

```
// Looping statements:
// in programming loops are used to repeat a block of code.

//loop
/*-----
- */
console.log("1");
console.log("1");
console.log("1");
console.log("1");
console.log("1");

/*
for loop:
    The for statement creates a loop with 3 optional
expressions:

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

Expression 2 : defines the condition for executing the code block.

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

Syntax:

    for(initialisation;condition;update expression){
        code block to be executed;
    }
*/

//example 1:
/*-----
- */
let n = 5;
for (let i = 1; i <= n; i++) {
    console.log("javascript");
}

/*
```

```
i = 1 ; 1 <= 5 ; i++ ; true
i = 2 ; 2 <= 5 ; i++ ; true
i = 3 ; 3 <= 5 ; i++ ; true
i = 4 ; 4 <= 5 ; i++ ; true
i = 5 ; 5 <= 5 ; i++ ; true
i = 6 ; 6 <= 5 ; false ; break;
*/
```

//example 2:

//print number 1 - 5

```
/*-----
- */
```

```
let n1 = 5;
```

```
for (let i = 1; i <= n1; i++) {
  console.log(i);
}
```

```
/*
```

```
i = 1 ; 1 <= 5 ; i++ ; true | o/p : 1
i = 2 ; 2 <= 5 ; i++ ; true | o/p : 2
i = 3 ; 3 <= 5 ; i++ ; true | o/p : 3
i = 4 ; 4 <= 5 ; i++ ; true | o/p : 4
i = 5 ; 5 <= 5 ; i++ ; true | o/p : 5
i = 6 ; 6 <= 5 ; false ; break;
*/
```

//example 3

//display sum of natural numbers

```
/*-----
--*/
```

```
let sum = 0;
```

```
let n3 = 5;
```

```
for (let i = 1; i <= n3; i++) {
  sum += i;
}
```

```
console.log("sum :", sum);
```

```
/*
```

```
sum = 0
```

```
i = 1; 1 <= 5; i++;
```

```

sum = 1
i = 2; 2 <= 5; i++;

sum = 1 + 2 => 3
i = 1; 1 <= 5; i++;

sum = 3 + 3 => 6
i = 3; 3 <= 5; i++;

sum = 6 + 4 => 10
i = 4; 4 <= 5; i++;

sum = 10 + 5 => 15
i = 5; 5 <= 5; i++;

sum = 15
i = 6; 6 <= 5; false ; break;
*/

```

```

// infinite loop:
// for(let i = 1; i >0; i++){
//     console.log("javascript")
// }

```

```

/*

```

while loop:

The while loop loops through a block of code as long as a specified condition is true.

Syntax :

```

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

```

```

// while loop

```

```

let i = 1;

```

```

let n4 = 5;

```

```

while (i <= n4) {

```

```

    console.log(i);
    i += 1;
}

/*
i=1; n4=5;
1 <= 5
1
i= i + 1 = 1 + 1 = 2

i=2; n4=5;
2 <= 5
i = 2 + 1 => 3

3 <= 5;
3
i= 3 + 1 => 4

4 <= 5;
4
i = 4 + 1 => 5

5 <= 5;
5
i = 5 + 1 = 6 false

*/

```

```

/*

```

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.

Syntax:

```

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

```

```

let j = 1;

```

```
let k = 5;  
  
do {  
  console.log(j);  
  j++;  
} while (j <= k);
```