

Q. 17.1

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17.1. Write a C program to print the following pattern.

4      3      2      1

\* \* \* \* \*

1 2 3 4

#include <stdio.h>

void main ()

{ for (int row=1; row<=4; row++)

{ for (int space=3; space>=row; space--)

{ printf(" ");

}

for (int col=1; col<=row\*2-1; col++)

{ printf("\* ");

}

printf("\n");

}

}

}

1

2

3

4

3

2

1

4

3

2

1

4

3

# Dry Run

row row <= 4 space space >= row PF(" ") col col <= row \* 2 - 1 PF(\*)

1	1 <= 4	3	3 >= 1	*	1	1 <= 1	*
		2	2 >= 1	*	2	2 <= 1	X
		1	1 >= 1	-			
		0	0 >= 1	X			

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{ C) aum biov

2 2 <= 4 { ( + row 3 : 3 >= 2 : 0 = 000 101 ) row 1 <= 3

-- 3 : 000 : 000 = < 2 : 000 2 >= 2 : 000 000 101 ) row 2 2 <= 3

1 { ( " 1 " ) 1 >= 2 X } 3 3 <= 3

4 4 <= 3 X

{ ( + 100 : 1 - 0 \* 0000 > 100 : 1 = 100 101 ) row

3 3 <= 4 { 3 : 3 >= 3 : 000 - 1 1 <= 5

2 2 >= 3 X { 2 2 <= 5

{ ( " 0 " ) 10000 3 3 <= 5

4 4 <= 5

5 5 <= 5

6 6 <= 5 X

4 4 <= 4 3 3 >= 4 X

1 1 <= 7

2 2 <= 7

3 3 <= 7

4 4 <= 7

5 5 <= 7

6 6 <= 7

7 7 <= 7

8 8 <= 7 X

5 5 <= 4 X

Date / /

Q.

1

1 2 3 2 1

1 2 3 4 3 2 1

1 2 3 4 3 2 1

1 2 3 4 3 2 1

```
#include <stdio.h>
```

```
void main () {
```

```
    for (int row = 1; row <= 4; row++) {
```

```
        int x = 1; int space = 3;
```

```
        for (int space = 3; space >= row; space--) {
```

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

```
        }
```

```
        for (int col = 1; col <= row * 2 - 1; col++) {
```

```
            printf("%d", x);
```

```
            if (col >= row) {
```

```
                x--;
```

```
            }
```

```
            else {
```

```
                x++;
```

```
            }
```

```
        }
```

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

```
    }
```

```
}
```



• Dry Run

row row <= 4 space space > row pf(" ") col col <= row \* 2 - 1 pf("X")

1 1 <= 4 3 3 >= 1 - 1 1 <= 1 1  
2 2 >= 1 - 2 2 <= 1 X  
1 1 >= 1 -  
0 0 >= 1

2 2 <= 4 3 3 >= 2 1 1 <= 3 1  
2 2 <= 3 2  
1 1 <= 2 X 3 3 <= 3 1  
4 4 <= 3 X

3 3 <= 4 3 3 >= 3 1 1 <= 5 1  
2 2 <= 5 2  
3 3 <= 5 3  
4 4 <= 5 2  
5 5 <= 5 1

4 4 <= 4 3 3 >= 4 X 1 1 <= 7 1  
2 2 <= 7 2  
3 3 <= 7 3  
4 4 <= 7 4  
5 5 <= 7 3  
6 6 <= 7 2  
7 7 <= 7 1  
8 8 <= 7 X

5 5 <= 4 X