

NAME: CHANDAN KUMAR

CLASS ROLL NO. : 25

SECTION: I

DATE: 17th NOVEMBER 2020

ASSIGNMENT NUMBER - 8

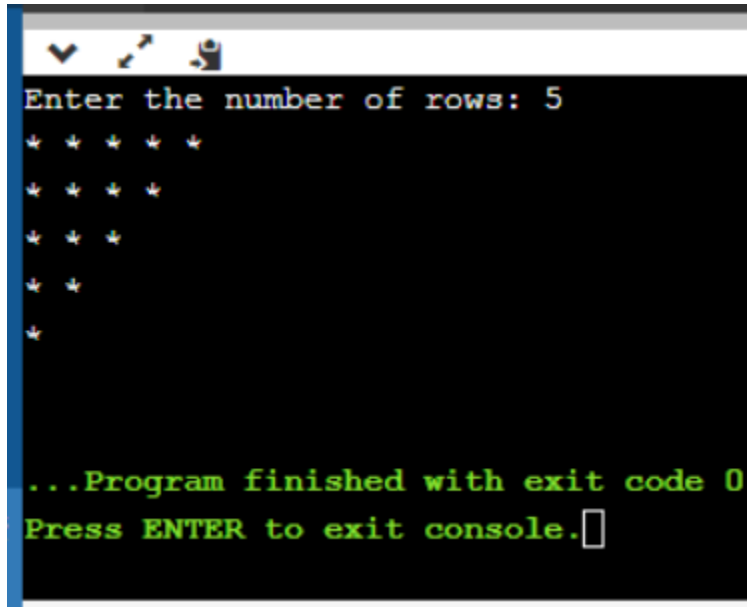
Pattern 1:

Source Code:

```
#include <stdio.h>

int main() {
    int i, j, rows;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = rows; i >= 1; --i) {
        for (j = 1; j <= i; ++j) {
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

Output:



```
Enter the number of rows: 5
* * * * *
* * * *
* * *
* *
*

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

Pattern 3 :

Source Code:

```
#include<stdio.h>
int main()
{
    int i, j, N, columns;
    printf("Enter number of columns:");
    scanf("%d",&N);
    columns=1;
    for(i=1;i<N*2;i++)
    {
        for(j=1; j<=columns; j++)
        {
            printf("*");
        }
        if(i < N)
        {
            columns++;
        }
        else
        {
            columns--;
        }
        printf("\n");
    }

    return 0;
}
```

Output:

```
27
Enter number of columns:5
*
**
***
****
*****
****
***
**
*
```

Pattern 4:

Source Code:

```
#include<stdio.h>

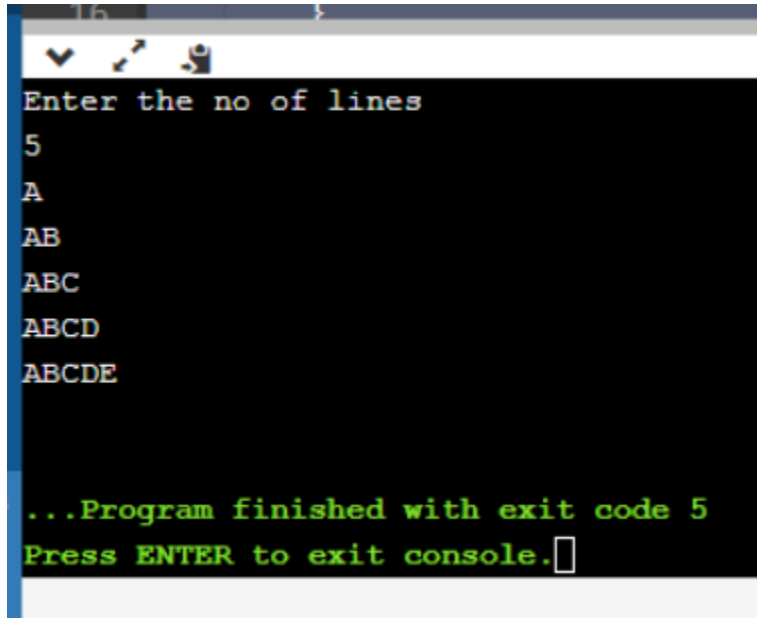
void main()
{
    int i,j,n;

    printf("Enter the no of lines\n");
    scanf("%d",&n);

    for(i=1;i<=n;i++)
    {
        for(j=1;j<=i;j++)
        {
            printf("%c",(char)(j+64));
        }

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

Output:

A screenshot of a console window with a black background and white text. The window has a title bar at the top with the text "16" and a close button. Below the title bar, there are three icons: a checkmark, a magnifying glass, and a person. The main area of the console displays the following text: "Enter the no of lines", "5", "A", "AB", "ABC", "ABCD", "ABCDE". At the bottom, there is a green message: "...Program finished with exit code 5" and "Press ENTER to exit console." followed by a small white square cursor.

```
16 }  
Enter the no of lines  
5  
A  
AB  
ABC  
ABCD  
ABCDE  
  
...Program finished with exit code 5  
Press ENTER to exit console.
```

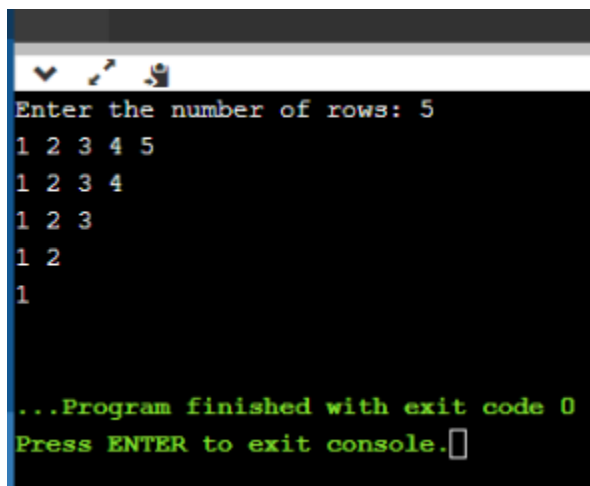
Pattern 5:

Source Code:

```
#include <stdio.h>

int main() {
    int i, j, rows;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = rows; i >= 1; --i) {
        for (j = 1; j <= i; ++j) {
            printf("%d ", j);
        }
        printf("\n");
    }
    return 0;
}
```

Output:



```
Enter the number of rows: 5
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
...Program finished with exit code 0
Press ENTER to exit console.
```

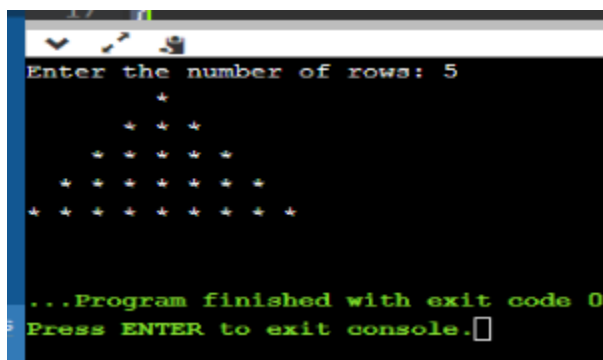

Pattern 6:

Source Code:

```
#include <stdio.h>

int main() {
    int i, space, rows, k = 0;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; ++i, k = 0) {
        for (space = 1; space <= rows - i; ++space) {
            printf(" ");
        }
        while (k != 2 * i - 1) {
            printf("* ");
            ++k;
        }
        printf("\n");
    }
    return 0;
}
```

Output:



```
Enter the number of rows: 5
  *
 * * *
* * * * *
* * * * * *
* * * * * * *
...Program finished with exit code 0
Press ENTER to exit console.
```

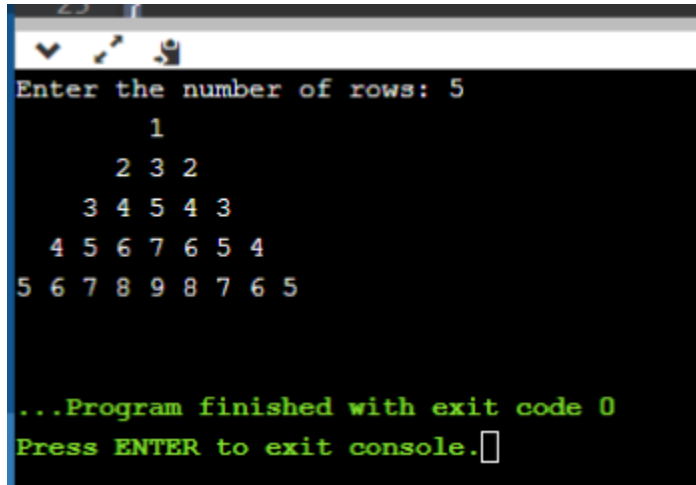
Pattern 7:

Source Code:

```
#include <stdio.h>

int main() {
    int i, space, rows, k = 0, count = 0, count1 = 0;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; ++i) {
        for (space = 1; space <= rows - i; ++space) {
            printf(" ");
            ++count;
        }
        while (k != 2 * i - 1) {
            if (count <= rows - 1) {
                printf("%d ", i + k);
                ++count;
            } else {
                ++count1;
                printf("%d ", (i + k - 2 * count1));
            }
            ++k;
        }
        count1 = count = k = 0;
        printf("\n");
    }
    return 0;
}
```

Output:



```
Enter the number of rows: 5
  1
 2 3 2
3 4 5 4 3
4 5 6 7 6 5 4
5 6 7 8 9 8 7 6 5

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

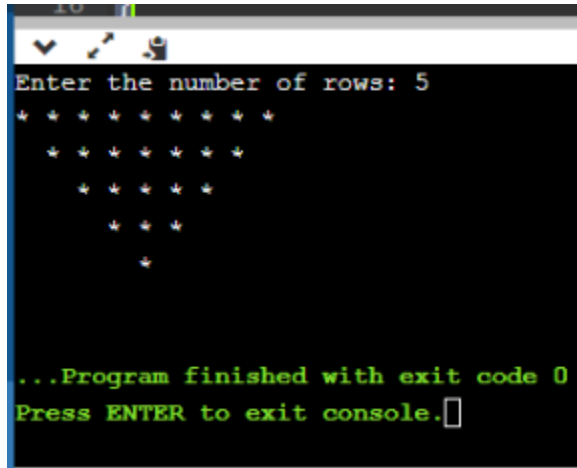
Pattern 8:

Source Code:

```
#include <stdio.h>

int main() {
    int rows, i, j, space;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = rows; i >= 1; --i) {
        for (space = 0; space < rows - i; ++space)
            printf(" ");
        for (j = i; j <= 2 * i - 1; ++j)
            printf("* ");
        for (j = 0; j < i - 1; ++j)
            printf("* ");
        printf("\n");
    }
    return 0;
}
```

Output:



```
10
Enter the number of rows: 5
* * * * *
 * * * * *
  * * * *
   * * *
    * *
     *

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

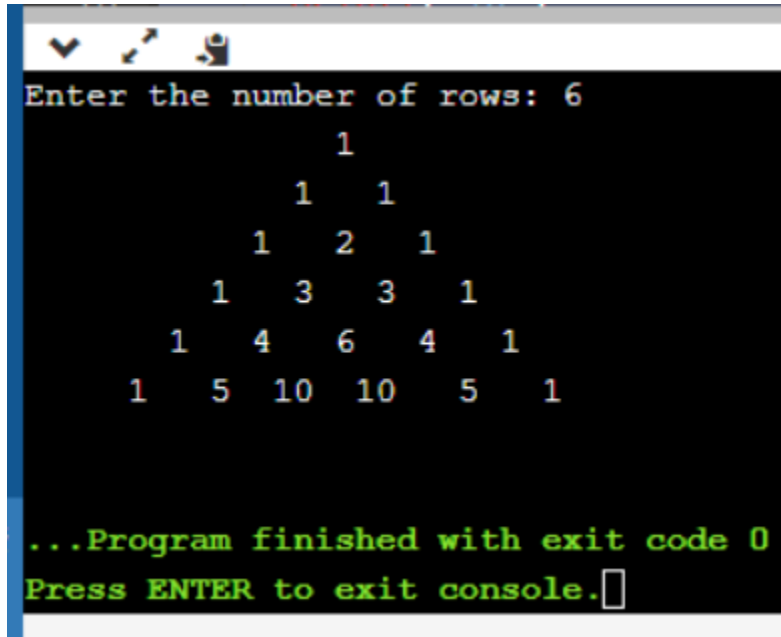
Pattern 9:

Source Code:

```
#include <stdio.h>

int main() {
    int rows, coef = 1, space, i, j;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 0; i < rows; i++) {
        for (space = 1; space <= rows - i; space++)
            printf(" ");
        for (j = 0; j <= i; j++) {
            if (j == 0 || i == 0)
                coef = 1;
            else
                coef = coef * (i - j + 1) / j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```

Output:



```
Enter the number of rows: 6

      1
     1 1
    1 2 1
   1 3 3 1
  1 4 6 4 1
 1 5 10 10 5 1

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

The screenshot shows a console window with a black background and white text. At the top, there are three small icons: a checkmark, a magnifying glass, and a person. Below these, the text "Enter the number of rows: 6" is displayed. This is followed by six rows of Pascal's triangle, where each number is the sum of the two numbers directly above it. The numbers are centered and spaced out. At the bottom, the text "...Program finished with exit code 0" and "Press ENTER to exit console." is shown in a green monospace font.

Pattern 10:

Source Code:

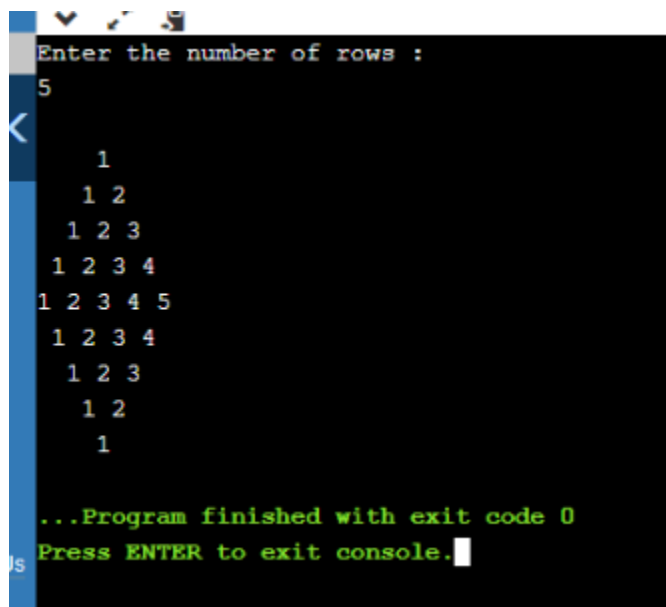
```
#include <stdio.h>

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



```
        for(int j=1;j<=n-i;j++)
        {
            printf("%d ",j);
        }
    }
    return 0;
}
```

Output:



The screenshot shows a terminal window with a black background and white text. At the top, it says "Enter the number of rows :". Below that, the number "5" is entered. The program then prints a 5x5 Pascal's triangle pattern. The first row has one '1', the second row has two '1's, and so on, up to five '1's in the fifth row. The pattern is centered. At the bottom, it says "...Program finished with exit code 0" and "Press ENTER to exit console." with a cursor.

```
Enter the number of rows :
5
    1
   1 2
  1 2 3
 1 2 3 4
1 2 3 4 5
 1 2 3 4
  1 2 3
   1 2
    1

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

Pattern 11:

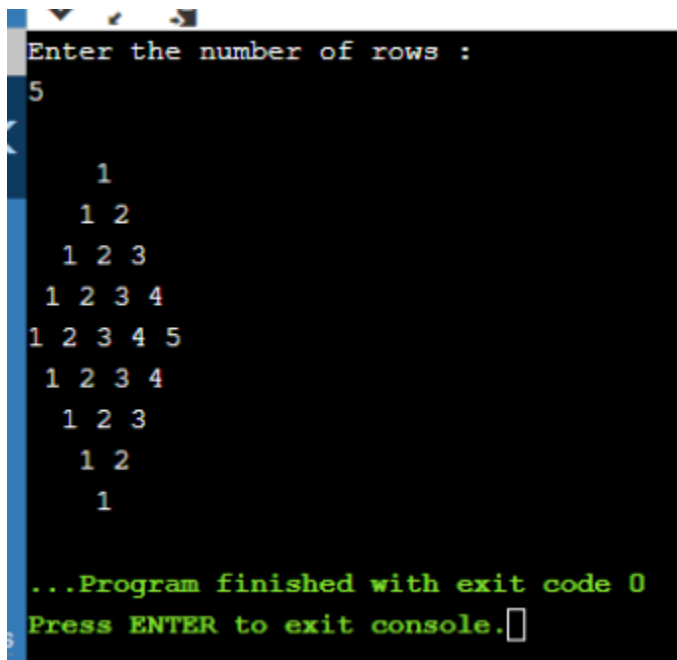
Source Code:

```
#include <stdio.h>

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

```
        for(int j=1;j<=n-i;j++)
        {
            printf("%d ",j);
        }
    }
    return 0;
}n 0;
}
```

Output:



```
Enter the number of rows :
5

    1
   1 2
  1 2 3
 1 2 3 4
1 2 3 4 5
 1 2 3 4
  1 2 3
   1 2
    1

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

Pattern 12:

Source Code:

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

    printf("Enter number of rows: ");
    scanf("%d",&n);

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

        for(j=1;j<=n-i;j++)
        {
            printf(" ");
        }

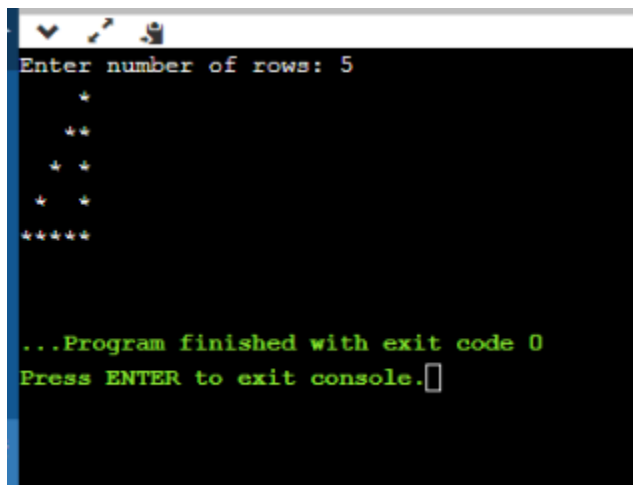
        if(i==1 || i==n)
            for(j=1;j<=i;j++)
            {
                printf("*");
            }
        else
        {
```

```
        for(j=1;j<=i;j++)
        {
            if(j==1 || j==i)
                printf("*");
            else
                printf(" ");
        }
    }
    printf("\n");

}

return 0;
}
```

Output:



The screenshot shows a terminal window with a black background. At the top, it says "Enter number of rows: 5". Below this, there is a pattern of stars: the first row has 1 star, the second has 2, the third has 3, the fourth has 4, and the fifth has 5. The stars are arranged in a right-angled triangle. At the bottom, it says "...Program finished with exit code 0" and "Press ENTER to exit console." followed by a cursor icon.

Pattern 13:

Source Code:

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

```
int main()
```

```
{
```

```
    int i ,j;
```

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

```
    {
```

```
        for(j=i;j<5;j++)
```

```
        {
```

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

```
        }
```

```
        for(j=1;j<=5;j++)
```

```
        {
```

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

```
        }
```

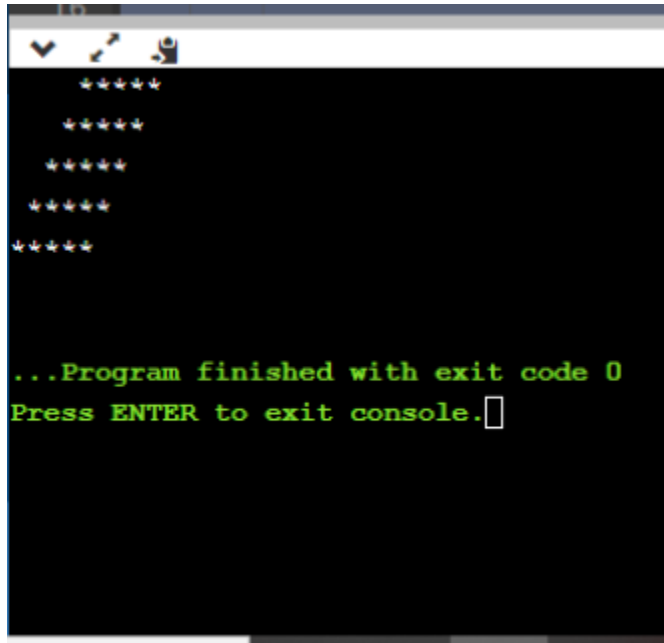
```
        printf("\n");
```

```
    }
```

```
    return 0;
```

```
}
```

Output:



A screenshot of a console window with a black background and green text. The window has a standard title bar and a toolbar with icons for zooming and other functions. The output consists of five lines of five asterisks each, followed by a message indicating the program finished with exit code 0 and a prompt to press ENTER to exit the console.

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

Pattern 14:

Source Code:

```
//15
```

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

```
int main()
```

```
{
```

```
    int i ,j;
```

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

```
    {
```

```
        for(j=i;j<5;j++)
```

```
        {
```

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

```
        }
```

```
        for(j=1;j<=5;j++)
```

```
        {
```

```
            if(i==1 || i==5 || j==1 || j==5)
```

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

```
            else
```

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

```
        }
```

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

```
    }
```

```
    return 0;
```

```
}
```


Output:

