



JAVA LOOPS

FOR LOOP , WHILE LOOP , DO WHILE LOOP

START SLIDE



LOOPS

A loop is a way in programming to repeat a block of code multiple times without writing it many times.

Instead of copying and pasting the same code, you create a loop so that your code is more compact, easier to change, and less error-prone.

FOR LOOP

When you know exactly how many times you want to loop through a block of code, use the for loop.

Statement 1 is executed (one time) before the execution of the code block.

Statement 2 defines the condition for executing the code block.

Statement 3 is executed (every time) after the code block has been executed.



```
for (statement 1; statement 2; statement 3) {  
    // code block to be executed  
}
```

FOR LOOP

Output:



```
public class Main {  
    public static void main(String[] args) {  
        for (int i = 0; i < 5; i++) {  
            System.out.println(i);  
        }  
    }  
}
```

0

1

2

3

4

NESTED LOOPS

It is also possible to place a loop inside another loop. This is called a nested loop.
The "inner loop" will be executed one time for each iteration of the "outer loop":



```
for (int i = 1; i <= 3; i++) {  
    for (int j = 1; j <= 3; j++) {  
        System.out.print(i * j + " ");  
    }  
    System.out.println();  
}
```

Output:

1	2	3
2	4	6
3	6	9

WHILE LOOP

The while loop repeats a block of code as long as the specified condition is true:



```
while (condition) {  
    // code block to be executed  
}
```

WHILE LOOP



```
public class Main {  
    public static void main(String[] args) {  
        int i = 0;  
        while (i < 5) {  
            System.out.println(i);  
            i++;  
        }  
    }  
}
```

Output:

0

1

2

3

4

DO/WHILE LOOP

The do/while loop is a variant of the while loop. This loop will execute the code block once, before checking if the condition is true. Then it will repeat the loop as long as the condition is true.



```
do {  
    // code block to be executed  
}  
while (condition);
```

WHILE LOOP



```
public class Main {  
    public static void main(String[] args) {  
        int i = 0;  
        do {  
            System.out.println(i);  
            i++;  
        }  
        while (i < 5);  
    }  
}
```

Output:

0

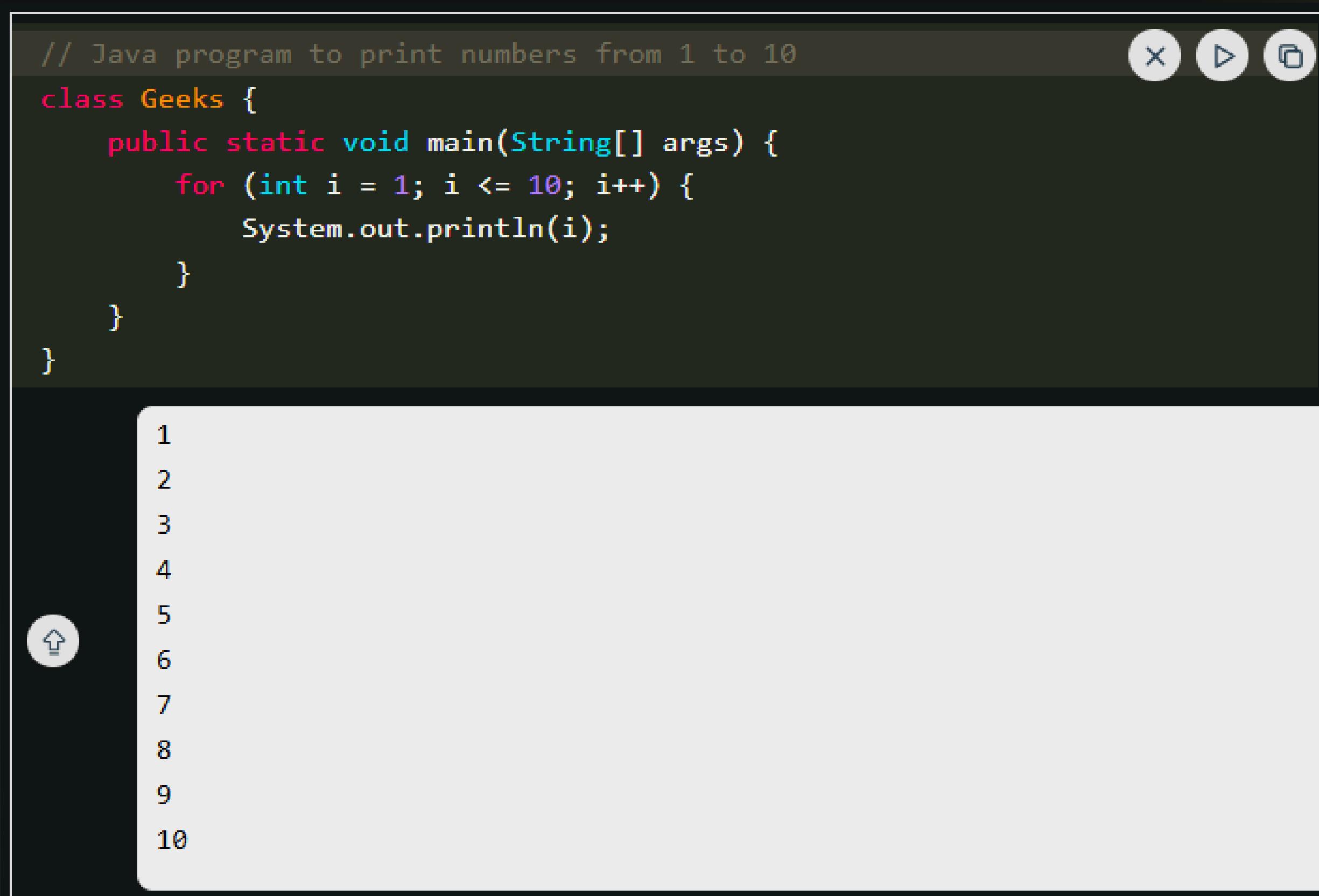
1

2

3

4

EXAMPLES



The screenshot shows a Java code editor window with a dark theme. The code in the editor is:

```
// Java program to print numbers from 1 to 10
class Geeks {
    public static void main(String[] args) {
        for (int i = 1; i <= 10; i++) {
            System.out.println(i);
        }
    }
}
```

Below the editor, a light gray terminal window displays the output of the program:

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

A small circular icon with an upward arrow is located at the bottom left of the terminal window.

EXAMPLES

```
// Java program to illustrate for loop
class Geeks {
    public static void main(String args[]) {

        // Writing a for loop
        // to print Hello World 5 times
        for (int i = 1; i <= 5; i++)
            System.out.println("Hello World");
    }
}
```



Hello World
Hello World
Hello World
Hello World
Hello World



EXAMPLES

```
public class WhileLoop {  
    public static void main(String[] args) {  
  
        // Initialize the counter variable  
        int c = 1;  
  
        // While loop to print numbers from 1 to 5  
        while (c <= 5) {  
  
            System.out.println(c);  
  
            // Increment the counter  
            c++;  
        }  
    }  
}
```

1
2
3
4
5

EXAMPLES

```
// Java program to illustrate while loop
class whileLoop {
    public static void main(String args[])
    {
        int i = 1;

        // test expression
        while (i < 6) {
            System.out.println("Hello World");

            // update expression
            i++;
        }
    }
}
```

Hello World
Hello World
Hello World
Hello World
Hello World

Output:

EXAMPLES

```
class GFG {  
    public static void main(String args[])  
    {  
        // Declaring and initialization expression  
        int c = 1;  
  
        // Do-while loop  
        do {  
            // Body of do-while loop  
            // Print statement  
            System.out.println("Hello World");  
  
            // Update expression  
            c++;  
        }  
        // Test expression  
        while (c < 6);  
    }  
}
```

Hello World
Hello World
Hello World
Hello World
Hello World