LAB-8

1. Write a program in C to display the cube of the number upto given integer.

main.c

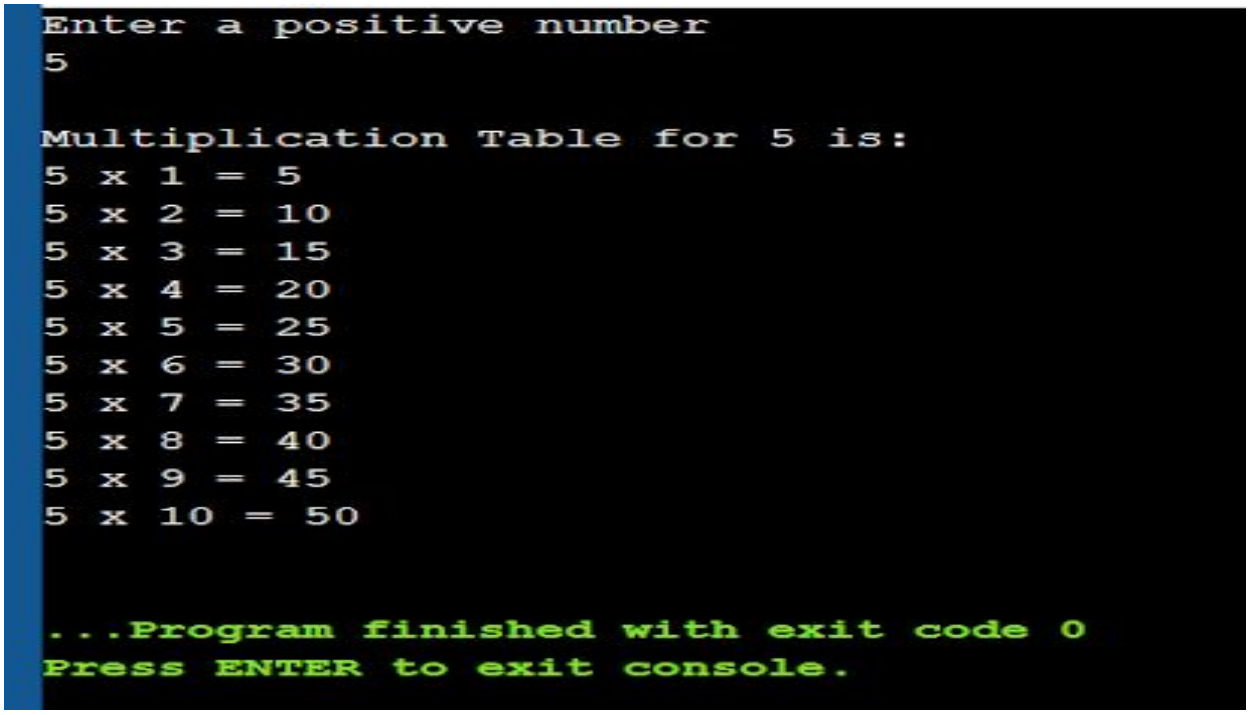
```c
#include<stdio.h>

int Calculte_Cube(int Number);

int main()
{
  int i,number, cube;

  printf(" \n Please Enter no. of terms: ");
  scanf("%d", &number);
  for(i=1;i<=number;i++)
  {
  cube = Calculte_Cube(i);

  printf("\n Cube of a given number %d is  =  %d", i, cube);
  }

  return 0;
}

int Calculte_Cube(int Number)
{
    return Number * Number * Number;
}
```

```
Please Enter no. of terms: 5

Cube of a given number 1 is   =   1
Cube of a given number 2 is   =   8
Cube of a given number 3 is   =   27
Cube of a given number 4 is   =   64
Cube of a given number 5 is   =   125

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

2. Write a program in C to display the multiplication table of a given integer.

main.c

```c
#include<stdio.h>

void tables(int);

int main()
{
    int num;

    printf("Enter a positive number\n");
    scanf("%d", &num);

    printf("\nMultiplication Table for %d is:\n", num);

    tables(num);

    return 0;
}

void tables(int num)
{
    int count;

    for(count = 1; count <= 10; count++)
    {
        printf("%d x %d = %d\n", num, count, num*count);
    }
}
```



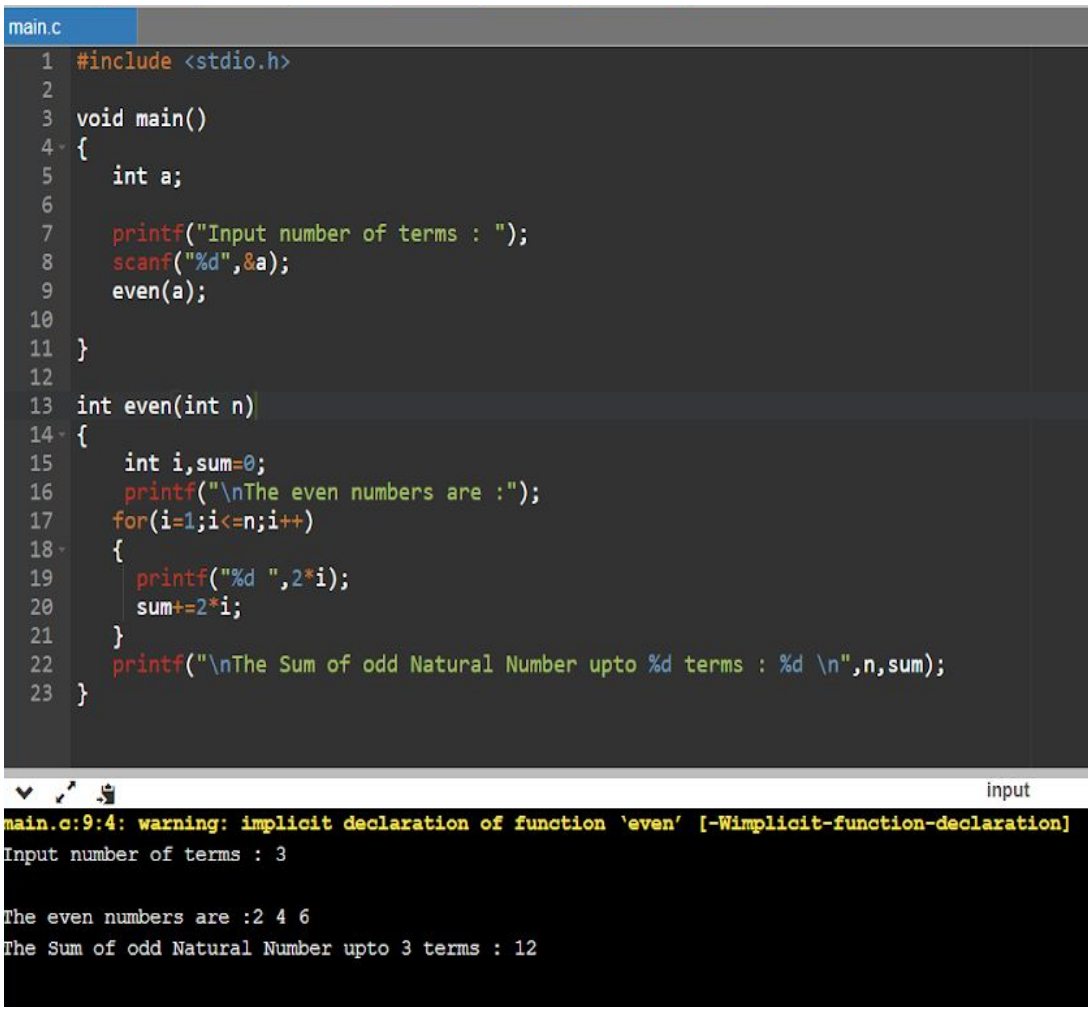
3. Write a program in C to display the n terms of odd natural number and their sum .
   Test Data
   Input number of terms : 10
   Expected Output :
   The odd numbers are :1 3 5 7 9 11 13 15 17 19
   The Sum of odd Natural Number upto 10 terms : 100

main.c

```c
#include <stdio.h>

void main()
{
   int a;

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

}

int odd(int n)
{
    int i,sum=0;
    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);
}
```

```
main.c:9:4: warning: implicit declaration of function
Input number of terms : 3

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


...Program finished with exit code 49
Press ENTER to exit console.
```

4. Write a program in C to display the n terms of even natural number and their sum.



```c
#include <stdio.h>

void main()
{
   int a;

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

}

int even(int n)
{
    int i,sum=0;
    printf("\nThe even numbers are :");
   for(i=1;i<=n;i++)
   {
     printf("%d ",2*i);
     sum+=2*i;
   }
   printf("\nThe Sum of odd Natural Number upto %d terms : %d \n",n,sum);
}
```

```
input
main.c:9:4: warning: implicit declaration of function 'even' [-Wimplicit-function-declaration]
Input number of terms : 3

The even numbers are :2 4 6
The Sum of odd Natural Number upto 3 terms : 12
```

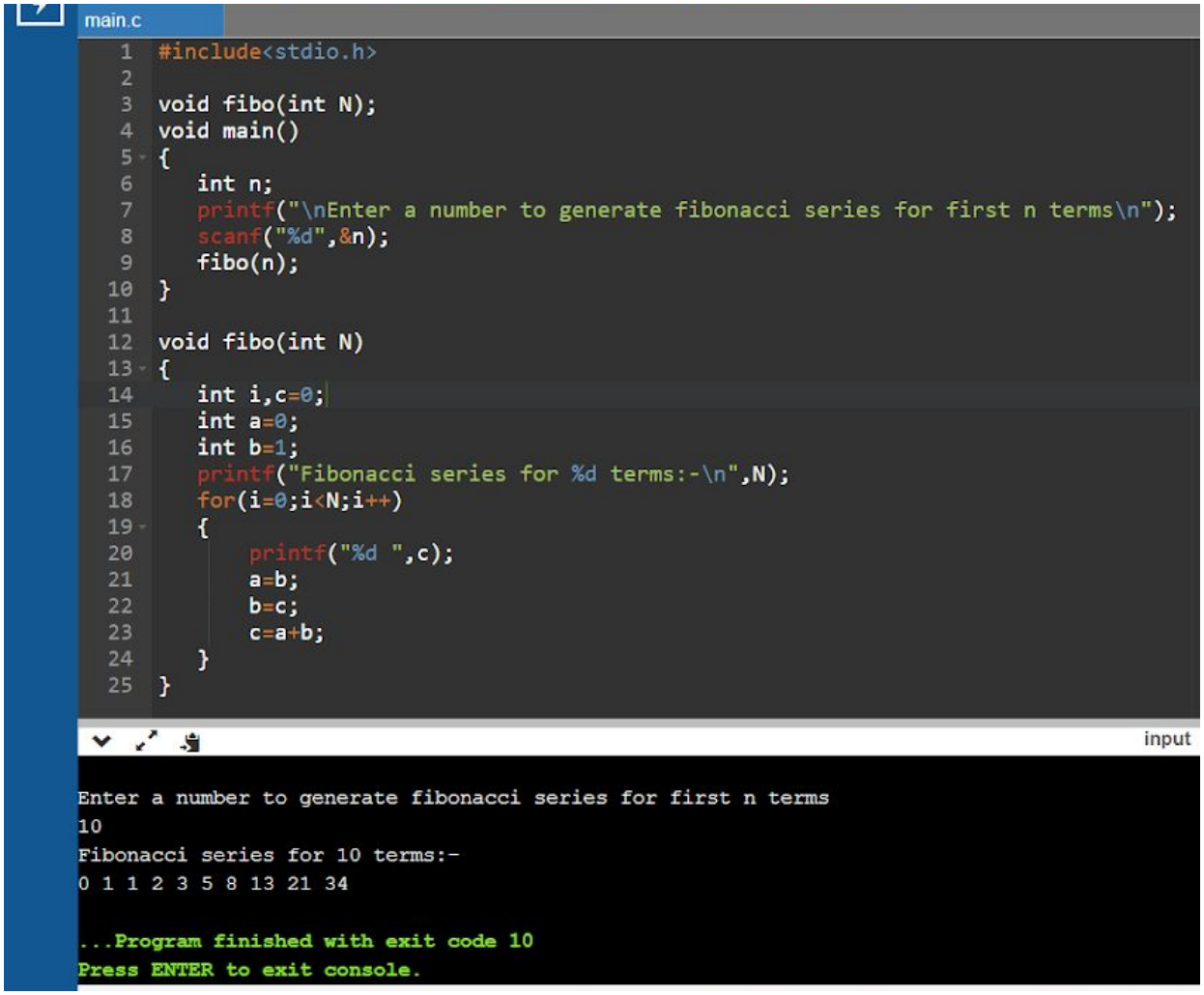
5. Write a C program to calculate the factorial of a given number.

main.c

```c
#include <stdio.h>

int fact(int);

void main()
{
 int n,factorial;

    printf("Enter a number to calculate it's factorial\n");
    scanf("%d",&n);
    factorial=fact(n);
    printf("Factorial of the num(%d) = %d\n",n,factorial);
}

int fact(int N)
{
    int i,f=1;
    for(i=1;i<=N;i++)
    {
        f=f*i;
    }
    return f;
}
```

```
Enter a number to calculate it's factorial
9
Factorial of the num(9) = 362880


...Program finished with exit code 33
Press ENTER to exit console.
```

6. Write a program in C to display the first n terms of Fibonacci series.
   Fibonacci series 0 1 2 3 5 8 13 .....
   Test Data :
   Input number of terms to display : 10
   Expected Output :
   Here is the Fibonacci series upto to 10 terms :
   0 1 1 2 3 5 8 13 21 34



7. Write a program in C swapping of two numbers using call by value and call by reference both.

   Call by reference

main.c

```c
#include <stdio.h>
 void swap(int*, int*);
 int main()
{
    int n1, n2;

    printf("Enter the value of n1 and n2\n");
    scanf("%d%d",&n1,&n2);

    printf("Before Swapping\nn1 = %d\nn2 = %d\n", n1, n2);

    swap(&n1, &n2);

    printf("After Swapping\nn1 = %d\nn2 = %d\n", n1, n2);

    return 0;
}
 void swap(int *n1, int *n2)
{
    int t;

    t = *n2;
    *n2= *n1;
    *n1 = t;
}
```

```
Enter the value of n1 and n2
23
45
Before Swapping
n1 = 23
n2 = 45
After Swapping
n1 = 45
n2 = 23


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

Call by Value

main.c

```c
#include <stdio.h>
 void swap(int, int);
 int main()
{
   int n1, n2;

   printf("Enter the value of n1 and n2\n");
   scanf("%d%d",&n1,&n2);

   printf("Before Swapping\nn1 = %d\nn2 = %d\n", n1, n2);

   swap(n1,n2);



   return 0;
}
 void swap(int n1, int n2)
{
   int t;

   t = n2;
   n2= n1;
   n1 = t;
    printf("After Swapping\nn1 = %d\nn2 = %d\n", n1, n2);
}

```

```
Enter the value of n1 and n2
1
23
Before Swapping
n1 = 1
n2 = 23
After Swapping
n1 = 23
n2 = 1


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