TASK1: What are conditional statements? Explain conditional statements with syntax and examples.

SOLUTION: Conditional statements control behavior in JavaScript and determine whether or not pieces of code can run.

There are multiple different types of conditionals in JavaScript including:

* “If” statements: where if a condition is true it is used to specify execution for a block of code.
* “Else” statements: where if the same condition is false it specifies the execution for a block of code.
* “Else if” statements: this specifies a new test if the first condition is false.

IF-Statement:

Syntax: **if (10 > 5) {**

**console.log(“10 is greater than 5”);**

**}else{**

**console.log(“10 is not greater than 5”);**

**}**

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TASK2: Write a program that grades students based on their marks.

SOLUTION:

let marks = 90;

if (marks >= 90) {

console.log("A grade");

}else if (marks < 90 && marks > 70) {

console.log("B grade");

}else if (marks < 70 && marks > 50) {

console.log("c grade");

}else{

console.log("F grade");

}

TASK3: What are loops, and what do we need them? Explain different types of loops with their syntax and examples.

SOLUTION:

Loops are programming constructs used to repeat a block of code multiple times. They are essential for automating repetitive tasks and iterating over collections of data. Loops help in reducing redundancy in code and making it more efficient.

There are mainly three types of loops in JavaScript:

1: **FOR-loop:** The ‘for’ loop is used when you know beforehand how many times you want to execute a block of code.

for (initialization; condition; increment/decrement) {

// code to be executed

}

2: **WHILE-loop :** The ‘while’ loop is used when you want to execute a block of code as long as a condition is true. It's suitable when you don't know the number of iterations beforehand.

while (condition) {

// code to be executed

}

3: **do-while loop:** The’do-while’ loop is similar to the ‘while’ loop, but the block of code is executed at least once before the condition is checked.

do {

// code to be executed

} while (condition);

TASK:4 Generate numbers between any 2 given numbers.

SOLUTION:

let x = 10;

let y = 25;

for (x; x <= y; x++) {

if(x == 10){

continue;

}

console.log(`${x}`);

}

TASK5: Use the while loop to print numbers from 1 to 25 in ascending and descending order.

SOLUTION:

FOR ASCENDING:

let x = 1;

while (x<=25) {

console.log(`${x}`);

x++

}

FOR DESCENDING :

let x = 25 ;

while (x>=1) {

console.log(`${x}`);

x--;

}