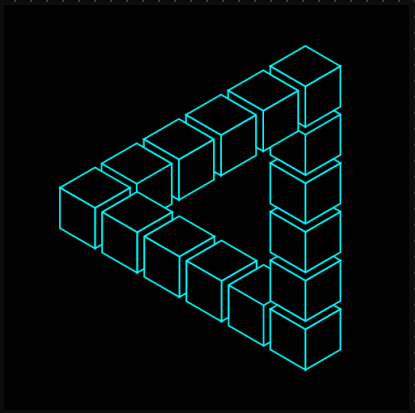
Loops In JavaScript:

Loops in JavaScript are a way to repeat a block of code multiple times.



Types of Loops in JavaScript :

1. for
2. while
3. do-while

Core Loops

4. for-of (arrays, strings, maps or sets [don’t care about index])
5. for-in (iterating over the properties (keys) of an object or the indexes of an array)

for loop

```
Syntax:
for(initialization, condition, iterator){
    // task to do
}

Example:
for(let i=1; i<=10; i++){
    console.log("School4U");
}
```

while loop

```
Syntax:
while (condition){
    // task to do
}

Example:
let i=1;
while(i<=10){
    console.log("School4U");
    i++;
}
```

Note:

- ❑ Avoid infinite loop

do-while loop

```
Syntax:
do {
    // task to do
} while (condition)

Example:
let i = 1;
do {
    console.log("School4U");
    i++;
} while (i <= 10)
```

for-of loop

```
Syntax:
for(let val of something){
    // do some task
}

Example:
let str = "Manas Kumar Lal"
for(let val of str){
    console.log(val);
}
```

for-in loop

```
Syntax:
for (let key in something) {
    // do some task
}

Example:
let obj = {
    name: "manas",
    age: "21",
    isStudent: true,
}
for (let key in obj) {
    console.log(key)
}
```

Challenge 1:

Print all even numbers from 0 to 100.

Solution:

```
for (let i = 0; i <= 100; i++) {
    if (i % 2 !== 0) {
        console.log(i);
    }
}
```

Challenge 2:

calculate how many vowels and consonents are in a given string using for of loop

Solution:

```
let string = "hello";

let vowelCount = 0, consonentCount = 0;
for (let letter of string) {
    if(letter === 'a' || letter === 'e' || letter === 'i' || letter === 'o' || letter === 'u' || letter === 'A' || letter === 'E' || letter === 'I' || letter === 'O' || letter === 'U'){
        vowelCount++;
    }else{
        consonentCount++;
    }
}

console.log("Vowel = " + vowelCount);
console.log("Consonent = " + consonentCount);
```

1. Calculate sum of first ‘n’ numbers.
2. Calculate the sum of numbers from ‘m’ to ‘n’.
3. Print all odd numbers from 0 to ‘n’.
4. Create a “Number Knock” game. (ask the user to keep guessing the number until the user enters correct guess) .
5. Simple Password Checker (Fixed Attempts)
6. Create a program to find the factorial of ‘n’.
7. Print the following pattern. (build it for nth numbers)

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

Build a Simple Text-Based Adventure Game

```
"You wake up in a dark forest..."
"Do you go 'left' or 'right'?"

"after choosing left:"

"You walk into a swamp..."
"You see something shiny in the mud. Do you pick it up? (yes or no)"
"if yes:" "It's a magic stone! You are teleported to safety. You win!"
"if no":" "You sink slowly into the mud. Game over."

"after choosing right:"

"You find a cave..."
"Do you enter the cave? (yes or no)"
"if yes:" "A dragon wakes up and chases you away. You barely escape!"
"if no:" "You set up camp outside the cave. A peaceful night under the stars. You win!"

"Do you want to play again? (yes or no)"
```