**C Program to Print Pyramids and Patterns**

In this example, you will learn to print half pyramids, inverted pyramids, full pyramids, inverted full pyramids, Pascal's triangle, and Floyd's triangle in C Programming.

To understand this example, you should have the knowledge of the following [C programming](https://www.programiz.com/c-programming) topics:

* [C if...else Statement](https://www.programiz.com/c-programming/c-if-else-statement)
* [C for Loop](https://www.programiz.com/c-programming/c-for-loop)
* [C while and do...while Loop](https://www.programiz.com/c-programming/c-do-while-loops)
* [C break and continue](https://www.programiz.com/c-programming/c-break-continue-statement)

Here is a list of programs you will find in this page.

| C Examples |
| --- |
| Half pyramid of \* |
| Half pyramid of numbers |
| Half pyramid of alphabets |
| Inverted half pyramid of \* |
| Inverted half pyramid of numbers |
| Full pyramid of \* |
| Full pyramid of numbers |
| Inverted full pyramid of \* |
| Pascal's triangle |
| Floyd's triangle |

**Example 1: Half Pyramid of \***

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\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

**C Program**

#include <stdio.h>

int main() {

int i, j, rows;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = 1; i <= rows; ++i) {

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

printf("\* ");

}

printf("\n");

}

return 0;

}

**Example 2: Half Pyramid of Numbers**

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

**C Program**

#include <stdio.h>

int main() {

int i, j, rows;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = 1; i <= rows; ++i) {

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

printf("%d ", j);

}

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)

**Example 3: Half Pyramid of Alphabets**

A

B B

C C C

D D D D

E E E E E

**C Program**

#include <stdio.h>

int main() {

int i, j;

char input, alphabet = 'A';

printf("Enter an uppercase character you want to print in the last row: ");

scanf("%c", &input);

for (i = 1; i <= (input - 'A' + 1); ++i) {

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

printf("%c ", alphabet);

}

++alphabet;

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)

**Example 4: Inverted half pyramid of \***

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\* \* \* \*

\* \* \*

\* \*

\*

**C Program**

#include <stdio.h>

int main() {

int i, j, rows;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = rows; i >= 1; --i) {

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

printf("\* ");

}

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)

**Example 5: Inverted half pyramid of numbers**

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1

**C Program**

#include <stdio.h>

int main() {

int i, j, rows;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = rows; i >= 1; --i) {

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

printf("%d ", j);

}

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)

**Example 6: Full Pyramid of \***

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**C Program**

#include <stdio.h>

int main() {

int i, space, rows, k = 0;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = 1; i <= rows; ++i, k = 0) {

for (space = 1; space <= rows - i; ++space) {

printf(" ");

}

while (k != 2 \* i - 1) {

printf("\* ");

++k;

}

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)

**Example 7: Full Pyramid of Numbers**

1

2 3 2

3 4 5 4 3

4 5 6 7 6 5 4

5 6 7 8 9 8 7 6 5

**C Program**

#include <stdio.h>

int main() {

int i, space, rows, k = 0, count = 0, count1 = 0;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = 1; i <= rows; ++i) {

for (space = 1; space <= rows - i; ++space) {

printf(" ");

++count;

}

while (k != 2 \* i - 1) {

if (count <= rows - 1) {

printf("%d ", i + k);

++count;

} else {

++count1;

printf("%d ", (i + k - 2 \* count1));

}

++k;

}

count1 = count = k = 0;

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)

**Example 8: Inverted full pyramid of \***

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

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\*

**C Program**

#include <stdio.h>

int main() {

int rows, i, j, space;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = rows; i >= 1; --i) {

for (space = 0; space < rows - i; ++space)

printf(" ");

for (j = i; j <= 2 \* i - 1; ++j)

printf("\* ");

for (j = 0; j < i - 1; ++j)

printf("\* ");

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)

**Example 9: Pascal's Triangle**

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

1 5 10 10 5 1

**C Program**

#include <stdio.h>

int main() {

int rows, coef = 1, space, i, j;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = 0; i < rows; i++) {

for (space = 1; space <= rows - i; space++)

printf(" ");

for (j = 0; j <= i; j++) {

if (j == 0 || i == 0)

coef = 1;

else

coef = coef \* (i - j + 1) / j;

printf("%4d", coef);

}

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)

**Example 10: Floyd's Triangle.**

1

2 3

4 5 6

7 8 9 10

**C Program**

#include <stdio.h>

int main() {

int rows, i, j, number = 1;

printf("Enter the number of rows: ");

scanf("%d", &rows);

for (i = 1; i <= rows; i++) {

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

printf("%d ", number);

++number;

}

printf("\n");

}

return 0;

}

[Run Code](https://www.programiz.com/c-programming/online-compiler)