

C Language

Star Pattern problems.



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Agenda

- ① Nested loop
- ② Basic skeleton code
- ③ Practic problem

Nested loop

```
while(—)  
{
```

```
    while( )  
    {
```

```
    }  
    ==
```

```
}
```

```
while(—)  
{
```

```
    ==  
    for( ; ; )  
    {  
        ==
```

```
    }
```

```
    ==
```

```
}
```

Find the output of the following program

```
int main()
{
    int a, b, c;
```

```
    for(a=5; a>1; a--)
```

```
    {
        for(b=6-a; b<=5; b++)
```

```
        {
```

```
            c=a+b;
            printf("\n %d %d %d", a, b, c);
```

```
        }
```

```
    }
```

```
}
```

a
1

b
6

c
7

246
257

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

Find output

```
int main()
{
    int a, b;
    for (a=1; a<=4; a++)
    {
        for (b=1; b<=5; b++)
        {
            printf("%d ", b*a);
        }
        printf("\n");
    }
}
```

	j			
	1	2	3	4
i	*			
2	*	*		
3	*	*	*	
4	*	*	*	*

i → row

j → column

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

```
    for (j=1; j<=4; j++)
    {
        if (j<=i)
            printf("*");
```

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

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

```
}
```

①

		j			
		1	2	3	4
i	1	*			
	2	*	*		
	3	*	*	*	
	4	*	*	*	*

②

i

1

2

3

4

j

1

1 2

1 2 3

1 2 3 4

③

i

1

2

3

4

j

 $j \leq 1$ $j \leq 2$ $j \leq 3$ $j \leq 4$

④

 $j \leq i$