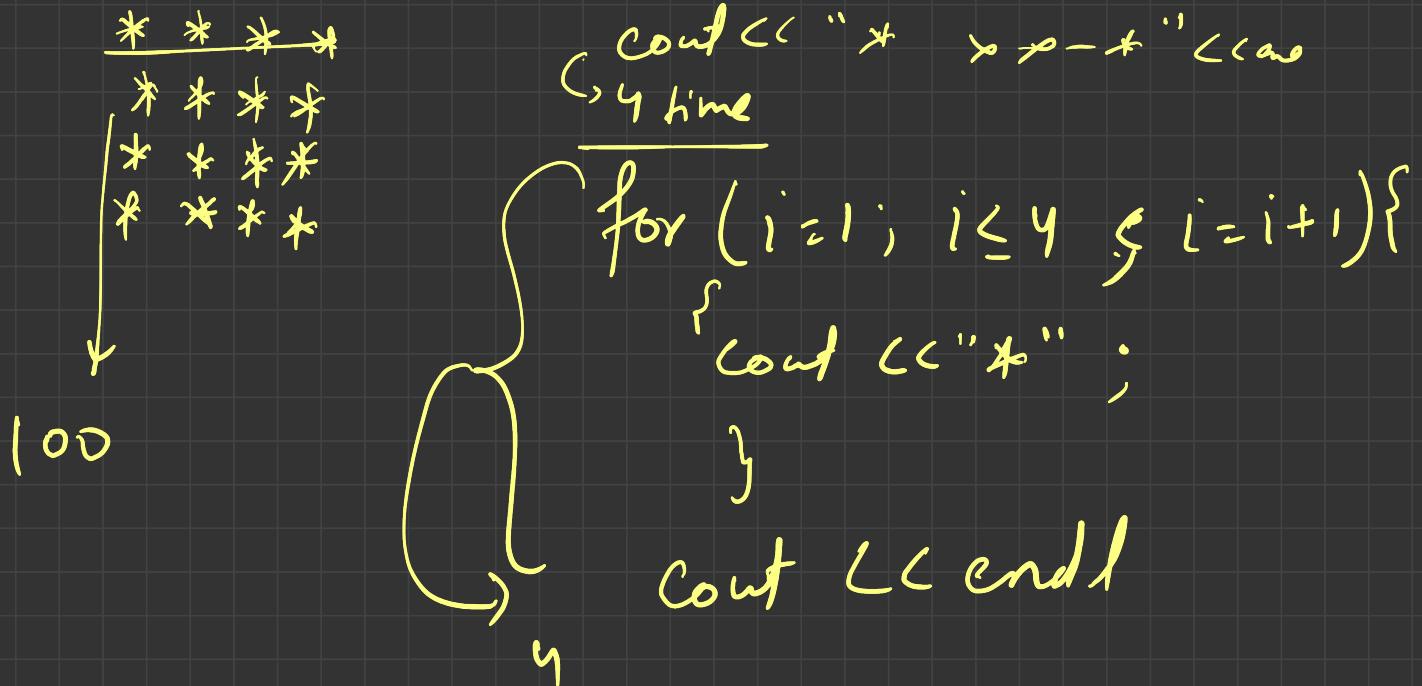
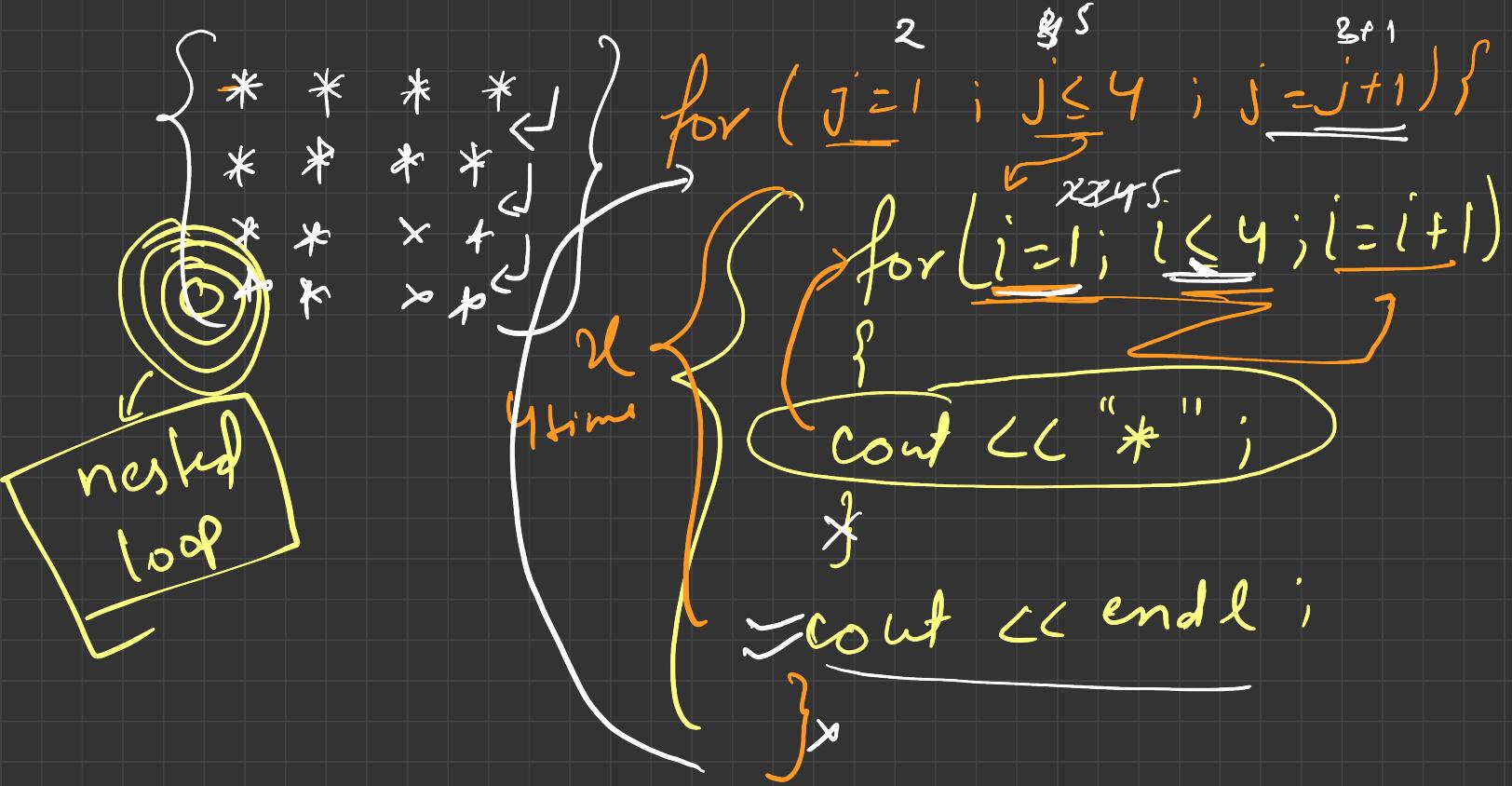


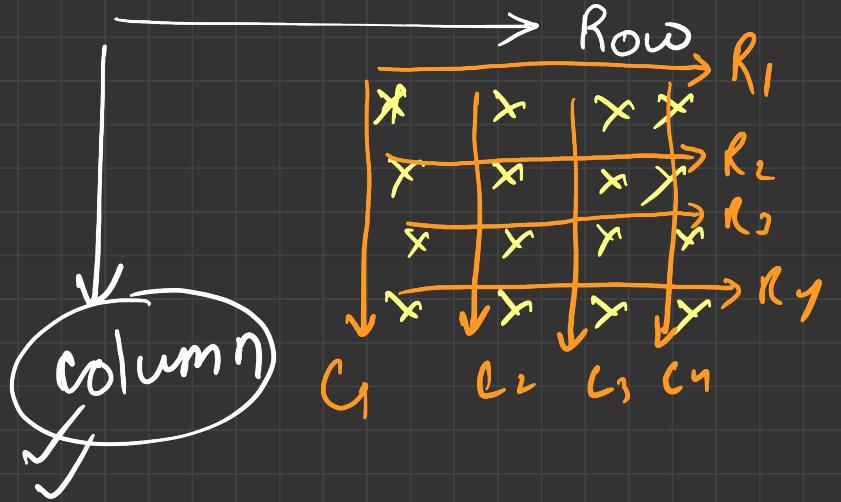
DSA 6

{Pattern Questions
using loop}

Sunfire Sensors

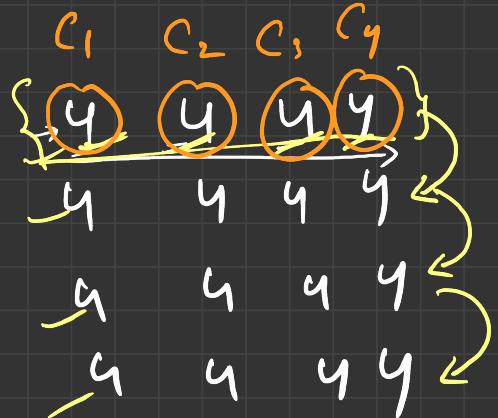






Pen

	1	2	3	4
1	1,1	1,2	1,3	1,4
2	2,1	2,2	2,3	-
3	-	-	3,3	-
4	-	-	-	4,4



row = 1

row ≤ 4 ← condition

Print y, 4 times

row = row + 1

for (row = 1 ; row ≤ 4 ; row = row + 1)

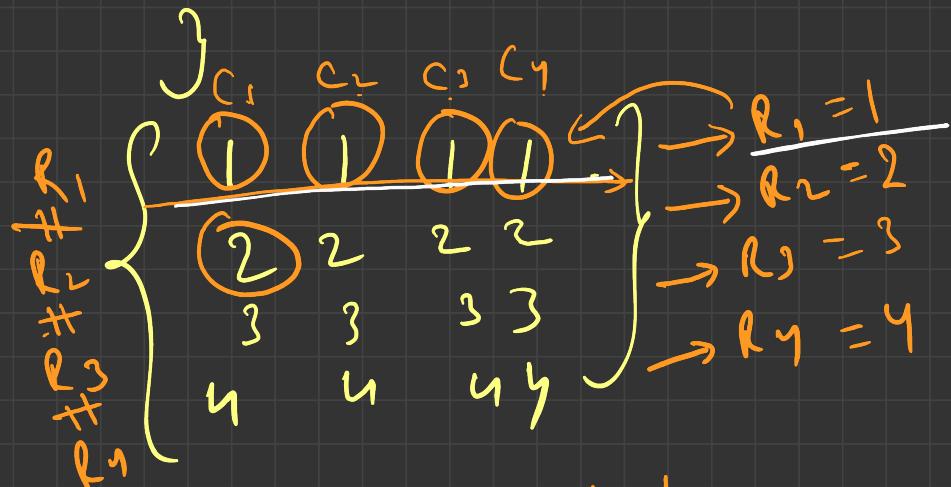
{

 // Print y, 4 times }

 for (col = 1 ; col ≤ 4 ; col = col + 1)

```
{  
    friend cout << 'y'  
}
```

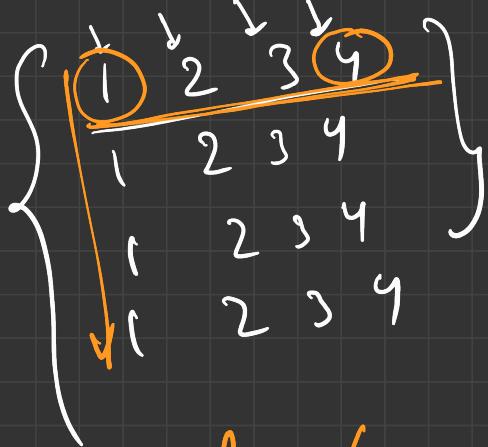
```
cout << endl;
```



row = 1
row ≤ 4
print row 4 times
row = row + 1
 $2 = 2^{1+1}$
 $3 = 2+1$

L L L L
2 2 2 2

```
    }   }   }  
    \n  \n  \n  
for (row=1 ; row <= 4 ; row++) {  
    }   for (col=1; col <= 4; col++) {  
        cout << row; }  
    }  
    cout << endl;  
}
```



$\text{row} = 1$

$\text{row} \leq 4$

Print 1 to 4

$\text{row} = \text{row} + 1$

$\text{for } (\text{row} = 1; \text{row} \leq 4; \text{row}++)$

{

$\text{for } (\text{col} = 1; \text{col} \leq 4; \text{col}++)$

{

$\text{cout} << \text{col};$

}

$\text{cout} << \text{endl};$

$\left\{ \begin{array}{cccc} 9 & 3 & 2 & 1 \\ 9 & 3 & 2 & 1 \\ 9 & 3 & 2 & 1 \\ 9 & 3 & 2 & 1 \end{array} \right\}$ \rightarrow $\text{row} = 1$
 $\text{row} \leq 4$
Print 5 to 1
 $\text{row} = \text{row} + 1$

```

for (row=1; row <= 4; row++) {
    for (col=4; col >= 1; col = col - 1) {
        cout << col << " ";
    }
    cout << endl;
}

```

$$\left\{ \begin{array}{cccc} 1 & 4 & 9 & 16 \\ 1 & 4 & 9 & 16 \\ 1 & 4 & 9 & 16 \\ 1 & 4 & 9 & 16 \end{array} \right\}$$



① $row = 1$

② $row \leq 4$

③ $ss = 'a' + (row - 1)$

④ Print ss

⑤ $row = row + 1$

```
for (row=1 ; row<=4 ; row++) {  
    char ss = 'a' + row-1  
    for (col = 1; col <= 4; col = col+1) {  
        cout << col;  
    }  
    cout << endl
```

a b c d →
a b c d
a b c d
a b c d

```
for (row=1 ; row<4 ; row++)  
{  
    for (char col = 'a' ; col<='d';  
          col++) {  
        cout << col ;  
    }  
    cout << endl ;
```

```
char ss = 'a'  
for (col = 1 ; col <= 5 ; col++)  
{  
    cout << ss + (col - 1)  
}  
cout << endl;
```

$$(row - 1) \times 4 + \underline{\text{col}}$$

1	2	3	4	\downarrow row - 1
5	6	7	8	\downarrow row 0
9	10	11	12	
13	14	15	16	

count = 1

row = 1

row \leq 4

print count + 1 5 times

Inc ↑

row = row + 1

THANK you
for watching

