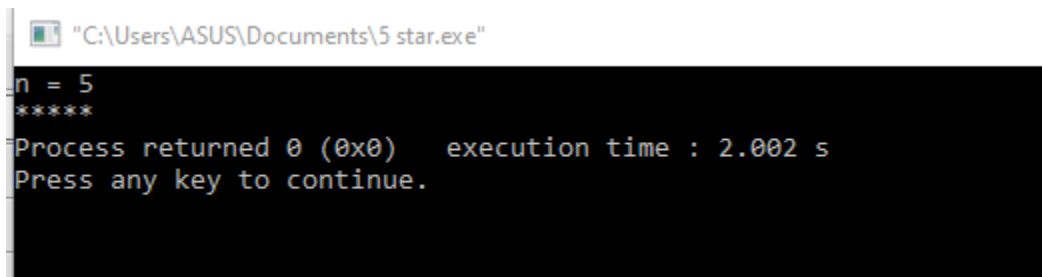
{
    printf("*",i);

}

}

```

Output:



```

C:\Users\ASUS\Documents\5 star.exe
n = 5
*****
Process returned 0 (0x0)   execution time : 2.002 s
Press any key to continue.

```

8 .Write a C programme 2 to 100 Even Number.

Input:

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

```
int main()
```

```
{
```

```
    int i,n;
```

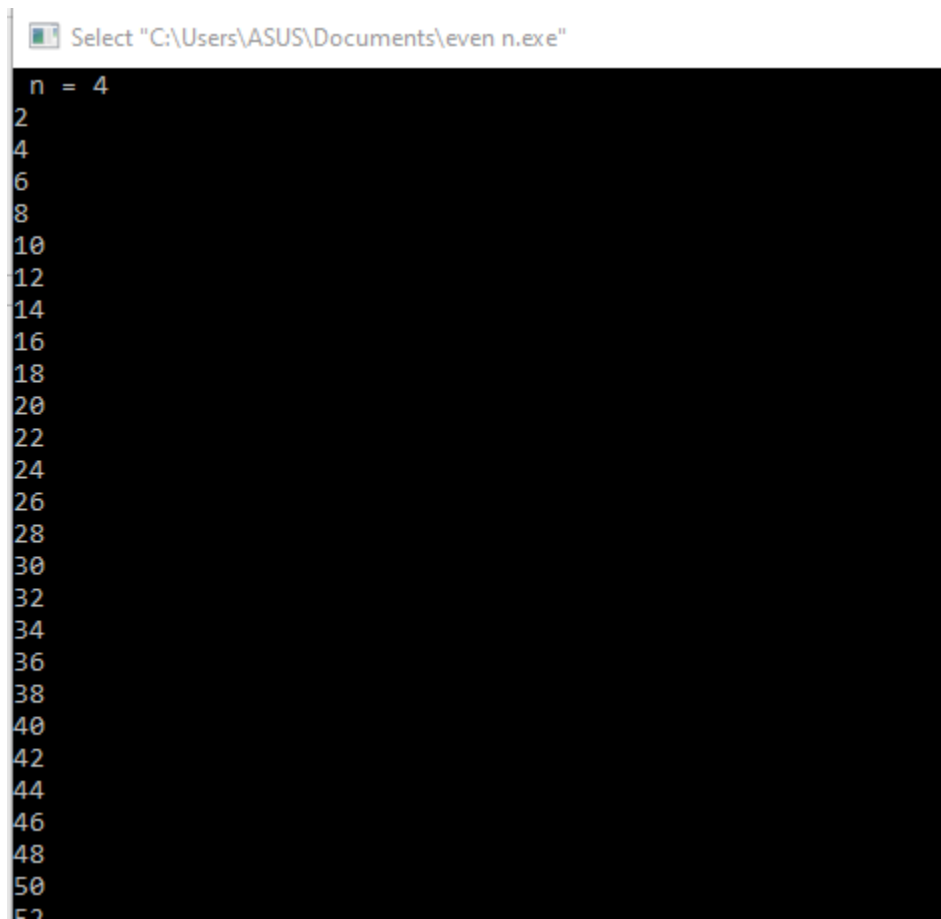
```
    printf(" n = ");
```

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

```
    for (i=2;i<=100;i=i+2)
```

```
{  
    printf("%d\n",i);  
}  
  
}
```

Output:



```
Select "C:\Users\ASUS\Documents\even n.exe"  
n = 4  
2  
4  
6  
8  
10  
12  
14  
16  
18  
20  
22  
24  
26  
28  
30  
32  
34  
36  
38  
40  
42  
44  
46  
48  
50  
52
```

9. Write a C programme to calculate lcd & gcm

Input:

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

```
int main()
```

```
{
```

```
    int num1,num2,n1,n2,rem,gcd,lcm;
```

```
    printf("Enter 2 number : ");
```

```
    scanf("%d %d",&num1,&num2);
```

```
        n1=num1;
```

```
        n2=num2;
```

```
    while (n2!=0)
```

```
    {
```

```
        rem=n1%n2;
```

```
        n1=n2;
```

```
        n2=rem;
```

```
    }
```

```
    gcd=n1;
```


```
lcm=(num1*num2)/gcd;
```

```
printf("GCD = %d\n",gcd);
```

```
printf("LCM = %d\n",lcm);
```

```
}
```

Output:

 "C:\Users\ASUS\Documents\codeblocks\lcm & gcm.exe"

```
Enter 2 number : 3 4
```

```
GCD = 1
```

```
LCM = 12
```

```
Process returned 0 (0x0)   execution time : 2.190 s
```

```
Press any key to continue.
```