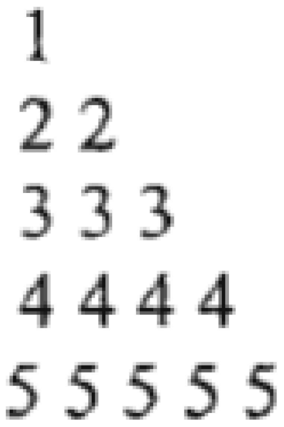
Pattern

```
main()
{
    int  i,j,n;
    printf(“Enter  n  :  ”);
    scanf(“%d”,&n);

    for(i=1;i<=n;i++)
    {
        for(j=1;j<=i;j++)
            printf(“*  “);
        printf(“\n”);    /*for  next  line  of  pyramid*/
    }
}
```

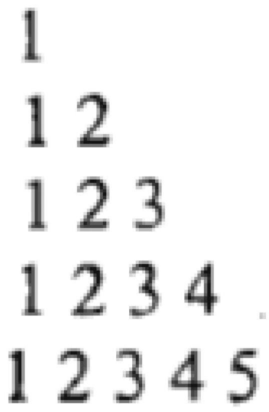
```
*
* *
* * *
* * * *
* * * * *
```

- The outer for loop is for number of lines and the inner loop is for number of stars in each line.
- The number of stars is equal to the line number, hence the inner loop will execute once for first line, twice for second line, thrice for third line and so on;



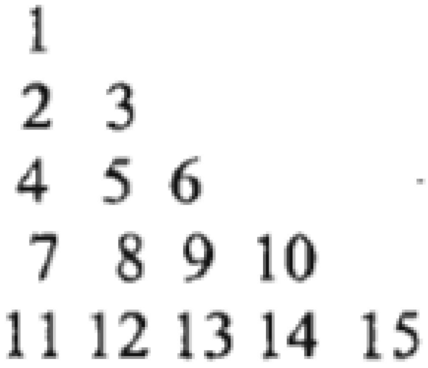
```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

- In the last program, if we print the value of i, then we'll get this pyramid



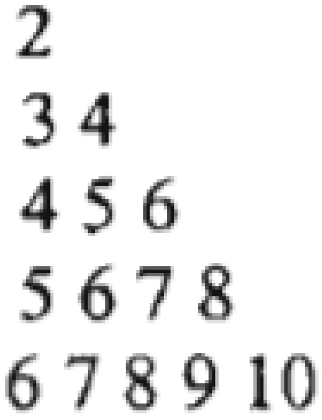
```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

- In the last program, if we print the value of j, then we'll get this pyramid



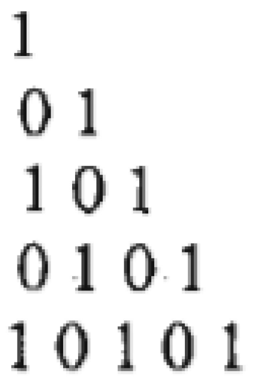
```
 1
 2  3
 4  5  6
 7  8  9 10
11 12 13 14 15
```

- In the last program, if we take a variable p = 1, and write the printf statement as printf("%3d", p++);



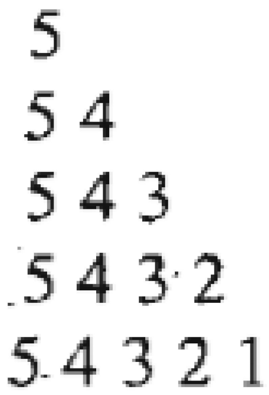
```
2
3 4
4 5 6
5 6 7 8
6 7 8 9 10
```

- In the last program, if we print the value of i+j, then we'll get this pyramid



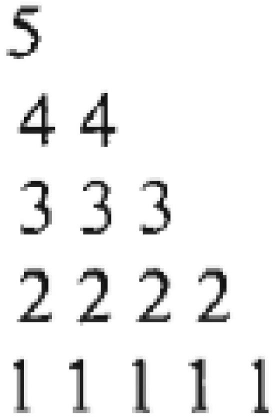
```
1
0 1
1 0 1
0 1 0 1
1 0 1 0 1
```

- In the last program, if we print 1 if (i+j) is even and print 0 if (i+j) is odd, then we'll get this pyramid



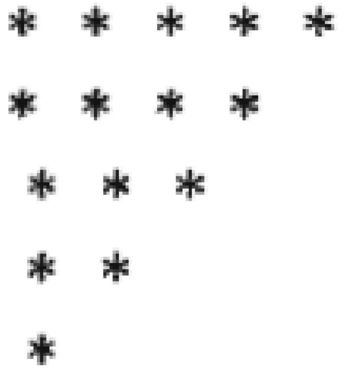
```
5
5 4
5 4 3
5 4 3 2
5 4 3 2 1
```

- In the last program, if we print (n+ 1-j), then we'll get this pyramid

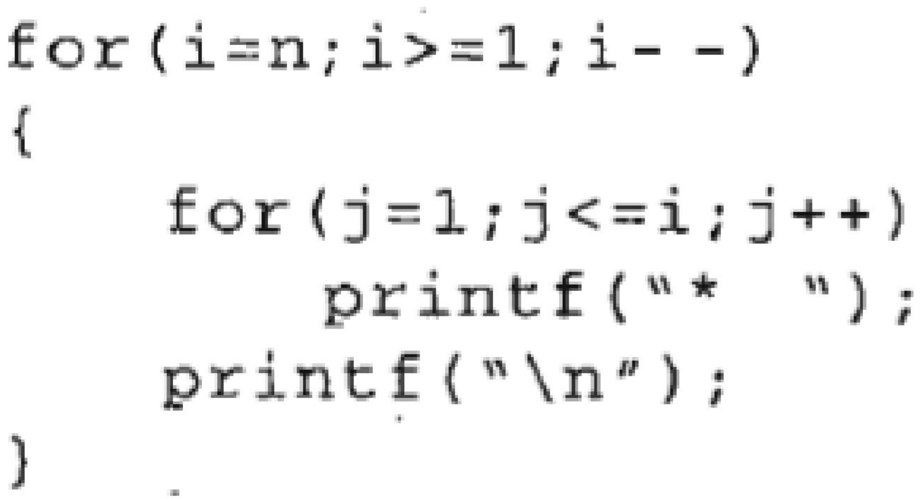


```
5
4 4
3 3 3
2 2 2 2
1 1 1 1 1
```

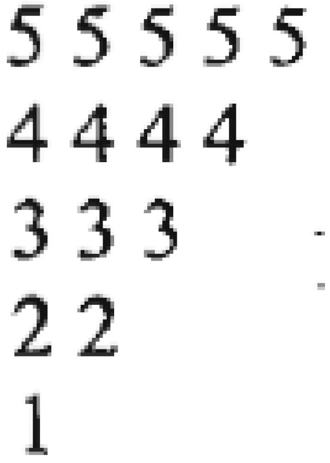
- In the last program, if we print (n+ 1-i), then we'll get this pyramid



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

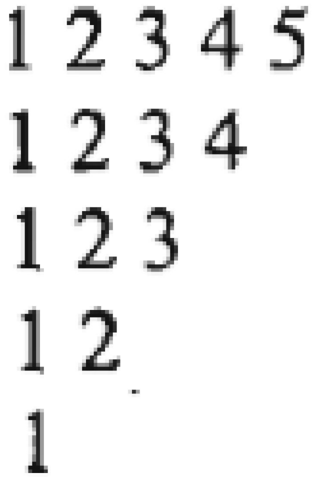


```
for(i=n;i>=1;i- -)
{
     for(j=1;j<=i;j++)
          printf("*  ");
     printf("\n");
}
```



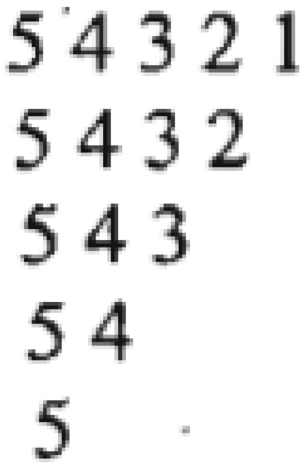
```
5 5 5 5 5
4 4 4 4
3 3 3
2 2
1
```

- In the previous program, if we print i, then we'll get this pyramid



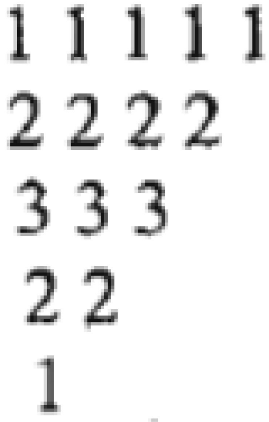
```
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
```

- In the previous program, if we print j, then we'll get this pyramid



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

- In the previous program, if we print (n+ 1-j), then we'll get this pyramid

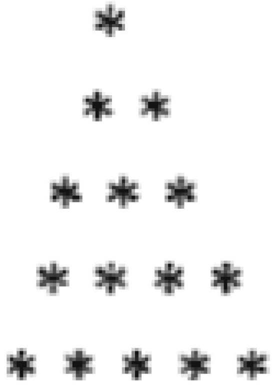


```
1 1 1 1 1
2 2 2 2
3 3 3
2 2
1
```

- In the previous program, if we print (n+ 1-i), then we'll get this pyramid

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

```
for(i=1;i<=n;i++)          /*loop for number of lines*/
{
    for(j=1;j<=n-i;j++)    /*loop for printing spaces*/
        printf("  ");
    for(j=1;j<=i;j++)      /*loop for printing stars*/
        printf("*");
    printf("\n");          /*for next line of pyramid*/
}
```

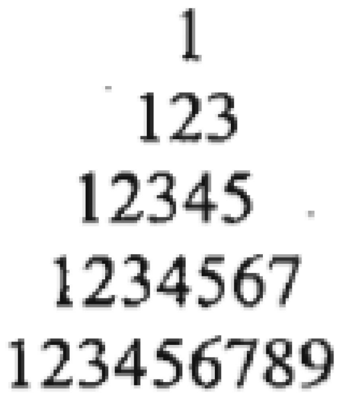


```
    *
   * *
  * * *
 * * * *
* * * * *
```

- In the previous program, if a space is given after star in the printf statement, then we'll get this pyramid

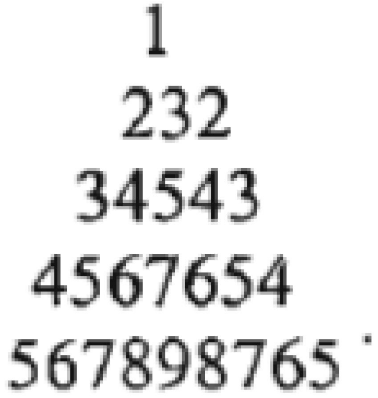
```
    *
   ***
  *****
 *******
*********
```

```
for  (i=1;i<=n;i++)            /*loop for number of lines in pyramid*/
{
    for(j=1;j<=n-i;j++)        /*loop for spaces (first part)*/
        printf("  ");
    for(j=1;j<=i;j++)          /*loop for second part*/
        printf("*");
    for(j=1;j<i;j++)           /*loop for third part*/
        printf("*");           /*for next line of pyramid*/
    printf("\n");
}
```



```
    1
   123
  12345
 1234567
123456789
```

- In the previous program, if we initialize the value of p with 1 each time before second inner for loop; and then print the value of p++ in the last two for loops.



```
    1
   232
  34543
 4567654
567898765
```

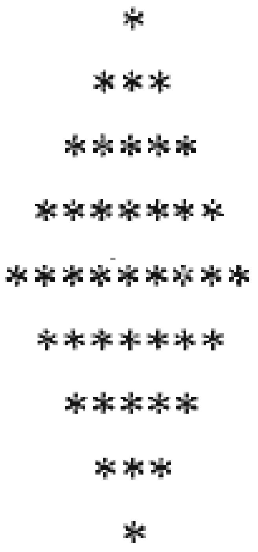
- In the previous program, if we initialize the value of p with i before second inner for loop, and then print the value of p++ in second for loop.
- After this the value of p is decreased by 1 and then the value of - -p is printed in the third for loop.

```
    5
   545
  54345
 5432345
543212345
```

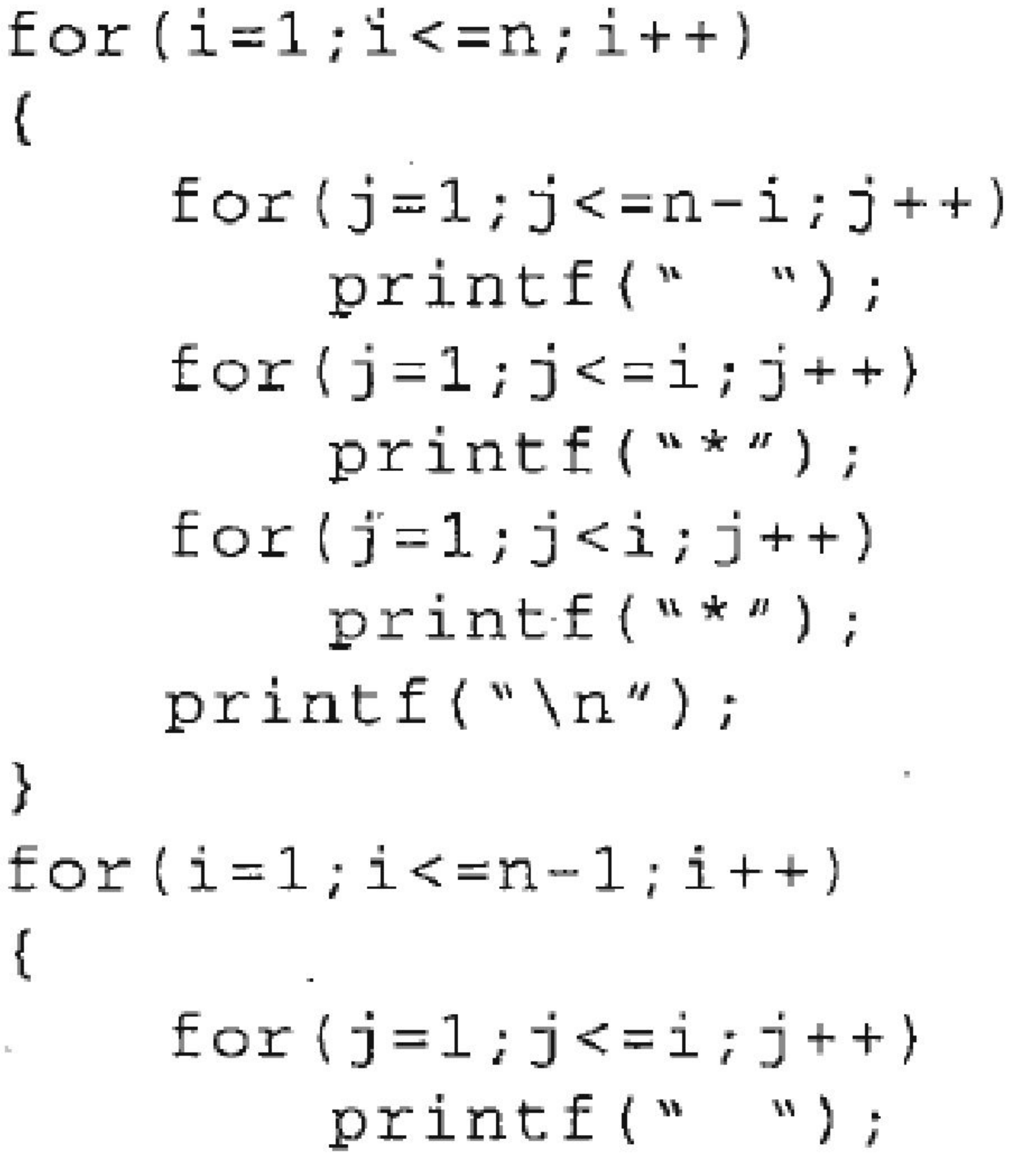
```
for(i=1;i<=n;i++)                  /*loop for number of lines in pyramid*/
{
    for(j=1;j<=n-i;j++  )          /*loop for spaces (first part)*/

        printf(“  “);
    p=n;
    for(j=1;j<=i;j++  )            /*loop for second part */
        printf(“%d”,p- -);
    p=p+2;
    for(j=1;j<i;j++)               /*loop for third part */
        printf(“%d”,p++);
    printf(“\n”);                  /* for next line of pyramid */
 }
```

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

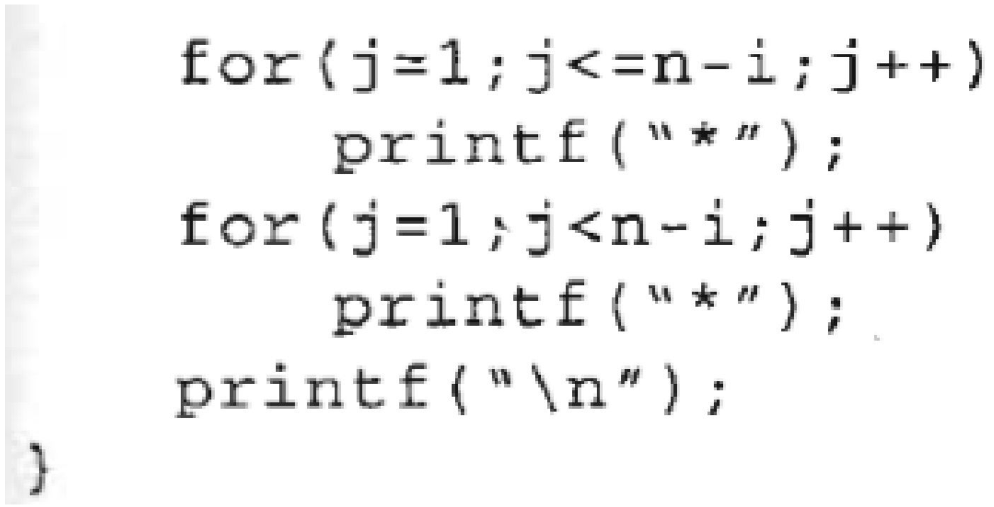
```
for(i=1;i<=n;i++)
{
    for(j=1;j<=i;j++)
        printf(“  “);
    for(j=1;j<=(n-i);j++)
        printf(“*”);
    for(j=1;j<(n-i);j++)
        printf(“*”);
    printf(“\n”);
}
```



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



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



```
    for(j=1;j<=n-i;j++)
        printf("*");
    for(j=1;j<n-i;j++)
        printf("*");
    printf("\n");
}
```