

# Program 1:

```
★ ★★★★  
★ ★★★★  
★ ★★★★  
★ ★★★★  
★ ★★★★
```

```
#include<iostream.h>
```

```
int main()
```

```
{
```

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

```
{
```

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

```
{
```

```
cout << " ";
```

```
}
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

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## Program 2



```
#include<iostream.h>
int main()
{
    for(int i=1; i<=5; i++)
    {
        for(int j=1; j<=i; j++)
        {
            cout << "*";
        }
        cout << endl;
    }
    return 0;
}
```

## Program 3:



```
#include<iostream.h>
int main()
{
    for(int i=1; i<=5; i++)
    {
        for(int j=1; j<=i; j++)
        {
            cout << "*";
        }
        cout << endl;
    }
    return 0;
}
```

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```
{  
for(int j=5; j>=1; j--)  
{  
cout << "*"; //any character or symbol '*' etc.  
}  
cout << endl;  
}  
return 0;  
}
```

## Program 4:



```
#include <iostream.h>  
int main()  
{  
int n=5; //size  
int i, j;  
for(int i=1; i<=n; i++)  
{  
for(int j=n; j>=1; j--)  
{  
if(i>=j)  
cout << "*";  
else
```

```
cout << " " ;  
}  
cout << endl;  
}  
return 0;  
}
```

## Program 5:

\*\*\*\*\*  
\*\*\*\*  
\*\*\*  
\*\*  
\*

```
#include <iostream.h>  
  
int main()  
{  
    int n=5; //size  
    int i,j;  
    for(int i=n; i>=1; i--)  
    {  
        for(int j=n; j>=1; j--)  
        {  
            if(i>=j)  
                cout << "*";  
            else  
                cout << " ";  
        }  
        cout << endl;  
    }  
}
```

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}  
cout << endl;

}

return 0;

}

## Program 6:



```
#include <iostream.h>
#include <math.h>
int main()
{
    int size = 3;
    for (int i = size; i >= -size; i--)
    {
        for (int j = size; j >= abs(i); j--)
        {
            cout << " ";
        }
        cout << endl;
    }
}
```

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return 0;

}

## Program 7:



```
#include<iostream.h>
#include<math.h>
int main()
{
    int size = 3;
    int i, j, k;
    for(i = size; i >= -size; i--)
    {
        for(j = 1; j <= abs(i); j++)
        {
            cout << " ";
        }
        for(k = size; k >= abs(i); k--)
        {
            cout << " ";
        }
    }
}
```

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cout << endl;

}

return 0;

}

## Program 8:

\*\*\*\*\*  
\*\*\*\*  
\*\*\*  
\*\*  
\*

```
#include <iostream.h>
int main()
{
    int i, j, k;
    int n = height / size;
    for (int i = n; i >= 1; i--)
    {
        for (int j = n; j >= 1; j--)
        {
            if (i == j)
                cout << " ";
            else
                cout << " ";
        }
        cout << endl;
    }
    return 0;
}
```

## Program 9

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

```
#include <iostream.h>
```

```
int main( )
```

```
{
```

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

```
{
```

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

```
{
```

```
cout << j
```

```
}
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

## Program 10

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

```
#include <iostream.h>
```

```
int main( )
```

```
{
```

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

```
{
```

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```
for(int j=1; j<=5; j++)  
{  
    cout << j;  
}  
cout << endl;  
}  
return 0;
```

## Program 11

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

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
for(int i=5; i>=1; i--)
```

```
{
```

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

```
{
```

```
cout << j;
```

```
}
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

## Program 12

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

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int n = 5;
```

```
int x = 1, y = n;
```

```
int t1, t2;
```

```
int x1 = x2;
```

```
for(int i=n; i>=1; i--)
```

```
{
```

```
t1 = x1;
```

```
t2 = y;
```

```
x1 = i;
```

```
x2 = i+1;
```

```
for(int j=n; j>=i; j--)
```

```
{
```

```
if((i+j)%2 == 0)
```

```
{
```

```
cout << t1 << " ";
```

```
}
```

```
else
```

```
{
```

```
cout << t2 << " ";
```

```
}
```

```
t1 = t1 - x1 + i;
```

```
t2 = t2 - x2 + i;
```

```
}
```

```
y = y + i - 1;
```

```
n = n + i;
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

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

### Program 13

```
#include <iostream.h>

int main()
{
    for(int i=5; i>=1; i--)
    {
        for(int j=5; j>=1; j--)
        {
            cout << j;
        }
        cout << endl;
    }
    return 0;
}
```

### Program 14

1 2 3 4 5  
6 7 8 9 10  
11 12 13 14 15  
16 17 18 19 20  
21 22 23 24 25

```
#include <iostream.h>
```

```
int main()
{
```

```
int n=5, k=1;  
for(int i=1; i<=n; i++)  
{  
    for(int j=1; j<=n; j++)  
    {  
        cout << k++ << " ";  
    }  
    cout << endl;  
}  
return 0;  
}
```

## Program 15:

1 3 5 7 9  
11 13 15 17 19  
21 23 25 27 29  
31 33 35 37 39  
41 43 45 47 49

```
#include <iostream.h>
```

```
int main()  
{  
    int n=5;  
    int x=1;  
    for(int i=1; i<=n; i++)  
    {  
        for(int j=1; j<=n; j++)  
        {  
            cout << x << " ";  
            x+=2;  
        }  
        cout << endl;  
    }
```

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```
}
```

```
return 0;
```

```
}
```

## Program 16:

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

```
#include <iostream.h>  
int main()  
{  
    int n=5;  
    int x=2;  
    for(int i=1; i<=n; i++)  
    {  
        for(int j=1; j<=n; j++)  
        {  
            cout << n << " ";  
            n+=2  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

## Program 17:

1 2 3 4 5  
2 4 6 8 10  
3 6 9 12 15  
4 8 12 16 20  
5 10 15 20 25

```
#include <iostream.h>  
int main()  
{  
    int n=5;
```

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```
for (int i=1; i<=n; i++)
{
    for (int j=1; j<=n; j++)
    {
        cout << (i*j) << " ";
    }
    cout << endl;
}
```

## Program 18

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

```
#include <iostream.h>
int main()
{
    for (int i=1; i<=5; i++)
    {
        for (int j=1; j<=3; j++)
        {
            cout << j << " " << i << " " ;
        }
        cout << endl;
    }
    return 0;
}
```

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## Program 19:

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

```
#include <iostream.h>
int main()
{
    for (int i = 1; i <= 5; i++)
    {
        for (int j = 1; j <= 3; j++)
        {
            cout << i << " " << j << " ";
        }
        cout << endl;
    }
    return 0;
}
```

## Program 20

1 6 11 16 21  
2 7 12 17 22  
3 8 13 18 23  
4 9 14 19 24  
5 10 15 20 25

```
#include <iostream.h>
int main()
{
    int n = 5;
    int x = 6;
    for (int i = 1; i <= n; i++)
    {
        for (int j = 1; j <= 5; j++)
        {
            cout << x << " ";
            x++;
        }
        cout << endl;
    }
}
```

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```
{  
    n = i;  
    for (int j = 1; j <= n; j++)  
    {  
        cout << n << " ";  
        n += n;  
    }  
    cout << endl;  
}  
return 0;  
}
```

## Program 21

|   |    |    |    |    |
|---|----|----|----|----|
| 1 | 10 | 11 | 20 | 21 |
| 2 | 9  | 12 | 19 | 22 |
| 3 | 8  | 13 | 18 | 23 |
| 4 | 7  | 14 | 17 | 24 |
| 5 | 6  | 15 | 16 | 25 |

```
#include<iostream.h>
```

```
int main()  
{  
    int n = 5;  
    int x, y;  
    for (int i = 1; i <= n; i++)  
    {  
        x = i;  
        y = n - i + 1;  
        for (int j = 1; j <= n; j++)  
        {  
            if (j % 2 == -1)  
            {  
                cout << n << " ";  
            }  
        }  
    }  
}
```

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```
else  
{  
    cout << y << " "  
}  
  
N = N + 1;  
y = y + n;  
}  
  
cout << endl;  
}  
}  
return 0;  
}
```

## Program 22

5 10 15 20 25  
4 9 14 19 24  
3 8 13 18 23  
2 7 12 17 22  
1 6 11 16 21

```
#include <iostream.h>  
  
int main()  
{  
    int n = 5;  
    int t;  
    for (int i = 1; i <= n; i++)  
    {  
        x = n - i + 1;  
        for (int j = 1; j <= n - i + 1)  
        {  
            cout << n << " ";  
            n = n + 1;  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

## Program

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

```
#include <iostream.h>
```

```
int main()
```

```
{  
    int n = 5;  
    int t = 1;  
    for (int i = 1; i <= n; i++)  
    {  
        y = i;  
        t = t - y;  
        for (int j = 1; j <= i; j++)  
        {  
            cout << t << " ";  
            t = t + j;  
        }  
        cout << endl;  
    }  
}
```

y++;

}

n = n + 1;

cout << endl;

}{  
return 0;  
}

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## Program 24

```
5 6 15 16 25  
4 7 14 17 24  
3 8 13 18 23  
2 9 12 19 22  
1 10 11 20 21
```

```
#include <iostream.h>
```

```
int main()
{
    int n = 5;
    int x, y;
    for (int i = 1; i <= n; i++)
    {
        x = i;
        y = n - i + 1;
        for (int j = 1; j <= n; j++)
        {
            cout << x << " ";
        }
        cout << endl;
    }
    return 0;
}
```

## Program 25

```
1 2 3 4 5  
2 3 4 5 6  
3 4 5 6 7  
4 5 6 7 8  
5 6 7 8 9
```

```
#include <iostream.h>
```

```
int main()
```

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```
{  
for(int i=1; i<=n; i++)  
{  
    for(int j=1; j<=n; j++)  
    {  
        cout << (i+j-1) << " ";  
    }  
    cout << endl;  
}  
return 0;  
}
```

## Program 28

1 3 5 7 9  
3 5 7 9 11  
5 7 9 11 13  
7 9 11 13 15  
9 11 13 15 17

```
#include <iostream.h>
```

```
int main()  
{  
    int n=5;  
    for(int i=1; i<=n; i++)  
    {  
        for(int j=1; j<=n; j++)  
        {  
            cout << (2*(i+j))-3 << " ";  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

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## Program 27

0 1 0 1 0  
1 0 1 0 1  
0 1 0 1 0  
1 0 1 0 1  
0 1 0 1 0

```
#include <iostream.h>
```

```
int main()
{
```

```
    int n = 5;
```

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

```
{
```

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

```
{
```

```
        cout << ((i + j) % 2) << " ";
```

```
}
```

```
    cout << endl;
```

```
}
```

```
    return 0;
```

```
}
```

## Program 28

1 0 1 0 1  
0 1 0 1 0  
1 0 1 0 1  
0 1 0 1 0  
1 0 1 0 1

```
#include <iostream.h>
```

```
int main()
{
```

```
    int n = 5;
```

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

```
{
```

```
    for (int j = 0; j < n; j++)
```

```
{
```

```
        cout << ((i + j) % 2) << " ";
```

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```
    }  
    cout << endl;  
}  
return 0;  
}
```

## Program 29

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

```
#include <iostream.h>
```

```
int main()  
{  
int n=5;  
for(int i=1; i<=n; i++)  
{  
for(int j=1; j<=n; j++)  
{  
cout << ((i*j)%2) << " ";  
}  
cout << endl;  
}  
return 0;  
}
```

## Program 30

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

```
#include <iostream.h>
```

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```
#include <iostream.h>
{
    int n = 5;
    for (int i = 0; i < n; i++)
    {
        for (int j = 0; j < n; j++)
        {
            cout << ((i * j) % 2) << " ";
        }
        cout << endl;
    }
    return 0;
}
```

## Program 31

0 0 0 0 0  
1 1 1 1 1  
0 0 0 0 0  
1 1 1 1 1  
0 0 0 0 0

```
#include <iostream.h>
int main()
{
    int n = 5;
    for (int i = 0; i < n; i++)
    {
        for (int j = 1; j <= n; j++)
        {
            cout << (i % 2) << " ";
        }
    }
}
```

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```
    }  
    cout << endl;  
}  
return 0;  
}
```

## Program 32

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

```
#include <iostream.h>
```

```
int main( )  
{  
    int n=5;  
    for(int i=1 ; i<=n ; i++)  
    {  
        for(int j=1 ; j<=n ; j++)  
        {  
            cout << (i%2) << " ";  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

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### Program 33

0 1 0 1 0  
0 1 0 1 0  
0 1 0 1 0  
0 1 0 1 0  
0 1 0 1 0

```
#include <iostream.h>

int main()
{
    int n=5;
    for(int i=1; i<=n; i++)
    {
        for(int j=0; j<n; j++)
        {
            cout << (j%2) << " ";
        }
        cout << endl;
    }
    return 0;
}
```

### Program 34

1 0 1 0 1  
1 0 1 0 1  
1 0 1 0 1  
1 0 1 0 1  
1 0 1 0 1

```
#include <iostream.h>

int main()
{
    int n=5;
    for(int i=1; i<=n; i++)
    {
        for(int j=1; j<=n; j++)
        {
            cout << (j%2) << " ";
        }
    }
}
```

```
    }  
    cout << endl;  
}  
return 0;  
}
```

## Program 35

A A A A A  
B B B B B  
C C C C C  
D D D D D  
E E E E E

```
#include <iostream.h>
```

```
int main()  
{
```

```
char i, j;
```

```
for (int i = 'A'; i <= 'E'; i++)  
{
```

```
    for (int j = 'A'; j <= 'E'; j++)  
{
```

```
        cout << char(i);
```

```
{
```

```
    cout << endl;
```

```
}
```

```
return 0;
```

```
{
```

```
1
```

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## Program 36

A B C D E  
A B C D E  
A B C D E  
A B C D E  
A B C D E

#include <iostream.h>

int main()

{

char i, j;

for(int i = 'A'; i <= 'E'; i++)

{

for(int j = 'A'; j <= 'E'; j++)

{

cout << char(j);

}

cout << endl;

}

return 0;

}

## Program 37

E E E E E  
D D D D D  
C C C C C  
B B B B B  
A A A A A

#include <iostream.h>

int main()

{

char i, j;

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```
for(int i = 'E'; i >= 'A'; i--)  
{  
    for(int j = 'E'; j >= 'A'; j--)  
        cout << char(i);  
    cout << endl;  
}  
return 0;
```

### Program 38

EDCBA  
EDCBA  
EDCBA  
EDCBA  
EDCBA

```
#include<iostream.h>  
int main ()  
{  
    char i, j;  
    for(int i = 'E'; i >= 'A'; i--)  
    {  
        for(int j = 'E'; j >= 'A'; j--)  
        {  
            cout << char(j);  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

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## Program 39

A B C D E  
F G H I J  
K L M N O  
P Q R S T  
U V W X Y

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int n = 5;
```

```
char ch = 'A';
```

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

```
{
```

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

```
{
```

```
cout << ch, " "
```

```
if (ch > 'Z')
```

```
ch++;
```

```
else
```

```
ch = 'A';
```

```
if reset char
```

```
{
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

## Program 40

A B C D E  
B C D E F  
C D E F G  
D E F G H  
E F G H I

```
#include <iostream.h>
int main()
{
    int n=5;
    for(int i=0; i<n; i++)
    {
        for(int j=0; j<n; j++)
        {
            cout<<(char)(i+j+65)<< " ";
        }
        cout<< endl;
    }
    return 0;
}
```

### Program 41

A F K P U  
B G L Q V  
C H M R W  
D S N T X  
E J O R Y

```
#include <iostream.h>
int main()
{
    int n=5;
    int i,j;
    for(int i=0; i<n; i++)
    {
        i = i;
        for(int j=1; j<=n; j++)
        {
            j = j;
        }
    }
}
```

Date:

```
cout << (char)(x - n + 65) << " ";
}
cout << endl;
}
return 0;
}
```

## Program 42

E J O T Y  
D I N S X  
C H M R W  
B G L Q V  
A F K P U

```
#include <iostream.h>
int main( )
{
    int n=5;
    int x;
    for(int i=1; i<=n; i++)
    {
        x = n-i;
        for(int j=1; j<=n; j++)
        {
            cout << (char)(x+65) << " ";
        }
        n = n+1;
    }
    cout << endl;
}
return 0;
}
```

## Program 43

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

#include <iostream.h>

void main()

{

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

{

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

{

cout << i;

}

cout << endl;

{

return 0;

}

## Program 44

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

#include <iostream.h>

int main()

{

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

{

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

```
{  
cout << j;  
}  
cout << endl;  
}  
return 0;  
}
```

## Program 45

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

```
#include <iostream.h>
```

```
int main( )  
{  
int n = 5;  
for(int i = n; i >= 1; i--)  
{  
for(int j = n; j >= i; j--)  
{  
cout << i << " ";  
}  
cout << endl;  
}  
return 0;  
}
```

## Program 46

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

```
#include <iostream.h>
```

```
int main( )  
{
```

Date: \_\_\_\_\_

int n = 5;

for (int i = n; i >= 1; i--)

{

for (int j = n; j >= i; j--)

{

cout << j << " "

cout << endl;

}

return 0;

}

## Program 47

5

4 5

3 4 5

2 3 4 5

1 2 3 4 5

#include <iostream.h>

int main()

{

int n = 5;

for (int i = n; i >= 1; i--)

{

for (int j = i; j <= n; j++)

{

cout << j << " ",

}

cout << endl;

}

return 0;

}

Date: Program

2 4 6 8

2 4 6

2 4 6 8

2 4 6 8 10

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int n = 5;
```

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

```
{
```

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

```
{
```

```
cout << j * 2 << " ";
```

```
}
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

Program 49

1

2 3

4 5 6

7 8 9 10

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int i, j;
```

```
int n = 1;
```

```
for (int i = 1; i <= 4; i++)
```

```
{
```

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

```
{
```

```
cout << n;
```

```
n++;
```

```
}
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

1

2 3

3 4 5

4 5 6 7

5 6 7 8 9

Program

50

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int n = 5;
```

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

```
{
```

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

```
{
```

```
cout << (i + j - 1) - '0' << " ";
```

```
}
```

```
cout << endl;
```

```
{
```

```
return 0;
```

```
{
```

Date: \_\_\_\_\_

## Program 51

1  
3 5  
5 7 9  
7 9 11 13  
9 11 13 15 17

```
#include <iostream.h>
void main()
{
    int i, j, t;
    for (i = 1; i <= 5; i++)
    {
        t = i - 1;
        for (j = 1; j <= i; j++)
        {
            cout << t + j << " ";
            t += 2;
        }
        cout << endl;
    }
    return 0;
}
```

## Program 52

1  
3 2  
6 5 4  
10 9 8 7

```
#include <iostream.h>
int main()
{
    int i, j, k = 0;
    int n = 4; // size
    for (int i = 1; i <= n; i++)
    {
        k += i;
        for (int j = k; j > k - i; j--)
        {
            cout << j;
        }
        cout << endl;
    }
}
```

## Program

1  
3 5  
7 9 11  
13 15 17 19  
21 23 25 27 29

```
#include <iostream.h>
int main()
```

```
int n = 5, m = 1;
for (int i = n; i >= 1; i--)
{
    for (int j = n; j >= i; j--)
    {
        cout << m << " ";
        m += 2;
    }
    cout << endl;
}
```

```
return 0;
```

Date: \_\_\_\_\_

2

## Program 54

4 6

8 10 12

14 16 18 20

22 24 26 28 30

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int n = 5, x = 2;
```

```
for (int i = n; i >= 1; i--)
```

```
{
```

```
for (int j = n; j >= i; j--)
```

```
{
```

```
cout << n << " ";
```

```
n += 2;
```

```
}
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

## Program 55

1

2 4

3 6 9

4 8 12 16

5 10 15 20 25

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int n = 5;
```

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

```
{
```

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

```
{
```

```
cout << (i * j) << " ";
```

```
}
```

```
cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

Date: \_\_\_\_\_

## 15 Program 56

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

```
#include <iostream.h>
int main()
{
    int n = 5;
    int x = (n * (n + 1)) / 2;
    for (int i = n; i >= 1; i--)
    {
        for (int j = n; j >= i; j--)
        {
            cout << x-- << " ";
        }
        cout << endl;
    }
    cout << endl;
    return 0;
}
```

## Program 58

1  
4 9  
16 25 36  
49 64 81 100

```
#include <iostream.h>
void main()
{
    int n = 4;
    int x = 1;
    for (int i = 1; i <= n; i++)
    {
        for (int j = 1; j <= i; j++)
        {
            cout << (x++ * x) << " ";
        }
        cout << endl;
    }
}
```

## 1 Program 57

1 2  
2 3 4  
4 5 6 7  
7 8 9 10 11

```
#include <iostream.h>
int main()
{
    int n = 5;
    int x = 1;
    for (int i = 0; i < n; i++)
    {
        for (int j = 0; j <= i; j++)
        {
            cout << (n - i) << " ";
        }
        cout << endl;
    }
    return 0;
}
```

## Program

1 0 0  
1 1 1  
0 0 0 0  
1 1 1 1 1

```
#include <iostream.h>
int main()
{
    int n = 5;
    for (int i = 1; i <= n; i++)
    {
        cout << (int j = 1; j <= i; j++)
        {
            cout << (int j = 1; j <= i; j++)
            {
                cout << (i % 2) << " ";
            }
        }
        cout << endl;
    }
    return 0;
}
```

Date: \_\_\_\_\_

## Program 60

1  
1 2  
3 5 8  
13 21 34 55  
89 144 233 377 610

```
#include <iostream.h>
```

```
Void main()
{
    int i, j;
    int n1 = 0, n2 = 1, t = n1 + n2;
    for (int i = 1; i <= 5; i++)
    {
        for (int j = 1; j <= i; j++)
        {
            cout << r << " ";
            t = n1 + n2;
            n1 = n2;
            n2 = t;
        }
        cout << endl;
    }
}
```

## Program 61

0  
1 1  
0 0 0  
1 1 1 1  
0 0 0 0 0  
1 1 1 1 1 1

```
#include <iostream.h>
int main()
{
    int n = 5;
    for (int i = 0; i < n; i++)
    {
        for (int j = 0; j < i + 1; j++)
        {
            cout << (i % 2) << " ";
        }
        cout << endl;
    }
    return 0;
}
```

Date:

## Program 62

```
1 0 1  
1 0 1  
1 0 1 0  
1 0 1 0 1  
#include <iostream.h>  
int main()  
{  
    int n = 5;  
    for (int i = 1; i <= n; i++)  
    {  
        for (int j = 1; j <= i; j++)  
        {  
            cout << (j % 2) << " ";  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

## Program 63

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

```
#include <iostream>  
int main()  
{  
    for (int i = 1; i <= 5; i++)  
    {  
        for (int j = 5; j >= i; j--)  
        {  
            cout << i; // any character or symbol like '#', etc.  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

Date: Program 64

```

12 3 4 5
12 3 4
12 3
12
1

```

```

#include <iostream.h>
int main()
{
    for (int i = 5; i >= 1; i--)
    {
        for (int j = 4; j >= 1; j++)
        {
            cout << j;
        }
        cout << endl;
    }
    return 0;
}

```

Program 66

```

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

```

```

#include <iostream.h>
int main()
{
    for (int i = 5; i >= 1; i--)
    {
        for (int j = 1; j <= i; j++)
        {
            cout << i;
        }
        cout << endl;
    }
    return 0;
}

```

Program 65

```

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

```

```

#include <iostream.h>
int main()
{
    for (int i = 1; i <= 5; i++)
    {
        for (int j = 5; j >= i; j--)
        {
            cout << j;
        }
        cout << endl;
    }
    return 0;
}

```

Program 67

```

5 4 3 2 1
6 5 4 3
7 6 5
8 7
9

```

```

#include <iostream.h>
int main()
{
    int n = 5;
    for (int i = 1; i <= n; i++)
    {
        for (int j = 1; j <= n - i + 1; j++)
        {
            cout << (n - j + i) << " ";
        }
        cout << endl;
    }
    return 0;
}

```

Date:

## Program 68

5 6 7 8 9  
4 5 6 7  
3 4 5  
2 3  
1

```
#include <iostream.h>
int main()
{
    int n=5;
    for (int i=1; i<=n; i++)
    {
        for (int j=1; j<=n-i+1; j++)
        {
            cout << (n-i+j) << " ";
        }
        cout << endl;
    }
    return 0;
}
```

## Program 70

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

```
#include <iostream.h>
int main()
{
    int n=5;
    int k=1;
    for (int i=n; i>=1; i--)
    {
        for (int j=1; j<=i; j++)
        {
            cout << k++ << " ";
        }
        cout << endl;
    }
    return 0;
}
```

## Program 69

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

```
#include <iostream.h>
int main()
{
    int n=5;
    int a=(n*n*(n+1))/2;
    for (int i=1; i<=n; i++)
    {
        for (int j=n; j>=i; j--)
        {
            cout << a-- << " ";
        }
        cout << endl;
    }
    return 0;
}
```

Date:

## Program 71

5 9 12 14 15

4 8 11 13

3 7 10

2 6

1

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int n=10; //size
```

```
int k;
```

```
for (int i=n; i>=1; i--)
```

```
{
```

```
k=i;
```

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

```
{
```

```
cout << k << "
```

```
k=k+(n-j);
```

```
}
```

```
cout << endl;
```

```
}
```

```
}
```

## Program 72

1 1 1 1 1

0 0 0 0

1 1 1

0 0

1

```
#include <iostream.h>
```

```
int main()
```

```
{
```

Date: \_\_\_\_\_

```
int n=5;  
for(int i=1; i<=n; i++)  
{  
    for(int j=n; j>=i; j--)  
    {  
        cout << (i%2) << " "  
    }  
    cout << endl;  
}  
return 0;  
}
```

### Program 7B

00000  
1111  
000  
11  
0

```
#include <iostream.h>
```

```
int main()  
{  
    int n=5;  
    for(int i=0; i<n; i++)  
    {  
        for(int j=n; j>i; j--)  
        {  
            cout << (i%2) << " "  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

### Program 7C

10101  
1010  
101  
10  
1

```
#include <iostream.h>  
int main()  
{
```

Date: \_\_\_\_\_

```
int n=5;
for(int i=n; i>=1; i--)
{
    for(int j=1; j<=i; j++)
    {
        cout << (j%2) << " ";
    }
    cout << endl;
}
return 0;
}
```

## Program 15

0 1 0 1 0  
0 1 0 1  
0 1 0  
0 1  
0

```
#include <iostream.h>
int main()
{
    int n=5;
    for(int i=n; i>=1; i--)
    {
        for(int j=0; j< i; j++)
        {
            cout << (j%2) << " ";
        }
        cout << endl;
    }
    return 0;
}
```

## Program 16

0 1 0 1 0  
1 0 1 0  
0 1 0  
1 0  
0

```
#include <iostream.h>
int main()
{
    int n=5;
    for(int i=n; i>=1; i--)
    {
    }
```

```
for(int j=1; j<=i; j++)  
{  
    cout << ((i+j)%2) << " ";  
}  
cout << endl;  
}  
return 0;  
}
```

## Program 7B

1 0 1 0 1  
0 1 0 1  
1 0 1  
0 1  
1

```
#include <iostream.h>  
int main ()  
{  
    int n=5;  
    for(int i=n ; i>=1; i--)  
    {  
        for(int j=0; j<=i; j++)  
        {  
            cout << ((i+j)%2) << " ";  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

## Program 7B

A A A A A  
B B B B B  
C C C C C  
D D D D D  
E E E E E

```
#include <iostream>  
int main ()  
{  
    int i,j;
```

Date: \_\_\_\_\_

```
for(int i=0; i<=4; i++)  
{  
    for(int j=4; j>=i; j--)  
    {  
        cout << (char)(j+65);  
    }  
    cout << endl;  
}  
return 0;  
}
```

## Program 79

A B C D E  
A B C D  
A B C  
A B  
A

```
#include <iostream.h>  
int main()  
{  
    int i, j;  
    for(int i=4; i>=0; i--)  
    {  
        for(int j=0; j<=i; j++)  
        {  
            cout << (char)(j+65);  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

## Program 80

E E E E E  
D D D D D  
C C C  
B B  
A

```
#include <iostream.h>  
int main()  
{
```

Date: \_\_\_\_\_

```
int i, j;  
for (int i = 4; i >= 0; i--)  
{  
    for (int j = 0; j <= i; j++)  
    {  
        cout << (char) (i + 65);  
    }  
    cout << endl;  
}  
return 0;  
}
```

## Program 89

EDCBA  
EDCB  
EDC  
ED  
E

```
#include <iostream.h>  
int main ()  
{  
    int i, j;  
    for (int i = 0; i <= 4; i++)  
    {  
        for (int j = 4; j >= i; j--)  
        {  
            cout << (char) (j + 65);  
        }  
        cout << endl;  
    }  
    return 0;  
}
```

## Program 81

EDCBA  
DCBA  
CBA  
BA  
A

```
#include <iostream.h>  
int main ()  
{
```

Date: \_\_\_\_\_

```
int n=5;
for(int i=1; i<=n; i++)
{
    for(int j=n-i; j>=0; j--)
    {
        cout<<(char)(j+65)<<" ";
    }
    cout<<endl;
}
return 0;
}
```

### Program 8.3

E D C B A  
F E D C  
G F E  
H G  
I

```
#include <iostream.h>
int main()
{
    int n=5;
    for(int i=1; i<=n; i++)
    {
        for(int j=1; j<=n-i+1; j++)
        {
            cout<<(char)(n-j+i+64)<<" ";
        }
        cout<<endl;
    }
    return 0;
}
```

### Program 8.3Y

E F G H I  
D E F G  
C D E  
B C  
A

```
#include <iostream.h>
int main()
{
```

```

int n=5;
for(int i=1; i<=n; i++)
{
    for(int j=i; j<=n-i+1; j++)
    {
        cout<<(char)(n-i+j+64) << " ";
    }
    cout<<endl;
}
return 0;
}

```

## Program 85

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

```

#include <iostream.h>
int main()
{
    int n=5;
    for(int i=n; i>=1; i--)
    {
        for(int j=1; j<=n; j++)
        {
            if(i==j)
                cout << i;
            else
                cout << " ";
        }
        cout << endl;
    }
    return 0;
}

```

## Program 86

5  
 4 5  
 3 4 5  
 2 3 4 5

```

#include <iostream.h>
int main()
{
}

```

Date: \_\_\_\_\_

## Program B7

```
int n=5;  
for(int i=n; i>=1; i--)  
{  
    for(int j=1; j<=n; j++)  
    {  
        if(i==j)  
            cout<<j;  
        else  
            cout<<" ";  
    }  
    cout<<endl;  
}
```

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

```
#include <iostream.h>  
int main()  
{  
    int n=5;  
    for(int i=1; i<=n; i++)  
    {  
        for(int j=1; j<=n; j++)  
        {  
            if(i==j)  
                cout<<i;  
            else  
                cout<<" ";  
        }  
        cout<<endl;  
    }  
    return 0;  
}
```

## Program 88

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

```
#include <iostream.h>  
int main()  
{  
    int n=5;  
    for(int i=1; i<=n; i++)  
    {  
        for(int j=n; j>=1; j--)  
        {  
            if(i>=j)  
                cout<<j;  
            else  
                cout<<" ";  
        }  
        cout<<endl;  
    }  
    return 0;  
}
```

Date: Program 89 =

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

```
#include <iostream.h>
```

```
int main()
```

```
{  
    int n = 5;
```

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

```
    {  
        for (int j = 1; j <= n; j++)
```

```
{
```

```
        if (i == j)
```

```
            cout << j
```

```
        else
```

```
            cout << " "
```

```
}
```

```
        cout << endl;
```

```
}
```

```
return 0;
```

```
}
```

## Program 890

### Hello C++

```
#include <iostream.h>
```

```
#include <iomanip.h>
```

```
void main()
```

```
{
```

```
clrscr();
```

```
cout << "Hello From C++!!!";
```

```
getch();
```

```
}
```

### Output:

Hello From C++!!!

## Q. Number is Even OR odd Program 91.

```
#include <iostream.h>
#include <conio.h>
Void main()
{
    clrscr();
    int x;
    cout << "Enter an integer: ";
    cin >> x;
    if (x % 2 == 0)
        cout << "Number is even.";
    else
        cout << "Number is odd.";
    getch();
}
```

### OUTPUT

(1st Run)

Enter an integer: 4  
Number is even.

(2nd Run)

Enter an integer: 7  
Number is odd

## Program 92

### Factorial

```
#include <iostream.h>
void main()
{
    cout << "Enter a number: ";
    cin >> n;
    for (i=1; i<=n; i++)
    {
        fact = fact * i;
    }
    cout << "Factorial of " << n << " is " << fact << endl;
}
```

### Output

(Run 1)

Enter a number: 5  
Factorial of 5 is 120

Dir: Run 2

Enter a number: 0

Factorial of 0 is 1

## Program 93

### Sum of Digit

```
#include <iostream.h>
#include <conio.h>
void main()
{
    clrscr();
    int n, num, x, sum = 0;
    cout << "Enter a number: ";
    cin >> n;
    while (n > 0)
    {
        x = n % 10;
        sum = sum + x;
        n = n / 10;
    }
    cout << "Sum of digits of a number is: " << sum;
    getch();
}
```

### OUTPUT:

Enter a number: 123

Sum of digits of a number: 6

## Program 94

### Reverse Number

```
#include <iostream.h>
#include <conio.h>
void main()
{
```

Date: \_\_\_\_\_

```
long a, b, c = 0;
clrscr();
cout << "enter any no.";
cin >> a;
while (a > 0)
{
    b = a % 10;
    a = a / 10;
    c = (c * 10) + b;
}
cout << "reverse is : " << c;
getch();
}
```

## OUTPUT

enter any no 1234

reverse is 4321

## Program 95

### Strupr (To upper chars)

```
#include <iostream.h>
#include <string.h>
int main()
{
    char str[20] = "happ birthday";
    cout << "Original string is :" << str << endl;
   strupr(str);
    cout << "String afterstrupr: " << str << endl;
    return 0;
}
```

## OUTPUT

Original string is: happy birthday

String afterstrupr: HAPPY BIRTHDAY

Date: 95:-) String Class

## String demo

```
#include <iostream.h>
int main()
{
    string str = "Hello World";
    cout << "String is " << str;
    return 0;
}
```

/\*

## OUTPUT

String is Hello World

## Program 94

### String input

```
#include <iostream.h>
int main()
{
    string name;
    cout << "Enter your name : ";
    getline(cin, name);
    cout << "Your name is " << name;
    return 0;
}
```

/\*

## OUTPUT

Enter Your name : Sumit Tiwari

Your name is Sumit Tiwari

/\*

at()

98)

#include <iostream.h>

int main()

{

String str = "Avengers";

cout << "String is" << str << endl;

cout << "Character at 3rd index is" << str.at(3);

return 0;

}

/\*

OUTPUT:

String is Avengers

Character at 3rd index is n

\*/

Prodgect 9

Cube No. series

1 8 27 64 125 216...

#include <iostream.h>

int main()

{

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

{

cout << " " << (i \* i \* i);

}

}

/\*

OUTPUT

1 8 27 64 125

/\*

Date: \_\_\_\_\_

## Program#0 Square No. series

1 4 9 16 25 36 49 ...

```
#include <iostream.h>
```

```
int main()
```

```
{
```

```
int n=5; //size
```

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

```
{
```

```
cout << " " << (i*i);
```

```
}
```

```
}
```

/\*

## OUTPUT

1 4 9 16 25

\*/