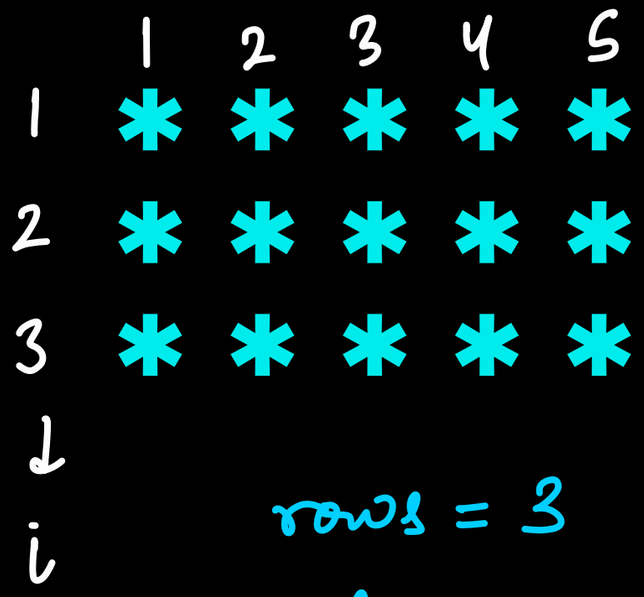
Pattern

Printing

Contents

Nested Loops → loop ke andar loop

Ques: Print the given pattern



rows = 3

columns = 5

row = 2

col = 6

* * * * * *

* * * * * *

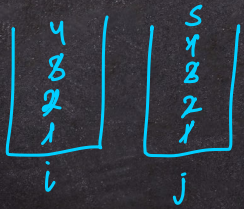
Star Rectangle

```java
int row = sc.nextInt();
int col = sc.nextInt();
for(int i=1;i<=row;i++){
    for(int j=1;j<=col;j++){
        System.out.print("* ");
    }
    System.out.println();
}
```

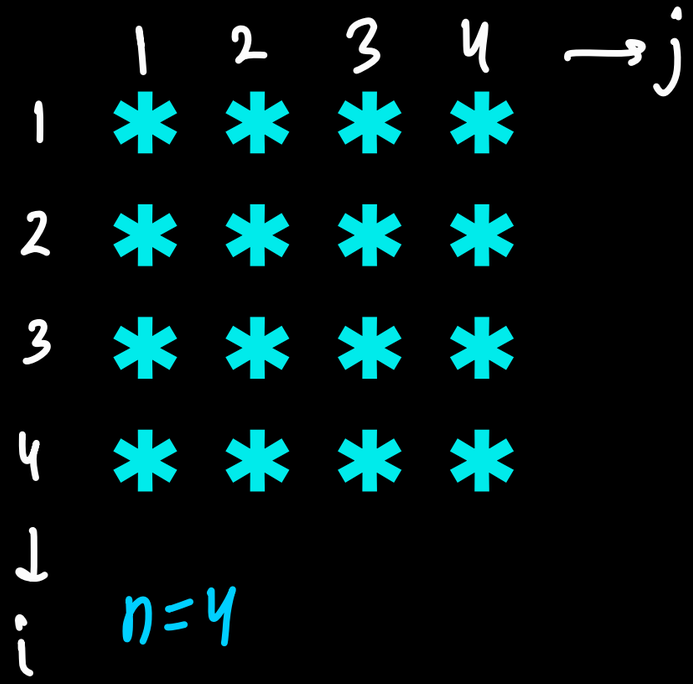
row = 3
col = 4

Output

* * * *
* * * *
* * * *



Ques: Print the given pattern



n=3

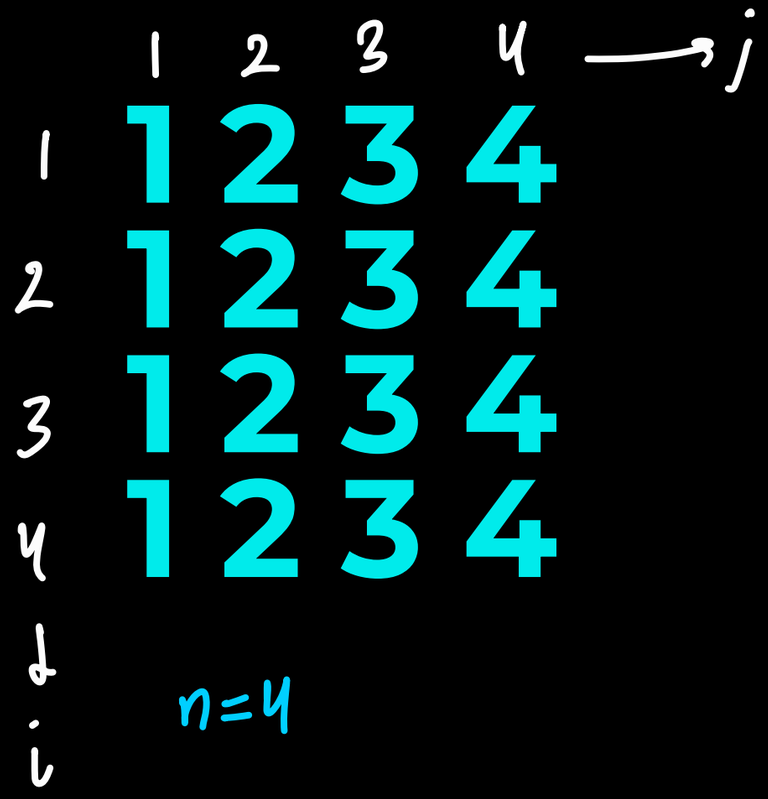
* * *

* * *

* * *

Star Square

Ques: Print the given pattern



n=2

1 2
1 2

n=5

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

Number Square

Ques: Print the given pattern

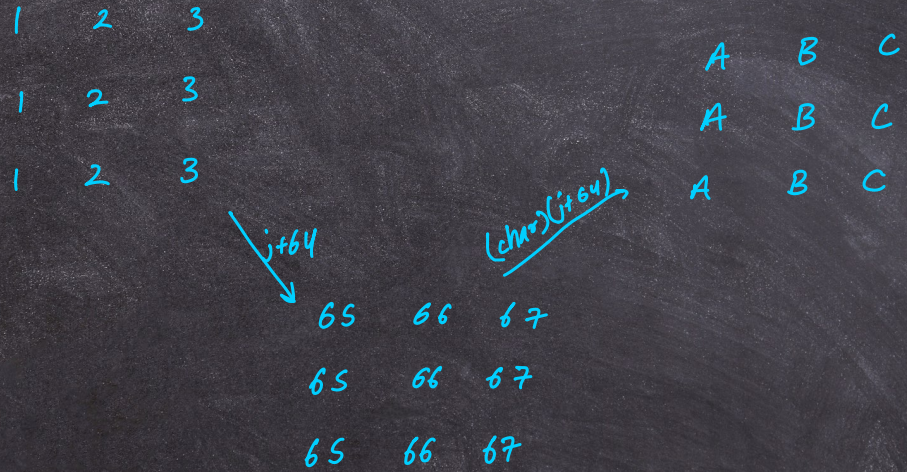
A B C D
A B C D
A B C D
A B C D

n=4

n=3

A B C
A B C
A B C

Alphabet Square


1 2 3
1 2 3
1 2 3
A B C
A B C
A B C
i+64
(char)(i+64)
65 66 67
65 66 67
65 66 67

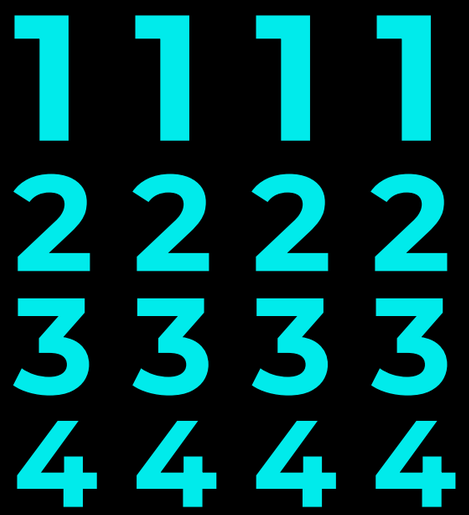
HW: Print the given pattern

a b c d
a b c d
a b c d
a b c d

n = 4

Alphabet Square 2

Ques: Print the given pattern



n=4

n=6

1 1 1 1 1 1

2 2 2 2 2 2

3 3 3 3 3 3

4 4 4 4 4 4

5 5 5 5 5 5

6 6 6 6 6 6

Number Square 2

HW: Print the given pattern

```
A A A A
B B B B
C C C C
D D D D
```

Alphabet Square 3

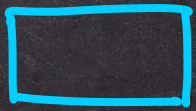
HW: Print the given pattern

```
a a a a
B B B B
C C C C
D D D D
```

Alphabet Square 4

Rectangles

```
for(i=1 to m){
    for(j=1 to n){
        ——
    }
    sout()
}
```



Squares

```
for(i=1 to n){
    for(j=1 to n){
        ——
    }
    sout()
}
```

Triangle

```
for(i=1 to n){
    for(j=1 to i){
        —
    }
    sout()
}
```

```
for(i=1 to n){
for(j=1 to n+1-i){
}
}
```

Number

j

or

i

Alphabet

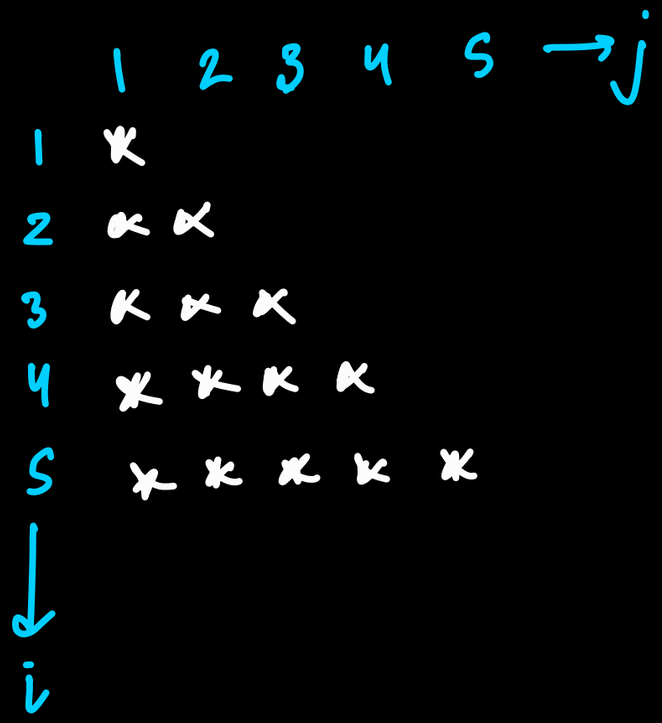
j → (char)(j+64)

Ques: Print the given pattern

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

n = 4

n = 5



Star Triangle

Ques: Print the given pattern

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

Number Triangle

HW: Print the given pattern

```
A
A B
A B C
A B C D
```

and

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

n=5

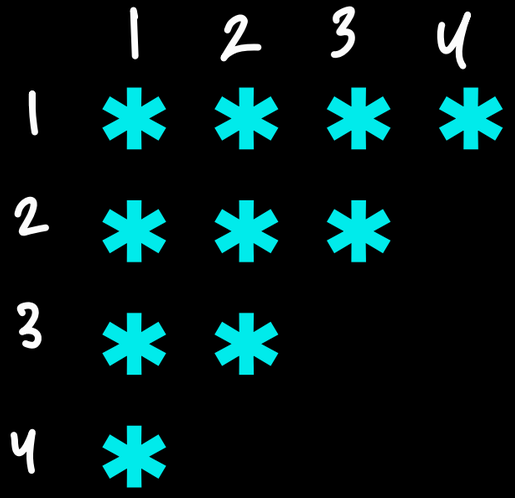
Alphabet Triangle

HW: Print the given pattern

```
1
A B
1 2 3
A B C D
1 2 3 4 5
```

Alphanumeric Triangle

Ques: Print the given pattern



$i=1 \Rightarrow j_{max}=4$

$i=2 \Rightarrow j_{max}=3$

$i=3 \Rightarrow j_{max}=2$

$i=4 \Rightarrow j_{max}=1$

$\rightarrow i+j_{max}=n+1$

$\Rightarrow j_{max}=n+1-i$

$n=4$

$j = 1$ to $n+1-i$

Star Triangle Horizontally Flipped

HW: Print the given pattern

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

Number Triangle Horizontally Flipped

HW: Print the given pattern

```
a b c d
a b c
a b
a
```

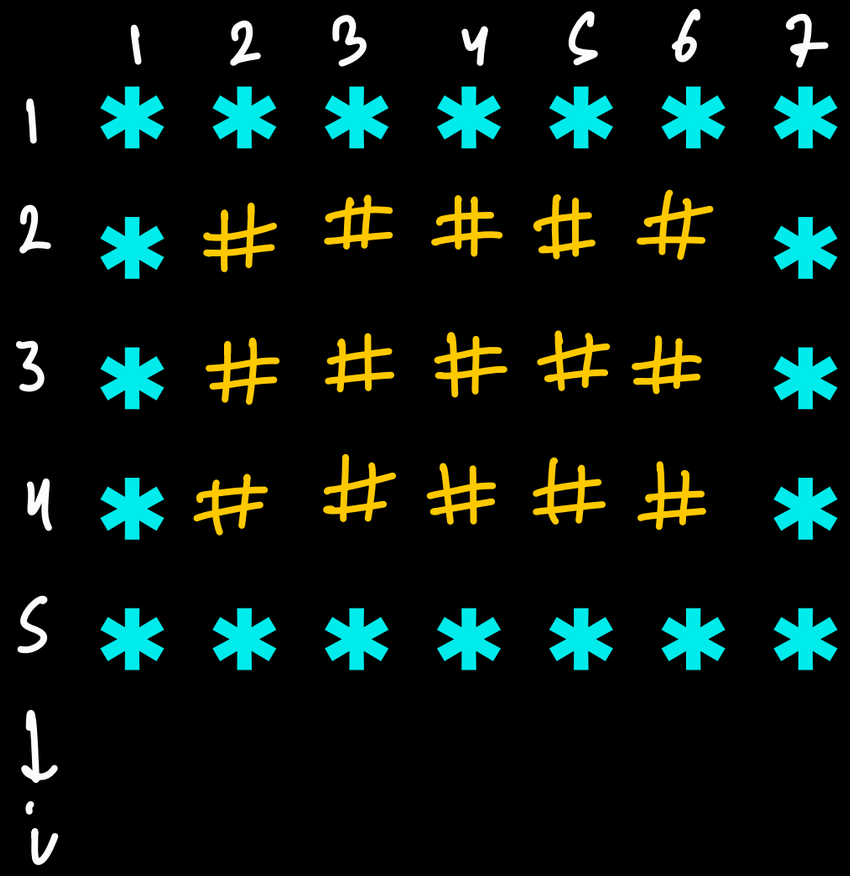
and

```
A A A A
B B B
C C
D
```

n=4

Alphabet Triangle Horizontally Flipped

Ques: Print the given pattern

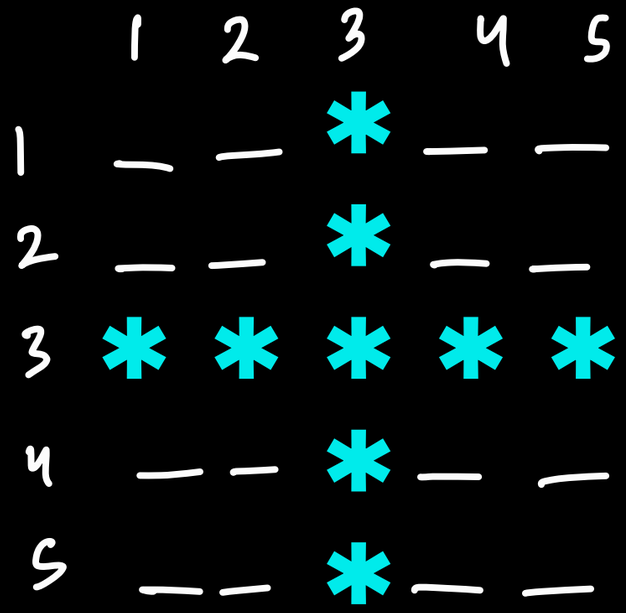



```
if(first or last row or first or last col)
    cout(*)
else
    cout(#)
```

Hollow **Rectangle**

Ques: Print the given pattern

'n' is odd



n=5

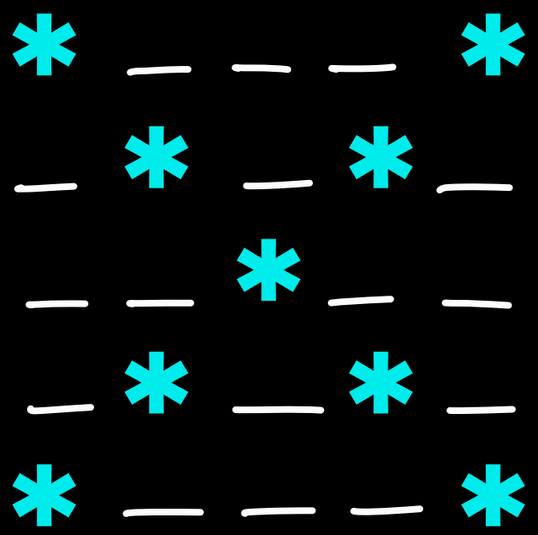
if(i==mid or j==mid) *

_

$mid = \frac{n}{2} + 1$

Star Plus

Ques: Print the given pattern 'n' is odd



Homework

Star Cross

Ques: Print the given pattern

a = 1

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

Floyd’s Triangle

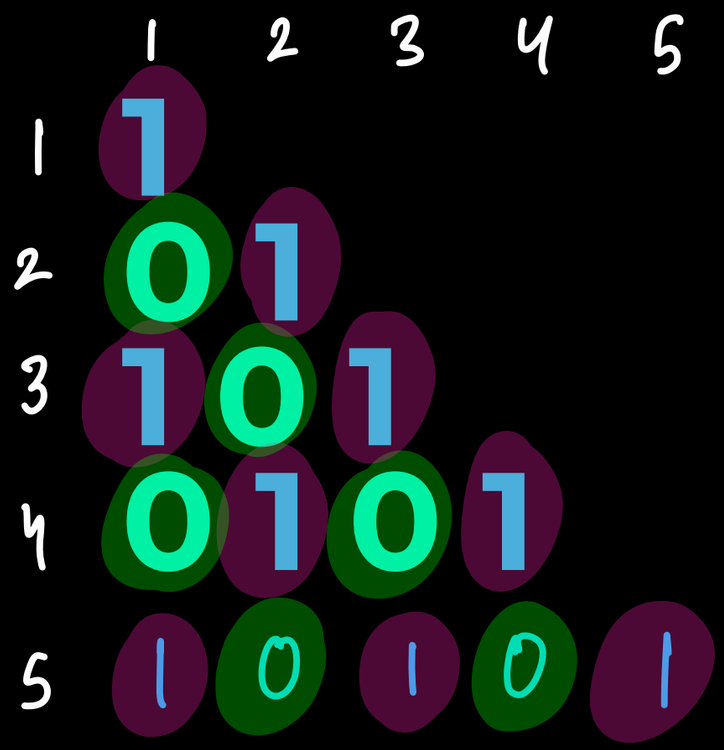
H.W.

Ques: Print the given pattern

```
1
1 3
1 3 5
1 3 5 7
```

Odd Number Triangle

Ques: Print the given pattern



1 → i+j even hai

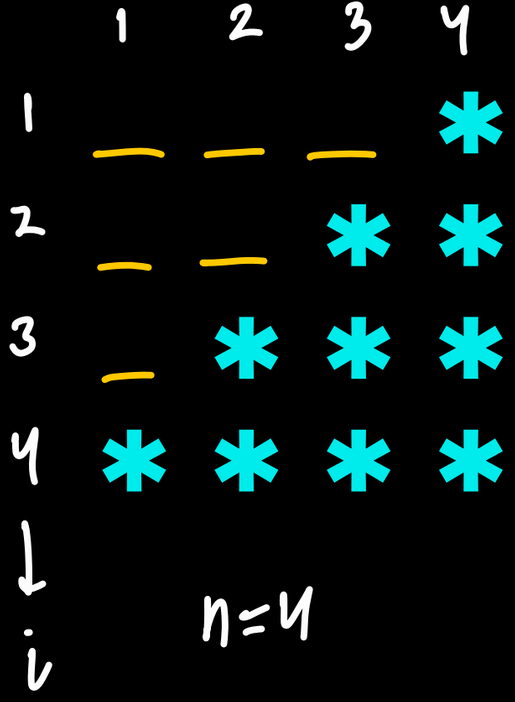
0 → i+j odd hai

n = 5

if(i is odd & j is odd) 1
if(i is odd & j is even) 0
if(i is even & j is even) 1
if(i is even & j is odd) 0

Binary Triangle

Ques: Print the given pattern



Method - 1

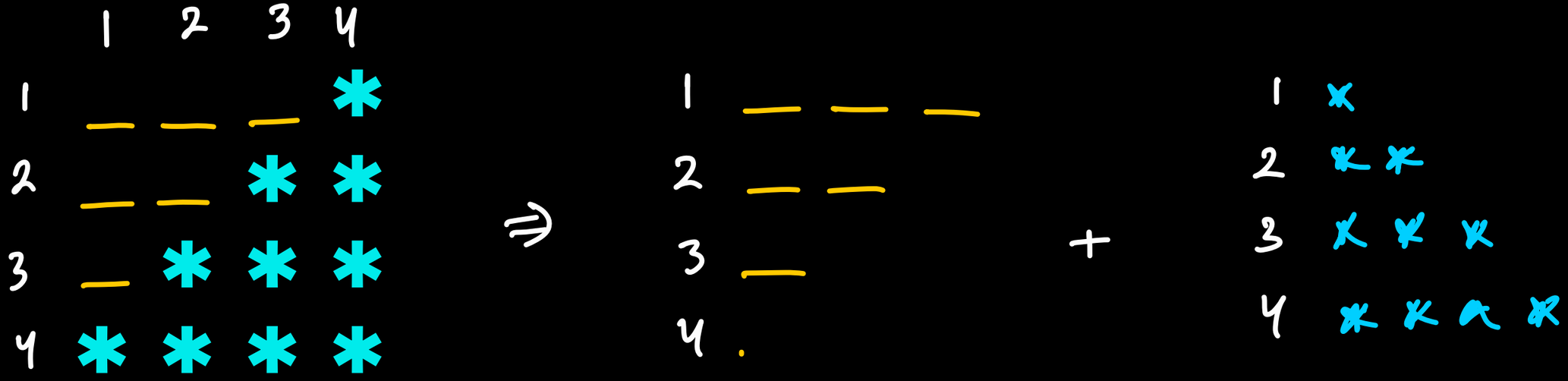
Consider this a square

```
if( i+j > n ) sout(*)
else sout(" ");
```

Star Triangle Vertically Flipped

Method-2 : 2K loop ke andar 2 loops

Ques: Print the given pattern

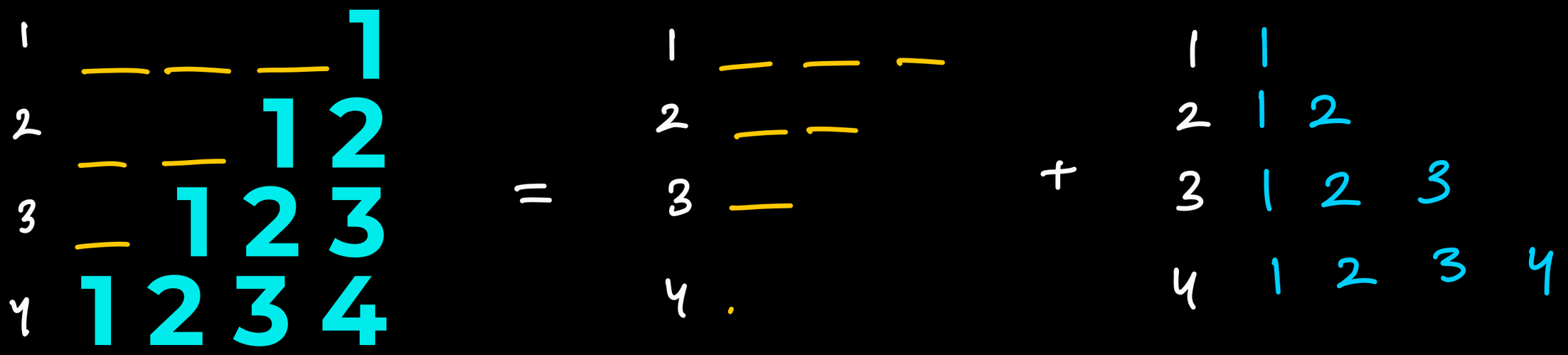


har line me kucch spaces print ho rahe hai & kucch stars print ho rahe hai.

↳ har line me 2 loops chal rahe hai

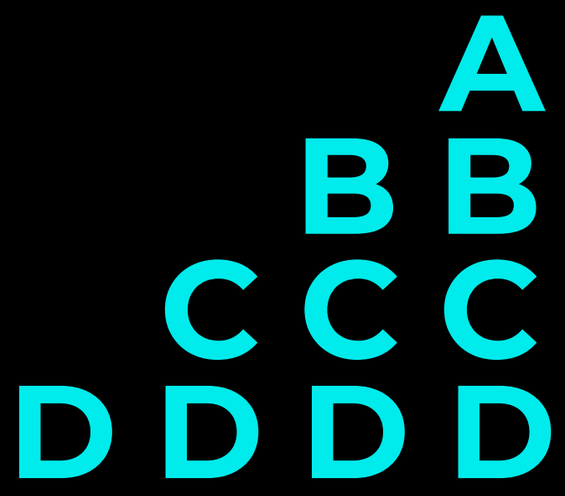
Star Triangle Vertically Flipped

Ques: Print the given pattern



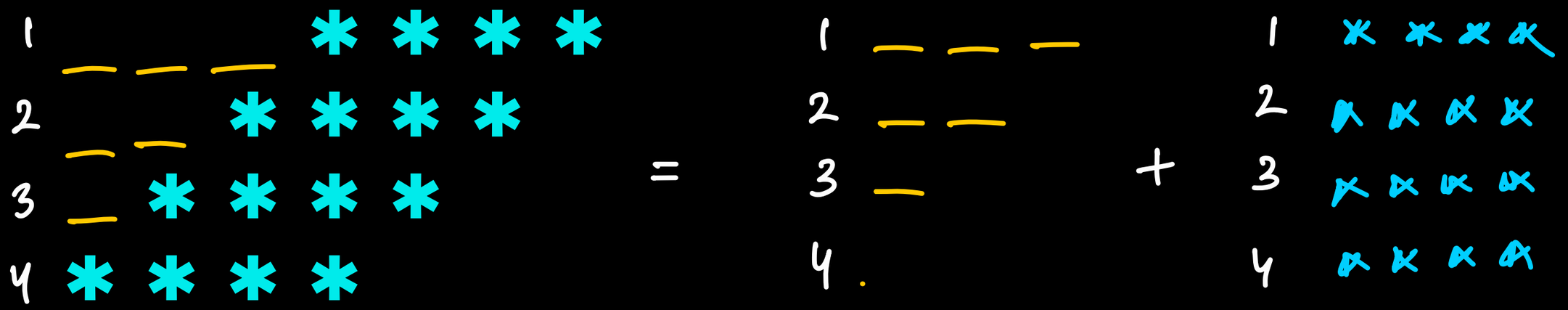
Number Triangle Vertically Flipped

HW: Print the given pattern



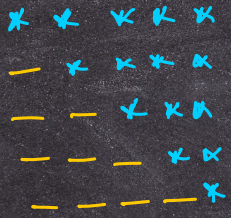
Alphabet Triangle Vertically Flipped

Ques: Print the given pattern



Rhombus

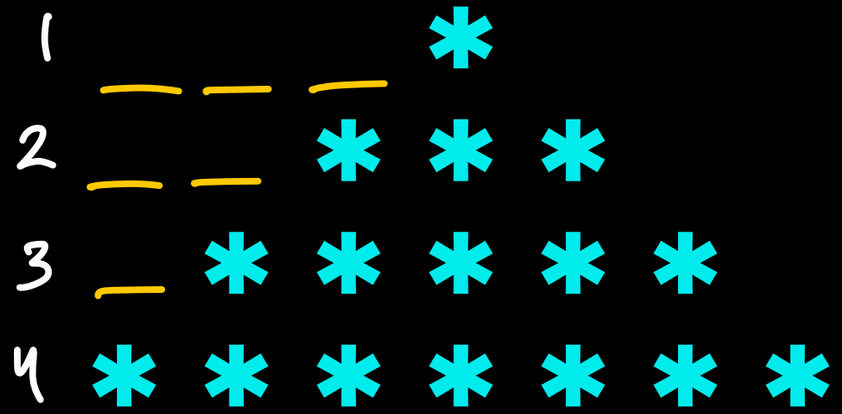
Homework

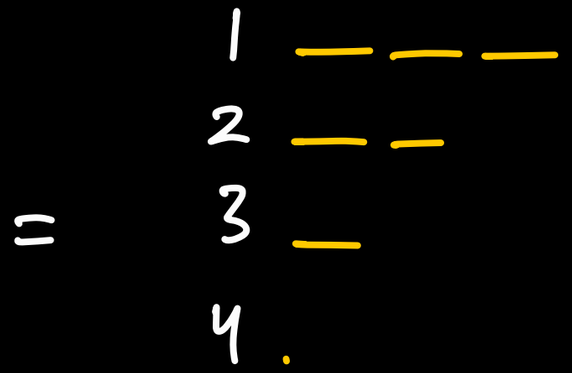


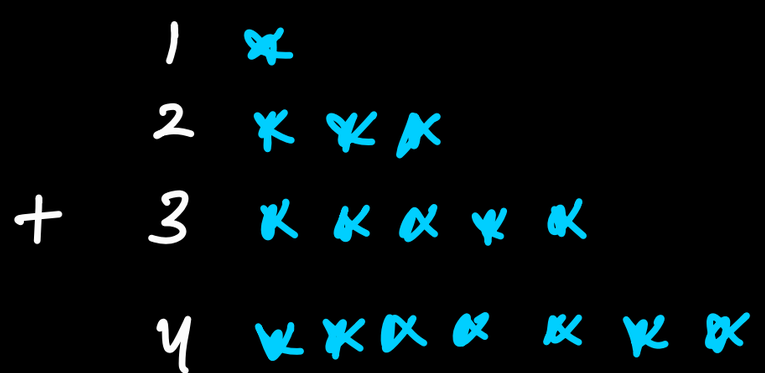
n=5

Method-1

Ques: Print the given pattern





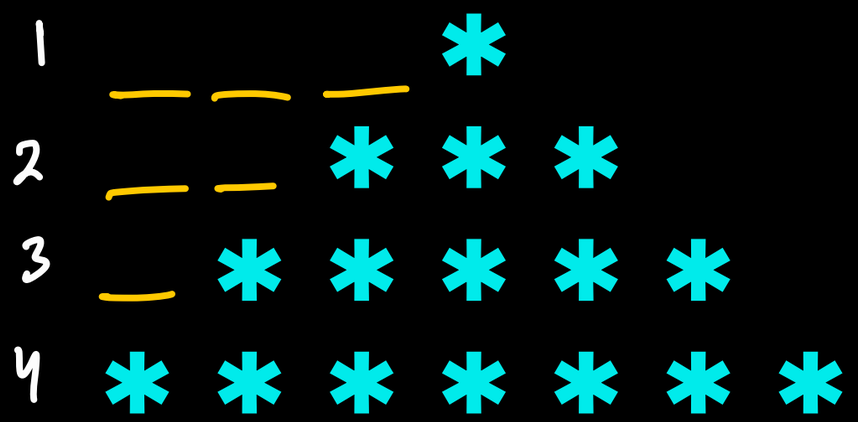


n = 4

Pyramid

Method-2

Ques: Print the given pattern

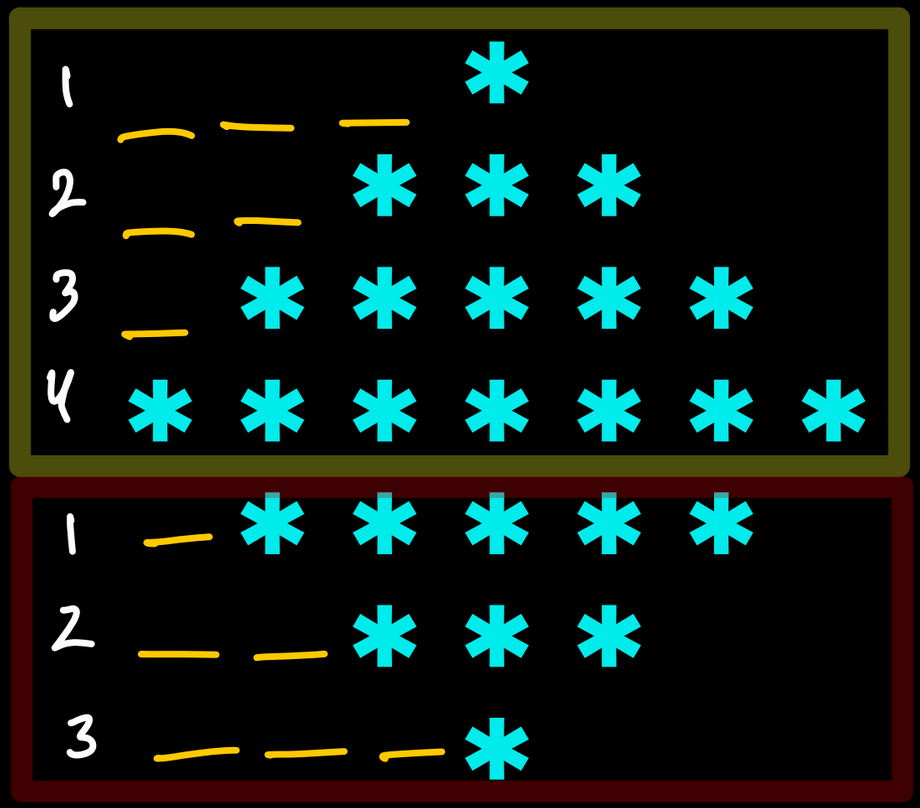



```
nsp = n-1
nst = 1
```

```
nsp -= 1
nst += 2
```

Pyramid

Ques: Print the given pattern



$n = 4$

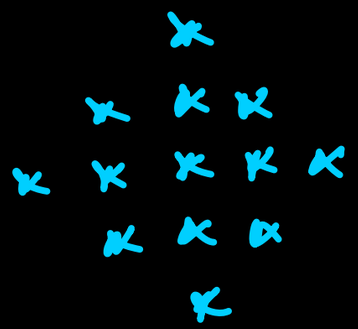
→ $nsp = n-1$ | $nsp--$
$nst = 1$ | $nst += 2$

→ $nsp = 1$ | $nsp++$
$nst = 2n-3$ | $nst -= 2$

$n = 1$

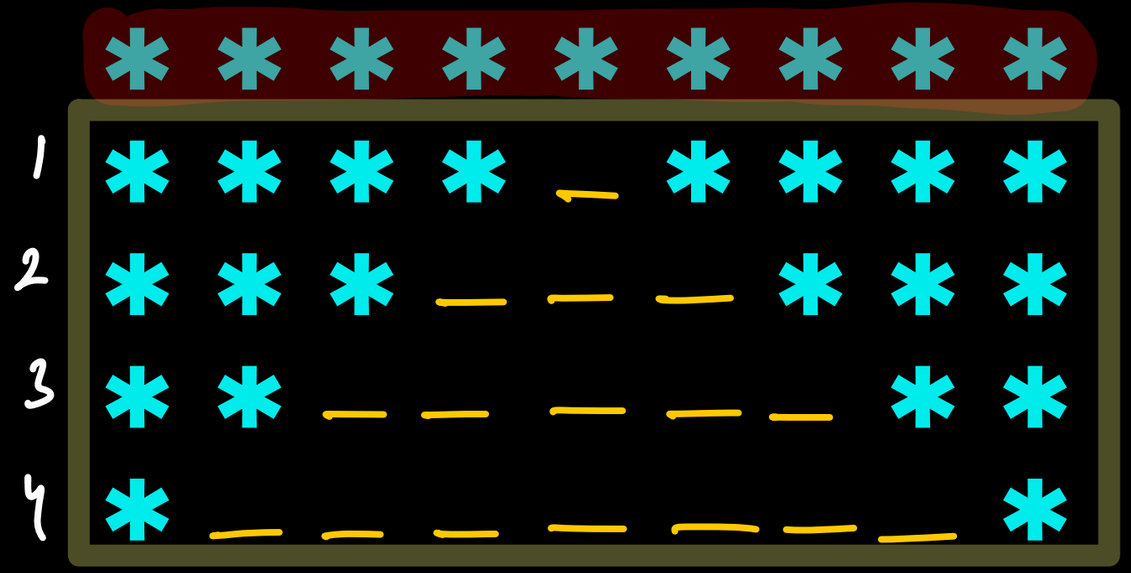
$n = 2$

$n = 3$

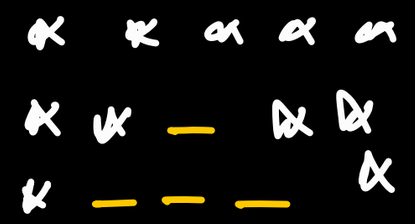


Diamond

Ques: Print the given pattern



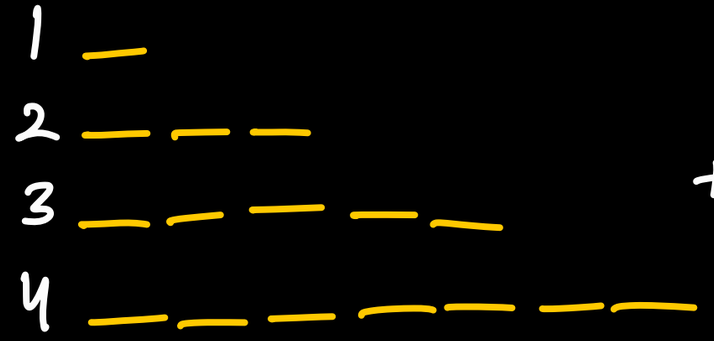
n = 3



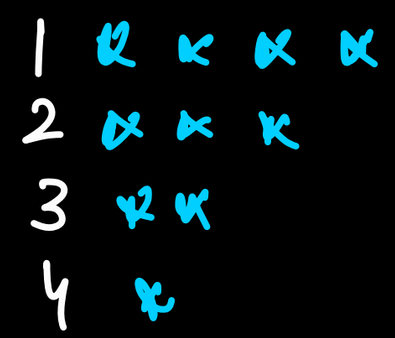
n = 5

=

+



+



Bridge

Number Spiral

n=1

1

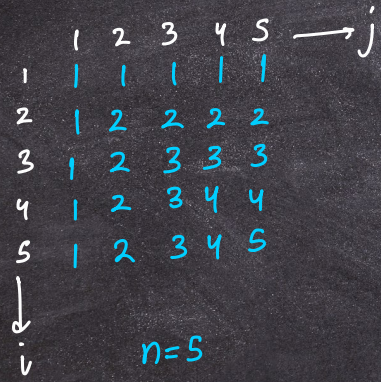
n=2

1 1 1
1 2 1
1 1 1

n=3

1 1 1 1 1
1 2 2 2 1
1 2 3 2 1
1 2 2 2 1
1 1 1 1 1

Concept of fake values.




```
for(i=1 to n)
{
    for(j=1 to n)
    {
        cout(min(i,j));
    }
    cout()
}
```

THANKYOU

Cuties