

# **202151160\_Lab6**

Name : Snehal Keshav Nalawade

ID : 202151160

1)

**Objective** : Displaying various star patterns viz. **a)** Isosceles triangle, and  
**b)** Right-angled triangle

**Software used** : Online GDB Compiler and Debugger for C (IDE)

**Methodology** : **a)** nested-for loop is used and the spaces and stars are printed such that an isosceles triangle is formed.  
**b)** nested-for loop is used to start printing stars from the very start of each new row/line such that the no. of stars in each row is equal to the row number.

**Algorithm** :

Step 1) Declare and initialize the required variable

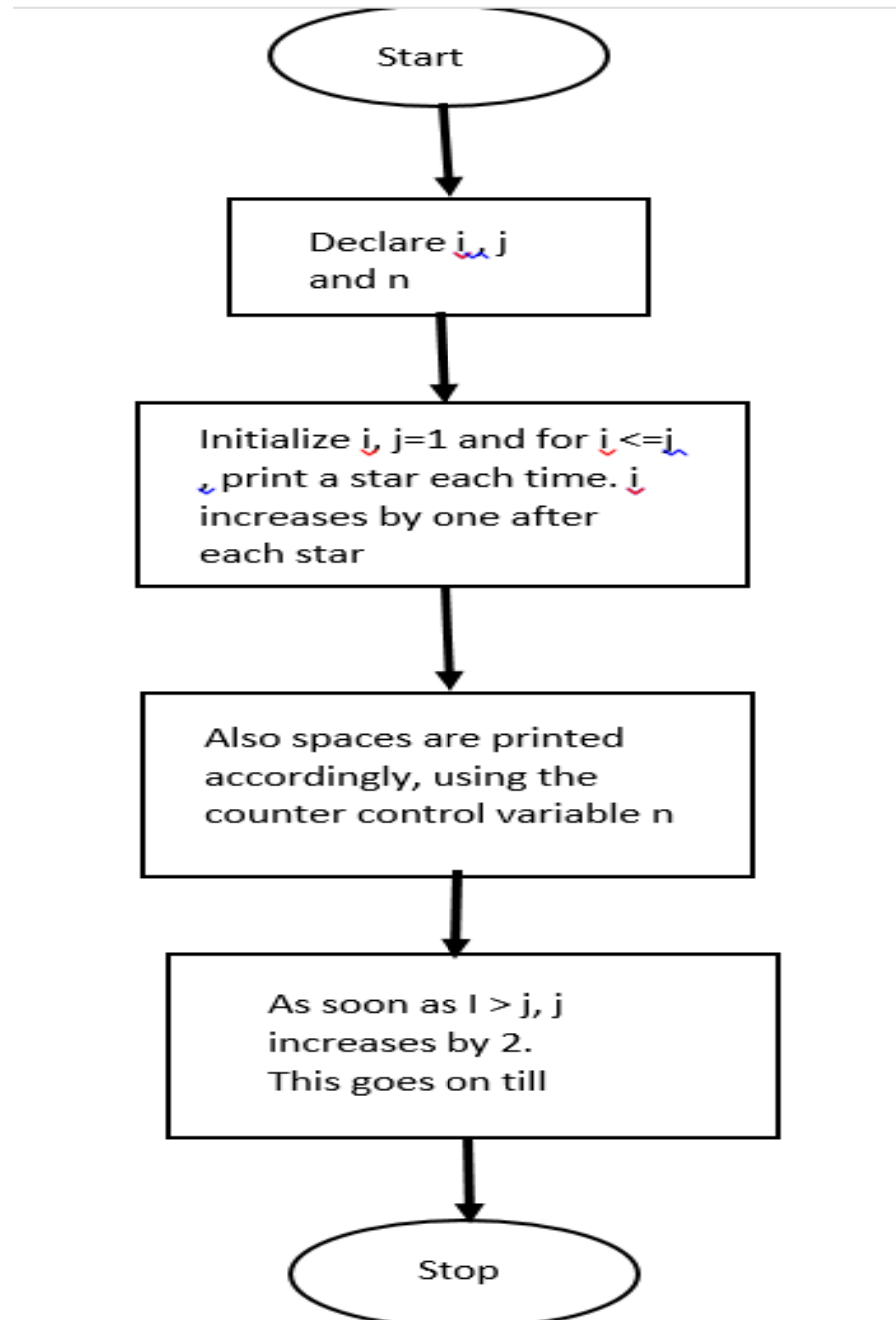
Step 2) Start the Nested-for loop

Step 3) use multiple counter variables to control the no. of stars and spaces in each row

Step 4) Stop

a)

Flowchart :



**/\* This C program is prepared by Snehal Nalawade**

**Roll No. : 202151160**

**Date of preparation : 02/02/2022**

**This C program prints an Isosceles triangle of 5 rows and is made up of stars. nested for loop is used in the program.**

**\*/**

**#include<stdio.h>**

**int main(void)**

**{ // opening of the main function**

**int n=1;**

**for(int j=1;j<10;j+=2)**

**{ // start of the nested for loop**

**for(int k=1;(n+k)<=5;k++)**

**{**

**printf(" "); // printing spaces**

**}**

**for(int i=1;i<=j;i++)**

**{**

**printf("\*"); // printing stars**

**}**

**printf("\n"); // taking cursor to the new line**

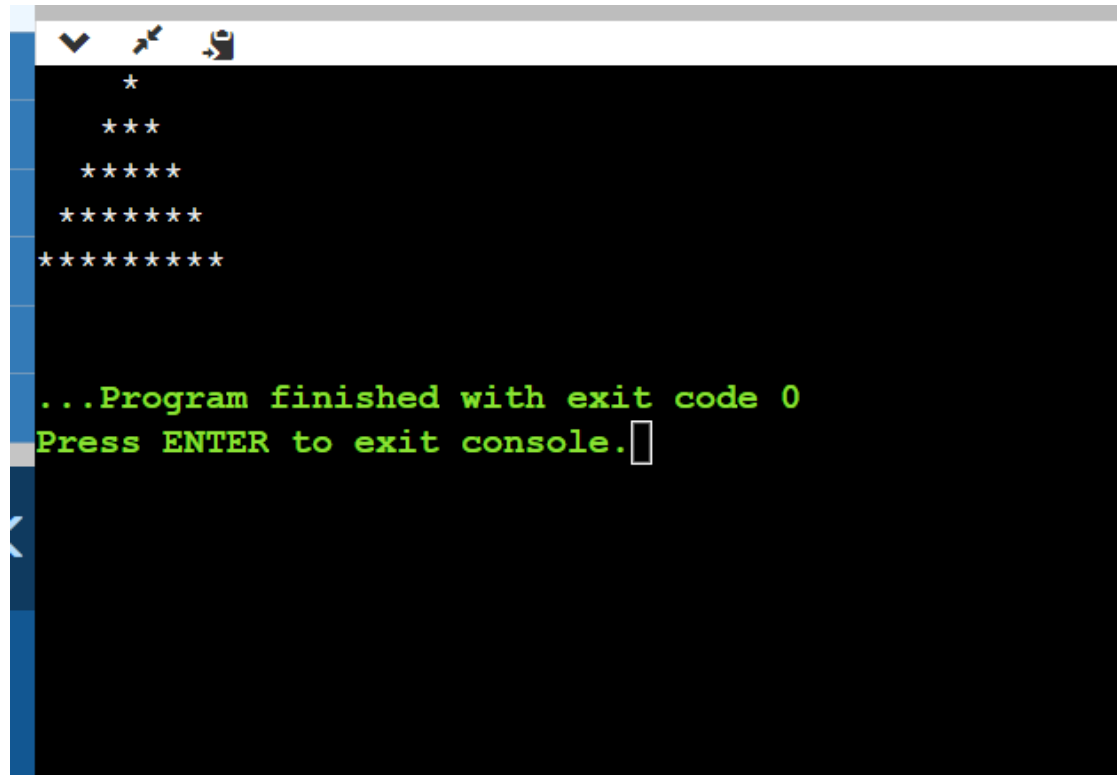
**n++;**

**}**

**return 0;**

**} // closing of the main function**

## Sample Output :



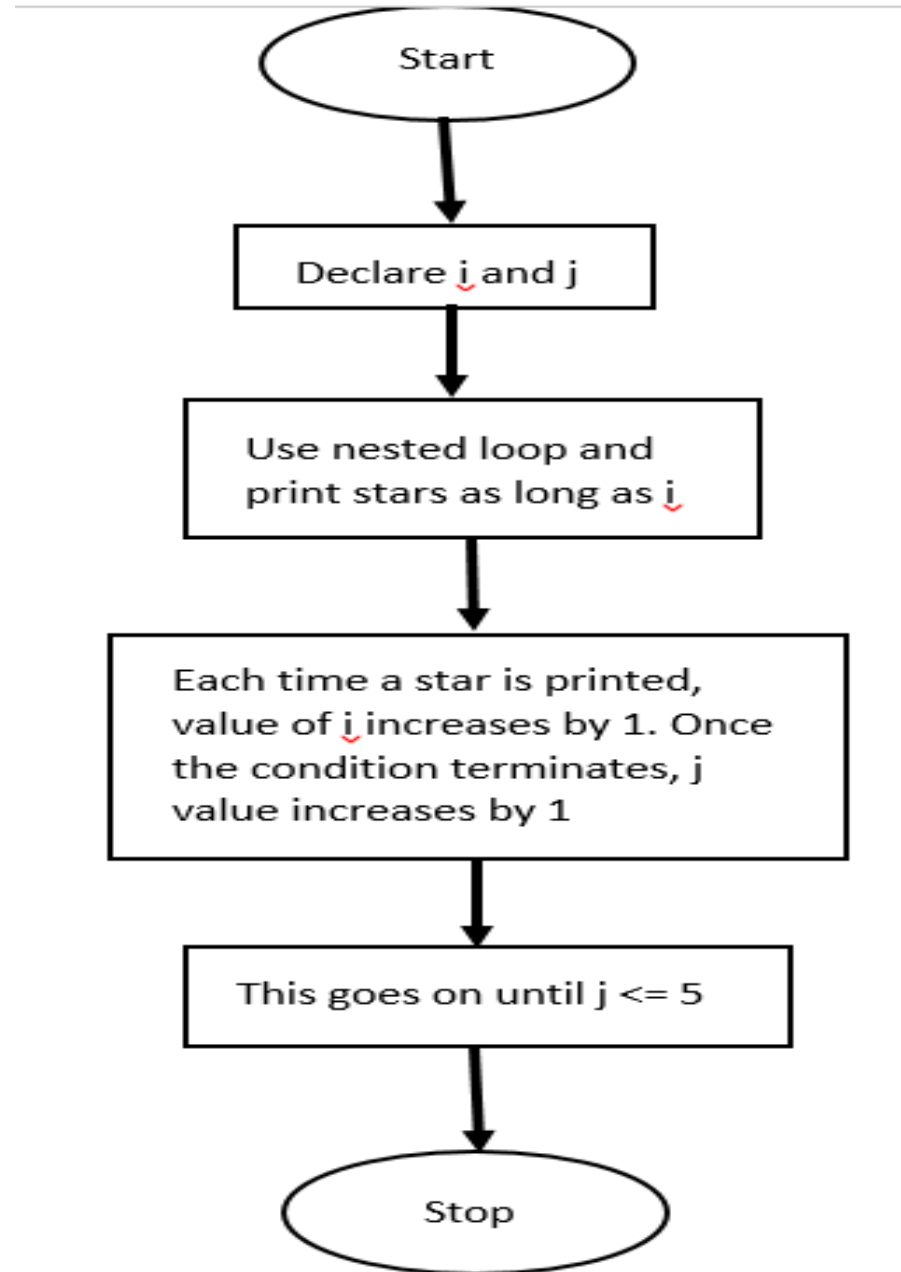
```
*
***
*****
*****
*****

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

**Conclusion:** The C code has been executed successfully and the desired results are obtained.

b)

Flowchart :



**Code :**

```
/* This C program is prepared by Snehal Nalawade
```

**Roll No. : 202151160**

**Date of preparation : 02/02/2022**

**This program prints a right-angled triangle of stars. the triangle has 5 rows in total. nested for loop is used here.**

```
#include<stdio.h>           // importing of standard input/output header files
```

```
int main(void)
```

```
{ // opening of the main function
```

```
for(int i=1;i<=5;i++)
```

```
{ // start of the nested for loop
```

```
printf(" ");
```

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

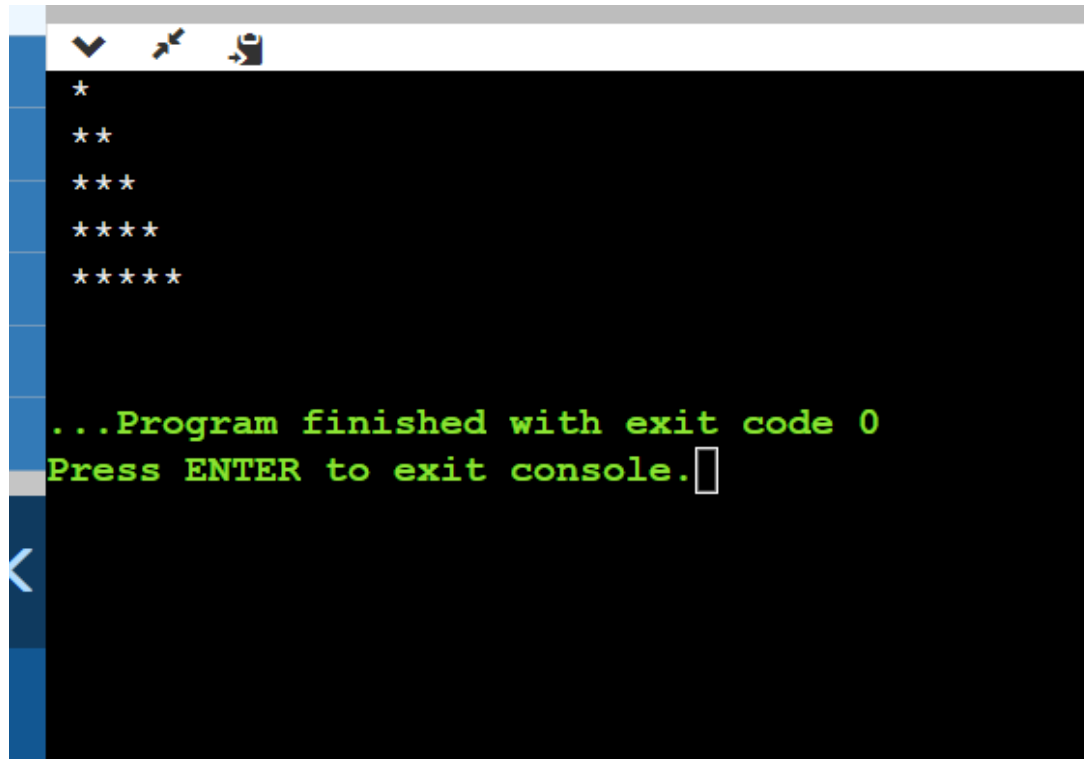
```
{
    printf("*");
```

```
}  
printf("\n");    // takes the cursor to the new line
```

```
}  
return 0;
```

```
} // closing of the main function
```

## Sample Output :



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

**Conclusion:** The C code has been executed successfully and the desired results are obtained.



2)

**Objective** : To display the Fibonacci series upto 100

**Software used** : Online GDB Compiler and Debugger for C (IDE)

**Methodology / Algorithm :**

Step 1) Start

Step 2) declare and initialize variables a and b and also print them

Step 3) add the above two variables and print the sum

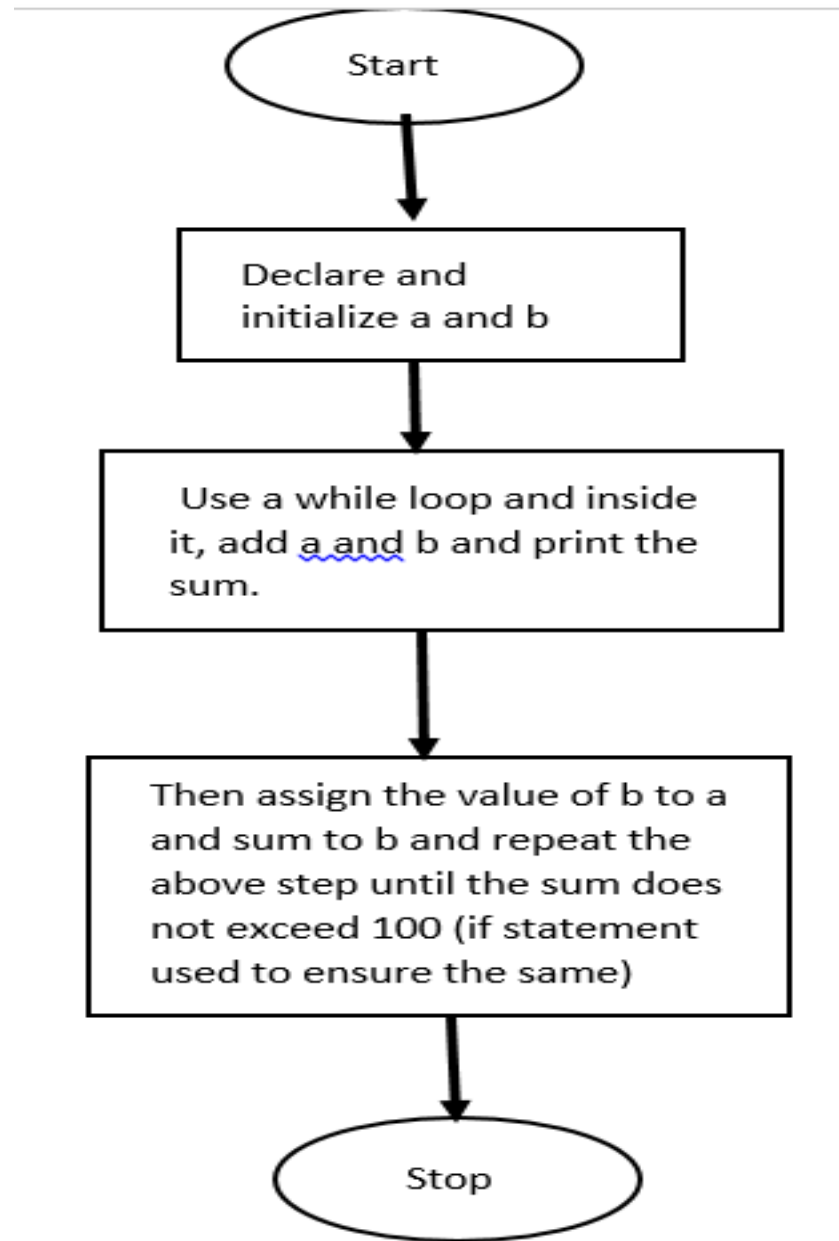
Step 4) substitute the value of b to a and sum to b

Step 5) Repeat the steps 3 to 5, until the sum  $\leq 100$

Step 6) Also use an if statement to ensure that no number greater than 100 is printed

Step 7) Stop

## Flowchart :



## Code :

**/\* This C program is prepared by Snehal Nalawade**

**Roll No. : 202151160**

**Date of preparation : 02/02/2022**

**This program prints Fibonacci series upto 100 (in a line).**

**\*/**

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

```
int main(void)
```

```
{           // opening of the main function
```

```
    int a=0, b=1, c;
```

```
    printf(" %d %d",a, b);
```

```
    while(c<=100)
```

```
    {           // start of the while loop
```

```
        c=a+b;      // adding the first two variables and storing in var c
```

```
        if(c<=100)
```

```
            printf(" %d",c); // printing the sum
```

```
        a=b;
```

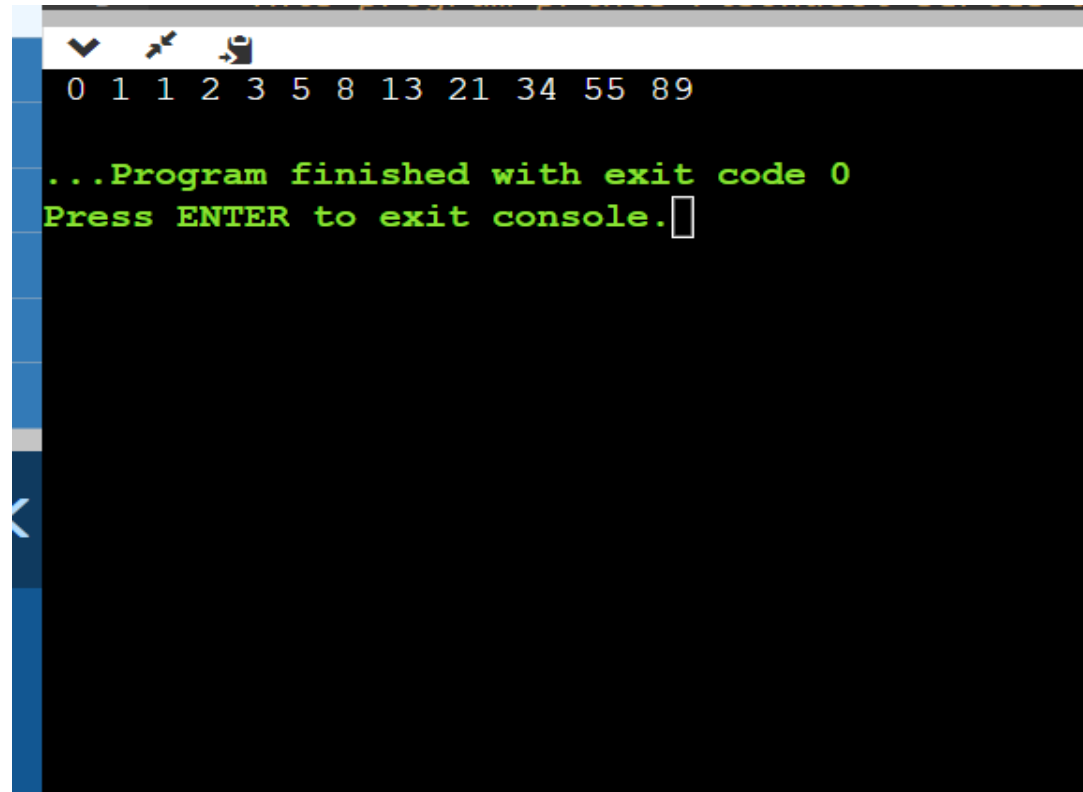
```
        b=c;
```

```
    }
```

```
    return 0;
```

```
}           // closing of the main function
```

## Sample Output :



```
0 1 1 2 3 5 8 13 21 34 55 89
...Program finished with exit code 0
Press ENTER to exit console.
```

**Conclusion:** The C code has been executed successfully and the desired results are obtained.

**Thank you**