

# LOOPS

## Loops:

In JavaScript, the for loop is used for iterating over a block of code a certain number of times, or to iterate over the elements of an [array](#).

## For loop:

The **JavaScript for loop** *iterates the elements for the fixed number of times*. It should be used if number of iteration is known. The syntax of for loop is given below.

### Syntax:

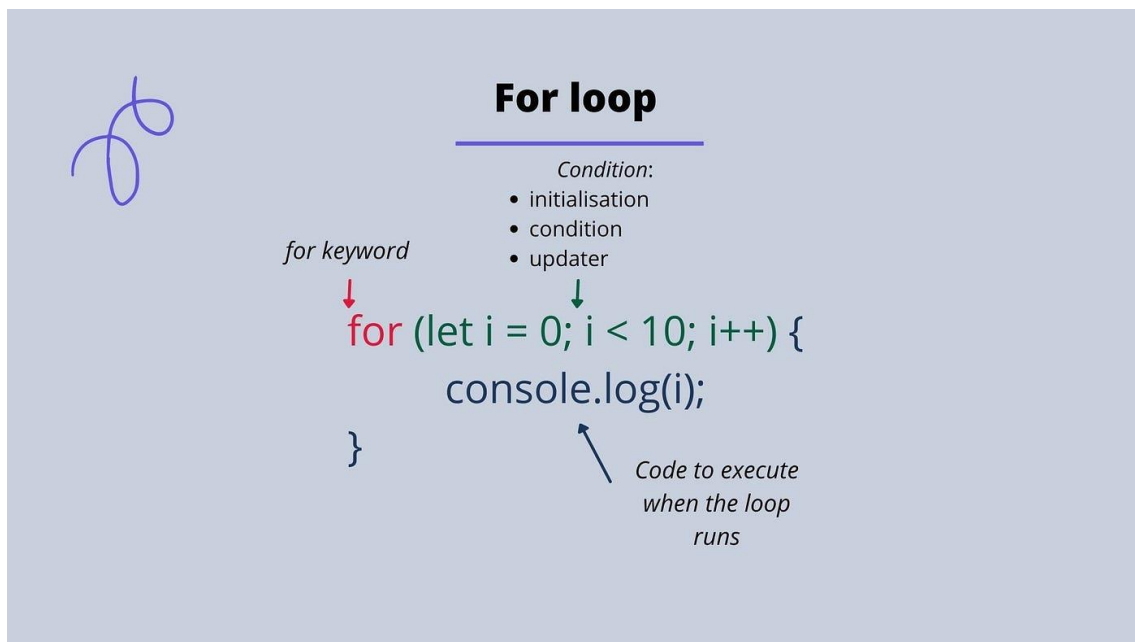
```
for (initialization; condition; increment)
{
    code to be executed
}
```

### Example:

```
<script>
for (i=1; i<=5; i++)
{
    document.write(i + "<br/>")
}
</script>
```

### Output:

1  
2  
3  
4  
5



## Nested For loop:

If we have loop inside loop, this is called a nested loop.

Example:

```
<script>
  for(var i=1; i<=5; i++){
    console.log("Table " + i);
    for(var j=1; j<=10; j++){
      var x=i*j;
      console.log(i+ " * "+j+'='+x);
    }
  }
</script>
```

for (var i=10; i<=15; i++)

initialization	condition	update	o/p
i=10	true	true	10
i=11	true	true	11
i=12	true	true	12
i=13	true	true	13
i=14	true	true	14
i=15	true	true	15
i=16	false	<del>true</del>	X

Example:- 7 table

```
for (var i=0; i<=10; i++){
  console.log ("7*" + i + "=" + 7*i);
}
```

Example: Tables

```
var User = prompt ("Enter a table num");
for (var i=0; i<=10; i++){
  console.log (User + "i" + i + "=" + User*i);
}
```

Example:- break the loop

```
for (i=1; i<=20; i++) {  
    if (i%2==0) {  
        console.log(i + " is even");  
        break;  
    }  
    else {  
        console.log(i);  
    }  
}
```

Example:- continue for skip the current iteration.

```
for (i=1; i<=2; i++) {  
    if (i%2==0) {  
        continue;  
        console.log(i);  
    }  
    else {  
        console.log(i);  
    }  
}
```

Example:- sum of even numbers

```
var count=0;  
for (i=1; i<=10; i++) {  
    if (i%2==0) {  
        count = count + 1;  
    }  
}  
console.log(count); //30
```

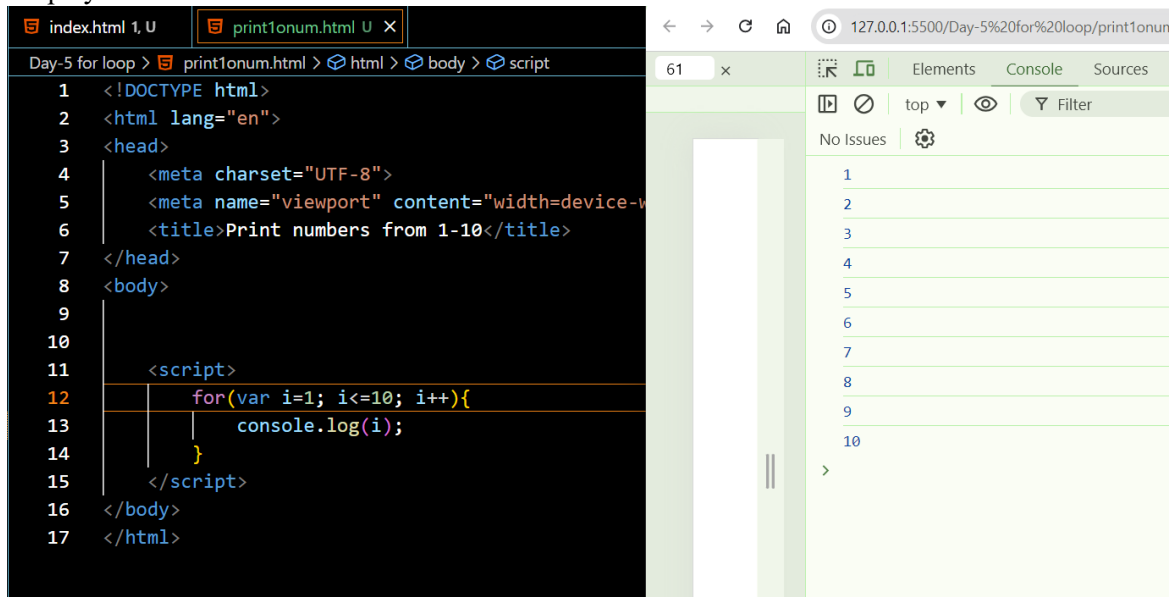
## Tasks:

### Task 1: Print Numbers from 1 to 10

Instructions:

Use a for loop to print numbers from 1 to 10.

Display the numbers in the console.



```
index.html 1, U | print1onum.html U X
Day-5 for loop > print1onum.html > html > body > script
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-w
6   <title>Print numbers from 1-10</title>
7 </head>
8 <body>
9
10
11 <script>
12   for(var i=1; i<=10; i++){
13     console.log(i);
14   }
15 </script>
16 </body>
17 </html>
```

61 x

127.0.0.1:5500/Day-5%20for%20loop/print1onun

Elements Console Sources

No Issues

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
>

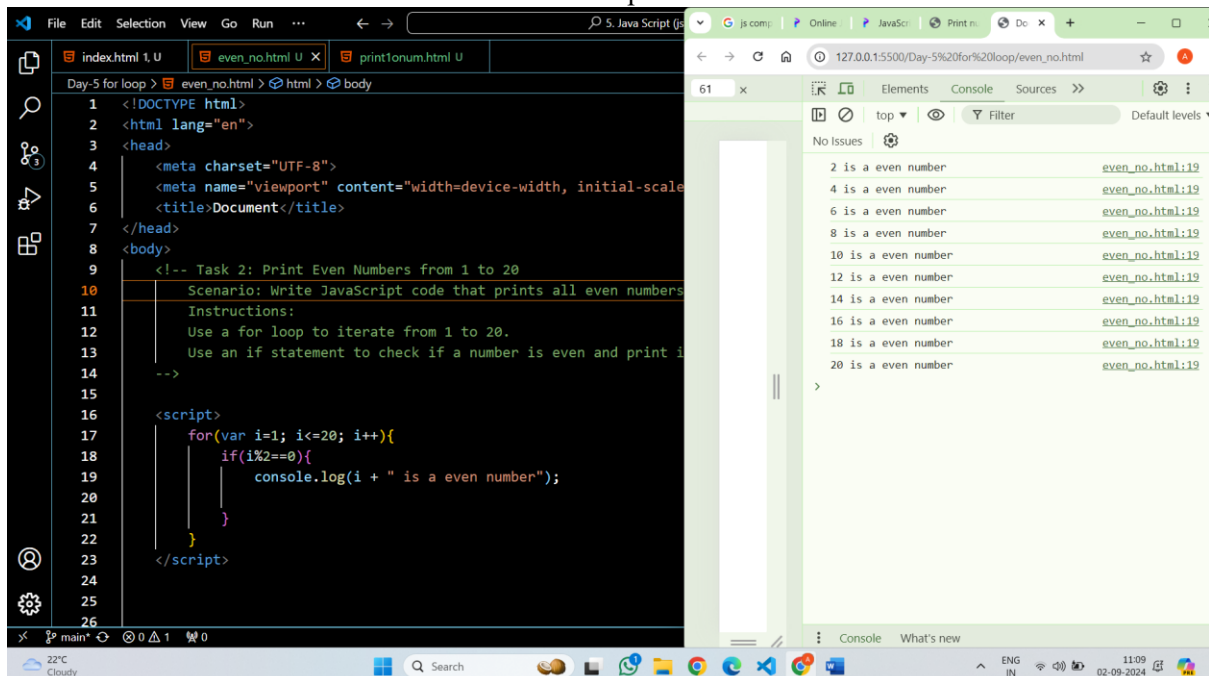
### Task 2: Print Even Numbers from 1 to 20

Scenario: Write JavaScript code that prints all even numbers from 1 to 20.

Instructions:

Use a for loop to iterate from 1 to 20.

Use an if statement to check if a number is even and print it.



```
File Edit Selection View Go Run ... 5. JavaScript (js) js.com: | Online | JavaScr | Print n... Do x + -
index.html 1, U | even_no.html U X | print1onum.html U
Day-5 for loop > even_no.html > html > body
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=
6   <title>Document</title>
7 </head>
8 <body>
9   <!-- Task 2: Print Even Numbers from 1 to 20
10   Scenario: Write JavaScript code that prints all even numbers
11   Instructions:
12   Use a for loop to iterate from 1 to 20.
13   Use an if statement to check if a number is even and print it
14   -->
15
16 <script>
17   for(var i=1; i<=20; i++){
18     if(i%2==0){
19       console.log(i + " is a even number");
20     }
21   }
22 </script>
23
24
25
26
```

61 x

127.0.0.1:5500/Day-5%20for%20loop/even\_no.html

Elements Console Sources

No Issues

2 is a even number even\_no.html:19  
4 is a even number even\_no.html:19  
6 is a even number even\_no.html:19  
8 is a even number even\_no.html:19  
10 is a even number even\_no.html:19  
12 is a even number even\_no.html:19  
14 is a even number even\_no.html:19  
16 is a even number even\_no.html:19  
18 is a even number even\_no.html:19  
20 is a even number even\_no.html:19  
>

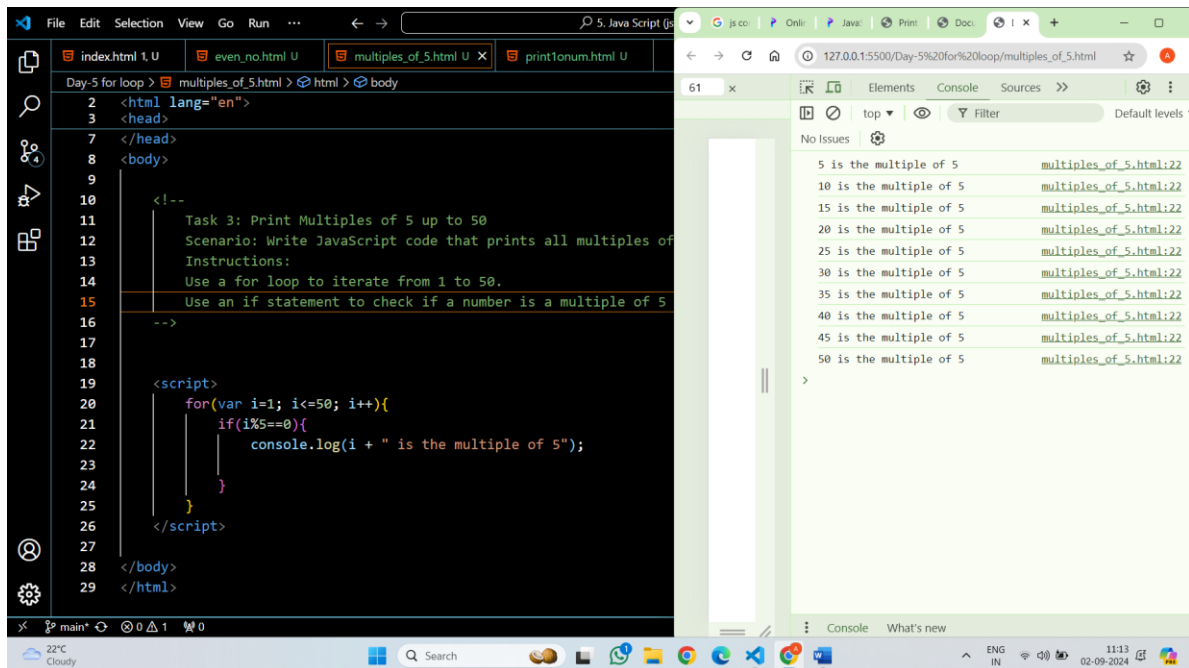
### Task 3: Print Multiples of 5 up to 50

Scenario: Write JavaScript code that prints all multiples of 5 up to 50.

Instructions:

Use a for loop to iterate from 1 to 50.

Use an if statement to check if a number is a multiple of 5 and print it.



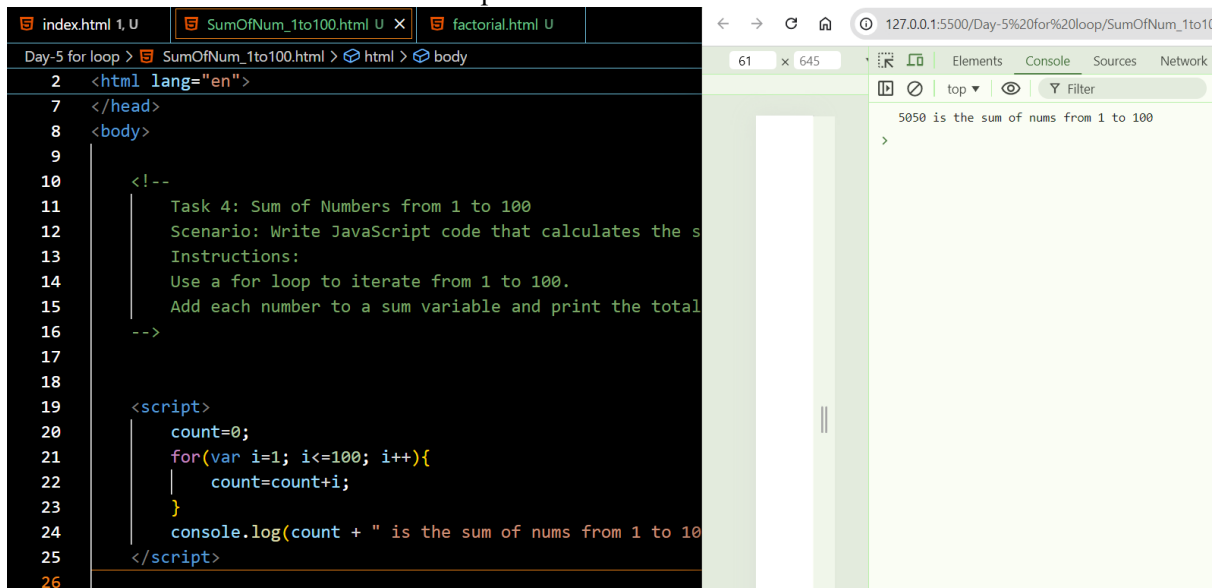
#### Task 4: Sum of Numbers from 1 to 100

Scenario: Write JavaScript code that calculates the sum of numbers from 1 to 100.

Instructions:

Use a for loop to iterate from 1 to 100.

Add each number to a sum variable and print the total sum.



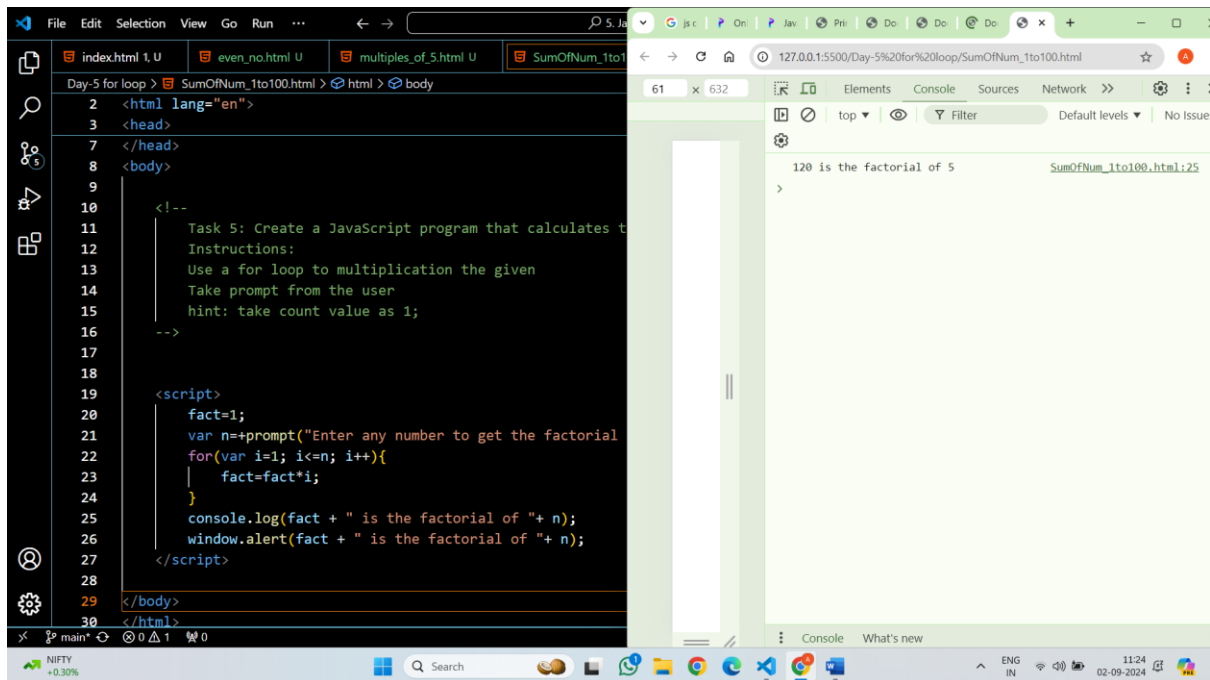
#### Task 5: Create a JavaScript program that calculates the factorial of a given number using a for loop.

Instructions:

Use a for loop to multiplication the given

Take prompt from the user

hint: take count value as 1;



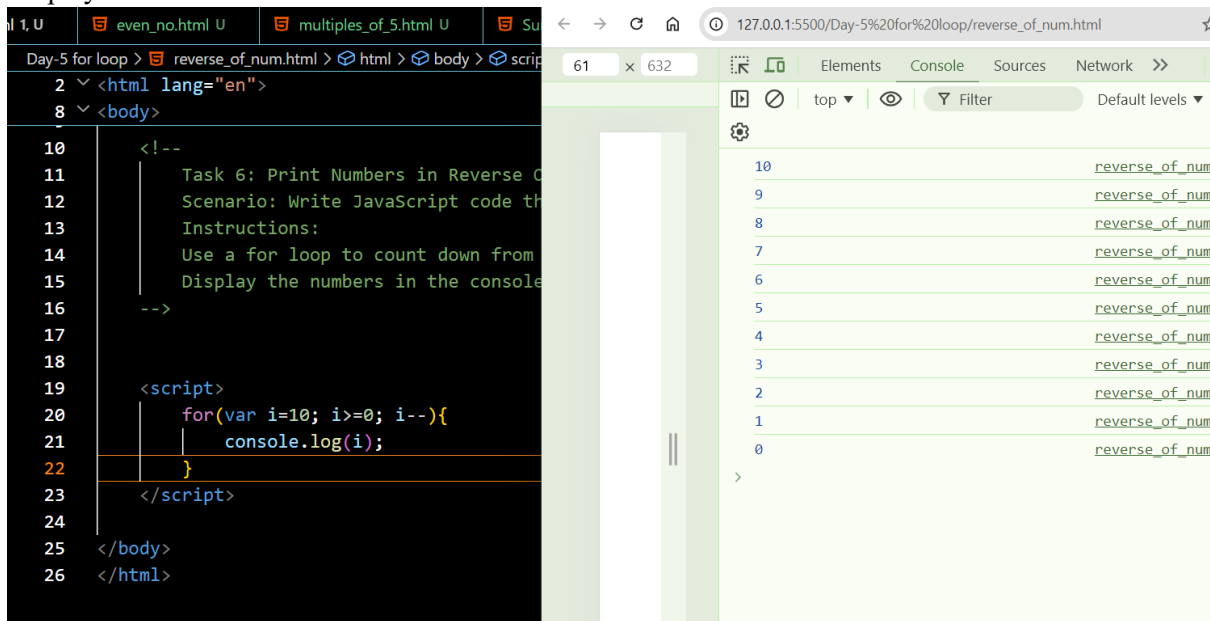
### Task 6: Print Numbers in Reverse Order

Scenario: Write JavaScript code that prints numbers from 10 to 1 in reverse order.

Instructions:

Use a for loop to count down from 10 to 1.

Display the numbers in the console.



(optional)

### Task 7: Print the Alphabet

Scenario: Write JavaScript code that prints the alphabet from A to Z.

Instructions:

Use a for loop to iterate through the ASCII values of the letters A to Z.

Convert the ASCII values to characters and print them.

Hint - `console.log(String.fromCharCode(i));`

# ASCII TABLE

Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char	Decimal	Hex	Char
0	0	[NULL]	32	20	[SPACE]	64	40	@	96	60	`
1	1	[START OF HEADING]	33	21	!	65	41	A	97	61	a
2	2	[START OF TEXT]	34	22	"	66	42	B	98	62	b
3	3	[END OF TEXT]	35	23	#	67	43	C	99	63	c
4	4	[END OF TRANSMISSION]	36	24	\$	68	44	D	100	64	d
5	5	[ENQUIRY]	37	25	%	69	45	E	101	65	e
6	6	[ACKNOWLEDGE]	38	26	&	70	46	F	102	66	f
7	7	[BELL]	39	27	'	71	47	G	103	67	g
8	8	[BACKSPACE]	40	28	(	72	48	H	104	68	h
9	9	[HORIZONTAL TAB]	41	29	)	73	49	I	105	69	i
10	A	[LINE FEED]	42	2A	*	74	4A	J	106	6A	j
11	B	[VERTICAL TAB]	43	2B	+	75	4B	K	107	6B	k
12	C	[FORM FEED]	44	2C	,	76	4C	L	108	6C	l
13	D	[CARRIAGE RETURN]	45	2D	-	77	4D	M	109	6D	m
14	E	[SHIFT OUT]	46	2E	.	78	4E	N	110	6E	n
15	F	[SHIFT IN]	47	2F	/	79	4F	O	111	6F	o
16	10	[DATA LINK ESCAPE]	48	30	0	80	50	P	112	70	p
17	11	[DEVICE CONTROL 1]	49	31	1	81	51	Q	113	71	q
18	12	[DEVICE CONTROL 2]	50	32	2	82	52	R	114	72	r
19	13	[DEVICE CONTROL 3]	51	33	3	83	53	S	115	73	s
20	14	[DEVICE CONTROL 4]	52	34	4	84	54	T	116	74	t
21	15	[NEGATIVE ACKNOWLEDGE]	53	35	5	85	55	U	117	75	u
22	16	[SYNCHRONOUS IDLE]	54	36	6	86	56	V	118	76	v
23	17	[ENG OF TRANS. BLOCK]	55	37	7	87	57	W	119	77	w
24	18	[CANCEL]	56	38	8	88	58	X	120	78	x
25	19	[END OF MEDIUM]	57	39	9	89	59	Y	121	79	y
26	1A	[SUBSTITUTE]	58	3A	:	90	5A	Z	122	7A	z
27	1B	[ESCAPE]	59	3B	;	91	5B	[	123	7B	{
28	1C	[FILE SEPARATOR]	60	3C	<	92	5C	\	124	7C	
29	1D	[GROUP SEPARATOR]	61	3D	=	93	5D	]	125	7D	}
30	1E	[RECORD SEPARATOR]	62	3E	>	94	5E	^	126	7E	~
31	1F	[UNIT SEPARATOR]	63	3F	?	95	5F	_	127	7F	[DEL]

The screenshot shows a web browser window with the URL `127.0.0.1:5500/Day-5%20for%20loop/alphabets_AtoZ.html`. The browser displays the output of a JavaScript script, which is the alphabet from A to Z. The code editor on the left shows the following code:

```

<html lang="en">
<head>
</head>
<body>
<!--
Task 7: Print the Alphabet
Scenario: Write JavaScript code that prints the alphabet
Instructions:
Use a for loop to iterate through the ASCII values of the
Convert the ASCII values to characters and print them.
Hint - console.log(String.fromCharCode(i));
-->
<script>
for(var i=65; i<=90;i++)
console.log(String.fromCharCode(i));
</script>
</body>
</html>

```

## Task 8: Write a JavaScript script that uses nested loops to

print a multiplication table for numbers 1 through 5.

Instructions:

use for loop

use nested loop



```
index.html 1, U | multiple_table_1to5.html U X
Day-5 for loop > multiple_table_1to5.html > html > body > script
2 <html lang="en">
8 <body>
12 Instructions:
13 use for loop
14 use nested loop
15 -->
16
17
18 <script>
19     for(var i=1; i<=5; i++){
20         console.log("Table "+ i);
21         for(var j=1; j<=10; j++){
22             var x=i*j;
23             console.log(i+ " * "+j+'='+x);
24         }
25     }
26 </script>
27
28
29 </body>
30
31 </html>
32
```

127.0.0.1:5500/Day-5%20for%20loop/multiple\_table\_1to5.html

61 x 632

Elements Console Sources

Table 1

1 * 1=1
1 * 2=2
1 * 3=3
1 * 4=4
1 * 5=5
1 * 6=6
1 * 7=7
1 * 8=8
1 * 9=9
1 * 10=10
Table 2
2 * 1=2
2 * 2=4
2 * 3=6
2 * 4=8
2 * 5=10
2 * 6=12
2 * 7=14
2 * 8=16
2 * 9=18

```
x.html 1, U | multiple_table_1to5.html U X
for loop > multiple_table_1to5.html > html > body > script
<html lang="en">
<body>
Instructions:
use for loop
use nested loop
-->
<script>
    for(var i=1; i<=5; i++){
        console.log("Table "+ i);
        for(var j=1; j<=10; j++){
            var x=i*j;
            console.log(i+ " * "+j+'='+x);
        }
    }
</script>
</body>
</html>
```

127.0.0.1:5500/Day-5%20for%20loop/multiple\_table\_1to5.html

61 x 645

Elements Console Sources Network

Table 3

3 * 1=3	multipl
3 * 2=6	multipl
3 * 3=9	multipl
3 * 4=12	multipl
3 * 5=15	multipl
3 * 6=18	multipl
3 * 7=21	multipl
3 * 8=24	multipl
3 * 9=27	multipl
3 * 10=30	multipl
Table 4	multipl
4 * 1=4	multipl
4 * 2=8	multipl
4 * 3=12	multipl
4 * 4=16	multipl
4 * 5=20	multipl
4 * 6=24	multipl
4 * 7=28	multipl
4 * 8=32	multipl
4 * 9=36	multipl
4 * 10=40	multipl

```

        console.log(i+ " * "+j+'='+x);
    }
</script>
</body>
</html>
```

Table 5

5 * 1=5
5 * 2=10
5 * 3=15
5 * 4=20
5 * 5=25
5 * 6=30
5 * 7=35
5 * 8=40
5 * 9=45
5 * 10=50