Patterns:

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Q)Write a Java program to display the following output?

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Ans)

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_01 {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print("\* ");

}

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

0 1 2 3 4 5 6 7 8 9

**Ex:**

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_02 {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print(j + " ");

}

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

9 8 7 6 5 4 3 2 1 0

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_03 {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print((9 - j) + " ");

}

System.***out***.println();

}

}

}

(or)

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_03 {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 9; j >= 0; j--) {

System.***out***.print(j + " ");

}

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

0 0 0 0 0 0 0 0 0 0

1 1 1 1 1 1 1 1 1 1

2 2 2 2 2 2 2 2 2 2

3 3 3 3 3 3 3 3 3 3

4 4 4 4 4 4 4 4 4 4

5 5 5 5 5 5 5 5 5 5

6 6 6 6 6 6 6 6 6 6

7 7 7 7 7 7 7 7 7 7

8 8 8 8 8 8 8 8 8 8

9 9 9 9 9 9 9 9 9 9

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_04{

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print(i + " ");

}

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

9 9 9 9 9 9 9 9 9 9

8 8 8 8 8 8 8 8 8 8

7 7 7 7 7 7 7 7 7 7

6 6 6 6 6 6 6 6 6 6

5 5 5 5 5 5 5 5 5 5

4 4 4 4 4 4 4 4 4 4

3 3 3 3 3 3 3 3 3 3

2 2 2 2 2 2 2 2 2 2

1 1 1 1 1 1 1 1 1 1

0 0 0 0 0 0 0 0 0 0

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_05 {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print((9 - i) + " ");

}

System.***out***.println();

}

}

}

(or)

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_06 {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 9; i >= 0; i--) {

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print(i + " ");

}

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

a b c d e f g h i j

a b c d e f g h i j

a b c d e f g h i j

a b c d e f g h i j

a b c d e f g h i j

a b c d e f g h i j

a b c d e f g h i j

a b c d e f g h i j

a b c d e f g h i j

a b c d e f g h i j

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_07 {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print((**char**) (97 + j) + " ");

}

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

j i h g f e d c b a

j i h g f e d c b a

j i h g f e d c b a

j i h g f e d c b a

j i h g f e d c b a

j i h g f e d c b a

j i h g f e d c b a

j i h g f e d c b a

j i h g f e d c b a

j i h g f e d c b a

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_08 {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print((**char**) (106 - j) + " ");

}

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

a a a a a a a a a a

b b b b b b b b b b

c c c c c c c c c c

d d d d d d d d d d

e e e e e e e e e e

f f f f f f f f f f

g g g g g g g g g g

h h h h h h h h h h

i i i i i i i i i i

j j j j j j j j j j

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_09 {

**public** **static** **void** main(String[] args) {

**char** currentChar = 'a';

// Outer loop for rows

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for columns

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print(currentChar + " ");

}

// Move to the next character after each row

currentChar++;

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following output?

j j j j j j j j j j

i i i i i i i i i i

h h h h h h h h h h

g g g g g g g g g g

f f f f f f f f f f

e e e e e e e e e e

d d d d d d d d d d

c c c c c c c c c c

b b b b b b b b b b

a a a a a a a a a a

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_10 {

**public** **static** **void** main(String[] args) {

**char** currentChar = 'j';

// Outer loop for rows

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for columns

**for** (**int** j = 0; j < 10; j++) {

System.***out***.print(currentChar + " ");

}

// Move to the previous character after each row

currentChar--;

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following pattern?

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**package** com.codegnan.patternexamples;

**public** **class** Pattern\_11 {

**public** **static** **void** main(String[] args) {

// Outer loop for rows

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for columns, prints '\*' based on current row number

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

System.***out***.print("\* ");

}

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following output?

0

0 1

0 1 2

0 1 2 3

0 1 2 3 4

0 1 2 3 4 5

0 1 2 3 4 5 6

0 1 2 3 4 5 6 7

0 1 2 3 4 5 6 7 8

0 1 2 3 4 5 6 7 8 9

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_12 {

**public** **static** **void** main(String[] args) {

// Outer loop for rows

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for columns, prints numbers based on current row number

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

System.***out***.print(j + " ");

}

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following output?

9

9 8

9 8 7

9 8 7 6

9 8 7 6 5

9 8 7 6 5 4

9 8 7 6 5 4 3

9 8 7 6 5 4 3 2

9 8 7 6 5 4 3 2 1

9 8 7 6 5 4 3 2 1 0

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_13 {

**public** **static** **void** main(String[] args) {

// Outer loop for the number of rows (from 0 to 9)

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for printing numbers in each row

// Starts from 0 and goes up to i

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

// Print the value (9 - j) followed by a space

// (9 - j) generates numbers from 9 down to (9 - i)

System.***out***.print((9 - j) + " ");

}

// Move to the next line after each row is printed

System.***out***.println();

}

}

Q)Write a Java program to display the following output?

0

1 1

2 2 2

3 3 3 3

4 4 4 4 4

5 5 5 5 5 5

6 6 6 6 6 6 6

7 7 7 7 7 7 7 7

8 8 8 8 8 8 8 8 8

9 9 9 9 9 9 9 9 9 9

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_14 {

**public** **static** **void** main(String[] args) {

// Outer loop for the number of rows (from 0 to 9)

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for printing numbers in each row

// Starts from 0 and goes up to i

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

// Print the current value of i followed by a space

// This prints the value of i for each column in the row

System.***out***.print(i + " ");

}

// Move to the next line after each row is printed

System.***out***.println();

}

}

Q)Write a Java program to display the following output?

9

8 8

7 7 7

6 6 6 6

5 5 5 5 5

4 4 4 4 4 4

3 3 3 3 3 3 3

2 2 2 2 2 2 2 2

1 1 1 1 1 1 1 1 1

0 0 0 0 0 0 0 0 0 0

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_15 {

**public** **static** **void** main(String[] args) {

// Outer loop for the number of rows (from 0 to 9)

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for printing numbers in each row

// Starts from 0 and goes up to i

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

// Calculate and print the value (9 - i) for each column in the row

// This expression decreases from 9 to (9 - i) as j increments

System.***out***.print((9 - i) + " ");

}

// Move to the next line after each row is printed

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

a

a b

a b c

a b c d

a b c d e

a b c d e f

a b c d e f g

a b c d e f g h

a b c d e f g h i

a b c d e f g h i j

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_16 {

**public** **static** **void** main(String[] args) {

// Outer loop for the number of rows (from 0 to 9)

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for printing characters in each row

// Starts from 0 and goes up to i

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

// Calculate the character using ASCII value: 'a' + j

**char** ch = (**char**)(97 + j);

// Print the character followed by a space

System.***out***.print(ch + " ");

}

// Move to the next line after each row is printed

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

j

j i

j i h

j i h g

j i h g f

j i h g f e

j i h g f e d

j i h g f e d c

j i h g f e d c b

j i h g f e d c b a

**package** com.codegnan.patternexamples;

**public** **class** Pattern\_17 {

**public** **static** **void** main(String[] args) {

// Outer loop for the number of rows (from 0 to 9)

**for** (**int** i = 0; i < 10; i++) {

// Inner loop for printing characters in each row

// Starts from 0 and goes up to i

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

// Calculate the character using ASCII value: 'j' - j

**char** ch = (**char**)(106 - j);

// Print the character followed by a space

System.***out***.print(ch + " ");

}

// Move to the next line after each row is printed

System.***out***.println();

}

}

}

(Or)

**package** com.codegnan.patternexamples;

**public** **class** PyramidPattern {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 10; i++) {

**for** (**int** j = 0; j < 10; j++) {

**if** (j < 9 - i) {

System.***out***.print(" " + " ");

} **else** {

System.***out***.print("\*" + " ");

}

}

System.***out***.println();

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** InvertedPyramidPattern {

**public** **static** **void** main(String[] args) {

**int** rows = 10; // Number of rows in the inverted pyramid

// Outer loop for each row

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

// Inner loop to print stars for each row

**for** (**int** j = 0; j < rows - i; j++) {

System.***out***.print("\* "); // Print star followed by a space

}

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** InvertedPyramidPattern {

**public** **static** **void** main(String[] args) {

**int** rows = 10; // Number of rows in the inverted pyramid

// Outer loop for each row

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

// Inner loop to print spaces before the stars

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

System.***out***.print(" "); // Two spaces for formatting

}

// Inner loop to print stars for each row

**for** (**int** k = 0; k < rows - i; k++) {

System.***out***.print("\* "); // Print star followed by a space

}

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** InvertedPyramidPattern {

**public** **static** **void** main(String[] args) {

**int** rows = 10; // Number of rows in the inverted pyramid

// Outer loop for each row

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

// Inner loop to print spaces before the stars

**for** (**int** j = 0; j < rows - i - 1; j++) {

System.***out***.print(" "); // Print space

}

// Inner loop to print stars for each row

**for** (**int** k = 0; k <= i; k++) {

System.***out***.print("\* "); // Print star followed by a space

}

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** InvertedPyramidPattern {

**public** **static** **void** main(String[] args) {

**int** rows = 10; // Number of rows in the inverted pyramid

// Outer loop for each row

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

// Inner loop to print spaces before the stars

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

System.***out***.print(" "); // Print space

}

// Inner loop to print stars for each row

**for** (**int** k = 0; k < rows - i; k++) {

System.***out***.print("\* "); // Print star followed by a space

}

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** DiamondPattern {

**public** **static** **void** main(String[] args) {

**int** rows = 10; // Number of rows in the diamond pattern

// Upper half of the diamond

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

// Inner loop to print spaces before the stars

**for** (**int** j = 0; j < rows - i - 1; j++) {

System.***out***.print(" "); // Print space

}

// Inner loop to print stars for each row

**for** (**int** k = 0; k <= i; k++) {

System.***out***.print("\* "); // Print star followed by a space

}

System.***out***.println(); // Move to the next line after each row

}

// Lower half of the diamond (excluding the middle row)

**for** (**int** i = 0; i < rows - 1; i++) {

// Inner loop to print spaces before the stars

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

System.***out***.print(" "); // Print space

}

// Inner loop to print stars for each row

**for** (**int** k = 0; k < rows - 1 - i; k++) {

System.***out***.print("\* "); // Print star followed by a space

}

System.***out***.println(); // Move to the next line after each row

}

}

}

(or)

**package** com.codegnan.patternexamples;

**public** **class** DiamondPattern {

**public** **static** **void** main(String[] args) {

**for** (**int** i = 0; i < 19; i++) {

**if** (i < 10) {

**for** (**int** j = 0; j < 9 - i; j++) {

System.***out***.print(" ");

}

**for** (**int** k = 0; k <= i; k++) {

System.***out***.print("\*" + " ");

}

System.***out***.println();

} **else** {

// System.out.println("else part where i value is "+i);

**for** (**int** l = 0; l <= i - 10; l++) {

// System.out.println("else part, in spaces part, where i value is "+i);

System.***out***.print(" ");

}

**for** (**int** m = 0; m < 19 - i; m++) {

// System.out.println("else part, in spaces part, where i value is "+i);

System.***out***.print("\*" + " ");

}

System.***out***.println(); // Move to the next line after each row

}

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** StarPattern {

**public** **static** **void** main(String[] args) {

**int** rows = 10; // Total number of rows

// Loop through each row

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

// Print 8 stars for the first 5 rows and 2 stars for the last 5 rows

**int** numStars = (i < 5) ? 8 : 2;

// Inner loop to print stars in each row

**for** (**int** j = 0; j < numStars; j++) {

System.***out***.print("\* ");

}

System.***out***.println(); // Move to the next line after each row

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** ChristmasTreePattern {

**public** **static** **void** main(String[] args) {

**int** height = 7; // Total height of the Christmas tree

// Loop to print each row of the Christmas tree

**for** (**int** i = 0; i < height; i++) {

// Print spaces for alignment

**for** (**int** j = 0; j < height - i - 1; j++) {

System.***out***.print(" ");

}

// Print stars for the branches

**for** (**int** k = 0; k < 2 \* i + 1; k++) {

System.***out***.print("\*");

}

System.***out***.println(); // Move to the next line after each row

}

// Print the trunk of the Christmas tree

**for** (**int** i = 0; i < 2; i++) {

**for** (**int** j = 0; j < height - 1; j++) {

System.***out***.print(" ");

}

System.***out***.println("|");

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** KitePattern {

**public** **static** **void** main(String[] args) {

**int** height = 7; // Total height of the kite

// Upper part of the kite

**for** (**int** i = 0; i < height / 2 + 1; i++) {

**for** (**int** j = 0; j < height - i; j++) {

System.***out***.print(" ");

}

**for** (**int** k = 0; k < 2 \* i + 1; k++) {

System.***out***.print("\*");

}

System.***out***.println();

}

// Lower part of the kite

**for** (**int** i = height / 2; i >= 0; i--) {

**for** (**int** j = 0; j < height - i; j++) {

System.***out***.print(" ");

}

**for** (**int** k = 0; k < 2 \* i + 1; k++) {

System.***out***.print("\*");

}

System.***out***.println();

}

// Print the tail of the kite

**for** (**int** i = 0; i < height / 2; i++) {

**for** (**int** j = 0; j < height / 2 + 1; j++) {

System.***out***.print(" ");

}

System.***out***.println("\*");

}

}

}

Q)Write a Java program to display the following output?

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**package** com.codegnan.patternexamples;

**public** **class** ButterflyPattern {

**public** **static** **void** main(String[] args) {

**int** size = 7; // Size of the butterfly pattern (adjustable)

// Upper part of the butterfly

**for** (**int** i = 1; i <= size; i++) {

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

System.***out***.print("\* ");

}

**int** spaces = 2 \* (size - i);

**for** (**int** j = 1; j <= spaces; j++) {

System.***out***.print(" ");

}

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

System.***out***.print("\* ");

}

System.***out***.println();

}

// Lower part of the butterfly

**for** (**int** i = size; i >= 1; i--) {

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

System.***out***.print("\* ");

}

**int** spaces = 2 \* (size - i);

**for** (**int** j = 1; j <= spaces; j++) {

System.***out***.print(" ");

}

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

System.***out***.print("\* ");

}

System.***out***.println();

}

}

}

1.Moulya, a passionate traveler, visited the pyramids of Egypt and was inspired to create a Java program that captures the essence of these architectural marvels. Now, she wants to use her programming skills to print a pyramid pattern based on the user's input for the number of rows. Can you help Moulya in writing the Java program?

Input format:

The input is an integer that represents the number of rows.

Output format:

The output is a pyramid pattern as shown in the sample test cases.

Execution Results

TestCase - 1 (Execution Time: 251ms)

Expected Output

5

1

1·2·1

1·2·3·2·1

1·2·3·4·3·2·1

1·2·3·4·5·4·3·2·1

Solution:

//File Name: q22758/PyramidPattern.java

//==================================

package q22758;

import java.util.Scanner;

public class PyramidPattern {

// write your code here..

public static void main(String[]args){

Scanner sc = new Scanner(System.in);

int rows = sc.nextInt();

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

for(int j = rows; j > i; j--){

System.out.print(" ");

System.out.print(" ");

}

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

System.out.print(j);

System.out.print(" ");

}

for(int j = i - 1; j >=1; j--){

System.out.print(j);

System.out.print(" ");

}

System.out.println();

}

}

}

Print the below pattern

—---------------------------

1 7 12 16 19 21

2 8 13 17 20

3 9 14 18

4 10 15

5 11

6

================================================================================

**package** com.codegnan.features;

**public** **class** NumberPattern {

**public** **static** **void** main(String[] args) {

// Outer loop controls the number of rows (6 rows in this case)

**for** (**int** i = 1; i <= 6; i++) {

// Initialize 'n' to the current row number (starting number for each row)

**int** n = i;

// Inner loop controls how many numbers are printed in each row (6 - i times)

**for** (**int** j = 0; j < 6 - i; j++) {

System.***out***.print(n + " "); // Print the current number

n += 6 - j; // Increase the number by a value dependent on the column position

}

// After finishing the inner loop, print the last value of 'n' and move to the next line

System.***out***.println(n);

}

}

}